
SEX DIFFERENCES IN LEADER BEHAVIOR

– An Evolutionary Psychology Perspective –

Using Ethnographic Field Work to Relate Sex Differences in
Evolved Preferences for Social Structure to Leader Behavior

Dipl.-Kffr. Regina Anna-Maria Palmer

Vollständiger Abdruck der an der Fakultät für Wirtschafts- und Organisationswissenschaften der Universität der Bundeswehr München zur Erlangung des akademischen Grades eines Doktors der Wirtschafts- und Sozialwissenschaften (Dr. rer. pol.) genehmigten Dissertation.

Gutachter/Gutachterin:

Prof. Sonja A. Sackmann, Ph. D.

Prof. Dr. Hans A. Wüthrich

Die Dissertation wurde am 04.01.2021 bei der Universität der Bundeswehr München eingereicht und durch die Fakultät für Wirtschafts- und Organisationswissenschaften am 20.01.2021 angenommen. Die mündliche Prüfung fand am 19.05.2021 statt.

ACKNOWLEDGMENTS

This dissertation thesis would not have come into existence if it had not been for the help of some very important people. First of all, I would like to thank my supervisor Professor Sonja Sackmann, who accompanied me on this exciting journey from the very first day. I am particularly grateful for her providing me with the space to pursue a research endeavor according to my heart's desire without ever limiting the scope of what I could or could not work on. I thank her for believing in this project and particularly for helping me gain access to my research partner GOFFCO through one of her personal contacts. Also, I would like to thank my second supervisor, Professor Dr. Hans Wüthrich, who expressed interest in the research topic and, on my request, joined my journey and together with Professor Sonja Sackmann had provided me with guidance and helpful insights ever since. I am particularly grateful that he was even still willing to supervise and review this thesis after his retirement. My colleague Erna Herzfeldt shared one of her personal contacts with me, which led me to the gatekeeper at the GOFFCO franchisee. If it was not for her, I would not have included those research sites and many important findings of this research project would never have come into existence. The German Business Foundation (Stiftung der Deutschen Wirtschaft, SDW) supported me financially for three years with a scholarship. Not only did they contribute financially, but they granted me access to many inspiring people, academic seminars, and international conferences that are reflected in this thesis. I never encountered another German institution that was more uncomplicated, encouraging, and warm and I would highly recommend any aspiring doctoral candidate to apply for one of their scholarships.

I would like to thank my parents, Alois Palmer and Katalin Palmer, who welcomed me back into my childhood home on multiple occasions, so that I could read, think, and write without any external disturbances. During those times, and, for that matter, during all of my life, they have always ensured that I was well provided for and had everything I needed and more. I thank them, my family-in-law, and my friends for understanding that I often lacked the time to participate in family visits and events. They all believed in me and motivated me in times when I felt insecure.

Furthermore, there are not enough words to thank those who helped me in the stressful final phase of the thesis. Dr. Nicola Spickenreither, my best friend, former colleague, and intellectual role-model, edited the dissertation thesis with an unbelievably high level of understanding, insight, and rigidity. Her input helped me regain a fresh look on the topics of sex differences in leadership and evolutionary psychology at a point where I was so deeply involved in those topics that it became hard to find the right levels of depth and detail for my accounts. The re-writes she put me through lifted the quality of the thesis to an entirely new level. Bill Bogle ensured that my English sounded as smooth as possible to the native speaker's ear. His insightful comments and ideas helped me refine the argumentation of the thesis. My sister-in-law, Susanne Fischer, and her life partner, Frank Mittag, invested many days to help me complete and cross-check the references included in the research study. It was absolutely amazing how they detected any inconsistencies between the reference list and the text corpus. My mother-in-law, Ruth Fischer, provided for them during that time so that they could devote themselves to the task entirely. She further always sent my husband home from his visits giving him an extra portion of her delicious cucumber salad for me in addition to other delicacies, which made me feel included and cared for.

Finally, I want to thank the love of my life, Sebastian Palmer-Fischer. There are not enough pages in the world to even begin to describe what his contribution to this dissertation thesis was. He always had my back and did everything for me that one person could do for another in order to help and support them. I consider myself one of the luckiest people in the world to have him by my side.

Regina Anna-Maria Palmer

ABSTRACT

This dissertation thesis takes a novel evolutionary psychology-based approach to the research field of sex differences in leadership. The mature field is characterized by ambiguous results as well as discrepancies in statements from scholars as opposed to practitioners. To bring more clarity into the field, the researcher first reviews the underlying assumptions of the hitherto predominantly feminist angles taken that build on social structure meta-theory. Criticizes this meta-theory for not making clear predictions about the existence of sex differences in leadership behaviors, because of the conflicting roles faced by women leaders. Evolutionary psychology, on the other hand, predicts the existence of sex differences based on evolved mechanisms related to differences in mating strategies and parental effort. The superordinate framework guiding traditional social structure-based approaches builds on the dichotomy of agency and communion that is loosely linked to gender stereotypes. It lacks rigor and transparency and hence adds to the ambiguousness of the field. The author develops a new framework that builds on the theoretical assumption that evolution favored men who manipulated their surrounding social structures to represent dominance hierarchies and women who manipulated their social structures to represent egalitarian communities. Men achieve their goal by utilizing the strategies of dominance behavior and coalition-building, whereas women achieve their goal by utilizing the strategies of intimacy-building and nurturing behavior. The evolutionary relevance of these strategies is demonstrated by providing empirical evidence from the fields of comparative psychology, developmental psychology, and neuroscientific as well as endocrinological research. Nevertheless, findings from the SDL field on related behaviors imply that leaders' social environment, i.e. gendered organizations, makes those sex differences difficult to detect using aggregating quantitative approaches. The second part of the thesis hence applied the framework to guide a comparative ethnographic field study in a standardized work environment that allows for differences and similarities in behavior to become visible and for the consideration of situational effects that affect them. The field study uncovered two subcultures that varied considerably in their tolerance of dominance behavior and in their people-orientation. Nevertheless, sex differences in leader behavior occurred in all strategies in the predicted direction although these differences were not always straightforward. Dominance behavior was more strongly affected by social influences in women than in men. Furthermore, women did not apply dominance in a way that served dominance hierarchy building. Coalition-building entailed the most conspicuous sex differences with women essentially not investing in coalition-building at all, whereas male leaders frequently demonstrated behaviors that served the group's cohesiveness and sense of unity. Male leaders displayed hardly any female strategies. The female leaders demonstrated some behaviors related to female strategies, but these displays often appeared to be involuntary. They sought more one-on-one interactions with their subordinates and disclosed more intimate information. Regarding nurturing behavior, women leaders found strategies to care for their employees on the group level. The individual store structures met the respective behaviors of their leaders. Male stores displayed more consistent and stable dominance hierarchies, whereas female stores were characterized by counter dominance, open conflict, and less efficient cooperation. The female store in the subculture that frowned upon dominance displayed the most egalitarian structures. In addition to introducing several behaviors that were as yet neglected in the sex differences in leadership research field, the findings help to achieve more clarity by disentangling behaviors that were treated interchangeably in the past but actually represent either male or female strategies. Furthermore, it demonstrates the distorting role of organizational subcultures on sex differences in leader behavior. It ends with discussing the implications and limitations of its findings.

ABSTRACT – DEUTSCH [GERMAN]

Diese Dissertation betrachtet das Feld der Geschlechterunterschiede im Führungsverhalten aus einer evolutionspsychologischen Perspektive. Das reife Forschungsfeld ist durch uneindeutige Ergebnisse und Diskrepanzen in den Aussagen von Forschern und Praktikern gekennzeichnet. Um mehr Klarheit in das Feld zu bringen, analysiert die Forscherin die Annahmen der bisher dominierenden feministischen Perspektive, die sich auf eine sozial-strukturelle Metatheorie stützt. Sie kritisiert die Metatheorie dafür, dass sie keine klaren Vorhersagen über die Existenz von Geschlechterunterschieden macht, da weibliche Führungskräfte mit konfligierenden Rollen konfrontiert sind. Die Evolutionspsychologie hingegen macht klare Vorhersagen über die Existenz von Geschlechterunterschieden basierend auf den evolutionspsychologischen Mechanismen, die sich aus unterschiedlichen Paarungsstrategien und elterlicher Investition entwickelt haben. Das übergeordnete Framework des sozial-strukturellen Ansatzes basiert auf der Dichotomie von agency und communion, die lose mit Geschlechterstereotypen assoziiert wird. Dieser Verknüpfung fehlt jedoch Präzision und Transparenz, sodass sie zu der Unklarheit im Feld beiträgt. Die Autorin entwickelt daher ein neues Framework, das auf der theoretischen Annahme aufbaut, dass die Evolution Männer bevorzugt, die ihr soziales Umfeld als Dominanzhierarchien gestalten und Frauen, die ihr soziales Umfeld als egalitäre Gemeinschaften gestalten. Männer erreichen ihr Ziel, indem sie die Strategien Dominanzverhalten und Koalitionsbildung anwenden, wohingegen Frauen ihr Ziel über die Strategien Intimitätsbildung und Fürsorgeverhalten erreichen. Die evolutorische Relevanz dieser Strategien lässt sich über die kombinierte Evidenz aus den Bereichen der komparativen Psychologie, der Entwicklungspsychologie sowie der neurowissenschaftlichen und endokrinologischen Forschung zeigen. Nichtsdestotrotz implizieren Erkenntnisse aus dem Feld der Geschlechterunterschiede im Führungsverhalten, dass quantitative Methoden Geschlechterunterschiede zwischen Führungskräften kaum sichtbar machen. Daher wird das evolutionspsychologische Framework angewandt um mittels einer komparativen ethnographischen Feldstudie in einer standardisierten Arbeitsumgebung Unterschiede und Gemeinsamkeiten zwischen männlichen und weiblichen Führungskräften sichtbar zu machen. Die Feldstudie förderte zwei Subkulturen zutage, die sich deutlich in ihrer Dominanztoleranz sowie ihrer Personenorientierung unterschieden. Trotzdem ließen sich Geschlechterunterschiede im Führungsverhalten in Bezug auf alle Strategien in die erwartete Richtung erkennen. Das Dominanzverhalten war bei weiblichen Führungskräften mehr durch die Subkultur beeinflusst als bei männlichen. Weiterhin wandten Frauen Dominanz nicht in einer Weise an, die die Bildung von Dominanzhierarchien förderte. Koalitionsbildung beinhaltete den auffälligsten Geschlechterunterschied, da weibliche Führungskräfte sie nicht zeigten, wohingegen männliche Führungskräfte häufig Verhalten zeigten, das der Gruppenkohäsion und dem Gemeinschaftsgefühl diene. Männliche Führungskräfte demonstrierten hingegen kaum weibliche Strategien. Die weiblichen Führungskräfte jedoch präsentierten Verhalten in Bezug auf weibliche Strategien. Sie suchten mehr Einzelinteraktionen mit ihren Mitarbeitenden und gaben mehr intime Informationen preis. Bezüglich Fürsorgeverhalten fanden weibliche Führungskräfte Strategien um für ihre Mitarbeitenden auf der Gruppenebene zu sorgen. Die Filialstrukturen entsprachen dem jeweiligen Führungsverhalten. Männlich geführte Filialen hatten konsistentere und stabilere Dominanzhierarchien, während weiblich geführte Filialen durch Gegendominanz, offene Konflikte und weniger Kooperation gekennzeichnet waren. Die Dissertation führt nicht nur neue Verhaltensweisen ein, die bisher in der Geschlechterunterschiede im Führungsverhalten Literatur vernachlässigt wurden, sie hilft auch mehr Klarheit zu erlangen indem sie bisher miteinander verstrickte Verhaltensweisen voneinander trennt, die oft als äquivalent gesehen wurden, aber eigentlich entweder männliche oder weiblichen Verhaltensweisen repräsentieren. Weiterhin zeigt sie den Einfluss von organisationalen Subkulturen auf Geschlechterunterschiede im Führungsverhalten. Abschließend diskutiert sie die Implikationen und Limitationen ihrer Erkenntnisse.

CONTENTS

LIST OF FIGURES	IX
LIST OF TABLES.....	X
LIST OF ABBREVIATIONS.....	XI
1 SEX DIFFERENCES IN LEADERSHIP: A STUCK RESEARCH FIELD	1
1.1 Sex Differences in Leadership: A Competitive Advantage?	3
1.2 The Sex Differences in Leadership Research Field.....	4
1.3 Changing The Paradigmatic One-Sidedness of Sex Differences in Leadership Research	7
1.4 Research Questions, Methodology, Results, & Outline of the Research Project	11
2 TWO META-THEORIES OF SEX DIFFERENCES IN LEADER BEHAVIOR.....	15
2.1 Social Structural Theories of Sex Differences in Leader Behavior.....	18
2.1.1 Social Influences on Sex Differences in Leader Behavior.....	18
2.1.2 Effects of Past Social Environments on Sex Differences in Leader Behavior	22
2.1.3 Effects of Current Social Settings on Sex Differences in Leader Behavior	25
2.1.4 Intra-Individual Theories of Sex Differences in Leadership	27
2.2 Evolutionary Psychology Theories of Sex Differences in Leader Behavior.....	31
2.2.1 Biological Groups: Phylogeny.....	36
2.2.2 Past Influences of Biological Factors: Ontogeny	38
2.2.3 Current Biological Influences: Mechanisms.....	41
3 INTRODUCING AN EVOLUTIONARY PSYCHOLOGY-BASED FRAMEWORK OF SEX DIFFERENCES IN LEADER BEHAVIOR	48
3.1 The Framework of Sex Differences in Social Structural Theory: Agency versus Communion.....	48
3.1.1 Agency and Communion and their Relationship with Gender Stereotypes	49
3.1.2 Leadership Styles and their Relationship to Agency and Communion	54
3.1.3 Agentic Male and Communal Female Leaders? Review and Current State of Research.....	57
3.1.3.1 Meta-Analyses and Reviews on Sex Differences in Leadership Styles	58
3.1.3.2 Quantitative Assessments of Sex Differences in Leader Behavior Beyond Leadership Styles	60
3.1.3.3 Qualitative Assessments of Sex Differences in Leadership	61
3.2 An Evolutionary Psychology Framework of Sex Differences in Leader Behavior	63
3.2.1 Men's Social Motive: Dominance Hierarchies	64
3.2.1.1 The Male Strategy of Dominance Behavior.....	67

3.2.1.1.1	Phylogenetic Evidence of Sex Differences in Dominance Behavior	72
3.2.1.1.2	Ontogenetic Evidence of Sex Differences in Dominance Behavior	73
3.2.1.1.3	Mechanisms of Sex Differences in Dominance Behavior	75
3.2.1.2	The Male Strategy of Coalition-Building.....	78
3.2.1.2.1	Phylogenetic Evidence of Sex Differences in Coalition-Building	83
3.2.1.2.2	Ontogenetic Evidence of Sex Differences in Coalition-Building.....	83
3.2.1.2.3	Mechanisms of Sex Differences in Coalition-Building.....	84
3.2.2	Women’s Social Motive: Egalitarian Communities.....	85
3.2.2.1	The Female Strategy of Intimacy-Building.....	92
3.2.2.1.1	Phylogenetic Evidence of Sex Differences in Intimacy-Building	95
3.2.2.1.2	Ontogenetic Evidence of Sex Differences in Intimacy-Building	96
3.2.2.1.3	Mechanisms of Sex Differences in Intimacy-Building	97
3.2.2.2	The Female Strategy of Nurturing Behavior	99
3.2.2.2.1	Phylogenetic Evidence of Sex Differences in Nurturing Behavior.....	103
3.2.2.2.2	Ontogenetic Evidence of Sex Differences in Nurturing Behavior	104
3.2.2.2.3	Mechanisms of Sex Differences in Nurturing Behavior	105
3.2.3	Comparing Frameworks: Social Structure vs. Evolutionary Psychology	107
3.3	RQ1a: Which Sex Differences in Leadership Exist Theoretically from an Evolutionary Psychology Perspective of Behavior?	109

4 ETHNOGRAPHIC FIELD WORK: A COMPARISON OF FOUR LEADERS IN A STANDARDIZED WORK ENVIRONMENT113

4.1	Ontology, Epistemology, Methodology: Empirical Research as a Pragmatic Realist.....	113
4.1.1	Ontology: The Pragmatic Reality of Sex Differences in Leaders	113
4.1.2	Epistemology: Gaining Knowledge of Sex Differences in Leaders	114
4.1.3	Methodology: Assessing Sex Differences in Leaders	115
4.2	Using a Qualitative Research Design.....	115
4.3	The Four GOFFCO Stores: Research in a Standardized Work Environment.....	118
4.3.1	Benefits of Research in a Standardized Work Environment	118
4.3.2	Sampling: Choosing the Research Partner and Research Sites.....	119
4.3.3	GOFFCO.....	122
4.3.3.1	The Standard GOFFCO Store	122
4.3.3.2	Store 1: Victor Kovac’s Flagship Store	125
4.3.3.3	Store 2: Eva Velitchkov’s Family Store.....	125
4.3.3.4	Store 3: Marta Solberg’s City Center Store.....	126
4.3.3.5	Store 4: Eric Holzhammer’s Highway Store	126
4.4	Method: Covert Participant Observation.....	127
4.5	Data Collection as Participant Observer	128
4.6	Data Analysis: Coding and Narrative Development	130

5 FINDING SEX DIFFERENCES IN LEADER BEHAVIOR.....136

5.1	Behaviors Serving Male and Female Strategies.....	137
5.1.1	Specific Dominance Behaviors	137
5.1.2	Specific Coalition-Building Behaviors.....	140
5.1.3	Specific Intimacy-Building Behaviors	143
5.1.4	Specific Nurturing Behaviors.....	146
5.2	Differences in Leader Behavior.....	148
5.2.1	Leader Differences in Behavior across Subcultures.....	149
5.2.1.1	Leadership at the Company Stores: A Performance-Oriented Subculture.....	149
5.2.1.2	Leadership at the Melsbach Stores: An Employee-Oriented Subculture	153
5.2.2	Leader Differences in Behavior across Sex	156
5.2.2.1	Leader Sex Differences in the Application of Male Strategies.....	157
5.2.2.1.1	Leader Sex Differences in Dominance Behavior	157
5.2.2.1.2	Leader Sex Differences in Coalition-Building	162
5.2.2.2	Leader Sex Differences in the Application of Female Strategies	170
5.2.2.2.1	Leader Sex Differences in Intimacy-Building.....	171
5.2.2.2.2	Leader Sex Differences in Nurturing Behavior	173
5.3	The Social Structures of Male and Female Stores	176
5.3.1	Dominance Hierarchies in the Four GOFFCO Stores.....	176
5.3.1.1	Dominance Hierarchy at the Flagship Store	176
5.3.1.2	Dominance Hierarchy at the Highway Store	178
5.3.1.3	Dominance Hierarchy at the Family Store.....	180
5.3.1.4	Dominance Hierarchy at the City Center Store	182
5.3.1.5	Commonalities Between Male and Female Stores Concerning Dominance Hierarchies	184
5.3.2	Egalitarian Communities in the Four GOFFCO Stores	185
5.3.2.1	Egalitarian Community at the Flagship Store	185
5.3.2.2	Egalitarian Community at the Highway Store	186
5.3.2.3	Egalitarian Community at the Family Store.....	188
5.3.2.4	Egalitarian Community at the City Center Store	189
5.3.2.5	Commonalities Between Male and Female Stores Concerning Egalitarian Communities ...	191
5.4	Discussion of Findings.....	192
5.4.1	Behaviors Serving Strategies to Create Evolutionary Adaptive Structures.....	193
5.4.2	Discussion of Sex Differences in Leader Behavior.....	196
5.4.2.1	Discussion of Subculture Influence on Sex Differences in Leader Behavior	196
5.4.2.2	Discussion of Leader Sex Differences in Dominance Behavior	197
5.4.2.3	Discussion of Leader Sex Differences in Coalition-Building	200
5.4.2.4	Discussion of Leader Sex Differences in Intimacy-Building	204
5.4.2.5	Discussion of Leader Sex Differences in Nurturing Behavior.....	208
5.4.3	Leadership Differences and Four Distinct Social Structures	210
5.5	RQ1b: Which Sex Differences in Leadership Exist from an Evolutionary Psychology Perspective of Behavior in Organizational Contexts?	215

6 DISCUSSING CONTRIBUTIONS, IMPLICATIONS, AND LIMITATIONS OF THE EVOLUTIONARY PSYCHOLOGY PERSPECTIVE ON SDL.....217

6.1	Contributions to More Clarity in the SDL Research Field.....	217
6.2	Theoretical Implications for Gender & Management and Leadership Research.....	221
6.3	Practical Implications of SDL for Organizations and Leaders.....	225
6.4	Limitations of Findings by Assumptions and Research Design	228
6.5	Ethical Considerations	233
6.6	Encouraging Future Research on SDL Beyond the Feminist Paradigm.....	233
7	REFERENCES	237
	APPENDIX.....	285
	Appendix A: The First Two Pages of the Observation Protocol.....	286
	Appendix B: Four Excerpts from the Narratives (Data Analysis Step Seven).....	288

LIST OF FIGURES

Figure 1 <i>Outline of the Research Project</i>	14
Figure 2 <i>Biosocial Framework of Sex Differences</i>	16
Figure 3 <i>Predictions of Social Structure Meta-Theory of Sex Differences in Leader Behavior</i>	30
Figure 4 <i>Deriving Evolutionary Psychological Relevance from Empirical Evidence</i>	36
Figure 5 <i>The Three Layers of Reality According to the Pragmatic Realist Paradigm</i>	113
Figure 6 <i>Culture Comparison of Hofstede Dimensions in Bulgaria, Croatia, and Germany</i>	121
Figure 7 <i>Store Design of the Standard GOFFCO Store</i>	123
Figure 8 <i>Eight Steps of Data Analysis</i>	130
Figure 9 <i>Types of Information Based on Dimensions of Functionality and Personality</i>	206

LIST OF TABLES

Table 1 <i>Adjective Lists Conceptualizing Masculinity</i>	51
Table 2 <i>Adjective Lists Conceptualizing Femininity</i>	52
Table 3 <i>Overview of Meta-Analyses on Sex Differences in Leadership</i>	59
Table 4 <i>Examples of Eight Forms of Workplace Aggression</i>	71
Table 5 <i>Summary of the Evolutionary Psychology Framework of Sex Differences in Behavior</i>	112
Table 6 <i>The Features of the Four GOFFCO Stores</i>	126
Table 7 <i>Process from Coding to Generalization</i>	132
Table 8 <i>Specific Dominance Behaviors</i>	139
Table 9 <i>Specific Coalition-Building Behaviors</i>	142
Table 10 <i>Specific Intimacy-Building Behaviors</i>	145
Table 11 <i>Specific Nurturing Behaviors</i>	148
Table 12 <i>Men and Women Leaders' Behaviors Serving Male Strategies</i>	170
Table 13 <i>Men and Women Leaders' Behavior Serving Female Strategies</i>	175
Table 14 <i>Commonalities in the Social Structure of Male and Female Stores</i>	192

LIST OF ABBREVIATIONS

<i>Abbreviation</i>	<i>Explanation</i>
<i>2D:4D</i>	Second to fourth finger digit ratio
<i>ACL</i>	Adjective check list
<i>CAH</i>	Congenital adrenal hyperplasia
<i>GOFFCO</i>	Globally operating fast-food company
<i>O</i>	Oxytocin
<i>OC</i>	Organizational commitment
<i>SDL</i>	Sex differences in leadership
<i>T</i>	Testosterone
<i>TDF</i>	Testes determining factor

To all the people whose goal it is to find truth
and who dare to walk unexplored paths to get there.

1 SEX DIFFERENCES IN LEADERSHIP: A STUCK RESEARCH FIELD

We are not so naïve to suggest that evolutionary psychology provides magic bullets that will suddenly eliminate social problems. But we do suggest that in domains where change is desired, the new science of the mind provides the light and the way. (Buss & Schmitt, 2011)

“The Fortune 500 now has a record number female CEOs: A whopping 38”, the headline of a CNN Business article claimed ironically in August 2020 (Benveniste, 2020). Thirty-eight female CEOs equal a share of 7.6 percent. This is probably not what Regina Herzlinger, professor at Harvard Business School, had in mind when predicting in the 1990ies that “large numbers” of female CEOs would be running America’s leading companies by the year 2010 (Aburdene & Naisbitt, 1992, p. 62). The prevailing low number of female leaders is a phenomenon that is not limited to the USA but concerns all regions of the world (Sojo et al., 2016). In Germany, the situation is even more precarious than in the United States. In 2019, of the 160 companies listed in the three German stock indices Dax, MDax, and SDax, only three companies (1.9%) had a female CEO. Looking at the share of female leaders on those companies’ executive boards revealed a low percentage of 8.7 percent. Two out of three companies even had an exclusively male executive board (Manager Magazin, 2019). Gender balance in top leadership positions is definitely *not* around the corner.

One reason which may be contributing to that disparity is that there is still uncertainty about what behaviors to expect from female leaders compared to male leaders. A study found that participants were equally likely to hire fictitious male and female applicants for a leadership position when they received information about their prior actions as leaders, i.e., they had more specific expectations about the specific applicant. When they received no information about the applicant’s prior leader experience, however, participants preferred male applicants over female applicants. The finding indicates that people, who lack knowledge in a specific domain, are more likely to rely on stereotypes in their decision making in the absence of other relevant information (cf. Bosak & Sczesny, 2011). A meta-analysis substantiates that male applicants are, on average, the preferred candidates for leadership positions (Eagly & Karau, 1991). Participants’ preference for male applicants for leadership positions indicates that they relied on the stereotype of leadership being male when deciding to hire the applicant (Heilman et al., 1989; Schein, 1973). Accordingly, decision-makers are more likely to fill leadership positions with female applicants only when the position contains a crucial social component (Eagly & Karau, 1991).

Prominent examples of female leadership seem to be of little help in specifying expectations about what behavior to expect from female leaders as opposed to male leaders. When Yahoo! hired Marissa Mayer as the new CEO in 2012, she did many things differently from her male predecessors. At the time Marissa Mayer took over as CEO, Yahoo! ’s market share was dwindling, and “it had lots of cash but few strategic advantages as it fought far larger competitors” (Weber & Dastin, 2016, para. 35). Mayer made food free, tore down walls, provided everyone with top-of-the-line company smartphones, and created a mentorship program for junior employees. She got in touch with her employees through email chains and lunches in the employee cafeteria and established a weekly meeting to discuss the week’s successes and plans with all Yahoo! employees. Many of these actions resembled common practices at her former employer Google, where she had started working as its 20ieth employee right after her graduation from Stanford University. In-depth reports stated that as a result of Mayer’s actions, the Yahoo! employees’ working morale started to change and where parking lots had been empty till 10 am, and after 4 pm, there were now full parking lots from 8 am till 6.30 pm. Within one year, Yahoo! transformed from a descending Internet giant that had lost momentum, talent, and motivation to a high-

energy and high-productivity culture. Shareholders valued the transformation making stock price rise by 100 percent (Carlson, 2013).

The story reads like the textbook example of a leader success story. Or maybe even a female leader success story? Many of the actions described above can be interpreted to conform to the female stereotype. For example, Mayer seemed to care for her employees' well-being and tried to improve it by providing them with free food and modern equipment. Furthermore, by introducing mentoring programs and open-plan offices, she increased interaction among employees and created a communal and people-related climate. These actions seem to represent a people-oriented leadership style, which is commonly attributed to stereotypes about women (Eagly & Johnson, 1990).

Other sources, however, indicate that Mayer might be less stereotypically female than the interpretations of her behavior above indicate. They report that many people disliked Mayer because she was robotic, stuck up, and absurd in her obsession with detail. Furthermore, she was shy and "socially awkward" (Carlson, 2013, para. 51) and someone to whom "empathy ... [did not] come naturally" (Carlson, 2013, para. 186). She refused to call herself a feminist in an interview and disgruntled working mothers at Yahoo! by banning the option for them to work from home (Carlson, 2013).

In 2017, Yahoo!'s demise culminated in Mayer selling its internet business to Verizon Communications and leaving the company (Lindner, 2018). At the beginning of 2020, the remaining Yahoo! business (which had renamed itself into Altaba Inc. in June 2016) dissolved. When Mayer left Yahoo! she had been named one of "the world's 19 most disappointing leaders" (Fortune Editors, 2016), a "case study in poor leadership" (Myatt, 2015) and "the 'least likable' CEO in tech" (Mejia, 2017). Her managerial actions at Yahoo! and people's accounts of her behaviors painted very different pictures about Mayer as a leader.

Today, Mayer and a former Google and Yahoo! acquaintance of hers lead Lumi Labs, an AI technology startup they founded in 2018 (Weinberger & Leskin, 2020). The startup's website depicts a team of thirteen (laughing and cheering) employees, including the two founders. One of the women in the picture holds a pillow that reads "Be nice or leave", and one of the company's core values is "We like each other – we believe in group lunches, evening trivia contests, homemade ice cream (with flavors chosen by vote!), and Aloha Fridays" (<http://lumilabs.com/team.html>). Nothing on the website implies that Mayer has difficulties interacting with her employees or that they dislike her. Instead, it seems to depict an egalitarian community of coworkers that enjoy working together in an intimate environment. The website's low focus on status and ranks and its emphasis on processes (innovation) rather than outcome appear to concur considerably more with female stereotypes. Furthermore, it challenges the image of the adamant tech CEO depicted in some of the reports about Mayer. Overall, the reports about Mayer are hence inconsistent, and it remains to her observers to assess her leader behavior as representative of other women leaders.

Of course, Marissa Mayer is just one example of female leadership. We cannot understand her behavior concerning its femaleness without assessing other female leaders' behaviors and contrasting them with hers. The example also highlights that we cannot understand female leader behavior without systematically contrasting it with male leadership behavior. What would male CEOs in similar situations and environments have done? Furthermore, looking at strategic macro-decisions like the ones described above only prevents us from understanding leader behavior on the everyday micro-level of behavior. Strategic decisions usually result from different, often both male and female, voices, environmental pressures, and events prior to the specific decision. They also entail personality characteristics that are unique and unrelated to biological sex. For understanding sex differences, it can be helpful to look at

individual cases. However, without contrasting them with other female and male leaders' behaviors, interpretations will be biased by stereotypes and selective attention.

1.1 SEX DIFFERENCES IN LEADERSHIP: A COMPETITIVE ADVANTAGE?

One fundamental reason to engage in gender and management research is to increase a company's competitive advantage (Alvesson & Billing, 2009, p. 1). Practitioners, both leaders and non-leaders, *do* feel that there is a sex difference in leader behavior. Many studies, scientific and non-scientific, further claim a positive correlation between the share of female leadership and financial performance. The correlation indicates that sex differences in behavior have distinct effects on companies' competitive advantage. A considerable number of studies have investigated the relationship between female leadership and company performance. *Managerial* studies that measure simple correlations between the number of women in top management teams and financial key indicators enthusiastically report that companies with a high share of women on boards perform better than companies with a low share of women leaders (Carter & Wagner, 2011; Curtis, Schmid, & Struber, 2012; Desvaux, Devillard-Hoellinger, & Baumgarten, 2007). Furthermore, there is evidence for companies with three or more women on the board to be economically more successful than companies that have only one woman in top management positions (Carter & Wagner, 2011; Schwartz-Ziv, 2013).

To aggregate the results of prior *scientific* research, Jeong and Harrison (2017) conducted a meta-analysis on a sample of 146 studies on female leaders (i.e., CEOs or top management team members) and company performance. They found that female leadership representation is weakly positively related to long-term financial performance and weakly negatively related to short-term stock market returns. The negative short-term effect is explained by the public interpretation of female leadership. Due to ease of accessibility, many studies assess the impact of female leadership on company performance based on publicly traded companies and use subjective, investor-based performance indicators like Tobin's Q (e.g., Adams & Ferreira, 2009; Ahern & Dittmar, 2012; Haslam et al., 2010; Judge, 2003). Those studies often find a negative relationship between financial performance and female leadership. Ahern and Dittmar (2012) explain this phenomenon with investors' belief that female leaders are hired to meet the political and public request for more female representation and not for their actual qualifications. The meta-analysis explains the positive long-term effect, on the other hand, by boards with female leaders being less risk-taking (Van Staveren, 2014).

Hoobler et al. (2018) conducted a meta-analysis of 78 studies on female leader representation and companies' financial performance. The authors controlled for type of leader, distinguishing between CEOs, top management team members, and board members. The study found that overall there is a small positive relationship between female leadership and company performance, both accounting-based and market-based. However, looking at the individual levels of representation, they only found women on the boards of directors to positively impact company performance. Furthermore, they demonstrated the moderating influence of the national cultural environment showing that female CEOs had a significantly higher positive impact on company performance in countries with higher levels of gender egalitarianism.

The studies cited in the meta-analyses are subject to several limitations. One problem is their correlative design, which does not account for causality. Did the share of women leaders cause positive financial performance, or are financially successful companies more likely to deploy female leaders? The influence of top leaders and financial figures can be both direct and indirect, and the number of intermediate and moderating variables is immense. For example, organizational culture and the country's national gender equality influence the effect of sex-specific leadership (Dwyer, Orlando, & Chadwick, 2003; Hoobler et al., 2018; Post & Byron, 2015). Measuring female leaders' contribution to

the corporate world based merely on financial outcomes may further be outdated (Hoobler et al., 2018), because it implies a one-sided view of organizational life. Shareholder figures may inadequately represent the war for talent and employer branding, corporate social responsibility and business ethics, employee wellness and health, or employee satisfaction and organizational commitment. Stakeholder-oriented measures could be more revealing concerning the impact of female leadership instead, but research in that area is still scarce (Hoobler et al., 2018). Most studies focused on an organizational macro-level and strategic top management decisions, just like the public reports on Marissa Mayer's leadership. They hence neglected behaviors on the meso-level and the micro-level that are publicly less visible but no less important to corporate success.

Despite their limitations, the studies mostly concurred that female leaders positively affect organizational performance given the "right" environmental conditions, implying a sex difference in leadership. The media echoes the notion of sex differences in leadership, citing studies that are pro-women but often non-scientific. Nevertheless, the studies do not tell us which specific leader *behaviors* distinguish female leaders from male leaders and positively impact company performance.

1.2 THE SEX DIFFERENCES IN LEADERSHIP RESEARCH FIELD

Within the research field of *sex differences in leadership* (SDL), scientists are concerned with the question of what behaviors of male and female leaders take place in the "black box" between company leadership and company performance (Lawrence, 1997). The SDL research field is subordinated to the field of gender and management. About half a century of research is subsumed under this research label, which has produced many theories and successively increased the field's complexity (for an overview, see Broadbridge & Simpson, 2011; Marshall, 1995). A considerable number of sub-streams have emerged in the field of gender and management (see Alvesson & Billing, 2009; Marshall, 1995; Powell, 2012), with one of them being about "whether men and women are really different" (Marshall, 1995, p. S57).

The topic of sex differences in leadership behavior is one of the most extensively investigated gender and management fields (Alvesson & Billing, 2009, p. 143). Marshall described the question about whether male and female leaders behave differently as "a remarkably persistent question in the gender field" (1995, p. S58). Being characterized by a large density of theories and empirical investigations, the research field classifies as a mature one. The field's beginnings built on explicit and implicit findings from extensive ethnographies and other qualitative interrogations (e.g., Kanter, 1977; Rosener, 1990, 1995; Sinclair, 1998), which were increasingly replaced later on by quantitative research approaches to test emergent theories. Among those theories are role incongruity (Eagly & Karau, 1991, 2002; Heilman, 2001), the backlash effect (Heilman et al., 2004), the queen bee phenomenon (Derks, Van Laar, & Ellemers, 2016), the glass ceiling (Powell & Butterfield, 1994) and the glass cliff (Ryan et al., 2016), or the classic "think manager, think male" phenomenon which influences our expectations towards leader behavior (Schein, 1973) and also women's leadership strategies (Laud & Johnson, 2013; Zenger & Folkman, 2012). Although not all of those theories focus on leader behavior per se, they all make assumptions or predictions about men and women's leader behavior. Some scholars worry that younger generations are starting to lose interest in the subject matter by assuming that the whole "gender issue" is solved. Nevertheless, the ongoing debates about sexism, women's quotas in public and private organizations, and gender pay-gaps among practitioners and in scientific journals imply that the field of sex differences in leadership remains worthy of research (Broadbridge & Simpson, 2011, p. 475).

Especially regarding the fact that the research field of SDL has as of yet not been able to answer the question whether there even is a difference in leader behavior between women and men.

Some scholars, practitioners, and journalists emphasize that there are sex differences in leadership (Book, 2000; Helgesen, 1990; Loden, 1985; Rosener, 1995). To name a few examples, CNBC Make it! stated that “Barack Obama says women make better leaders – and data shows he’s right” (Mejia, 2017), Psychology Today featured an online article stating “The world would be better if most leaders were women” (Riggio, 2010), the Independent claimed, “Women are better leaders than men, study of 3,000 managers conclude” (Hosie, 2017), and Bloomberg’s article “As leaders, women rule” summarized the findings of a study showing “that female managers outshine their male counterparts in almost every measure” (Sharpe, 2000). According to the authors, male leaders are characterized by qualities such as competitiveness, hierarchy-orientation, high levels of control, and analytic problem-solving free of emotions. Female leadership, on the other hand, entails cooperation, egalitarian collaboration, lower levels of control, and problem-solving based on intuition and empathy as well as rationality (Eagly & Johnson, 1990).

The attributes associated with female leadership are argued to constitute a “female advantage” (Yukl, 2002, p. 412). Female leadership is supposed to be more effective in well-resourced, dynamic unstable, or complex environments (Krishnan et al., 2006). The female advantage results from females being more relationship-oriented than males. Relationship-oriented leadership overlaps with transformational leadership in contrast to transactional leadership which is more task-oriented (Bass & Avolio, 1994). Transformational leadership is considered more effective than transactional leadership (Lowe, Kroeck, & Sivasubramaniam, 1996) because it better meets the complexity of modern organizations (Eagly & Carli, 2003; Eagly, Gartzia, & Carli, 2014; Jelinek & Adler, 1988).

Several meta-analyses assessed sex differences in leadership styles such as transformational vs. transactional, participative vs. autocratic, and/or people-oriented vs. task-oriented leadership (Dobbins & Platz, 1986; Eagly & Johnson, 1990; Eagly, Johannesen-Schmidt, & Van Engen, 2003; Van Engen & Willemssen; 2004). Their results are ambiguous and sometimes contradictory. Dobbins and Platz (1986), for example, find in their meta-analysis no significant sex difference in leadership behavior on the scales of initiating structure and consideration. In their extensive meta-analysis, Eagly and Johnson (1990) replicated this finding, but only for field studies. In laboratory settings, they found a sex difference in initiating structure favoring females.

Another meta-analysis, however, found the opposite effect: sex differences were even larger in organizational settings than in artificial settings (Van Engen & Willemssen, 2004). Eagly and Johnson (1990) also assessed other dimensions in their analysis and looked at participative vs. autocratic leadership behavior. Other than in consideration and initiating structure, they found a significant – though still small – difference in leadership behavior on these dimensions across both field and laboratory settings.

In their later meta-analysis, Eagly and her colleagues (Eagly, Johannesen-Schmidt, & Van Engen, 2003) focused on field studies only. This time they wanted to assess sex differences regarding transactional, transformational, and laissez-faire leadership. Again, they found a small overall sex difference with - as predicted - women being more transformational and men being more transactional and laissez-faire, respectively. A complementing meta-analysis by Van Engen and Willemssen (2004), however, found no sex differences regarding transactional leadership, task-oriented, interpersonal, and autocratic leadership styles. They only found a sex difference favoring women in transformational and democratic leader behavior.

Subsequent studies added to this confusion. A large-scale study based on the assessments of 64,000 employees found that women leaders scored higher on both interpersonal *and* task-oriented scales (Van Emmerik et al., 2008). Another extensive study confirmed that finding assessing 1,546 male and 721 female leaders (Pfaff et al., 2013). A Swedish and one Spanish study, on the other hand, found no sex differences when asking male and female leaders to assess their own leadership behavior (Andersen & Hansson, 2011; Cuadrado et al., 2012). When the Spanish researchers analyzed the opinion of the leaders' subordinates, they did find a sex difference after all. Again, female leaders were considered stronger in both stereotype male and female behavior patterns (Cuadrado et al., 2012).

Some research on SDL approached the field without focusing on particular leadership styles. Instead, they reported sex differences in individual behavioral patterns such as conflict management (Brewer, Mitchell, & Weber, 2002; Korabik, Baril, & Watson, 1993). Others derived implications about leader behavior by assessing the share of women leaders on company boards and those companies' strategic actions regarding risk-taking (Chen, Crossland, & Huang, 2016; Mukarram, Ajmal, & Saeed, 2018), corporate social responsibility (Cook & Glass, 2018), and self-derived leadership dimensions (Anderson et al., 2006; Spurgeon & Cross, 2006). As soon as two or more studies assessed the same behavioral pattern, results became inconclusive. For example, one study reported sex differences in leaders' self-reports of conflict management style (Brewer, Mitchell, & Weber, 2002), whereas another found no evidence for sex differences neither in self-reports nor other reports (Korabik, Baril, & Watson, 1993).

Qualitative assessments of SDL, on the other hand, consistently reported sex differences in leader behavior (e.g., Alimo-Metcalfe, 2010; Eisner, 2013; Loden, 1985; Rigg & Sparrow, 1994; Rosener, 1990; Stratham, 1987). However, many of those reports were isolated from other research due to missing theoretical links. Furthermore, the various individual behaviors they focus on were not integrated into a meaningful SDL framework. As a result, other researchers rarely picked up qualitative findings on SDL, and most of them hence lack empirical substantiation in representative samples.

Overall, the findings generated by the field of SDL are inconclusive. They do not substantiate the existence of a female advantage since differences are only reported inconsistently and with small effect sizes. The reader is left with a sense of confusion rather than new knowledge. As Butterfield and Grinnell (1999) conclude: "After reviewing three decades of work on the topic of gender, leadership, and managerial behavior, it appears that we have not provided conclusive answers" (p. 237).

Despite the ambiguity of the existing literature, researchers seem to have agreed on a makeshift consensus: There is a small, non-significant sex difference in leadership in the predicted direction (i.e., women are more people-oriented/ democratic/ participative/ transformational), but overall, male and female leaders are much more alike than they are different (Alvesson & Billing, 2009, p. 156). This makeshift consensus, however, highlights men and women leaders' similarities more than their differences. It does not accommodate the multitude of studies that consistently find distinct sex differences in leader behavior. It does not accommodate the various investigations that report a positive relationship between female representation in leadership and company performance either. More importantly, however, this makeshift consensus does not clarify *how* male and female leaders actually differ in their leader behavior. How does their transformational, participative, people-oriented leadership style translate into day-to-day leader actions? The question that still needs answering is: Are there sex differences in leader behavior and, if so, what do they look like? Until these questions remain unanswered, the field of SDL will continue being mysterious.

1.3 CHANGING THE PARADIGMATIC ONE-SIDEDNESS OF SEX DIFFERENCES IN LEADERSHIP RESEARCH

Alvesson and Kärreman (2011) proposed five methodological principles to facilitate the resolution of mysteries. Three of them are particularly important for this research project, which attempts to provide some clarity about the ambiguous results of the SDL research field: problematization, defamiliarization, and broad scholarship.

Problematization refers to the “unpacking, deconstruction, and critique of concepts and categories that belong to the received cultural and scientific traditions and wisdoms, and that also form the major input for our thinking and construction processes” (p. 41). Problematization aims at systematically questioning dominant research perspectives and theories. One goal of this research project is to apply the methodology of problematization to assess the scientific traditions that constitute the hitherto existing ways of thinking and construction in the SDL research field. These ways of thinking and construction are bundled in the field’s scientific paradigm (Kuhn, 2012). To understand a research field, the researcher needs to uncover the underlying assumptions that constitute that paradigm (Kilmann, 1983; Kuhn, 2012; Sackmann & Phillips, 2004). Hence, in a first step, the SDL paradigm and its related theories, concepts, and methodologies are identified and critically reviewed.

Most of the research generating the hitherto existing findings on sex differences in leadership has been conducted from a feminist paradigm. The field of gender studies, which developed in the USA in the mid-1970s, resulted from the feminist movement and inspired the field of gender in management (Hönig, 2004). It was an extension of the field of women studies, which aimed at the scientific assessment of women from a female perspective (Steffen, Rosenthal, & Våth, 2005). Because of the increasing share of working women, gender studies found their way into the field of organization and management studies, where they retained their feminist beliefs. For instance, well-respected scientific journals in the gender and management field such as *Gender, Work, & Organization* and *Gender in Management: An International Journal* presume a feminist world view. Understanding the SDL research field’s basic assumptions could help explain its ambiguous findings.

The research fields of gender and management and, more specifically, sex differences in leadership are characterized by three underlying assumptions.

- (1) The notion of gender is central to understanding all social relations, institutions, and processes.
- (2) Gender relations constitute a problem as they are characterized by patterns of domination/subordination, inequalities, oppression, and oppositions.
- (3) Gender relations are seen as social constructions (Alvesson & Billing, 2009, p. 21).

The first assumption describes the notion that gender is not only a social category to distinguish between men and women but serves as a lens through which we perceive reality. Gender is omnipresent and must be considered as influencing reality in all respects. The researcher’s gender is as important as the gender of the leader examined, and the employee interviewed. The leader’s organization has gendered processes and a gendered culture, and specific gender attributes are ascribed to the company’s products or services (Ely & Padavic, 2007). Ignoring gender influences leads to distorted results and untenable generalizations. Regarding the example of Marissa Mayer, the assumption implies that her behavior cannot be interpreted on an objective basis, but is always prone to gendered interpretations. The gender of the journalists reporting about her needs to be considered just as much as the gendered structures at Yahoo!. The gender roles prevalent in the tech industry and the USA shaped Mayer’s leader behavior, too.

The second assumption of gender and management research refers to its political agenda. Gender studies adopt a feminist perspective (for a clustering of the different streams of feminism concerning

gender and management, see Alvesson & Billing, 2009). The feminist paradigm claims that women are disadvantaged on the societal, organizational, and individual level. The unfair treatment of women constitutes a problem that needs to be explained and solved (Marshall, 1995). Marshall (1995) emphasizes the political component of the gender differences in leadership research: “The issue of difference/sameness is now often more subtly pursued than previously, but it still does much to shape research on management. It can seem like a search for the ultimate truth, a search heavy with political and power connotations” (1995, p. S58). According to that assumption, articles in the field of gender and management about Mayer would aim at highlighting Mayer’s strengths and extraordinary achievements. That way, they would hope to set an example for other women leaders and convince critics about the value of women leadership. Another possibility would be to focus on misogynous factors in Mayer’s environment and analyze their contribution to Mayer’s failure and Yahoo! ’s demise.

Finally, the third assumption concerns the ultimate cause of gender differences. Gender is a term that stems from the field of gender studies and requires a clear distinction from the term ‘sex’ (Unger, 1979). While the term sex refers to the biological differences between men and women (e.g., chromosomes, genitalia), the term gender highlights the social components associated with men and women. The sexes are typically ascribed certain attributes that are induced by culture and shape people’s expectations about men and women’s behavior. Within the research field of sex differences in leadership, many researchers use the word “gender” (e.g., Eagly & Johnson, 1990; Eagly & Karau, 1991; Eagly, Karau, & Johnson, 1992) to highlight that their paradigm is social constructivist. However, in this research work (and many publications, e.g., Dobbins & Platz, 1986; Van Engen & Willemsen, 2004), the research field is referred to as *sex* differences in leadership (as opposed to *gender* differences in leadership) because most researchers take biological sex as a proxy for gender. To assess gender differences, however, it would be necessary to assess leaders’ *femininity* and *masculinity* and link them to their behavior. Surprisingly few studies have chosen that more accurate (but costlier) path (Yukl, 2013).

Nevertheless, gender and management studies usually assume that gender is socially determined and does not have a biological component. Gender results from processes of individual interpretation and making sense of the world. It reflects the meaning of being either male or female (Alvesson & Billing, 2009, p. 21). In Mayer’s case, her behaviors could be traced back to the variety of gender-specific influences that she had most likely encountered during her life course. Those entail the social roles of men and women in the US-American culture as depicted by role models, the media, or arts, her upbringing by her parents, teachers, and peers, and also her prior education and work experiences at Stanford University and Google. Gender researchers would contrast her behavior with stereotypes of women that inhere in all of those social influences and point at those congruences that were potentially hurtful to Mayer’s career and women leaders in general. Gender researchers further argue that because people’s perceptions and expectations of gender are socially constructed, it is possible to re-construct them. Feminist researchers aim to change the constructs of gender to result in a fair society without gender discrimination.

Empirical studies from the fields of ethology, biology, neurology, endocrinology, and psychology contradict gender studies’ assumption that the only cause of gender differences is social constructivism. According to those studies, sex differences (in some domains) do not merely rely on social construction but also biological components. Indeed, many behaviors display persistent sex differences across cultures (e.g., in dominance; Betzig, 1993; Buss, 1989; Schwartz & Rubel, 2005), in animals (e.g., dominance; Cooper & Bernstein, 2002; O’Donnell, 1999), in infants (e.g., dominance; Mascaro & Csibra, 2012), and in patients with rare medical conditions affecting their biological sex (e.g., interest; Leveroni & Berenbaum, 1998; Servin et al., 2003). They imply that some sex differences may be as much a matter of biology as they are a matter of social construction.

The second of Alvesson and Kärreman's (2011) principles applied here, *defamiliarization*, refers to "trying to refrain from using familiar concepts and frameworks and instead opening up the studied reality as an unknown and unfamiliar place" (Alvesson & Kärreman, 2011, p. 41). After problematizing the underlying ways of thinking in the SDL field, i.e., its paradigmatic assumptions, the researcher deliberately exchanges those familiar assumptions for unfamiliar ones. This detachment from familiar theories, frameworks, and methodologies paves the way for new insights and unexplored causes and explanations of existing research findings on sex differences in leader behavior.

In their meta-analysis on sex differences in leader behavior, Eagly and Johnson (1990) discuss reasons for the existence and the lack of sex differences in leader behavior and find that one explanation lies in the existence of biological sex differences:

There are ... several reasons to suggest that male and female organizational leaders, even those who occupy the same positions, may differ to some extent in their leadership style despite the structural forces for minimizing differences ... One such reason acknowledges the possibility of ingrained sex differences in personality traits and behavioral tendencies, differences that are not nullified by organizational selection or socialization ... Thus, it is possible that *biological sex differences* ... cause men and women to be somewhat different kinds of people, even if they do occupy the same managerial role (Eagly & Johnson, 1990, p. 235; emphasis added by the author).

Biological sex differences in behavior can result from apparent physical differences between the sexes (e.g., height; Blaker & Van Vugt, 2014; facial features; Spisak et al., 2012), but most of them result from more subtle, non-visible mechanisms that differ between men and women. A psychological field concerned with biologically-based sex differences in behavior is the field of *evolutionary psychology*. The goal of evolutionary psychology is to understand brain mechanisms, those mechanisms that are responsible for most of human behavior, from an evolutionary perspective (Tooby & Cosmides, 2005). Like evolutionary theory, evolutionary psychology has a large sub-stream that focuses on the development of sex differences based on evolutionary mechanisms like natural and sexual selection.

The SDL literature has mostly avoided evolutionarily developed mechanisms as an explanation for sex differences in leader behavior. Due to its roots lying in emancipation and the political and economic liberation of women, feminist gender studies distance themselves from biological and other intrinsic explanations of female behavior. In the late 19th century, scholars focusing on sex differences from a biological perspective displayed women as inferior to men (Shields, 1975). The probably best-known example is the conviction that the smaller female brain correlates with female inferiority in intelligence and originality (Möbius, 1901; Romanes, 1887). The allegedly proven inferiority of women was hence utilized as a pretense to discriminate against women in a variety of social domains, e.g., women's suffrage, receiving an education, or the right to work.

Lately, however, the field opens up to a more inclusive paradigm. In a recent publication, Carli and Eagly (2018) explicitly listed evolutionary psychology theory as a possible explanation for the gender gap in leadership. It was conspicuous, though, that in the section highlighting the role of evolutionary psychology theories for SDL not a single reference substantiated its role. The dearth of literature illustrates the as yet missing link between the comprehensive fields of sex differences in evolutionary psychology and sex differences in leadership.

The missing interconnection is surprising given that other fields in the management sciences and, more specifically, in leader behavior have already adopted evolutionary psychology perspectives. In research on entrepreneurship, scholars proposed a biosocial model of ultimate causes for people to create new ventures (White, Thornhill, & Hampson, 2007). Others assessed how evolutionary psychology leads to some leaders being more severely punished for misbehaviors than others (Kakkar, Sivanathan, & Gobel, 2020). Leader-member exchange theory was conceptually linked to an evolutionary psychology mechanism (Sparrowe, 2020). Sex differences relevant in organizational contexts have also

been researched through an evolutionary psychology lens. For example, unethical negotiation behavior was more pronounced in male business students when they had high mating motivation (Le et al., 2017). A recent review on publications interrelating biological factors and management sciences identified 307 papers published between 1932 until 2017 (Nofal et al., 2018). The idea of merging biological influences on managerial issues is not new. Nonetheless, the field of SDL has, for the most part, resisted the commingling with evolutionary psychology paradigms.

More openness towards evolutionary psychology paradigms, however, could benefit the SDL field as suggested by the quote by Buss and Schmitt (2011) at the beginning of this chapter. Saad (2011) points out that incorporating evolutionary psychology thinking into the business sciences yields three epistemological benefits. First, it allows for greater consistency in the field. Where the social sciences usually produce eclectic, sometimes isolated results, the biological realm is known for more clarity and the unification of results under a consistent and stable umbrella. Furthermore, the evolutionary paradigm invites researchers to pursue interdisciplinarity (Nissani, 1997). It borrows from the neurosciences and endocrinology, and, from within the field of behavioral psychology, builds on findings from ethology and developmental psychology. Each of these fields is necessary to assess behavioral phenomena's relevance from an evolutionary psychology perspective. By virtue of their interdisciplinary work, researchers have achieved impactful scientific advances (see, Garcia et al., 2011) and built frameworks beyond their research field's limitations. It has even been suggested that, paradoxically, the biological revolution has made researchers recognize and better understand social variables and their impact on behavior (Halpern, 2014, p. 91). Finally, adopting an evolutionary psychology paradigm may open up new research questions and hypotheses and help advance the field of SDL beyond the point of stagnation it seems to have reached.

For these reasons, this research project aims at filling the existing void by exchanging the underlying paradigm of the existing SDL literature. Instead of the social constructionist view of the feminist paradigm, the researcher adopts a pragmatic realist paradigm and assumes that the biological component inherent in evolutionary psychology is relevant to sex differences in leader behavior. By applying a different paradigmatic approach to assessing SDL, the researcher aims to broaden the as of yet still prevailing narrow perspectives and limited paradigms in the field.

Evolutionary psychology is based, amongst others, on the following assumptions (see Buss & Schmitt, 2011, p. 769):

- (1) Manifest behavior depends on underlying psychological mechanisms in the brain, in conjunction with external and internal inputs that interact with them.
- (2) Evolved psychological mechanisms are functionally specialized to solve adaptive problems that recurred for humans over their evolutionary development.
- (3) Selection designed the information processing of psychological mechanisms to be adaptively influenced by specific classes of information from the environment.

Other than gender and management studies, evolutionary psychology assumes that behavior does not depend exclusively on social learning. Instead, it depends on the interaction of genetic predispositions and environmental input. Human behavior is hence viewed as highly flexible and not – as some fear – as genetically predetermined. Nevertheless, given adequate environmental input, psychological mechanisms are more likely to develop differently across sex (Buss & Schmitt, 2011).

By changing the theoretical paradigm, the ultimate goal is to engage in Alvesson and Kärreman's (2011) methodological principle of *broad scholarship*. Broad scholarship entails using new or alternative perspectives to increase researchers' interpretive repertoires. That repertoire consists of the researcher's personal paradigmatic, theoretical, and methodological qualifications as well as restrictions (Alvesson & Sköldbberg, 2009). When confronted with empirical material, researchers rely on this

repertoire in their understanding and interpretations. SDL researchers interpret observed sex differences in leadership in terms of social constructivism and in ways that support women's progress in leader positions. This research work adds to the interpretive repertoire of researchers in the SDL field by comparing, linking, and contrasting the predominant frameworks of SDL research, both theoretical and empirical, to research on sex differences in evolutionary psychology.

By increasing their awareness and knowledge regarding 'foreign' paradigms like evolutionary psychology, researchers may reevaluate empirical material and critically reflect on their theoretical underpinnings. They become more flexible, more creative, and hence more likely to publish non-formulaic research of high visibility (Alvesson & Gabriel, 2013, p. 254; Leahey, Beckman, & Stanko, 2017). Furthermore, they may detect errors in their own field, create new fields in the interstices between traditional disciplines, and benefit not only their original research fields but also the new one(s) that they may migrate towards.

1.4 RESEARCH QUESTIONS, METHODOLOGY, RESULTS, & OUTLINE OF THE RESEARCH PROJECT

The goal of this research project is to reassess the scientific literature on sex differences in leader behavior because its results are inconclusive and incompatible with findings from related research streams. Following the arguments in the preceding section, the researcher exchanges the feminist assumption that gender relations are socially constructed for the evolutionary psychology assumption that men and women differ based on the interaction of inherited psychological mechanisms and environmental input. These arguments lead to the following research question:

Which sex differences in leadership exist from an evolutionary psychology perspective of behavior?

The research question is approached both theoretically and empirically as illustrated in Figure 1. Although there is an overwhelming amount of research substantiating the existence of behavioral sex differences (irrespective of organizational leadership contexts) from an evolutionary psychology perspective, the findings from the SDL literature suggest otherwise. Evolutionary psychology accounts for social influences in the specifications of behavior and hence allows for the social influences of organizational environments to take effect. To determine the existence and quality of sex differences in leadership, it is hence vital to specifically assess men and women's leader behaviors in the reality of organizational contexts. Hence the above stated research question is subdivided into two separate research questions:

(RQ1a) Which sex differences in leadership exist theoretically from an evolutionary psychology perspective of behavior?, and

(RQ1b) Which sex differences in leadership exist from an evolutionary psychology perspective of behavior in organizational contexts?

Based on the methodological principles introduced above (problematization, defamiliarization, and broad scholarship), this research project follows three steps to answer those questions. First (chapter 2), the author presents a holistic model of biosocial influences on behavior (Lippa, 2005). Based on that model, the meta-theory of social role theory (Eagly, 1987) and subordinated theories that serve as the theoretical basis for the SDL field are summarized, linked with empirical data on sex differences in leader behavior, and critically discussed. The model then links the meta-theory of social structure theory to evolutionary psychology (Buss, 1995). According to the same scheme, evolutionary psychology theories are summarized, linked with empirical data, and critically discussed. The author concludes that social structure theory makes no clear predictions about the existence, magnitude, and quality of sex differences in leader behavior. Furthermore, the SDL literature does not account for the variety of social influences inherent in social roles. Instead, it focuses predominantly on the social influences of groups,

but not of inter-individual or intra-individual influences on behavior. Evolutionary psychology, on the other hand, explicitly predicts the existence of sex differences in leader behavior.

In a second step (chapter 3), the predominant framework of the SDL literature that links SDL to the theoretical dichotomy of agency and communion (Bakan, 1966; Eagly & Karau, 2002; Eagly & Wood, 1991) is critically reviewed. Following that critical review, the author introduces a new framework based on evolutionary psychology meta-theory. The framework is derived from an iterative process going back and forth between the evolutionary psychology literature on sex differences in behavior and the primary data collected in an ethnographic field study. It builds loosely on Geary's (2010) theory of sex differences in behavior, which assumes that humans pursue the ultimate goal of survival through the manipulation of social structures. Due to differences in parental investment (Trivers, 1972), males prefer the social structure of *dominance hierarchies*, whereas women prefer building *egalitarian communities*. Accordingly, men and women pursue different strategies concerning social structure manipulation. Strategies that serve dominance hierarchies are *dominance behavior* and *coalition-building*. For egalitarian communities, however, these strategies can be detrimental. Egalitarian communities require *intimacy* and *nurturing* instead. The male and female strategies are reviewed, theoretically linked to behaviors, and interdisciplinarily tested for their evolutionary psychology relevance by assessing literature from the fields of ethology, neuroscience, endocrinology, and developmental psychology. The step results in a framework that depicts evolved sex differences that should occur in leadership contexts given that environmental pressures do not require adaptation or cause self-selection processes. Further, it results in the answer to research question RQ1a.

In the third step (chapters 4 and 5), the framework is applied to guide ethnographical fieldwork that was built on the method of covert participant observation. Following a pragmatic realist paradigm, a qualitative approach avoided the various methodological caveats inherent in the predominantly quantitative leadership research (Hunter, Bedell-Avers, & Mumford, 2007). The fieldwork took place at four stores of a globally operating fast-food company (GOFFCO), of which two were led by male and the other two by female leaders. GOFFCO operated two of the stores itself, whereas a franchisee operated the other two stores. The empirical part aimed at taking a fresh, "defamiliarized" look at sex differences in leader behavior. Using the framework as a guideline, the researcher carved out behaviors that served the individual strategies that men and women leaders applied to manipulate social structures. Based on the strategies and behaviors, the researcher systematically contrasted the four cases within and across sex and subcultures. A multitude of differences and similarities resulted from the analysis and were interpreted in terms of the evolutionary psychology paradigm and the existing research in the SDL field.

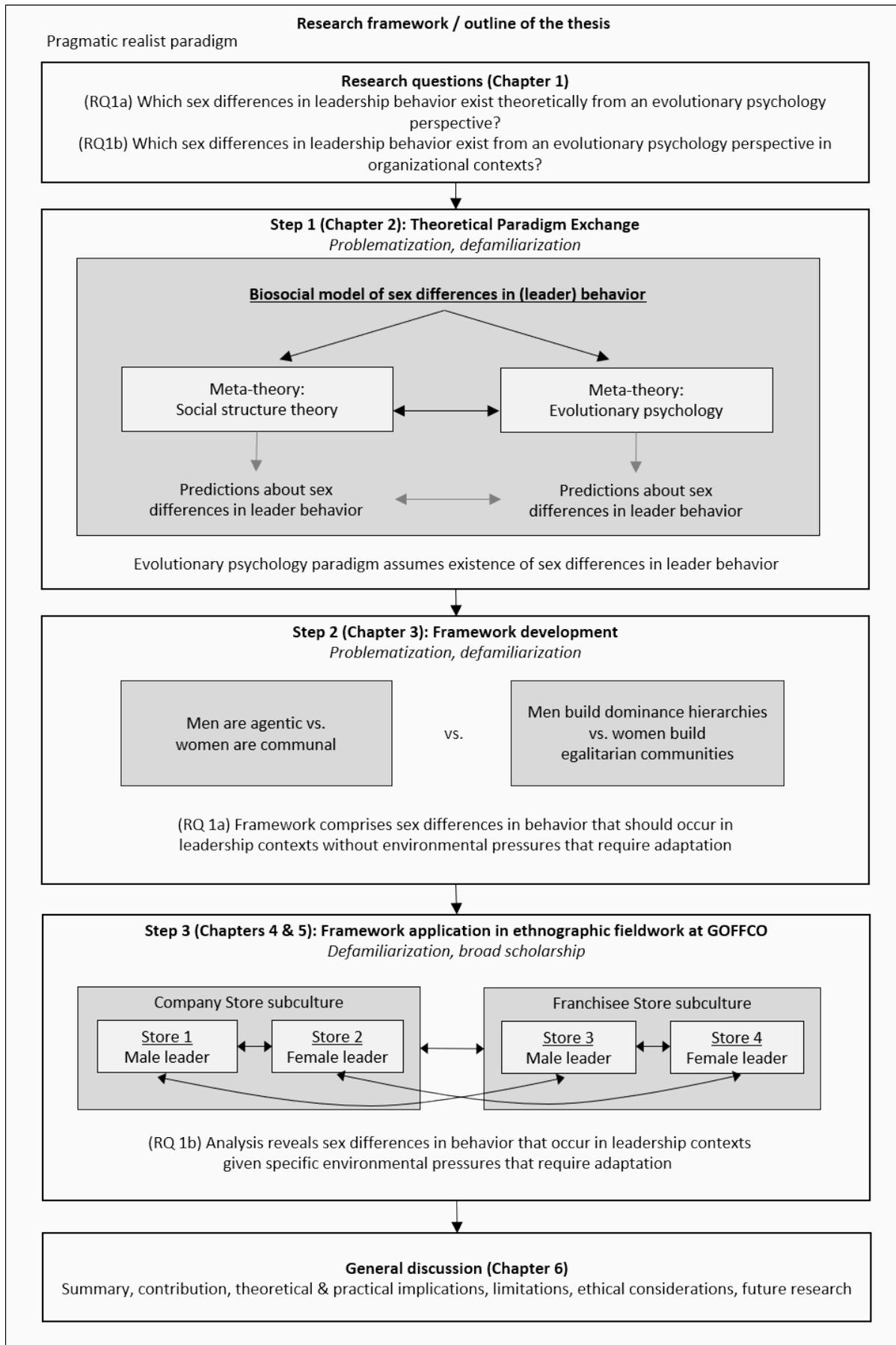
The main findings concerning research question RQ1b indicate that men and women leaders roughly act in congruence with sex-specific strategies. Male leaders were more likely to apply male strategies, and female leaders applied female strategies more than the opposite sex. Whereas men did not engage at all in female strategies, female leaders did engage in male strategies. However, they only did so when it was encouraged by their store's subculture. They also engaged more in male strategies and behaviors stereotypically associated with leader behavior, e.g., assertiveness and aggressiveness. In contrast, when female leaders did engage in male strategies, it did not result in the corresponding social structure of dominance hierarchies. Women leaders were hence adopting behaviors that they thought were expected of them, but they did not adopt the evolutionarily adaptive corresponding strategy of social structure manipulation. Women leaders did not adopt male strategies that are stereotypically unrelated to leadership, such as coalition-building or prestige. Finally, the empirical findings suggest that, in practice, some male strategies can appear similar to female strategies from the outside. For example, affiliating outgroup members as a behavior serving coalition-building looked similar to doing favors, a behavior

related to nurturing. To distinguish between those behaviors and classify them correctly, inter-individual dynamics and leader intentions were assessed, e.g., who benefits from the behavior in what regard.

These findings highlight some shortcomings of the existing SDL literature. Focusing on stereotypical leader behaviors or leadership styles developed from within a male research environment is likely to yield little to no differences between the sexes because women adapt to social expectations regarding the leadership role. Nevertheless, leader behaviors also comprise non-stereotypical behaviors. By focusing on those, SDL researchers may uncover consistent sex differences in leader behavior. The current research revealed that surprisingly little is known about females' preferred group structure and sex-specific strategies. Male structures and strategies to achieve them are by far more explored. This discrepancy highlights that the SDL field's framework might be even more unsteady than assumed initially. Linking female leader behavior to specific leadership styles or vague stereotypes is insufficient to do the complexity of female behavior justice. Finally, relying on manifest behaviors in identifying SDL bears the risk of misinterpretation. Because leadership measurement instruments often assess followers' perceptions of their superiors' actions, those misinterpretations are likely to distort the reality of SDL.

The final chapter summarizes the contributions of this research project by highlighting the implications of the research findings for the SDL literature. Subsequently, general theoretical and practical implications of the findings are discussed. In addition to the theoretical elaboration conducted on social structure theory and the research framework introduced based on evolutionary psychology, the research has theoretical implications for several adjacent research fields. These comprise leadership theories, the theory of the female advantage, organizational commitment, and organizational culture. Practical implications comprise organizational issues that might benefit from female leadership. For example, women leaders should be deployed in employee wellness and health programs or when transitioning to agile organizational structures. Furthermore, the possibilities of enabling leadership potential through active organizational culture management are discussed. After considering limitations and research ethics, the researcher ends with suggestions for future research.

Figure 1
Outline of the Research Project



2 TWO META-THEORIES OF SEX DIFFERENCES IN LEADER BEHAVIOR

The SDL literature has predominantly taken a social structural approach to investigate sex differences in leader behavior (Alvesson & Billing, 2009), which builds on the different social positions of men and women. The different social positions result in an unbalanced power distribution favoring men (Eagly & Wood, 1999). The social structural approach hence assumes that sex differences in leader behavior result from social influences and does not consider biological influences and their interactions with social influences.

However, sex differences in behavior stem from either social influences or genetically inheritable predispositions. An extensive meta-analysis on 50 years of twin studies found that 50 percent of the variance in behavior was explained by genetic influences, while the other 50 percent resulted from social influences (Polderman et al., 2015). Nevertheless, biological and social forces do not work independently, but interdependently (Wood & Eagly, 2012). A classic experiment on rats illustrates their interdependence. In the experiment, genetically bred dull rats placed in an *enriched* environment performed as well on a learning task as genetically bred intelligent rats in a *normal* environment. Furthermore, genetically bred intelligent rats in an *impoverished* environment performed as poorly as dull rats in a *normal* environment (Cooper & Zubek, 1958). This experiment demonstrates that it is necessary to consider biological *and* social factors to understand behavior. The ability to learn, develop, and adhere to cultural norms is genetically encoded in the human species. Behavioral diversity is not the outcome of a battle between biological and social forces. It is an inherited mechanism that helps humans adapt quickly to environmental requirements (Dobzhansky, 1972; Richerson & Boyd, 2005). Hence, the question is not “nature or nurture?”, but rather to what extent biology facilitates cultural/social diversity. In other words: how loose is the “leash” that nature has on culture (Gould, 1987)? Many researchers avoid this question by focusing on merely one of those two main influences (Eagly & Wood, 2013; cf. Maccoby & Jacklin, 1974). Research even indicates a sex difference in the degree to which social influences determine behavior. Women were found to be more susceptible to social influences than men, while men were more strongly influenced by biological influences than women (Roberts & Pennebaker, 1995; Udry, 2000).

Studies seeking to explain sex differences in leader behavior have ignored biology for a long time (Appelbaum, Audet, & Miller, 2003). At the end of the last century, however, leadership scholars, including feminists like Alice Eagly, started postulating that social and biological approaches to gender and management research might be compatible (Eagly & Wood, 1999; Nicholson, 2005). As a result, researchers increased their efforts to integrate the two fields (e.g., Vongas, 2009; Vongas & Hajj, 2015b; Vongas, Hajj, & Fiset, 2018). Leadership research has been opening up to biology ever since. In “The Nature of Leadership”, Antonakis and Day state that “ironically, one of the oldest branches of science – biology and evolution – is the new kid on the block in leadership studies” (Antonakis & Day, 2018, p. 13). They argue that researchers’ new insights into brain mechanisms and genetics revived the former trait-based leadership approaches. The Leadership Quarterly, which had already hosted a special issue on the “Biology of Leadership” in 2012, published another Call for Papers on the topic in 2017 (Van Vugt & von Rueden, 2017). In their call for papers, Van Vugt and von Rueden (2017) enthusiastically praised the methodological possibilities that lie in the combination of the fields:

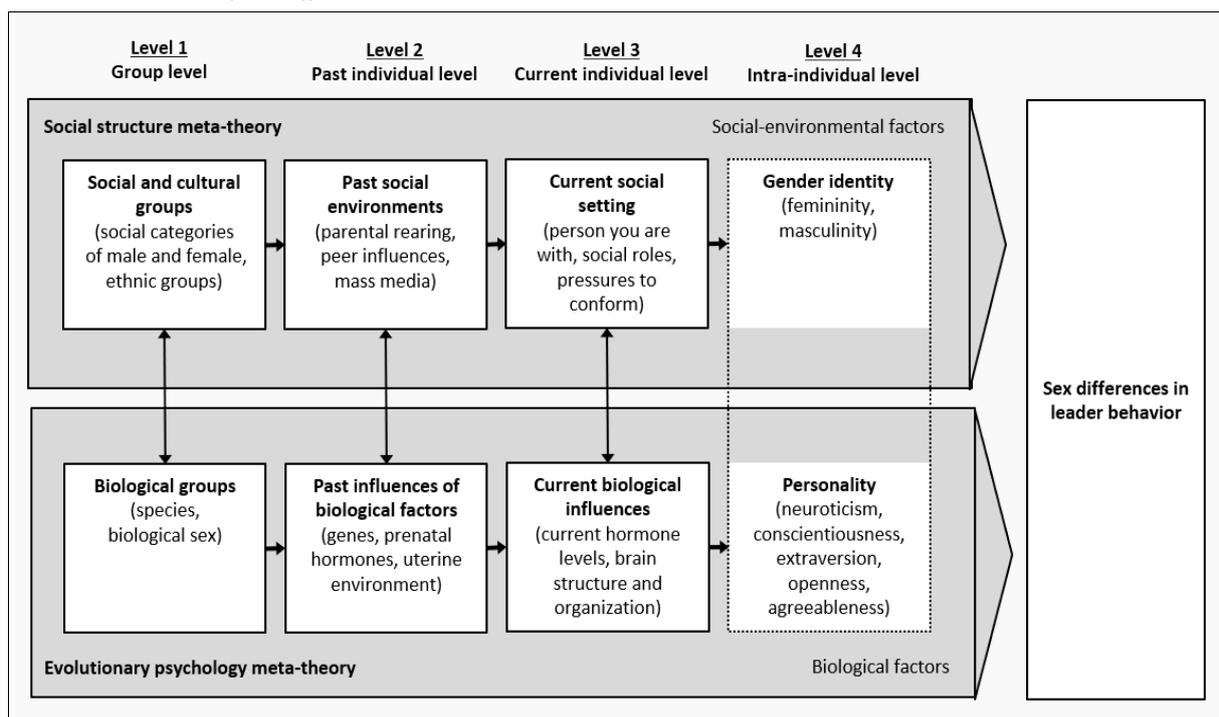
Furthermore, the methodological pluralism offered by a consilience between biological and social science perspectives opens avenues for exciting new tools for studying leadership and followership such as through agent-based models ..., animal behavior studies ..., endocrinology ..., neuroscience ..., genetics ..., and ethnographic comparison ... (p. III)

In an attempt to integrate the social and biological influences on sex differences in behavior, Lippa (2005) offered a holistic framework. His framework, depicted in Figure 2, works on four successive, interdependent levels that relate to both biological and social influences on sex differences in behavior:

- (1) the group level,
- (2) the individual level and its past biological and environmental factors,
- (3) the individual level and its current biological and environmental factors, and
- (4) internal traits and dispositions.

Lippa's framework of explanatory levels of sex differences in behavior was adopted as a guideline to collect and systemize the theories that have guided SDL research until now. As will be discussed in detail below, the vast majority of research was based on theories of social influences on sex differences in behavior. Those theories are subordinate to the *social structure* meta-theory. On the other hand, *evolutionary psychology* is a meta-theory that acknowledges biological factors to cause sex differences in behavior. The following sections are devoted to demonstrating the predictions made by each of the two meta-theories concerning sex differences in leadership. The contrasting juxtaposition reveals that social structural meta-theory makes contradicting predictions about sex differences in leadership, whereas evolutionary psychology theory unambiguously predicts their existence.

Figure 2
Biosocial Framework of Sex Differences



Note. Adapted from Lippa, 2005, p. 82

Chapter 2.1 deals with SDL theories on the four socio-environmental levels suggested by Lippa's model. Socio-environmental factors at the group level refer to *social norms in groups*. Differing environments and political developments have led to a large variety of national and regional cultures. Those cultures usually have an individual categorization of masculinity and femininity, which manifests in the culture's gender stereotypes (Barry, Bacon, & Child, 1957; Hofstede, 1996). Leader behavior, too, varies systematically across cultures indicating that cultural influences need to be considered to understand leadership (Ayman & Korabik, 2010; Brodbeck et al., 2000; Charles & Davies, 2000; Den

Hartog et al., 1999; Gerstner & Day, 1994; Gibson, 1995; Hofstede, 1980a, b, 2001; House et al., 2004; Kuchinke, 1999; Shaw, 1990; Smith et al., 2002; Van de Vliert, 2006).

Past social-environmental factors on the individual level refer to one's *upbringing, peer influences, mass media, and education*. They represent major social influences that affect the individual's development. There is a growing interest in the impact of early life experiences and socialization processes on adult leader behavior (Akstinaite, 2016; Murphy & Johnson, 2011). Several scholars have even adopted a life span approach to leadership. They identify both stable, objective factors such as birth order, age, and genetics as well as volatile, subjective factors, such as parenting styles, attachment style, sports, as well as education and practice as pre-adulthood influences affecting leader behavior (Berkowicz, 2011; Day, 2000, 2011; Day, Harrison, & Halpin, 2009; Murphy & Johnson, 2011; Riad, 2011). Simultaneously, empirical evidence indicates that girls and boys experience differences in socialization (Lytton & Romney, 1991). Mass media, for instance, portray stereotypical gender hierarchies in TV shows and commercials (Furnham & Skae, 1997; Ganahl, Prinsen, & Netzley, 2003). These socialization differences become manifest in actual behavior (Barry, Bacon, & Child, 1957). Hence there is reason to believe that socialization contributes to sex differences in leader behavior.

Current social settings refer to *individual interactions, roles* held by the individuals in specific settings (e.g., mother or manager), and *social pressures* (Asch, 1956). In organizations, all of these current social influences are united in their organizational cultures. They serve as a guiding framework for behavioral responses (Deal & Kennedy, 2000). Several studies substantiated the relationship between organizational culture and leader behavior (e.g., Giberson et al., 2009; O'Reilly III, Caldwell, Chatman, & Doerr, 2014; Tsui et al., 2006). Irrespective of organizational culture, leaders may adapt their behavior depending on their interaction partner's characteristics (Moskowitz et al., 1994).

Finally, the fourth level concerns the individual's internal traits and dispositions. These include an individual's *gender identity, gender schema, and personality traits*. These factors cannot be clearly classified as either biological or social. However, research demonstrated that 40 percent of differences in *personality traits* across individuals are inherited (Vukasović & Bratko, 2015). *Self-schemas* and *gender identity*, on the other hand, are believed to mainly result from social influences. Nevertheless, all of the internal traits and dispositions are discussed in the chapter on social influences because they are predominantly researched from a social structure perspective.

Chapter 2.2 introduces theories on SDL from an evolutionary psychology perspective. The group level focuses on biological factors that characterize the entire *species* and its *male and female representatives*. They present human phylogeny and result from biological evolution. In humans, biological factors that distinguish males and females are called primary and secondary sexual characteristics. Primary sexual characteristics are directly related to sexual reproduction, while secondary sexual characteristics are only indirectly related to reproductive success (Herman-Giddens et al., 1997; Schonfeld, 1943). One example of primary sexual characteristics in humans is the gonads, i.e., females' ovaries and males' testes. Examples of secondary sexual characteristics are females' lower waist-to-hip ratio and males' larger average body size and deeper voices.

The phylogenetic influences on the group level are interrelated with the individuals' ontogenetic development (Gould, 1977). The second level refers to ontogenetic influences on the individual, i.e., with past biological factors. Past biological factors on the individual level enabling sex differences in behavior are *genetics, prenatal hormones, and other factors of the uterine environment*. Countless studies have shown a relationship between behavior and genetic predisposition, exposure to hormones in the fetal stage, and other influences before birth.

On the third level, current biological influences deal with biological mechanisms that have a systematic and direct impact on behavior. Two mechanisms are particularly important: the *endocrine*

system and the *brain*. Current hormone levels and brain structures vary across individuals and sex. Different levels of sex steroids like testosterone and estrogen, as well as systematic differences in brain structures such as the prefrontal lobe and the amygdalae, have repeatedly been linked to sex differences in behavior.

2.1 SOCIAL STRUCTURAL THEORIES OF SEX DIFFERENCES IN LEADER BEHAVIOR

Eagly and Wood (1999) juxtaposed the meta-theories of evolutionary psychology and social structure theory (Buss & Kenrick, 1998; see 2.2) to explain behavioral differences between the sexes. Although they acknowledged the role of evolved traits, they emphasized the crucial impact of social-structure-related influences on behavior. In congruence with their focus, the bulk of sex differences in leadership research builds on *social structural meta-theory* (Eagly & Wood, 1999). Even though this research takes the rarely used evolutionary psychology approach to assess SDL, it is necessary to at first deal with social structure theory in order to understand previous results from the SDL research field and link them to the findings presented in the subsequent chapters.

Social structural theory suggests that sex differences between men and women originate from their different roles in society. Feminists believe that these contrasting social positions result from patriarchal systems, in which power and status are distributed to favor men and disadvantage women (Alvesson & Billing, 2009, p. 59; Greer & Greene, 2003, p. 2).

Patriarchies refer to social systems that regard the male as the head of the family as the highest authority over women, children, and property (Davies, 2010). Smuts (1992) argues that patriarchic social systems are the result of a “conflict of reproductive interest” (Archer, 1996, p. 912). It is both men’s and women’s ultimate goal to maximize their genetic survival by raising as many healthy offspring as possible. Men have a greater advantage in taking control than women because they have infinite gamete supplies, whereas women’s gamete supply is finite and ebbs away with age. In overcoming female choice, men can thus considerably enhance their genetic survival by having more children. When women are in control, however, they can only slightly improve their genetic survival by choosing a more adaptive set of genes (e.g., by choosing more healthy-looking males, males of higher hierarchical rank). Due to their physical size and strength, men can enforce their will and institutionalize patriarchal values and monopolize power (Smuts, 1992). Hence, patriarchies are a direct outcome of universal biological differences between men and women institutionalized by social structures that characterize most human cultures.

Within social hierarchies, women usually occupy lower status positions than men. In particular, leadership positions are prestigious and associated with power as well as access to resources and are less likely to be filled with women as opposed to men. In the resulting division of labor, women are more likely to perform domestic work such as homemaking and child-rearing. At the same time, men spend more hours in paid employment, where they receive higher wages and are more likely to reach the highest career levels (Blau & Kahn, 2006; Eagly & Wood, 1999).

2.1.1 SOCIAL INFLUENCES ON SEX DIFFERENCES IN LEADER BEHAVIOR

The first level of social group influences on sex differences in behavior is based on *social roles*. Eagly (1987) noted that men and women’s different social roles, with men mostly conducting paid labor and women doing housework/raising children, are associated with different characteristics. The male social role of paid labor is associated with assertiveness, performance-orientation, and instrumentality, while the female social role of domestic labor is associated with nurturance, yielding, and friendliness (Eagly, 1987). These masculine and feminine stereotypes appear to be stable over time (cf. Auster &

Ohm, 2000; Holt & Ellis, 1998; Prentice & Carranza, 2002; Werner & LaRussa, 1985). For example, women are expected to display a friendly, warm, and nurturing demeanor, while men are described as harsh, competitive, and selfish (for a review, see Bem, 1981). Social role theory predicts sex differences in behavior that concur with the *gender stereotypes* derived from men and women's social roles. Much of SDL research assumes that these gender stereotypes are also reflected in men and women's leadership behavior.

Nevertheless, social roles differ across *cultures* (Archer, 2006a; Eagly & Wood, 1999) and, accordingly, the masculine and feminine stereotypes that result from them vary across cultures as well (Block, 1973; Hofstede, 1996; Williams & Best, 1982). For example, women's social role varies considerably between Arab cultures and European cultures (cf. James-Hawkings, Qutteina, & Yount, 2017). Culture is a learned and transmitted pattern of shared beliefs, emotions, and behavioral norms that constitutes a human group (Kluckhohn, 1951, p. 86). Cultural influences impact all facets of human social life, including organizations and leadership (Ayman & Korabik, 2010; Brodbeck et al., 2000; Charles & Davies, 2000; Den Hartog et al., 1999; Gerstner & Day, 1994; Gibson, 1995; Hofstede, 1976, 1980a, b, 2001; House et al., 2004; Kuchinke, 1999; Shaw, 1990; Smith et al., 2002; Van de Vliert, 2006). Differences in cultures that are reflected by their structures and beliefs about femininity and masculinity should hence impact sex differences in leader behavior.

The mechanisms that cause a set of cultural beliefs and values to impact leadership behavior are still debated. One possible explanation is based on operant conditioning. Edward Thorndike and B. F. Skinner studied how individuals "operate" their immediate environment through their behavior (Sackney & Mergel, 2007). According to operant conditioning, actions are learned by positive or negative reinforcement. In the case of positive reinforcement, the individual receives a reward when performing the desired action (e.g., getting a treat when pulling a lever). In contrast, in the case of negative reinforcement, the individual escapes an unpleasant stimulus on performing the desired action (e.g., pulling a lever to stop loud music). Hence, if an action does not trigger any reaction from the environment, it will not be learned. Based on operant conditioning, it has been argued that leaders, who demonstrate culturally desirable behavior, inspire employees to perform better and contribute more to the organization, enhancing company performance. This effect serves as positive reinforcement that motivates leaders to demonstrate more culturally adequate behavior (Erez & Earley, 1993). If culturally desired behavior differs for men and women due to existing social structure, it will hence lead to sex differences in leader behavior.

Only a few studies have conducted a cross-cultural comparison of national culture's effects on sex differences in leadership (Gibson, 1995; Van Emmerik, Euwema, & Wendt, 2008; Van Emmerik, Wendt, & Euwema, 2010). Overall, they report only little interaction effects of sex and national culture on leader behavior. Gibson (1995) compared male and female leaders from the Scandinavian and Anglo-American regions. She assumed that the collectivistic and equality-based Scandinavian culture as opposed to the individualistic and more aggressive Anglo-American culture would systematically influence sex differences in leader behavior. Her results indicated a main effect for sex differences in leadership, with women leaders being more interaction-facilitating and men being more goal-setting. However, these sex differences were stable across all four nations and did not confirm that culture influences sex differences in leader behavior.

On the other hand, Van Emmerik and colleagues (2008, 2010) did find an interaction between sex differences in leader and country of origin, although the effect size was small. They focused on the independent leadership dimensions *consideration* and *initiating structure*. According to the Ohio State approach to leadership (Stogdill, 1963, 1977), consideration refers to friendly and supportive leadership behavior, while initiating structure refers to leadership behavior that is concerned with getting the task

done and directive behavior towards employees (Yammarino et al., 2005). Van Emmerik and colleagues (2008, 2010) analyzed survey data from more than 30 countries where employees rated over 12,000 leaders on these dimensions. They found that women were rated higher on both the dimension of consideration and – contrary to gender stereotypes – of initiating structure. Sex differences in both dimensions were mostly explained on the individual level, followed by the organizational and societal level. Societal influences explained only 2 percent of sex differences in consideration and 10 percent of sex differences in initiating structure (Emmerik et al., 2010). Overall, the latter dimension of initiating structure seems to be more easily influenced by environmental factors demonstrating how the tightness of nature’s “leash” on culture operates differently in different mechanisms.

Cultural influences do not need to take place on a national level. Some cultural values and customs transgress national borders and can hence be considered supranational. The GLOBE project, for example, classified countries into ten different cultural clusters that contain countries with similar historical roots, beliefs, and religions (House et al., 2004). The study found the culture’s level of gender egalitarianism to be a moderating variable for sex differences in leadership. Higher levels of gender egalitarianism were related to smaller levels of sex differences. However, the authors acknowledged, “we know very little about gender differences with respect to the effectiveness of these leadership dimensions among nations” (Dorfman et al., 2004, p. 698). They complained about the lack of large-scale empirical studies investigating the interaction effects of leaders’ sex and cultural background in their effect on leadership behavior (Dorfman & House, 2004).

Social structures and stereotypes about men and women not only transgress national borders but also infiltrate organizations. If an organization is termed *gendered*, it will emphasize that underlying norms, structures, processes, and ways of thinking demonstrate a distinction between the sexes. A gendered organization has positions and tasks that are predetermined to be occupied by one of the sexes. These organizational structures usually favor males (Acker, 1990). For instance, top management positions are mostly reserved for men, while positions concerned with employee well-being (e.g., HR-manager) and administrative tasks are filled with women. Furthermore, symbols, images, stories, and rites mostly represent male domains and enforce the masculine genderedness. Metaphors from the traditionally male domains of sports and warfare, for example, are often utilized to refer to various aspects of organizational life (Loden, 1985, p. 116). Interactions between organizational members enforce the gendered hierarchies that put men at the top. The pervasive gender cues promote individuals’ gender identity within the organization. The salience of their gender identity has organizational members adapt to the gendered organizational norms. A reinforcing circuit of gender norms starts and results in “fundamental, ongoing processes of creating and conceptualizing social structures” (Acker, 1990, p. 147). Accordingly, a gendered organization is likely to diminish sex differences in leader behavior.

Hofstede (1980, 1998) implied some variation in organizations’ genderedness by suggesting that organizational cultures reflected the dimension of masculinity of their national cultures. He defined *organizational culture* as a group phenomenon that consists of shared basic assumptions about how to solve recurring internal and external problems. These assumptions are passed on to new organizational members to guide their perceptions, thoughts, feelings, and actions (Sackmann, 2017, p. 42; Schein, 1992). Organizational culture-related expectations of acceptable behavior entail expectations about whether and to what extent gendered behavior is acceptable in a specific organizational role. The more salient and formalized the organizational culture and the corresponding norms and rules, the more likely it is for men and women to act alike by abiding by the company’s guidelines (Mischel, 1973). According to this suggestion, the emergence of sex differences in leadership depends on the organizational culture’s strength and formalization. In organizations with strong, formalized organizational cultures, sex

differences in leadership are expected to be small, whereas they are expected to be larger in informal, weak cultural settings.

Organizational cultures do not only vary in strength and formalization but also in their masculinity and femininity (Hofstede, 1980a; 1998). In countries high in masculinity, organizational cultures value authoritarian leadership, hierarchical structures, obedience, and control. They reward competition, status, and assertiveness. In a country low in masculinity (i.e., a country high in femininity), on the other hand, organizational cultures are more supportive, collaborative, egalitarian, and relationship-oriented. Work-life balance and group progression play a more important role in feminine than in masculine societies (Lyness & Kropf, 2005).

Regarding sex differences in leadership, Hofstede's (1980, 1998) suggestion implies that in feminine countries, organizational cultures encourage or at least allow for stereotypically female behavior. In contrast, in masculine countries, leaders should behave more in stereotypically masculine terms. The within-country variance of sex differences in leadership behavior should hence be smaller than cross-country variance because leaders of both sexes adapt to the norms inherent in their country's organizational cultures. Empirical evidence has supported Hofstede's suggestion (Bajdo & Dickson; 2001; Walker & Aritz, 2015).

The gender stereotypes that shape organizational structure also relate to *organizational roles* such as leadership roles. Virginia Schein conducted a classic study in which she asked 300 male middle managers to rate women, men, or successful middle managers on 92 descriptive items (e.g., curious, intelligent; Schein, 1973). She found that out of 92 characteristics, 60 showed a significant correlation with stereotypically male attributes (e.g., dominance was rated high for both men and managers), while only eight of the items showed a positive correlation with female attributes. Schein's findings demonstrate that stereotypic thinking links leadership and masculine behavior. This was confirmed in another study, in which Schein asked both male and female managers to rate leader and sex-type characteristics (Schein, 1975). Later research showed that this is a stable global phenomenon and referred to it as the "think manager – think male" phenomenon (Fullagar et al., 2003; Heilman et al., 1989; Schein, 1996).

The lack of sex differences in leaders found by some studies may be related to the attributes of organizational roles (Eagly & Johnson, 1990). An organizational role, e.g., a leadership role, consists of a "set of often diverse behaviors" that is expected of persons who occupy a particular position (Van Maanen & Schein, 1977, p. 28). Schein (1973) demonstrated in her research that as gender roles are associated with certain traits and behaviors, organizational roles like the leadership role are also associated with a set of behaviors and attitudes that overlap with those of the male gender role. Eagly and Johnson acknowledged the importance of organizational roles for the lack of sex differences in leadership. As one of the reasons to expect the absence of sex differences in leadership style, they state:

Behavior may be less stereotypic when women and men who occupy the same managerial role are compared because these organizational leadership roles, which typically are paid jobs, usually provide fairly clear guidelines about the conduct of behavior. ... Thus, reasonable assumptions about socialization into leadership roles and selection for these roles suggest that male and female leaders who occupy the same organizational role should differ very little. Managers of both sexes are presumably more concerned about managing effectively than about representing sex-differentiated features of societal gender roles. (Eagly & Johnson, 1990, p. 234)

According to Eagly and Johnson (1990), "paid jobs" come with an organizational role, which in return entails a descriptive guideline of appropriate behavior. This guideline is insensitive to gender. All individuals that occupy similar organizational roles will be following the same behavior guideline and, as a result, be acting similarly irrespective of their gender.

The misfit between stereotypes associated with women and the leadership role is referred to as *role incongruity* (Eagly & Karau, 2002). It has been used to explain why significant sex differences in leadership are rarely found. Studies provide evidence that individuals confronted with a stereotype about a group they belong to tend to assimilate this stereotype in the style of a self-fulfilling prophecy (Zanna & Pack, 1975). For women, the urge to assimilate the female stereotype is particularly challenging in a leadership position. With the *leader* stereotype prescribing them to behave in a *masculine* manner and the *gender* stereotype prescribing them to behave in a *feminine* manner, women in leadership positions face a *double bind* or catch 22 because either option is linked to negative consequences. If women conform to the male leader stereotype, they will experience *backlash* and be evaluated negatively (Eagly et al., 1992; Rudman & Phelan, 2008; Wolfram et al., 2007). If they behave in stereotypically feminine ways, however, they will be perceived as less competent and less suited for the leadership position (Heilman, 2012). Which strategy the female leader chooses probably depends on her immediate environment and other situational factors like the specifications of her leadership position. In any case, women leaders face a predicament that can have significant effects on behavior. From a theoretical standpoint, it is difficult to predict what specific behaviors to expect. It can be assumed, though, that the conflictive influences on the social group level at least increase women leaders' awareness for their own situation, implying a higher level of deliberateness and strategic rationale in female leaders as compared to male behavior.

On the group level, social structural meta-theory hence predicts sex differences in leadership between men and women due to the influence of the historical division of labor between men and women on social roles. Stereotypes derived from these social roles are omnipresent and also prevail in men and women leaders. However, social structures, social, and stereotypes vary across cultures, so that predictions about men and women's leader behavior require taking regional cultures into account. At the same time, modifications of the social structural theories in organizational contexts predict that there should be no sex differences in leader behavior. Masculine organizational cultures, masculine organizational roles, and masculine stereotypes associated with leadership positions require leaders of both sexes to adapt to masculine gendered organizations.

Due to the contradictory implications, it is difficult to make predictions about male and female leader behavior on the group level. Additionally, many of the influences on the group level cannot be specified. Stereotypical sex differences are derived from social roles, but organizational cultures, organizational roles, and even national cultures are highly specific. Accordingly, the quality of their influence remains unspecific unless those unknown factors are determined. Finally, social influences on the group level, though relatively stable, are not resistant to change. Global trends like more egalitarian role division (e.g., Omar and Davidson, 2001; Wood and Eagly, 2002) and globalization (Taylor, 2008) systematically change the division of labor and resulting social roles.

2.1.2 EFFECTS OF PAST SOCIAL ENVIRONMENTS ON SEX DIFFERENCES IN LEADER BEHAVIOR

Social structures influence a society's socialization practices on an individual's upbringing and professional life. Socialization refers to processes during which naïve individuals are taught behaviors, skills, and values of the surrounding culture. These processes are initiated by agents such as parents, siblings, peers, mass media, and teachers, but also role models, employers, and leaders (Maccoby, 2007). Due to social structures and males' and females' different social roles, socialization processes vary systematically for men and women (for a review, see Leaper & Friedman, 2007). These differences in socialization are believed to be reflected by sex differences in leader behavior.

Socialization theory is based on social learning theory (Bandura, Ross, & Ross, 1961, 1963), which states that the individual learns through observation, imitation, and modelling. By watching other

individuals being rewarded, punished, or not receiving any feedback, the observer learns which behaviors to engage in and which behaviors to avoid. In his classic experiments, Bandura and colleagues showed that children watching an adult beating a bobo doll (Bandura, Ross, & Ross, 1961) were more likely to demonstrate aggressive behavior towards the doll than the control group. Children watching an adult, who hit a bobo doll and was punished afterward, were less likely to imitate the aggressive behavior than children who watched an adult who was rewarded or did not receive any feedback for the aggressive behavior (Bandura, Ross, & Ross, 1963). The finding implies that individuals do not just imitate any behavior but that there is a selective learning process depending on the observed action's outcome (Bandura, 1986). Sex differences in behavior seem to be coupled with observational learning. Observational learning requires the individual to pay attention to another individual's actions (Bandura, 1986). As soon as children can distinguish between the sexes, they pay more attention to same-sex role models than to other-sex role models (Bussey & Bandura, 1984, 1992) and pay more attention to actions they perceive as personally relevant (Kanfer, Duerfeldt, Martin, & Dorsey, 1971).

Leadership research agrees that role models are an effective way to learn leadership skills and behavior (Cross, Linehan, & Murphy, 2017; Fitzsimmons, Callan, & Paulsen, 2014; Latham & Saari, 1979; Porras et al., 1982). An interview study with male and female leaders confirmed that leaders were more susceptible to learning from same-sex role models. While the male leaders reported having been influenced in their leadership behavior exclusively by male role models, female leaders were the most emotional about female role models. However, female leaders also listed men as influential factors for their leadership development (Kempster, 2009). There are two possible explanations for females' higher attentiveness to male role models. For one, females in senior positions who can act as role models are scarce (Fitzsimmons, Callan, & Paulsen, 2014). Also, there is a general lack of access to female role models in the media. Mass media and scholarly journals tend to focus on male leaders (Baker, Aldrich, & Liou, 1997). If journalists portray women leaders, they highlight their looks and traits more than their actions (Heldman, Carroll, & Olsons, 2005) and do not depict them in an organizational context (Wilkinson & Blackmore, 2008). Secondly, women are less focused on same-sex role models than men (Hartman & Harris, 1992; Slaby & Frey, 1975), indicating that even if role models of both sexes are available, male leaders will still be more likely to learn from same-sex role models than women leaders. Concerning sex differences in leadership behavior, these findings imply a masculinizing influence of socialization processes on women leaders.

A study by Hartman and Harris (1992) implied that role models' influence might be even more complicated. They conducted a questionnaire-based study to assess how parents influenced men and women in their leadership styles. They asked male and female business administration students to rate their own leadership styles, which resulted in scores for the dimensions of consideration and initiating structure. Then the authors asked them to have their most influential person (e.g., mother or father) fill out the same questionnaire. One finding of the study was that when parents reported a leadership style that was high in initiating structure, male students were more likely to score high on that leadership dimension, too. At the same time, when parents reported a highly considerate leadership style, female students were more likely to score high on consideration. In other words, male students were more likely to copy stereotypically male leader behavior, while female students were more likely to copy stereotypically female leader behavior. Another finding was more challenging to interpret: the sex of the role-model the male student picked, i.e., either the father or the mother, influenced the nature of the correlation between the leadership dimensions. When male students reported their fathers to be their role models, initiating structure and consideration were positively correlated. When male students picked their mothers as the most influential role models, however, the correlation between initiating structure and consideration was negative. No such effect emerged for the female students. Finally, male

students who reported a female influence showed a greater discrepancy between their own leadership style and how they perceived their female role model's leadership style. Male leaders who reported a female influence were hence less willing to admit that they were modelling their leadership style after a female role model.

The study provides interesting insights into the impact of early family influences and their complex interdependent effects on sex differences in leadership behavior. It indicates that there is a sex difference in imitation behavior. When role models act in a stereotypically male way, men are more likely to imitate their behavior than women, while the same is true for women as compared to men when the role model is acting in a stereotypically female way. Furthermore, men are more likely to copy female behaviors in addition to male behaviors when they are displayed by a male role-model as compared to a female model. The study hence confirmed previous findings that men are more consistent in copying male role models as compared to female role models. Women, on the other hand, do not discriminate between role-model sex.

Just as all members of society go through socialization, organizational members go through a process of *organizational socialization* when they enter the organization or advance into a new position (Terborg, 1977; Van Maanen & Schein, 1977). The organizational socialization process serves four distinct goals: teaching task mastery or how to perform one's job, clarifying one's role within the organization, adjustment to the organization's culture, and social integration (Morrison, 1993). Although socialization is often associated with the period during which an individual is new to a culture, it is actually an ongoing process that lasts throughout the life span (Maccoby, 2007). Socialization of leaders, for instance, can take place formally in leadership interventions and training, or informally through on-the-job learning (Davies & Easterby-Smith, 1984). However, the effectiveness of leadership interventions in terms of achieving variation in leader behavior has been demonstrated to be only about 10 percent (Avolio et al., 2009). Natural learning in the field, however, is a strong determinant of leader behavior (Burgoyne & Hodgson, 1983).

Although organizational socialization is considered an important factor for explaining the often-concurring behaviors of male and female leaders (e.g., Eagly & Johnson, 1990), little research has as yet empirically investigated the role of organizational socialization for sex differences in leader behavior. Gomez-Mejia (1983) found in an early study that sex differences in work-related attitude occurred only at the beginning of managers' careers. There were no differences in male leaders and female leaders, who had worked within their occupations for eleven years or more. Since attitude is strongly correlated with behavior (Glasman & Albarracin, 2006), the phasing attitudes hence predict that male and female leaders become more similar in their behaviors over time. Congruently, a classic study by Diamond in 1971 reported that men and women became more similar with increasing hierarchy levels and an extensive literature review by Terborg (1977) several years later showed that male and female leaders in middle management had similar attributes.

Other research substantiated that male and female leaders' career paths are much alike (Miller Burke & Attridge, 2011; Laud & Johnson, 2013), implying that they experience very similar socialization processes shaping their traits and skills. Finally, once entering an organization, managers are socialized into their roles as leaders and according to the prevailing organizational culture (e.g., Buchanan, 1974; Jones, 1986; Morrison, 1993), further assimilating male and female leaders in their behavior.

In contrast, another study found that female leaders tend to behave in more stereotypically male ways at the beginning of their career and develop a more individual, female leadership style later in their careers (Hennig & Jardim, 1977). This latter finding implies that women adapt to social pressures and role expectations in leadership positions. Once women have settled in and grown in confidence regarding their leadership skills, however, they relax and diminish their efforts to adapt to the pressures

of masculine cultures. Still, as implied by the meta-analyses on sex differences in leadership behavior, women leaders often score high on masculine dimensions – sometimes even higher than their male counterparts. Zenger and Folkman (2012) assessed the evaluations of 7,000 leaders in financially successful companies. On 75 percent of the questions, female leaders scored higher than male leaders, including questions that measured stereotypically male behavior. The largest difference favoring women was obtained for the stereotypically male competencies “takes initiative” and “drives for results”.

Gendered structures, social roles, and gender stereotypes affect socialization processes that reinforce sex differences in behavior. However, organizational socialization and career paths prevent men and women leaders from differing in their behavior. Nevertheless, some socialization processes influencing leaders like the ones induced through mass media or role models indicate a masculinizing effect on women’s leader behavior as well. At the same time, empirical data indicate that the masculinizing effects of socialization might subside after time when leaders are settled in their positions and invest fewer efforts to adapt to external pressures. In sum, socialization and, in particular, organizational socialization affect sex differences in leadership behavior. Again, however, the social forces from within societies and from within organizations might be conflicting and do not allow for clear predictions about sex differences in leader behavior.

2.1.3 EFFECTS OF CURRENT SOCIAL SETTINGS ON SEX DIFFERENCES IN LEADER BEHAVIOR

Behaviors take place in a specific social setting and usually involve interactions with other individuals. Reported leader behavior is often inconsistent, indicating respondents' varying perceptions or actual variation in leader behavior (Bono, Hooper, & Yoon, 2012). The latter rationale implies that factors of a specific social setting interact with current leader behavior. Those factors may be inherent in the *organizational structure* or *follower characteristics*. Gender and management research that is concerned with influences on sex differences at this level takes on an interpersonal perspective and draws on a multitude of theories like social role theory and theories of gender schemas and gender identity (Ayman & Korabik, 2010; Riger & Galligan, 1980).

In most companies, organizational structures are masculine, which translates into hierarchical structures, autocratic leadership, and competitiveness (Helgesen, 1990; Kanter, 1976; Maier, 1999; Marshall, 1993). This phenomenon is not limited to organizations; instead whole industries are characterized by masculinity (Bajdo & Dickson, 2001; Becker, Ayman, & Korabik, 2002; Eagly & Johnson, 1990; Gardiner & Tiggeman, 1999). These masculine settings across industries and organizations can hinder female leaders from being selected into leadership positions, receiving support for their development, and unfolding their range of female behaviors (e.g., Loden, 1985; Longman et al., 2018; Lyness & Thompson, 2000; Marshall, 1993; Norman, Rankin-Wright, & Allison, 2018; Walker & Aritz, 2015).

The masculine structures have a biasing impact on *selection processes*. Women promoted to leadership positions have rather masculine traits and attributes compared to other females (Megargee, 1969). One of these selection processes becomes visible during hiring situations. Eagly and Karau have already shown in their 1991 meta-analysis that in both experimental and field studies, men are more likely to be selected for leadership positions than women (Eagly & Karau, 1991). A study by Phelan, Moss-Racusin, and Rudman (2008) manipulated the answers of female and male job applicants who were interviewing for the positions of a computer lab manager. Study participants had to take their pick based on job interviews. Most likely to be hired for the job were male job applicants, who gave stereotypically male answers. The second group most likely to be hired were female applicants, who acted in a stereotypically male way. Males and females who acted in a stereotypically female way were the least likely to be hired (Phelan, Moss-Racusin, & Rudman, 2008). This finding coincides with a

meta-analysis (Lord, De Vader, & Alliger, 1986) that found emergent leaders to be more likely to be characterized with masculine characteristics such as agency and dominance. Some studies demonstrate that androgynous individuals are just as likely to be identified as leaders as masculine individuals (Gershenoff & Foti, 2003; Kent & Moss, 1994; Moss & Kent, 1996). Findings like these imply that women who have the prerequisite of a masculine or androgynous nature have a competitive advantage in hiring procedures over feminine competitors. Women leaders are hence motivated to adapt their behavior to the requirements of the masculine settings to advance their careers.

Nevertheless, women are still underrepresented in leadership positions (Sojo et al., 2016), which perpetuates masculine structures. If a mostly homogenous group contains only a very low number of individuals with a distinguishing feature, this effect is referred to as *tokenism* (Taylor et al., 1978). In her classic ethnographic study on men and women in the corporate world, Kanter (1977) found that it was not gender per se that hindered women from gaining power and being successful. Instead, she proposed that it was their low number, i.e., their roles as tokens, that had several negative effects. Negative effects of tokenism include being scrutinized, devalued, and expected to act according to stereotypes as demonstrated in various studies (Daily & Dalton, 2003; Ely, 1995; Kanter, 1977a, b; McDonald, Toussaint, & Schweiger, 2004; Singh, Vinnicombe, & Johnson, 2001; Terjsten, Sealy, & Singh, 2009). These effects can result in *stereotype threat*. Stereotype threat occurs when negative attributes of a group become salient. It has been repeatedly shown to negatively affect performance (Steele & Aronson, 1995; Davies et al., 2002; Roberson & Kulik, 2007). To feel threatened by stereotypes, i.e., for stereotypes to become salient, it is sufficient for the individual to be part of a minority within an existing group – as, for example, individual female leaders are in an otherwise male executive group (Hoyt et al., 2010; Inzlicht & Ben-Zeev, 2000; Kanter, 1977a; Sekaquaptewa & Thompson, 2003; von Hippel, Walsh, & Zouroudis, 2011).

Because stereotype threat can trigger negative emotions, one avoidance strategy is to distance oneself from the group in question. Women leaders in a male-dominated environment have an incentive to display male-typical behavior to distance themselves from the feminine stereotypes. Female leaders who openly distance themselves from other female organizational members are referred to as *queen bees* (Derks, Van Laar, & Ellemers, 2016). Queen bees are one of few or even the only successful women in a male-dominated work environment. They adapt to the masculine culture and legitimize other women's discrimination (Derks, Van Laar, & Ellemers, 2016). Studies show that queen bees are very critical towards younger women and biased by gender stereotypes in their assessment of other women. They tolerate discriminating selection processes and show little readiness to mentor younger women (Derks et al., 2011a; Derks et al., 2011b; Ellemers et al., 2004; Stroebe et al., 2009; Derks, Van Laar, & Ellemers, 2016).

Kanter (1977) reported that in an organization with women representing a minority, men tended to emphasize their masculinity and highlight differences between the sexes. In the light of gender identity theory, this is not surprising: The small number of females in the male-dominated sales force of the company increased men's salience of the in-group (i.e., men) and the out-group (i.e., women; Ashforth & Mael, 1989), which in return increased their identification with their in-group. Consequently, they increased stereotypic actions and, at the same time, reinforced the distinctiveness of male values and attitudes. This finding demonstrates how token women's employment increases an organization's masculine structures and prevents sex-specific leader behavior. To evoke feminine leader behavior, the number of women on a corporate board needs to reach a *critical mass* of at least three women (Kramer et al., 2006; Konrad, Kramer, & Erkut, 2008; Kanter, 1977a; Torchia, Calabrò, & Huse, 2011). This effect has been demonstrated in several studies (Adams & Ferrerira, 2009; Hoogendoorn, Oosterbeek, & Van Praag, 2013; Kakabadse et al., 2015).

Building on Kanter's groundbreaking research, Harvard Professor Robin Ely (1995) investigated how the share of women leaders affected male values and norms as well as women's gender identity in organizations. Distinguishing between law firms with a share of women partners of 15% (sex-integrated firms) or less than 5% or two women (male-dominated firms), Ely conducted interviews with 30 female associates. She then systematically analyzed their perceptions, evaluations, and self-perceptions concerning femininity, masculinity, and gender neutrality. Ely found that women had stronger perceptions of sex differences in male-dominated as opposed to sex-integrated firms, confirming that tokenism increases group identity and intergroup competition. Furthermore, women in male-dominated firms evaluated stereotypically female attributes as less favorable and less helpful in advancing their careers. Accordingly, those women reported adapting to masculine values and preferences to achieve success. In another article, Ely (1994) reported similar results. She demonstrated that in companies with a low share of women leaders, female associates did not identify with women leaders, felt no support by women leaders, and had more problematic encounters with women leaders.

Organizational structures emphasize how current situational cues enforce masculine leader behavior in predominantly masculine cultures. Due to the still masculinized structures in organizations and often low numbers of women in leadership positions, current influences predict no sex differences in leader behavior. Women adapt to the masculinized cultures and distance themselves from behaviors that increase others' salience of their female sex. Hence, current influences on leader behavior predict that women and men are more similar in their leader behavior than different.

2.1.4 INTRA-INDIVIDUAL THEORIES OF SEX DIFFERENCES IN LEADERSHIP

Social identity theory (Tajfel, 1981; Tajfel & Turner, 1986) assumes that individuals have a need for positive self-images. By identifying with a social group, individuals can increase their self-esteem (Hogg & Turner, 1985). Furthermore, social identity helps segment and order the social environment and provides the individual with a systematic tool to classify others and oneself regarding different groups (Ashforth & Mael, 1989). Membership in organizations was identified as an important determinant of social identity (Wharton, 1992).

Gender identity is a categorical definition of the self-regarding the gender group an individual feels part of. It describes an individual's perception of oneness with their gender group and is achieved through social interactions (Ashforth & Mael, 1989; Cahill, 1986). Gender-role characteristics with regard to masculinity and femininity incorporated into one's gender identity are considered to influence leadership behavior. Indeed, the intrapsychic perspective on sex differences in leader behavior postulates that leader gender identity is a better predictor of leadership behavior than leader sex (Ayman & Korabik, 2010; Powell, 1982).

The classification of the self in social identity theory happens in relation to other groups (Tajfel & Turner, 1986, p. 16). Accordingly, the category *female* exists next to the category *male*; the category of *leaders* exists next to the category of *followers*. Important antecedents of identification with a group are the distinctiveness of values and practices, the group's prestige, the salience of the out-group(s), intergroup competition, and factors associated with group formation (Ashforth & Mael, 1989).

People can be either gender schematic or gender aschematic. This distinction differentiates to what extent people view gender as an important part of the self. People who are gender schematic can process schema-conform information more quickly, organize new information in gendered categories, and base their evaluations on gender-schematic dimensions. Gender schema theory does not describe how men and women should behave, but how the sex-typing results in gender schemas that assimilate (to a varying degree) into individuals' self-concepts (Bem, 1981, p. 355). The gendered self-schema then influences

perception and memory to enforce gender-stereotypical behavior in individuals who more strongly assimilated their self-concepts into their gender schema compared to those who did so less strongly¹. In sum, Bem introduced a model for explaining processes in the cognitive black box of individuals that learn gender stereotypes and include them in their gender identity.

According to gender schema theory, female leaders whose gender identity is high, perceive themselves as gender stereotypically feminine. They are gender schematic in their self-concept and hence demonstrate behavior consistent with female gender stereotypes. The same holds for male leaders and stereotypically male behavior. Since stereotypes about men and leaders concur, gender schematic men should feel comfortable in their position and behave in stereotypically masculine ways. Gender schematic female leaders, however, encounter difficulties in masculine organizational cultures dominated by gender-schematic male leaders. In masculine cultures, sex-stereotypic behavior becomes particularly salient. It leads to cognitive dissonance (Festinger, 1957), inducing women to abandon the leadership position or adapt their behavior and/or gender self-schema (see, e.g., queen bee phenomenon, 2.1.3). Accordingly, gender schema theory predicts that gender aschematic female leaders should be more comfortable in leadership positions as compared to gender schematic female leaders. Gender schema theory thus explains the lack of behavioral gender differences between male and female leaders often reported in scientific studies (Butterfield & Grinnell, 1999). Self-selection processes and behavioral adaptation should reinforce the assimilation of male and female leader behavior.

Empirical evidence substantiates the theoretical predictions. Xie and Whyte (1997) found that, across management levels, male leaders were more masculine, whereas women leaders were more feminine than the opposite sex. Comparing sex differences in managerial aptitude, needs, abilities, values, and personality traits, however, demonstrated that male and female managers were more similar than male and female non-managers. The finding demonstrates that selection processes lead to mostly equivalent prerequisites in male and female leaders and that gender aschematic women are more likely to become leaders. Adams and Funk (2012) supported this finding, although they did not assess gender identity but leader values. Female leaders were more benevolent and universally concerned but less power-oriented than male leaders. However, the female leaders deviated from the general female population. While women in the general population were more tradition and security-oriented than men, the women leaders showed the opposite value preferences, i.e., they were less tradition and security-oriented than their male counterparts.

Fagenson (1990) found that in higher levels of an organization's power hierarchy, both female and male leaders become more masculine. However, women leaders were, at the same time, more feminine than male leaders. Similar results were obtained from a Spanish sample of male and female managers (Gartzia & Van Engen, 2012). The results showed that female leaders were more feminine but no less masculine than their male colleagues. Hence the female leaders were androgynous, while the male leaders were masculine. Powell and Butterfield (2003) emphasize the self-selection mechanisms that precede managerial careers. In two samples of business students collected in 1977 and 1999, they showed that masculine gender identities persisted in predicting managerial career aspirations. Female students tended to believe that they were less suited for leadership positions than their male peers (Bosak & Sczesny, 2008). Once occupying a leadership position, men further feel more confident and skillful in their leadership role (Bierema, 2016). These findings indicate that men and individuals with a masculine gender identity more easily identify with leadership roles.

¹ Bem classifies individuals who evaluate themselves as congruent with cultural sex-stereotypes as gender schematic. Individuals who evaluate themselves as opposite to cultural sex-stereotypes are classified as cross-sex-types. Individuals who classify themselves as congruent with both male and female sex-stereotypes are classified as androgynous, and finally individuals who classify themselves as low on both dimensions are considered undifferentiated (Bem, 1981).

While gender identity maintains its status as a niche area in the field of leadership research, the leadership *trait* approach has received much attention from researchers and practitioners. Trait-based leadership research is the oldest domain of leadership research (see Bass & Bass, 2008; Zaccaro, 2007; Zaccaro, Kemp, & Bader, 2004) and influenced much of gender and management research (Ayman & Korabik, 2010). It relies on the basic assumption that leaders differ from non-leaders in personality measures (Roslow, 1940). Leader traits have regained importance recently due to new insights from neuropsychology (Antonakis & Day, 2018, p. 9).

The Big Five model is one of the most frequently applied theoretical frameworks to assess personality (McCrae & John, 1992). Accordingly, leadership researchers have often applied the Big Five model to assess the importance of personality traits for different facets of leadership (Lippa; 2005; Ayman & Korabik; 2010). The Big Five model assumes five independent personality dimensions, extraversion, agreeableness, neuroticism, openness, and conscientiousness, which represent universal personality traits (Marsella et al., 2000, p. 48). In a frequently cited meta-analysis, Judge et al. (2002) found that given the declining popularity of trait approaches in leadership, a surprisingly high share of 28.1 percent of the variance in leadership could be explained by the Big Five personality dimensions. Others found that the Big Five personality dimensions correlated with specific leadership styles such as transformational and transactional leadership (e.g., Brandt & Edinger, 2014; Bono & Judge, 2004; Judge & Bono, 2000; Johnson et al., 2004; Lim & Ployhart, 2004; Reichard et al., 2011). Johnson and colleagues (2004) integrated a genetic component in their test of personality influence on leadership style. They questioned 183 pairs of monozygotic and 64 pairs of same-sex dizygotic twins on the Big Five personality dimensions and their leadership behavior. The study provides evidence that genetic predispositions play a role in personality and its effects on leadership. Unfortunately, none of these studies included a sex-specific assessment of their effects.

Nevertheless, Feingold's (1994) meta-analysis on sex differences in personality suggests that personality dimensions systematically differ between men and women. He found that extraversion and agreeableness differed the most between the sexes. Costa, Terracciano and McCrae (2001) investigated the Big Five personality dimensions in 23,000 individuals across 26 countries and also reported significant sex differences in personality. Their findings confirm Feingold's (1994) study in that women score higher on neuroticism and agreeableness dimensions, and men score higher on extraversion dimensions. Furthermore, they found that men score higher on competence (factor of conscientiousness), fantasy, and openness to ideas (factors of openness to experience).

These extensive large-scale studies lend support to a systematic difference in men's and women's personalities. The personality differences they report can reinforce sex-typed behavior such as empathy and assertiveness (Sims, 2017). In combination with the findings from leadership research that personality is related to leadership style, it can be assumed that male and female leaders' differing personalities could result in differing leadership behavior.

Only one study was identified that assessed the interaction of personality and sex and their effect on leadership. The findings imply that the same personality dimensions might manifest themselves differently across sex. The study found extraverted women leaders to be more modelling and rewarding than extraverted men. Furthermore, introverted women were still more modelling and rewarding but also more enabling and transformational than their introverted male counterparts (Brandt & Erdinger, 2014). These findings imply that personality does not necessarily predict identical behavior across the sexes. Making predictions about sex differences in leadership based on personality is hence not possible yet.

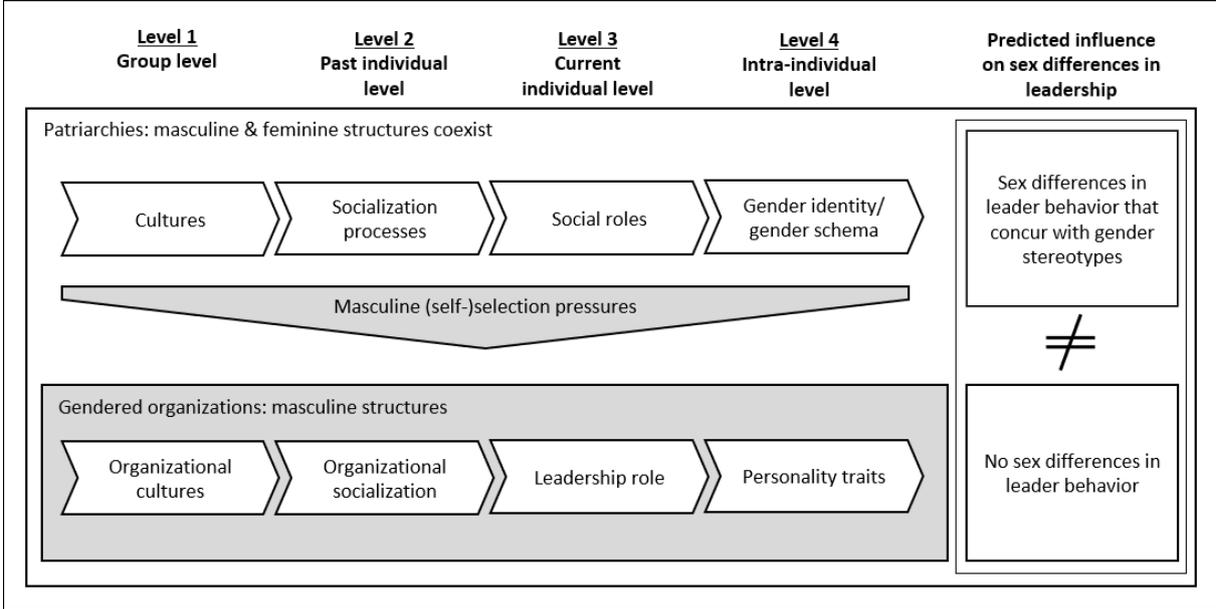
In sum, leadership research and gender studies come to the preliminary conclusion that personality influences leadership and that men and women differ systematically in specific personality traits.

However, hardly any comprehensive research has investigated the interaction of personality and sex on leader behavior. The one exception included here demonstrates the complexity of the issue and does not allow for general predictions regarding the existence and nature of sex differences in leader behavior.

However, research on gender identity indicates that sex differences in leader behavior should be small or non-existent. While male leaders parallel the stereotypical male, female leaders are rather untypical. They resemble stereotypical males in many respects, and if they do not, they will still not resemble stereotypical females. Cognitive dissonance and resulting effects such as self-selection lead to above-average masculine or androgynous women being more likely to pursue leadership positions. The findings support the shaky consensus made in sex differences in leadership behavior research that male and female leaders are more alike than they are different.

The preceding chapter demonstrated social structural theories in the field of SDL and summarized the predictions they make about sex differences in leader behavior. The division of labor results in different social roles of men and women in patriarchic societies. These roles have attributes and require skills that are transferred to the sexes in the form of gender stereotypes. These stereotypes frame socialization processes and gender identities, which in return ultimately lead to gender differences in behavior. Hence, social structural meta-theory predicts sex differences in leader behavior to exist and to concur with gender stereotypes in their quality. Because social roles and stereotypes can vary across cultures, the quality of these differences can fluctuate depending on the surrounding culture’s level of gender egalitarianism.

Figure 3
Predictions of Social Structure Meta-Theory of Sex Differences in Leader Behavior



On the other hand, the corporate and, in particular, managerial worlds within societies are gendered subcultures that predominantly incorporated masculine stereotypes. Masculine organizational cultures, organizational socialization, and the leadership roles prescribe behavioral norms and selection pressures that concur with masculine stereotypes. Leaders in those organizations historically represent societies’ patriarchs. Femininity is undesirable in that environment. Instead, all of the organizational members are required to adapt to masculine standards. On the organizational level, social structural theory hence predicts that there will be no sex differences in leader behavior.

As indicated above and illustrated in Figure 3, social structural meta-theory is ambiguous in its assumptions about the existence of sex differences in leadership. In the general society, it predicts the existence of sex differences in leadership because of the strong omnipresent influences of social roles that are repeated by socialization processes and incorporated in individuals' identities. In organizations, however, social structure meta-theory predicts similarity in leader behavior across the sexes due to the immediate environmental influence of masculine organizational structures.

Social structural meta-theory does not make any predictions about how social influences are weighted or about which one takes the lead when opposite social structural forces collide within the same individual. Consequentially, it is difficult to derive clear statements or hypotheses that could be tested. If a study finds no sex difference in leader behavior, it can use the masculine structural forces in organizations as an explanation. If, on the other hand, it does find sex differences in leader behavior, it can use social structural forces of social roles as an alternative explanation. Either finding hence supports the social structural meta-theory. The explanatory power of the theory in leadership contexts is limited, however, because it does not make unambiguous predictions about the existence of sex differences in leadership.

2.2 EVOLUTIONARY PSYCHOLOGY THEORIES OF SEX DIFFERENCES IN LEADER BEHAVIOR

In addition to social influences, Lipka's model (2005) contains biological influences on behavior. Just as the social influences were subsumed under the roof of social-structural meta-theory, all biological influences are subsumed under the roof of the meta-theory of evolutionary psychology. After reviewing the underlying assumptions of evolutionary psychology, the following subsections 2.2.1 - 2.2.3 elaborate on the group influences as well as past and current individual influences on sex differences in behavior from a biological point of view.

Evolutionary psychology focuses on the adaptations of the mind which impact human behavior. It assumes that manifest behavior depends on underlying psychological mechanisms in conjunction with the external and internal inputs — social, cultural, ecological, physiological — that those mechanisms interact with (Confer et al., 2010; Tooby & Cosmides, 2005). It deals with understanding the mechanisms underlying the human mind. Key questions of evolutionary psychology are: What caused the development of the human mind? What elements and mechanisms does the human mind consist of? What are the functions and structures of those elements and mechanisms? How does the modern human mind interact with the input from today's environment? (Buss, 2004, p. 23-4).

Evolutionary psychology, like social-structural theory, is considered a meta-theory for sex differences in behavior (Buss, 1995a; Eagly & Wood, 1999). It draws on insights from a wide range of disciplines like biology, anthropology, computer science, and paleoarchaeology (Buss & Schmitt, 2011). Evolutionary psychology assumes that behavior depends on (1) psychological mechanisms and their interaction with the environment; that (2) those mechanisms develop through selection processes; and that (3) these processes are the response to a species' recurring adaptive problems (Buss & Schmitt, 2011). In the following, these assumptions are explicated and briefly summarized regarding their meaning for sex differences in leader behavior.

(1) Behavior depends on psychological mechanisms and their interaction with external and internal inputs. In contrast to social-structural theory, evolutionary psychology focuses on *biologically* rooted, psychological mechanisms linked to behavior. These mechanisms are information-processing circuits housed in the brain that register *external* and *internal* information that is transformed into a functional output to solve a recurring problem (Confer et al., 2010). Evolutionary psychology acknowledges the importance of social influences that trigger the use of particular psychological

mechanisms. Accordingly, evolutionary psychology assumes that manifest behavior is enormously flexible instead of predetermined, as many critics fear (Buss & Schmitt, 2011; Confer et al., 2010; Nicholson, 2005). This flexibility is based on cultural and social environments that activate or deactivate psychological mechanisms. Furthermore, the psychological mechanisms act in various combinations and sequences, adding to that flexibility (Buss & Schmitt, 2011). It is a misunderstanding about evolutionary psychology that it relates all behavior to genetics and hence does not distinguish between behavior and its underlying mechanisms (Buss & Schmitt, 2011; Confer et al., 2010; Nicholson, 2005). This misunderstanding has even been named as one of the major reasons why feminism and evolutionary psychology have worked separately on overlapping problems (Buss & Schmitt, 2011). Fortunately, increasing numbers of publications integrating evolutionary approaches and feminist work demonstrate that this misunderstanding is being eradicated (e.g., Buss & Malamuth, 1996; Gowaty, 1997; Peters et al., 2002).

The evolutionary psychology assumption that behavior depends on psychological mechanisms that interact with social influences has two implications for sex differences in leader behavior. For one, sex differences in leader behavior are facilitated by underlying psychological mechanisms. Secondly, leadership behavior depends on environmental influences in conjunction with these psychological mechanisms. Evolutionary psychology hence does *not* imply that sex differences in leader behavior are biologically predetermined. Instead, the human mechanisms for culture development and assimilation allow leaders to adapt flexibly to environmental requirements and situational pressures.

(2) Psychological mechanisms are adaptations that develop through evolutionary selection processes. Darwin's (1871) evolution theory proposes that the interplay of genetic variation, heredity, and environmental change leads to a process of *natural selection*, which causes biological changes in a species that lead to its improved adaptation to a specific environmental niche. According to his initial theory, only those members of a species were going to survive that are best adapted to meet the challenges of their immediate environment (Darwin, 1859). Adaptations are the distinct features of a species that ensure its reproductive success (Buss et al., 1998). Williams (1966) suggested that any feature is an adaptation if it matches three criteria: reliability, efficiency, and cost-effectiveness. The criteria imply that, given stable environmental conditions, the trait must reliably occur in every member of the species (reliability), offer a good solution to a recurring problem (efficiency), and solve the problem employing reasonable energy input (cost-effectiveness; Buss, 2004, p. 40). Darwin (1871) noticed, however, that some of the adaptations he observed, e.g., the male peafowl's intricate tail feathers, seemed to be very costly and not adaptive regarding survival. This observation caused him to extend his theory by the principle of *sexual selection*. Sexual selection produces adaptations which are not necessarily linked to acquiring resources and survival alone, but offer advantages in attracting mating partners (Petrie, Halliday, & Sanders, 1991).

Today, the distinction between natural and sexual selection is usually no longer made. Instead, evolutionary psychologists assume a holistic process based on the reproductive success of inheritable genetic variation. Darwin's 'fitness' referred to the survival success of an individual and its offspring. Hamilton's *inclusive fitness theory*, however, suggests that individuals' reproductive success additionally depends on the survival of their kin because the latter are also carriers of their genes (Hamilton, 1964). Inclusive fitness theory is vastly accepted among scholars. However, in order to emphasize the type of benefit of an adaptation, i.e., whether it increases access to resources (e.g., the giraffe's long neck) or access to mating partners (e.g., the peacock's tail feathers), biologists sometimes still revert to the Darwinian terms of natural and sexual selection (Buss, 2004, p. 30).

Evolutionary psychology transfers the idea of adaptive *biological* features to *psychological* mechanisms facilitating certain behaviors. Accordingly, it is not only the giraffe's long neck that offers

an evolutionary advantage, but also its behavior patterns in terms of social organization (e.g., living in a group or solitarily), mating, and habitat selection. Transferring this assumption to sex differences in leader behavior means that diverging behaviors between men and women go back to the beginning of human history.

Evolutionary psychology believes that many evolved human behavior patterns, including those that differ between the sexes, came into existence to solve recurrent problems in the ancestral environment (Confer et al., 2010; Tooby & Cosmides, 2005). Understanding those psychological mechanisms and their interactions with today's socio-cultural input factors might help understand the existence or absence of sex differences in leadership behavior.

The aforementioned ancestral environment is also referred to as the *Environment of Evolutionary Adaptedness* (EEA; Charlton, 1997; Tooby & Cosmides, 2005). Based on evidence from archaeology and contemporary anthropological studies, researchers tried to reconstruct human life in the EEA starting 200,000 years ago. In the EEA, individuals were organized in small nomadic groups, consisting of 25 to 40 members of extended family that belonged to loose alliances of 100 to 200 members. Humans led a hunting-and-gathering way of life which was characterized by the collection of food for rapid consumption, using tools made as required, and no accumulation or storage of resources (Charlton, 1997). Ninety-nine percent of human history took place in the EEA. The beginning of agricultural societies about ten thousand years ago (Stephens et al., 2019) and the rapid development of human cultural and environmental diversity since then have been proposed to be too short of a timeframe to allow for considerable changes of adaptive psychological mechanisms (Symons, 1979, p. 35). Accordingly, the brains of male and female leaders EEA should still contain the same psychological mechanisms as the brains of their ancestors from the EEA.

(3) Psychological mechanisms solve recurring adaptive problems that humans have encountered throughout their history. One way to understand the evolutionary development of psychological mechanisms is to understand the recurring adaptive problems they help solve. Due to uncertainties with respect to the specifications of the EEA at different times (Eagly & Wood, 1999), it is difficult to reconstruct all of the problems that our ancestors dealt with in detail. However, some domains appear as promising starting points for evolutionary psychologists due to their universality. These include food selection, habitat selection, mate selection, parenting, and defense against dangerous animals. Hypothesizing how hunter-gatherers may have solved those problems in ancient times can help understand modern behaviors (Buss, 2004, p. 100-1). The today often still very pronounced fear of snakes and spiders in many people, for instance, is ascribed to the potentially life-threatening dangers that emanated from them in the ancestral environment (Confer et al., 2010). Fearing spiders and snakes directly affected survival because it guided behavior. Ancestors who feared snakes and spiders were more cautious when moving around in their environment, were more likely to detect them hidden in the grass, and react by a fight-or-flight response. On the contrary, ancestors who had not developed this psychological mechanism were more likely to overlook snakes and spiders while moving through their environment, were more likely to maybe even approach them curiously instead of avoiding them, and were hence more likely to be bitten and die. As arachnophobia and ophidiophobia, some adaptations have lost their adaptive value today, given that in most modern societies, snakes or spiders cause only a negligible number of deaths. The two phobias further represent one of those domains that one does not expect to contain sex differences. Defense mechanisms against potentially lethal creatures should have been adaptive for both men and women². In fact, men and women should be similar in all domains in

² Interestingly, research provides evidence that there actually is a sex difference in fear of spiders. The authors attribute this difference to a sex-linked overall difference in the emotion of fear (Cornelius, Randolph, & Averill, 1983).

which they have faced similar adaptive problems over human history. However, they are expected to differ in domains in which they have faced different recurring problems over time.

Recurring problems that differ for men and women arise from sexual reproduction and are addressed by the *theory of parental investment* (Trivers, 1972). The term parental investment refers to individuals' expenditure of resources to increase their offsprings' survival at the cost of their ability to invest in further offspring. The theory of parental investment claims that *within a species, the sex of the parent that invests more in their offspring is the sex that gets to choose their mates*. In most species, including humans, females are the ones to invest more in offspring because they have larger gametes than males. In humans, the male gamete is sperm, and the female gamete is the ovum or egg. The female ovum is far more complex and therefore costlier for the organism to produce than the male sperm. Hence, females only produce one gamete per month, while males produce millions of spermatozoa in the same timeframe. Since every gamete stands for potential offspring, the number of hypothetical offspring a female can produce is significantly smaller than the number of offspring a male can produce over his lifetime (Lippa, 2005, p. 88). Consequently, females are the limiting factor in the reproductive process and are careful to choose the right mate, which can lead to female-female competition (for an overview, see Geary, 2010, pp. 235). By choosing a mate that offers good genes, the female increases her offsprings' possibility of survival (Lippa, 2005, p. 91).

Parental investment does not end with the gamete size. In humans, the female parental investment includes the childbearing period, birth, and nursing. The female body hence invests approximately one year in the development of one offspring. On the other hand, the male's time investment is limited to the length of sexual intercourse. So men could hypothetically produce thousands of children in the same time period that women need to produce one offspring.

Due to the higher parental investment of the female organism, the offspring is more valuable to the female than the male. Ergo, women invest higher amounts of *parental effort* than men. Men, on the other hand, demonstrate stronger *mating efforts* than women. Since women are choosier and less available for intercourse, men need to put effort into being chosen by a woman. The most common strategies to attract females are to demonstrate health (to imply healthy offspring), physical strength (to provide security in times of danger), and to provide access to resources (to ensure the women's and her offsprings' survival; Buss, 1989). In short: women invest more resources in their children, while men invest more resources in being attractive to women. This fundamental difference in resource distribution led to different psychological mechanisms in men and women, which lead to different behavior patterns in return. Evolutionary psychology predicts those mechanisms to still exist, as their ultimate cause, sexual selection, has not changed. Accordingly, they should also be present in male and female leaders. Although male and female leaders face the same environmental input (e.g., general leadership tasks, organizational cultures, socialization processes, comparable follower characteristics), their behavior might differ due to the differences in underlying mechanisms.

Evolutionary psychology's assumptions imply that sex differences in leader behavior should be built on inheritable psychological mechanisms. These psychological mechanisms developed over a period of hundreds of thousands of years. They are assumed to change and adapt very slowly to the requirements of industrialized societies, which is why they should impact men's and women's leader behavior irrespective of the behavior's adaptedness to specific leadership situations. The psychological mechanisms are assumed to differ between men and women due to different recurring problems resulting from gamete size. Men and women's differing reproductive equipment caused the evolution of different mechanisms in the sexes, each of which increased the respective sex's survival. In men, those mechanisms had to facilitate mate attraction, whereas in women, the mechanisms had to facilitate

offspring survival. From an evolutionary psychology perspective, sex differences in leadership behavior should hence build on those two strategies.

Researchers can only speculate about the extent of the effect of biological or social forces on specific behaviors. Nevertheless, empirical evidence can substantiate the evolutionary psychology relevance of a behavior. Tinbergen (1963) suggested that four “problems” have to be addressed to understand behavior: its *adaptive function*, its *phylogenetic evolution*, its *ontogenetic development*, and its *underlying mechanism*. The adaptive function of sex differences (mating efforts vs. parental efforts) has already been discussed above. To substantiate the evolutionary psychology background of behaviors, empirical evidence should demonstrate that their adaptive usefulness translates into inheritable, biological mechanisms.

For one, the behavior should be present in species other than humans. This *phylogenetic perspective* concurs with the group level of Lippa’s (2005) framework. Phylogeny refers to a species’ (i.e., the group’s) evolution and development over time. In the phylogenetic tree, a species’ ancestors, relatives, and successors are related to each other. The closer species are on the phylogenetic tree, the more they should have in common. Studies on sex differences in animals close to humans, e.g., primates, hence provide insights into the phylogenetic background of sex differences. If a sex difference is shared between humans and primates, it is more likely to be inheritable. Evidence like this is often taken from the fields of ethology or comparative psychology.

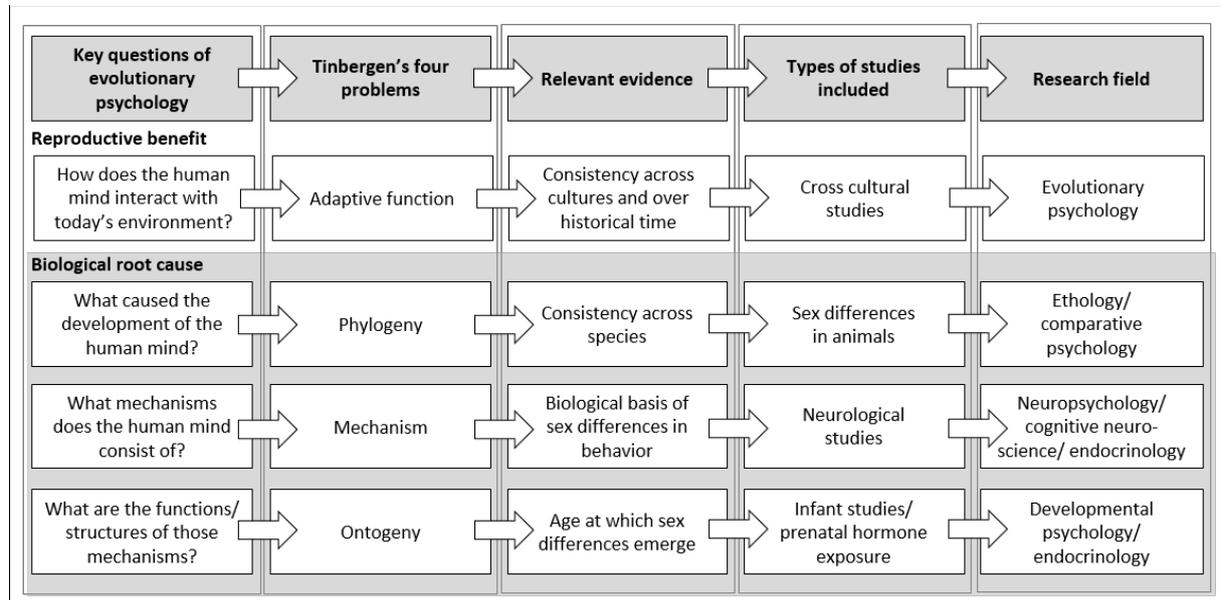
Ontogeny refers to the biological development of one member of a species from conception until death. It represents *past* individual influences on sex differences in behavior. These influences are considered past influences because all of the individual’s behaviors, including sex-specific behaviors, are the outcome of preceding developmental steps. These developmental steps are anchored into humans’ genetic makeup, and each of them relies on the interaction of biological and social influences (e.g., speech development relies on biological prerequisites as well as exposure to spoken language). However, the earlier the developmental step occurs in the individual’s life-time, the less social influences can take effect. Therefore, sex differences that occur early in life should have a noticeable biological component. To investigate evolutionarily relevant sex differences in behavior, researchers should focus on sex differences in newborns and infants because social effects had comparatively fewer opportunities to affect them. In the field of developmental psychology, evidence from infants, but also from individuals who experienced developmental anomalies prenatally, should provide insights into whether behaviors could result from adaptive pressures.

If a sex difference in behavior rests on underlying *biological mechanisms*, it should become visible in individuals’ current reactions. For example, if the hormone testosterone was positively related to aggressive behaviors, it should be elevated in leaders who consciously harm their followers. The existence of such biological mechanisms and their interaction with behavior is a strong indicator for a behavioral sex difference’s evolutionary background. If there is a biological mechanism, it is imprinted on individuals’ genes and can be passed on over generations shaped by evolutionary forces. Evidence for biological mechanisms usually stems from neurological studies of the brain and from endocrinological investigations that assess the effect of hormones.

The interrelationships of the biosocial model of influences on SDL, Tinbergen’s four problems, and fields that provide empirical information are illustrated in Figure 4. The following subsections explicate the group level and the two individual levels of biological influences on sex differences in behavior. They do so by highlighting the general biological mechanisms of sexual reproduction, sexual development, and brain as well as endocrinological mechanisms that contribute to sex differences in behavior. If there were any available, findings on leadership behavior in relation to those biological

phenomena were integrated. These sections will be important to understand the sexual dimorphism of the specific behavioral strategies that are introduced later on in chapter 3.2.

Figure 4
Deriving Evolutionary Psychological Relevance from Empirical Evidence



2.2.1 BIOLOGICAL GROUPS: PHYLOGENY

Phylogenetics tries to find similarities between different species to understand a species' features and its position within the phylogenetic tree (Macphail, 1987). Phylogeny refers to "the history of the evolution of a species or group, especially in reference to lines of descent and relationships among groups of organisms" (Encyclopædia Britannica, 1998, p. 411). From a phylogenetic perspective, the history of the human species began about four 3.7 billion years ago, when the first living organisms developed on the planet (Buss, 2004).

Phylogenetics not only explains why there are different species but also why there are *sexually reproducing* species consisting of males and females. The first living organisms on the planet reproduced asexually (cf. Dodd et al., 2017). So why did at some point a first species develop that reproduced sexually? Since asexual reproduction does not require the high costs of intersexual selection (e.g., the peacock's feathers) and intrasexual competition (e.g., death through a competitor's aggression), it is less costly. For sexual reproduction to develop, it hence must have offered a considerable advantage. Geary (2010, p. 26) summarizes three of the main theories that illustrate the benefits of sexual selection: (1) mutations, (2) ecological adaptations, and (3) parasite resistance (Keightley & Eyre-Walker, 2000; Williams & Mitton, 1973).

(1) Genetic mutations, which mostly result from mistakes in DNA repair and replication (Crow, 1997), are assumed to be responsible for many beneficial adaptations of modern species. However, in most cases, genetic mutations are harmful to a species (Kondrashov, 1988; Peck & Eyre-Walker, 1997). During asexual reproduction, an individual usually produces an exact copy of its DNA. However, if a harmful mutation occurs, its offspring might not be able to reproduce, thus eliminating it from the population. Since during sexual reproduction, each parent contributes 50% of the DNA, genetic mutations can be absorbed and have less fatal consequences to the individual (Williams & Mitton, 1973).

(2) The theory of ecological adaptation argues that if members of an asexual species are genetically identical, they will only be more likely than a sexual species to survive if their environment does not change (Charlesworth, 1993). However, as soon as its environment changes, it will not fit the new requirements of that environment, so that the sexual species will have a higher possibility to survive due to genetic variation (Williams & Mitton, 1973).

(3) Finally, the theory of parasite resistance predicts that in an asexual species, parasites are more likely to adapt to the host's defense mechanisms (e.g., the immune system). This could lead to the elimination of the lineage (Hamilton, 1980). In a sexual species, however, an adaptation to the host does not endanger the entire species since its members are genetically not identical, and their defense mechanisms vary (Ridley, 2003). In support of the theory, the genes responsible for the human immune system are the most variable type of genes ever identified (Nei & Hughes, 1991). It is still debated which of the theories above best explains the development of sexual reproduction. However, the mere existence of mainly sexual species today and the absence of sophisticated asexual species demonstrate the evolutionary advantage inherent in sexual reproduction.

The development of sexual reproduction entailed the distinction between males and females. The differing contribution to reproduction by males and females is the starting point of any behavioral sex difference. The first sexually reproducing species is hence the common ancestor of all sexually reproducing species existing today, linking them all phylogenetically. This is why, in comparative psychology, scholars often search for mental continuities between humans and animal species (Boakes, 1984; Lockard, 1971; Macphail, 1987). From a phylogenetic perspective, those continuities between species hint at a common ancestry that led to shared mental mechanisms (Tooby & Cosmides, 2005). Among the closest relatives to humans are the four species of African great apes. Those are chimpanzees, bonobos, and the eastern as well as the western Gorillas, in which chimpanzees are considered closest to humans (Pilbeam & Lieberman, 2017; Yaxley & Foley, 2019). Similar actions and reactions between African great apes and humans are considered a sign of an evolutionarily developed behavior. This also holds for sex differences. Nevertheless, due to the common ancestry of sexually reproducing species, similarities to other species also offer an indication for a behavior's adaptiveness.

Sex differences in leadership have as yet only rarely been linked to evolutionary theory. However, *evolutionary leadership theory* represents an effort to understand leadership itself from the viewpoint of human evolution. Evolutionary leadership theory argues that humans have specific psychological mechanisms that facilitate leadership as well as followership. The recurring problem that these mechanisms refer to is the act of group movement. Humans and other social species, like honeybees and baboons, are characterized by group movement that requires coordination through time and space (King, Johnson, & Van Vugt, 2009).

Especially in humans and apes, evolutionary leadership theory further proposes that leadership and followership mechanisms regulate recurring problems of conflict management (Boehm, 1999; deWaal, 1996). A growing body of empirical evidence from various fields supports the theory (for a review, see Van Vugt & Ronay, 2014). The question of how the evolutionary development of leadership may have differed between the sexes has been acknowledged (Van Vugt, 2006) but is yet to be addressed.

Scientists still face many unanswered questions concerning the evolutionary development of species. One reason for that is that many of the species that were important in the phylogenetic development of other species are now extinct. Although some species, such as dinosaurs, left behind analyzable evidence, many species probably will never be known to us. However, fossil records are to some extent there, while "fossil *behaviour* is hardly available" (Tinbergen, 1963, p. 427; emphasis added). This is a strong limitation in the field of phylogeny and makes the results of comparative psychology on different species even more relevant for inferences made about the phylogenetic tree.

2.2.2 PAST INFLUENCES OF BIOLOGICAL FACTORS: ONTOGENY

While phylogeny is concerned with an entire species' development on the group level, ontogeny is concerned with one group member's development on the individual level. Human ontogeny starts with conception and continues over the entire life span. From a biological perspective, however, most developments that occur later than early infancy are difficult to interpret because of the increasing influence of social influences that interact with the given biological conditions. Therefore, particularly ontogenetic developments that take effect prenatally and can be linked to postnatal behavior are of interest here. They rest on (1) *genetics* and (2) *the exposure to prenatal hormones*.

(1) Genetics. If a psychological mechanism is hypothesized to be an evolved trait, it should be genetically encoded (Buss, 2004, p. 71). An individual's sex is determined by the *sex chromosome* that the father contributes to the fertilization process. If it is an X chromosome, the fertilized ovum will develop into a female, while a Y chromosome leads to the development of a male fetus. At the point of fertilization, there are three basic genetic differences between the sexes: males have Y genes that women lack, women have two X chromosomes (from which one is disabled in every cell), and females receive a paternal X chromosome, while the one X chromosome in men is always provided by the mother (McCarthy & Arnold, 2008). The main purpose of the Y chromosome is the development of testes (Wade, 2013). It is comparatively small, carrying only a small number of genes (Craig, Harper, & Loat, 2004, p. 271). One of those is a gene called SRY and is the sex-determining region of the Y chromosome (Haqq et al., 1994; McLaren, 1990). Together with the gene complex testes determining factor (TDF), the SRY triggers the development of *fetal gonads* about seven weeks after fertilization, producing the first expression of sexual differentiation: the testes. If after nine weeks the production of testes has not been initiated by the TDF, e.g., due to malfunction, the genes responsible for ovary production, the female gonad, will turn on. Due to the missing SRY gene in women, this is the standard process for the development of healthy females (Mealey, 2000; Money & Ehrhardt, 1972).

One method to assess the impact of genetics on behavior is twin studies. Monozygotic twins reared in the same household share the same environment and the same DNA. Consequently, deviations in behavior between monozygotic twins are ascribed to non-shared environments such as different friends or different educations. Monozygotic twins are usually contrasted to dizygotic twins. Dizygotic twins share only 50 percent of their genes but also grow up in a shared environment with a same-aged sibling indicating comparable socialization experiences as monozygotic twins.

Twin studies have been the most used method in determining the effect of genetics on leader behavior. Research in this area started at the end of the 1990s. The idea that leaders owe their leadership position to a genetic component is, however, not as recent. In fact, the very first leadership theory from the first half of the 19th century proposed that leaders are *born*. The so-called Great Man Theory considers leadership an innate trait reserved for a few selected men (Carlyle, 1993; Spector, 2016). This way of thinking implies that the uniqueness inherent in those great men is part of their genetic code and not the result of socialization and learning processes. The goal of the trait approach of leadership was to identify what traits make Great Men great. However, despite considerable research in that field, findings kept being ambiguous (Stogdill, 1977). Researchers hence started to lose interest in leadership traits and turned to other research endeavors.

Researchers resumed their work on genetic components of leadership at the end of the 20th century. Maybe the earliest of those studies was conducted in 1998, asking the question of whether leaders are "born or made?" (Johnson et al., 1998). The authors conducted a twin study on 183 monozygotic and 64 dizygotic same-sex twin pairs, who indicated their leader behavior on three different measures. They found both transformational and transactional leadership behaviors to be explained by a considerable

amount of heritability. Genetics explained forty-eight percent of the variance in transactional and 59 percent of the variance in transformational leadership in univariate analyses. Unfortunately, the authors removed sex differences from their analysis to avoid confounding. Another twin study conducted in the USA on 214 monozygotic and 178 dizygotic twins largely confirmed Johnson and colleagues' (1998) results reporting that 49 percent of the variance in transformational leadership was explained by genetic factors (Chaturvedi et al., 2011). However, the study used only female twin pairs for its purpose so that no statements about sex differences in leader behavior can be derived.

On the other hand, a Swedish large-scale twin study on 1,285 monozygotic and 849 dizygotic twin pairs tested to what extent genetics affect men's and women's tendency to become entrepreneurs (Zhang et al., 2009). It found a significant sex difference. While in women, 60 percent of variance in the tendency to become entrepreneurs was explained by genetics, in men, zero(!) percent could be attributed to genetics. Instead, the shared environment explained a similar amount of variance in male twins' tendency to become entrepreneurs as the genetic influence explained in female entrepreneurship. Their finding was supported by other research (Nicolaou et al., 2008). The authors argue that the participating women were not encouraged to become entrepreneurs by their social environment, while for men, it seemed to be vital to receive social support in becoming entrepreneurs. However, research on genetic effects on leader behavior and differences in men and women is still in its infancy. Although the first results seem to hint at the existence of differences, their causes and effects on behavior remain notional for the time being.

(2) Prenatal hormones. Once the fetal gonads have developed, they produce sex steroids. The testes in males primarily produce *testosterone*, while the ovaries in females primarily produce *estrogen*. These hormones act on many different tissues in the body, guiding them to develop sex-specificity (Browne, 2002, p. 109). Sex-specific differentiations mainly concern permanent organizational effects, like the fetal genitalia and the fetal brain (McCarthy & Arnold, 2008). In addition to the fetus's own hormone production, the mother's hormone levels can affect the development of the fetus at this point. For instance, mothers classified as high-risk pregnancies are sometimes treated with a variety of hormones, of which some have masculinizing or defeminizing effects, while others have feminizing or demasculinizing effects (Browne, 2002, p. 112).

In a normal fetus, exposure to sex hormones leads to the development of sex-specific genitals. Although the testes and ovaries, respectively, are already present, the fetus only now develops external genitals (Mealey, 2000, p. 15). At this point, genetic anomalies like congenital adrenal hyperplasia (CAH), androgen insensitivity syndrome, and 5-alpha reductase pseudohermaphroditism can lead to the development of male genitals in female fetuses and the development of female genitals in male fetuses. These anomalies have been particularly interesting for research on sex differences because they demonstrate the effect of prenatal hormone exposure. However, only congenital adrenal hyperplasia is elucidated subsequently because it has the highest prevalence among those anomalies and was accordingly used the most for assessing sex differences in behavior.

Congenital adrenal hyperplasia (CAH) is a genetic anomaly that leads to the development of male genitals in chromosomally (XX) female fetuses. The condition leads to prenatally enlarged adrenal glands, which therefore produce exceedingly high amounts of androgens, including testosterone. Since the supply of male sex steroid hormones triggers the development of genitalia, the abnormally high exposure to androgens leads to the development of male genitals, despite the individual being chromosomally female (Lippa, 2005, p. 122). CAH is usually diagnosed right after birth. The girls are treated with supplemental estrogen, and their genitals are surgically corrected so that they can live on as regular girls. Many studies have examined the behavior and attitudes of CAH females because they offer the rare condition of individuals having been reared as females, who were exposed to significantly higher

testosterone levels prenatally than healthy females (Browne, 2002). Hence, their behavior sheds light on the effect of the male sex-steroid on the uterine development of behavioral mechanisms. As will be demonstrated in section 3.2, CAH girls' behavior is more male-typical in some domains compared to healthy control groups.

Although genetic anomalies offer a possibility to derive the effects of prenatal testosterone exposure on sex differences in behavior, they have not been used for leadership research yet. Genetic anomalies are rare, and the pool of potential study participants is accordingly small. Due to small sample sizes, most research on sex differences using samples of patients with genetic anomalies lacks the statistical power to make statements about sex differences in behavior. Additionally, leadership researchers are not familiar with clinical samples and the acquisition of such groups for research purposes.

Another approach to assess leaders' prenatal testosterone exposure is the *second to fourth finger digit ratio* (2D:4D). This ratio has been demonstrated to be sexually dimorphic in humans, with females having a .25 standard deviations *higher* digit ratio than males (Manning et al., 2000). A low 2D:4D ratio implies strong uterine exposure to testosterone, whereas a high 2D:4D digit ratio implies low testosterone exposure prenatally.

2D:4D digit ratio is a useful proxy for sex differences in prenatal testosterone exposure for several reasons (Hönekopp & Bartholdt, 2007). Among those are that the sex difference in 2D:4D has been substantiated in the fetus as early as the end of the first trimester (Malas et al., 2006), that the same genes carry the information for genital as well as digit development (Kondo et al., 1997), that the second substantial hormonal development phase during puberty does not affect digit ratio (McIntyre et al., 2005; Trivers et al., 2006), that CAH girls have lower 2D:4D ratios than unaffected girls (Brown et al., 2002; Ökten et al., 2002), and that females with a male co-twin have lower 2D:4D values (Van Anders et al., 2006). The latter is supposed to occur because the female twin is exposed to more testosterone in the amniotic fluid she shares with her brother than females in a single pregnancy. Because assessing digit ratios is non-invasive and can easily be done by anyone, 2D:4D is a common method to assess prenatal testosterone exposure.

In management research, a few studies have utilized 2D:4D to assess the effects of prenatal testosterone levels. Their findings, however, are as yet scattered and do not paint a cohesive picture on the relationship between prenatal hormones and leadership behavior, let alone between prenatal hormone exposure and sex differences in leader behavior. One study based on a sample of male German entrepreneurs reports that 2D:4D is negatively related to entrepreneurs' need for achievement, but not to their success (Unger et al., 2015). Contrary to this study, another study reports that high prenatal testosterone exposure was related positively to company success as well as the entrepreneur's commitment to strategic goals (Trahms, Coombs, & Barrick, 2010). Yet another study did not assess the relationship between prenatal testosterone and success but investigated how prenatal testosterone exposure affected students' intentions to become entrepreneurs (Bönte et al., 2015). The results support the hypothesis that prenatal testosterone exposure positively affects entrepreneurial intention mediated through risk-taking – a trait that has been frequently demonstrated to be higher in males than females (Byrnes, Miller, & Schafer, 1999). In one study, women entrepreneurs had even smaller digit ratios than their male counterparts (Guiso & Rustichini, 2011). This effect was even stronger in regions where women were less emancipated. The findings indicate that entrepreneurship is linked to traits and/or skills that positively correlate with testosterone. However, the operationalization of entrepreneurship in those studies mostly did not entail leadership *behavior*, indicating only limited explanatory power for the research question at hand.

Infancy. After birth, society assigns a sex to the newborn child, which usually depends on the external genitals. The child's sex influences the parents' explicit and implicit behavior in nurturing and

the environment's reaction to the infant (Mealey, 2000, p. 18). That is where sex-specific socialization starts. Nevertheless, sex differences in infants' behavior are considered indicators of biological influences. At the age of two, children start developing a gender identity, i.e., they can tell their own and other children's sex. Sex differences in behavior that occur *before* gender identity sets in are considered to have a biological origin because social influences at that time are still comparatively low (Lippa, 2005, p. 138; Maccoby & Jacklin, 1974). Accordingly, behavioral sex differences in infants could indicate an innate sex difference that rests on psychological mechanisms that developed over the course of evolution. For example, if female infants demonstrated higher levels of empathy than male infants towards a crying individual, this could indicate a biological mechanism that is also present in female leaders. Hence, sex differences in infancy can be indicators for biologically facilitated sex differences in leader behavior that deserve further attention.

It is, however, important to note that even infants (between 0 and 24 months of age) show differences in behavior across cultures and socioeconomic classes, demonstrating the strong impact of social influences (Bornstein, Arterberry, & Lamb, 2014, p. 46). Even if cultural factors are controlled, behavioral evidence derived from studies on infants will always be controversial (Ruble, Martin, & Berenbaum, 2006). Infants are usually not motivated to participate in scientific studies and are accordingly not cooperative. They cannot interact verbally with the researcher, so instead, research paradigms rest on the length of gaze. Furthermore, infants have limited attention spans, and the variability in infant behavior is high, making their reactions and behaviors hard to decipher (Lamb, Bornstein, & Teti, 2002, p. 25).

In sum, past biological influences, i.e., the different genetic makeups of men and women and their different early development, indicate behavioral sex differences, but their impact on leader behavior has hardly been investigated as yet. Genetics and prenatal hormones impact some variables that are linked to leader behavior, but understanding them and their contribution to sex differences between male and female leaders in detail requires further research. The existing studies are still valuable to the research question since they demonstrate that there is a biological share in why some behaviors are more pronounced in one sex and less pronounced in the other.

2.2.3 CURRENT BIOLOGICAL INFLUENCES: MECHANISMS

Human ontogeny becomes manifest in (1) *neurological* and (2) *endocrine* mechanisms that guide behavior. Neurological mechanisms refer to brain structures and functional areas that first develop in utero and then due to the brain's plasticity in interaction with environmental factors and hormone influences. Endocrine mechanisms here refer to ad hoc hormone releases triggered by situational factors. Both neurological and endocrine mechanisms contribute to men's and women's behavioral actions in a given situation. If those mechanisms vary across sex, they will be likely to lead to sex differences in men and women leaders' behavior.

(1) Brain Mechanisms. Neurological mechanisms that cause sex differences in behavior are primarily located in the brain. The brains of vertebrates, including humans, consist of basically three parts: the prosencephalon, the mesencephalon, and the rhombencephalon, and are also referred to as forebrain, midbrain, and hindbrain. Since the hindbrain and midbrain are primarily responsible for very basic and vital body functions, such as breathing, heart rate, temperature regulation, reflexes like vomiting or sneezing, sleep, and wake, those brain regions are considered irrelevant for the scope of this research project. Sex differences in these areas of the brain are assumed not to be responsible for adaptive behaviors that solve the issues of parental investment and mating efforts (Bear, Connor, & Paradiso, 2007).

The forebrain in humans develops into two different areas, the diencephalon and the cerebrum. The diencephalon is not taken into account for similar reasons as given for the hindbrain and midbrain. Although the diencephalon's functions, e.g., distributing information to higher brain regions and regulating homeostasis, are vital, they are not considered directly linked to behaviors that are related to adaptive behaviors in terms of mating and parenting. Hence, the relevant brain region for the current research is the *cerebrum*, which is the largest part of the brain and contains the cerebral cortex and subcortical structures, including the basal ganglia and the limbic system. The cerebrum consists of two cerebral hemispheres, which are divided by the medial longitudinal fissure. The two hemispheres are primarily connected through the *corpus callosum*, which consists of 200-250 million axonal projections that enable the two hemispheres to exchange information. All areas in the cerebrum that consist of axons connecting neurons are called *white matter*, while those areas which mainly consist of neuronal bodies are called *grey matter* (Bear, Connor, & Paradiso, 2007).

The *cerebral cortex* is the outer part of the cerebrum and builds 80% of the brain mass. Its function contains all voluntary actions in the body. In order to fit into the human skull, the cortex has a closely folded structure made of *gyri* and *sulci*. The two most prominent sulci are the central sulcus and the lateral sulcus, which is also referred to as the Sylvian fissure. They are used to divide the cerebral cortex into four parts: the *frontal lobe*, the *parietal lobe*, the *occipital lobe*, and the *temporal lobe*. Since the cerebrum consists of two cerebral hemispheres, each lobe can be found on each hemisphere, so that there is, for example, a right and a left frontal lobe, or a right and a left parietal lobe. Cerebral brain regions involved in the psychological mechanisms included in the framework are introduced in more detail within the respective subsections (Bear, Connor, & Paradiso, 2007).

Brain research on sex differences has mostly focused on structural and connective differences, i.e., differences in size and interconnectedness of different regions. It has been proposed though that physiological differences, i.e., those that refer to neurochemicals and excitability of neurons, are more strongly related to sex differences. Unfortunately, such studies remain rare (McCarthy & Arnold, 2008). Nevertheless, research on structural and connective sex differences provides some compelling evidence for sex differences in brain anatomy (Kimura, 1992; McCarthy et al., 2012; Ruigrok et al., 2014).

Between the end of the first and the beginning of the second trimester of pregnancy, the sex steroid hormones issued by the fetal gonads start their organizing effect on the fetal brain. Not much is known about the specifics of these organizing effects because there is no appropriate equipment to monitor the development of the fetal brain in the mother's womb, and miscarried fetuses are usually not dissected for research (Mealey, 2000, p. 16). It still has been proposed that the *hypothalamus* is organized sex-specifically in this period. The hypothalamus is the 'master gland' and essentially regulates all hormone production and release in the body (Mealey, 2000, p. 16). Hence, the female-specific hypothalamus regulates, amongst others, the female monthly hormonal cycle and the male-specific non-cyclical hormone production after puberty (Breedlove, 1992). Although not monitored directly, other brain areas also seem to be affected by prenatal hormone exposure. Brain asymmetry, which has been of great interest to researchers investigating sexual dimorphism in the brain, positively correlates with prenatal levels of testosterone (Grimshaw, Bryden, & Finegan, 1995; Levy & Heller, 1992). Similarly, the corpus callosum also showed proneness to prenatal hormone exposure (e.g., deLacoste, Holloway, & Woodward, 1986; Holloway et al., 1993; Johnson et al., 1994).

Although the potential of neuroscientific work for management research is being more and more acknowledged, empirical evidence on the matter is still scarce. In their extensive literature review on biology and management, Nofal and colleagues (2018) summarized the current state of research as follows:

Although scholars in entrepreneurship ..., leadership ..., human resource management ..., and other management areas ... have started to recognize the value of neuroscientific methods to organizational disciplines, it is surprising that we know very little about the role of neuroscience in management, as the literature is mainly conceptual: Out of the 115 retrieved studies, we found 25 empirical articles incorporating neuroscience into management research. (Nofal et al., 2018, p. 17)

A few of the empirical studies they cite investigated the relationship between neurobiology and leadership. Waldman et al. (2011) found that coherence in right frontal cortex structures correlated with the formation of a socialized visionary communication. As a consequence, leaders with higher right frontal coherence were more likely to be perceived as inspirational by their leaders, which is an important attribute of transformational leadership (Seltzer & Bass, 1990) or charismatic leadership (Fuller et al., 1996). Hannah et al. (2013), on the other hand, reported that lower levels of coherence in the frontal lobes were related to greater adaptive decision making, which contributes to leader self-complexity. Only one of the studies identified by Nofal et al. (2018) distinguished between men and women; however, it did not focus on leaders but on regular workers in corporate settings (Kawasaki et al., 2015). Furthermore, it assessed the effects of work-related stress and did not look at behavior.

In the end, no research has as yet assessed neurobiological correlates of leadership and investigated them for sex differences. Nevertheless, neuropsychological studies can provide interesting insights into individual behaviors irrespective of leadership contexts, as will be demonstrated in the next chapter. These studies distinguish between male and female participants and find systematic differences in brain activities, brain structures, and behavioral outcomes between the sexes. To avoid misinterpretations or overinterpretations of these findings, the reader should be aware of the limitations in neuroscientific brain research.

First of all, sample sizes in brain research are often comparatively small, making representativeness an issue (Button et al., 2013; Lindebaum, 2016). Furthermore, interpretations of brain reactivity are tricky. Brain research studies can only demonstrate correlations between brain activity and social interactions, but not causality. Therefore, results can be distorted by distractions or moderating variables in the research setting. Using self-reports and measuring external bodily responses such as Galvanic skin response and facial electromyography, researchers attempt to reduce misinterpretations to a minimum.

If a sexual dimorphism emerges, its connection to behavioral outcomes is not clear. In many studies, linking sex differences in brain structure to sex differences in behavior lies outside their scope. Some suggested that sex differences in behavior might have evolved to *compensate* for bodily sex differences and hence lead to more uniform behavior of men and women (de Vries & Forger, 2015; Grabowska, 2017). Others highlight that similar brain activations across individuals do not necessarily result in similar actions (Ryan, 2017). Further, the size of neuroanatomical sex differences is often unclear and remains debated among researchers (McCarthy, 2016). Finally, anatomical sex differences do not need to be the result of heritable adaptations. The brain is highly adaptable and changes its anatomy during the life course. Whether a certain sex difference is biologically enhanced or just the result of an individual's life history and cultural adaptation remains unanswered in most studies on sex differences in the human brain (McCarthy, 2016). A recent analysis warns about a considerable publication bias in the field. The publication bias overemphasizes the importance of neurological differences found because studies that find no differences are not published (David et al., 2018).

(2) Hormones. Although the brain is an important mechanism facilitating sex differences in behavior, it is not the only one. The brain's configuration is highly dependent on hormonal influences. Hormones are neurotransmitters that facilitate communication within the brain and between the brain and other body parts via the bloodstream. Men and women have the same types of hormones cycling within their bodies so that there is no exclusively male or female hormone that could be made

responsible for sex differences in behavior. However, hormone release, hormone levels, and the timing of exposure do differ between the sexes (Browne, 2002, p. 109). Various hormones have received attention by the organizational behavior literature and in research concerned with sex differences in behavior. These include testosterone, dopamine, oxytocin, serotonin, and cortisol (Nofal et al., 2018, p. 15). Nevertheless, the current research will concentrate on the sex steroid *testosterone* and the neuropeptide *oxytocin*, because they are among the most researched and their levels vary consistently across the sexes.

Testosterone plays a crucial role in sexual differentiation; its concentration differs significantly between men and women, with men having considerably higher testosterone levels (Archer, 2006b). Furthermore, it is one of the most investigated hormones in management research (Nofal et al., 2018, p. 15). Testosterone's effect on behavior is well-researched, especially compared to other hormones (Kemper, 1990), and much of that research suggests that testosterone is related to social behavior (Nieschlag, Nieschlag, & Behre, 2004). Baseline levels of testosterone are highly inheritable (Gagnon et al., 2001; Harris & Vernon et al., 1998; Meikle et al., 1986), indicating that evolutionary pressures should have molded testosterone levels to support parenting, mating, and intersexual as well as intrasexual competition.

Testosterone is an androgenic hormone that is responsible for the development of male characteristics. It is produced mainly in males' testes. In women, it is produced by converting the steroid hormone dehydroepiandrosterone produced by the adrenal glands. According to the organizational activation hypothesis, the effect of testosterone on behavioral sex differences starts with the *organizational* effects that occur as soon as the male testes start producing it (Phoenix et al., 1959). These effects concern the development of brain structures that affect the brain's reaction to ad hoc hormone releases, i.e., *activational* effects. For example, a boy prenatally exposed to above-average testosterone levels might develop an enlarged hypothalamus (= organizational effect), which then reacts more sensitively to short-term testosterone release (= activational effect; Arnold & Breedlove, 1985). While organizational effects refer to permanent effects on body tissue, including the brain, activational effects refer to short-term, situational effects triggered by spontaneous exposure to hormones (Browne, 2002, p. 109; Liben et al., 2002). Activational effects hence facilitate the individual's adaptation to environmental stimuli, such as a suddenly appearing predator, which require a quick behavioral response.

Oxytocin is considered a female hormone because it is related to exclusively female mechanisms such as uterine and cervical contractions, parturition, and lactation (Bethlehem et al., 2013; Salonia et al., 2005). At the same time, it is related to a range of prosocial behaviors, which is why it is also referred to as "love hormone" (Bartz et al., 2011). Oxytocin levels are considerably higher in females than in males (Carter, 2007; Lee, Macbeth, Pagani, & Young, 2009). Oxytocin is produced in the posterior pituitary gland, which is located in the subcortical region of the brain. It does not easily go through the blood-brain-barrier, and hence oxytocin levels in blood or saliva do not adequately represent oxytocin levels in the brain (Kagerbauer et al., 2013). As a result, oxytocin levels in individuals are difficult to assess. In studies testing the effects of oxytocin on behavior, participants are hence usually administered oxytocin via nasal spray. Comparing the behavior of an experimental group that was administered oxytocin with an untreated control group sheds light on the relationship of oxytocin and behavior. Testosterone, on the other hand, is most commonly measured via salivary samples (Vongas & Hajj, 2015a) and can therefore easily be assessed in naturalistic settings (Booth et al., 2006).

Maybe due to ease of assessment, various studies have already assessed the effect of testosterone on leaders, whereas the effect of oxytocin on leaders has not been addressed yet in the scientific literature. Nofal and colleagues (2018) identified 25 studies that empirically assessed the relationship between

testosterone and management-related topics. Several studies report that testosterone levels account for entrepreneurship (Dabbs, de la Rue, & Williams, 1990), competitiveness (Schipper, 2014), risk-taking (Sapienza, Zingales, & Maestriperi, 2009), levels of achievement (Dabbs, 1992; Schindler, 1979), self-employment (Greene et al., 2014), job complexity (Purifoy & Koopmans, 1979), and new venture creation (White, Thornhill, & Hampson, 2006, 2007). A meta-analysis, however, reported no relationship between basal testosterone levels and leadership style (Van der Meij, Schaveling, & Van Vugt, 2016).

More recent research claims an interaction effect of testosterone and cortisol, making studies that look exclusively at testosterone difficult to interpret. One study investigated the effect of testosterone on leader behavior in both men and women (Mehta & Josephs, 2010). Based on an experimental design, it found that higher levels of testosterone - given low levels of cortisol - led to more dominance-oriented behavior in both men and women. Hence, testosterone had the same effect on both sexes. A similar study conducted in a natural setting confirmed testosterone's effect on dominant leadership behavior but included only male study participants (Sherman et al., 2016). These results substantiate that the different testosterone levels in men and women may facilitate sex differences in leader behavior.

Many studies concentrate on exclusively male or female samples in order to show how testosterone levels can affect management-related factors (e.g., women only: Purifoy & Koopmans, 1979; Schindler, 1979; men only: Greene et al., 2014; Van der Loos et al., 2013; White, Thornhill, & Hampson, 2006; 2007). Other studies expected a confounding effect of gender and hence controlled for participant sex (e.g., Bendahan et al., 2015; Zyphur et al., 2009). Some studies, however, reported no link between testosterone levels and entrepreneurial behavior (Van der Loos et al., 2013) and status of attainment in groups (Zyphur et al., 2009). Again, other studies found an effect of testosterone but also report a sex difference for that effect. For instance, higher testosterone levels were related to higher levels of risk-taking behavior, and this effect was stronger in women than in men (Sapienza, Zingales, & Maestriperi, 2009).

Although the number of findings on the relationship between testosterone and leader behavior is steadily rising, their explanatory power is mitigated by various limitations (for an overview, see Pfaff, Rubin, Schneider, & Head, 2018). First, hormone studies usually concentrate on *within*-sex behavior but suggest that differences found within the sexes also refer to differences *between* the sexes (Zyphur, Narayanan, Koh, & Koh, 2009). For example, if high-testosterone female leaders demonstrated more aggressive behavior than low-testosterone female leaders, male leaders were automatically assumed to be more aggressive than female leaders because men's testosterone level is higher than women's. This is an "inferential leap" derived from the fact that the sex hormones of men and women differ (Lippa, 2005, p. 131). That assumption would only hold if women's and men's endocrine systems reacted identically to comparable situations, and if the relationship between hormones and behavior was strictly linear.

Vongas and Hajj (2015a) provide an excellent example of how hormones respond differently to stressful situations across sex. In a stressful situation, men will show *decreasing* levels of testosterone if the situation is related to negative stress and show *elevated* levels of testosterone when it is related to positive stress. Women, however, show elevated levels of testosterone when confronted with both positive stress and negative stress. Vongas and Hajj (2015a) argue that this is why women are less likely than men to give up or throw in the towel after a defeat. These diverging bodily reactions result from men's and women's different endocrine mechanisms. In men, stressful situations trigger both the production of testosterone in the testes and the production of cortisol via the hypothalamic-pituitary-adrenal axis. Cortisol, however, inhibits testosterone production in the testes. Stressful situations hence have both an elevating and an inhibiting effect on testosterone production in men. In women, however,

the gonads produce only marginal amounts of testosterone, so that inhibiting mechanisms caused by cortisol hardly affect overall testosterone levels. As a consequence, the direction of testosterone change differs in men and women in certain status-related situations (Vongas & Hajj, 2015a). This example demonstrates the complexity of endocrine mechanisms. Despite the evidence that testosterone has behavior-regulating effects, interaction effects with other hormones might distort the results. These distortions can be different across sex.

The linearity of the relationship between hormones and behavior is another issue of concern. In various studies, the relationship between testosterone and behavior was U-shaped, indicating that individuals with especially low or high levels of testosterone perform worse on certain tasks than individuals with moderate levels of testosterone (Grimshaw, Sitarenios, & Finegan, 1995). Accordingly, a study that found female leaders with high testosterone levels to be more dominant than female leaders with low testosterone levels would not necessarily imply that men are more dominant than their female colleagues. If the relationship between dominance and testosterone was U-shaped, men's excessively higher testosterone levels would indicate *less* dominant behavior than in high testosterone women leaders.

Finally, the explanatory power of existing hormone research is limited by the matter of causality. For example, research shows a positive correlation between testosterone levels and social success in men (Mehta, Jones, & Josephs, 2008). However, it is unclear whether socially successful men are successful because of their high testosterone levels or whether their testosterone levels are high because of their success. In fact, scholars argue that there is no simple causal effect of hormones on behavior. Instead, the relationship is better described as bi-directional because it depends on individual differences in perception, previous experiences, and social context. Accordingly, testosterone does not cause behavior but increases the probability for a specific behavior depending on the specifics of the social situation (Booth et al., 2006; Sapolsky, 1997). Although oxytocin has as yet not been used for the assessment of leader behavior, all of the limitations addressed for testosterone's effect can be transferred to oxytocin and other sex-steroids.

In sum, research provides many indications that testosterone levels (which are highly heritable and are hence shaped by evolutionary forces) affect leader behavior in both men and women, although research directly addressing the matter is scarce. Because testosterone levels vary across the sexes, it is assumed that they lead to differences in behavior. However, research also indicates that the relationship between testosterone and managerial behavior has not been fully understood yet since the existing research succumbs to several limitations.

Summary. Two meta-theories have been consulted to map the theoretical terrain of research on sex differences in leadership: social structural meta-theory and evolutionary psychology meta-theory. Social role theory highlights the importance of social-structural differences for men and women in most societies and how they become manifest in the division of labor and resulting gender stereotypes. Evolutionary psychology theory, on the other hand, concentrates on the adaptive mechanisms that evolved differently for men and women over the course of human history due to the different recurring problems they faced based on biological differences in reproductive mechanisms such as gamete size and parental investment.

Both meta-theories comprise many subordinated theories and phenomena that can be clustered on four different levels that influence sex differences (or a lack thereof) from a group, inter-individual, and intra-individual perspective. Social structural meta-theory makes no clear prediction about what to expect from female leaders. Will they, as postulated by social role theory, adhere to their historical social role within patriarchic systems and act according to female stereotypes? Or are they going to adapt to the male cultures of organizations and leadership and adapt to stereotypically male behaviors? The meta-

theory of evolutionary psychology, on the other hand, postulates the existence of sex differences in behavior due to different underlying psychological mechanisms in men and women that have evolved based on adaptive pressure for thousands of years. Hence, *it also predicts sex differences in the behavior of male and female leaders*. Nevertheless, evolutionary psychology acknowledges humans' flexibility and adaptability to socio-environmental requirements as a fundamental trait. Hence, evolutionary psychology meta-theory admits that female leaders might adapt to the socio-cultural impact of gendered organizational cultures, which, in return, could reduce or even extinguish sex differences in visible behavior.

Most empirical research on sex differences in leader behavior has drawn on social structural theory or taken a behaviorist approach (i.e., no assumptions about the origin of behavior). Its results have often been inconclusive, ambiguous, or contradictory. Empirical research from the evolutionary psychology perspective, on the other hand, is very rare. This is because the inclusion of biology into management-related topics is still in its infancy. Although considerable efforts were made to integrate the two fields theoretically and conceptually, empirical research is scarce.

3 INTRODUCING AN EVOLUTIONARY PSYCHOLOGY-BASED FRAMEWORK OF SEX DIFFERENCES IN LEADER BEHAVIOR

To answer the first research question (*RQ1a*), *which sex differences in leadership exist theoretically from an evolutionary psychology perspective of behavior?*, a framework of sex differences in leader behavior from an evolutionary psychology perspective is developed. This framework needs to entail sex differences in behaviors that can be linked to evolutionary psychology, i.e., an adaptive benefit inherent in the sex-specific behavior.

Before a new framework on SDL can be developed, the existing one that is used by social structure meta-theory needs to be analyzed for its limitations in order to understand the requirements and assessment criteria of a new one. Accordingly, the forthcoming section 3.1 reviews the behavioral framework suggested by social structures and finds that according to the framework male leaders demonstrate agentic and female leaders demonstrate communal behaviors. The idea of agency and communion is frequently equated with gender stereotypes. Gender stereotypes are limited in predicting actual leader behavior because their specifics and scope can vary, as findings across studies demonstrate. Nevertheless, the bulk of the SDL literature acts on the assumption that leadership styles are closely related to agency and communion as well as gender stereotypes.

Most studies assessed differences between the sexes in leadership *styles* and derived conclusions about leaders' gender stereotypicality. As demonstrated in detail in section 3.1.3, the conclusions about sex differences in leadership styles are, however, inconclusive and provide little understanding of SDL. Other quantitative approaches have hence focused on specific behaviors, such as risk-aversion, ethical behavior/corporate compliance, and innovativeness or inductively developed individual leadership scales. Due to the small number of studies and even at this stage contradicting results, these efforts only marginally improve the situation in the SDL field. Qualitative approaches to SDL consistently report differences in male and female leaders' behavior. They indicate that the preformed assumptions of quantitative analyses prevent researchers from identifying behaviors that differ between men and women. Unfortunately, qualitative research in the field is insufficiently linked to existing research and does not engage in theory-building but falls back on those leadership styles for which quantitative assessments failed to generate conclusive findings.

In section 3.2, a new framework of sex differences in leader behavior is introduced. The framework is not limited to highly specific behaviors as this would prevent the researcher from identifying behaviors that showed sex differences in leadership which were overlooked by others, who based their research on the agency-communion-dichotomy. Instead, the final framework distinguishes between men's and women's different motives for structuring their social environment. It assumes that for men, it is more adaptive to build dominance hierarchies, whereas, for women, egalitarian communities are more adaptive. As a result, different strategies have evolved between the sexes to organize their social groups. The framework is based on men's and women's motives for organizing their social environment and their corresponding strategies which are explained in detail in the respective subsections.

3.1 THE FRAMEWORK OF SEX DIFFERENCES IN SOCIAL STRUCTURAL THEORY: AGENCY VERSUS COMMUNION

Agency and communion are the cornerstones of the framework that guides social structural-based research on sex differences in leadership. The dichotomy is linked to stereotypes about being feminine and masculine, although that link is weakly researched, and attributes derived from it are volatile and not clearly distinguished from one another. The dichotomy is also transferred to research on leadership

styles. Some behavioral styles are believed to concur with feminine characteristics more than with masculine characteristics, whereas, for other styles, the opposite is true. However, empirical findings on sex differences in leadership styles based on the dichotomy of agency and communion rather confirm the prediction of social structure theory on the organizational level that there are no sex differences in behavior. These findings contradict the dichotomy of agency and communion.

Nevertheless, meta-analyses regularly found at least small differences in leadership behavior between men and women. Studies focusing on specific behavioral patterns outside of leadership styles report clearer and more consistent sex differences. The same is true for qualitative research on sex differences in leadership. However, many studies on SDL, irrespective of their research paradigm or behavior variable, build only loosely on the framework of agency and communion underlying social structure theory and do not convince in claiming or denying differences between male and female leadership.

3.1.1 AGENCY AND COMMUNION AND THEIR RELATIONSHIP WITH GENDER STEREOTYPES

Social structural theory rests on at least two principles that predict differences in male and female behavior. The first meta-theoretical principle posits that social structures entail men occupying *positions of higher power and status*, which leads to more dominant behavior in men as compared to women (Eagly & Wood, 1999; Ridgeway & Diekema, 1992). In contrast, *women's societal positions of lower power and status* lead to more submissive behavior in women as compared to men. Dominant behavior in this sense is controlling, assertive, directive, and autocratic, whereas submissive behavior is being compliant to social influence, appeasing, and cooperative as well as conciliatory (Eagly & Wood, 1999).

The second meta-theoretical principle results from the first one and concerns the skills that men and women acquire to adapt to their assigned social roles. Women's traditional social role as homemakers requires them to adopt domestic skills such as child-rearing, cooking, cleaning, while men in their roles as resource providers (Eagly & Wood, 1999) acquire skills that are marketable in their respective paid economy. These skills again relate to behaviors that are termed by social structural theory as *agentic* and *communal* (Eagly, 1987).

The distinction between agency and communion stems from psychologist David Bakan's philosophical essay "Duality of Human Existence: An Essay on Psychology and Religion" (1966). In this essay, he does not specifically address sex differences with his famous terms of agency and communion, but describes "*two fundamental modalities in the existence of living forms*, agency for the existence of an organism as an individual, and communion for the participation of the individual in some larger organism of which the individual is a part" (Bakan, 1966, p. 14; emphasis added by the author). He uses the terms to describe the individual as a distinct organism (agency), as opposed to the individual in connection to a larger system or organism (communion). He describes the two terms as follows:

Agency manifests itself in self-protection, self-assertion, and self-expansion; communion manifests itself in the sense of being at one with other organisms. Agency manifests itself in the formation of separations; communion on the lack of separations. Agency manifests itself in isolation, alienation, and aloneness; communion in contact, openness, and union. Agency manifests itself in the urge to master; communion in noncontractual cooperation. Agency manifests itself in the repression of thought, feeling, and impulse; communion in the lack and removal of repression. One of the fundamental points which I attempt to make is that the very split of agency from communion, which is a separation, arises from the agency feature itself; and that it represses the communion from which it has separated itself. (Bakan, 1966, p. 14-5)

Agency represents solitude, independence, action instead of thought, and self-involvement. Communion, on the other hand, is characterized by being part of a group, display of emotions, openness, and concern for the collective organism. According to Bakan's description, the two constructs of being

agentic and being communal are mutually exclusive. Individuals cannot be agentic and communal at the same time because agency “represses” communion.

Within the SDL literature, the dichotomy of agency and communion introduced by Bakan (1966) is commonly applied as synonymous to *gender stereotypes*. Accordingly, male stereotypes represent agency, whereas female stereotypes represent communion (cf. Block, 1973; Gibson, 1995). However, in many instances it seems the original meanings of the terms have been appropriated and used as shorthand catch-alls representing an unorganised list of adjectives associated with gender stereotypes.

Sandra Bem (1974), for example, a key researcher of gender stereotypes and androgyny, used a list of 400 adjectives. She presented it to respondents, who then indicated to what extent they thought the respective adjectives indicated typically masculine, feminine, or neutral traits. The list had no scientific basis but was made up by Bem and her staff in an unsystematic brainstorming approach (Williams & Bennett, 1975). Bem's somewhat random conceptualization of gender stereotypes has been highly influential for subsequent work on gender differences, and the resulting Bem Sex Role Inventory (BSRI) is still a frequently used measure to assess gender identity. Somewhat more systematic are other researchers' approaches, which rely on theoretically-founded adjective lists like Sarbin's adjective list (1954; Sherriffs & McKee, 1957; Werner & LaRussa, 1985) and Gough's Adjective Check List (Gough & Heilbrun, 1965) that represent attributes that describe people irrespective of sex (Williams & Bennett, 1975). These lists, however, lack theoretical bases that take gender into account. One noticeable exception is Block (1973), who explicitly based her classification of masculine and feminine on Bakan's dichotomy. She had four psychologists assess adjectives in terms of agency and communion based on Bakan's definitions of the two terms. Unfortunately, however, the underlying adjective list is not further specified in terms of origin and content.

Although the concepts of masculinity/femininity and agency/communion, respectively, seem to concur at first in their illustration of male and female attributes, a closer look at the different underlying concepts and theoretical frameworks (or the lack thereof) leads to confusion concerning their exact meaning. Comparing the above-mentioned works of Block (1973), Bem (1974), Williams and Bennett (1975), and Werner and LaRussa (1985) illustrates that point. In all of the four publications, the respective author(s) assessed differences in subjects' perceptions of men and women. Block (1973) and Bem (1974) use self-provided adjective lists, and Williams and Bennett (1975), as well as Werner and LaRussa (1985), use the often-applied Adjective Check List (ACL). Tables 1 and 2 summarize all adjectives, traits, and behaviors that participants perceived as typical of men and women, respectively. Adjectives, traits, and behaviors that yielded no distinct significance in representing masculine or feminine traits were not included in the tables.

Comparing the four publications reveals at least four aspects that make predicting behavioral differences in men and women based on stereotypes difficult. First of all, the sheer number of adjectives, traits, and behaviors that are found to be typical of men and women is overwhelming and confusing. The four studies alone present 66 adjectives to characterize men and 67 individual adjectives to characterize women. These adjectives, however, are probably not semantically independent. For example, it is very likely that being ambitious and being competitive overlap in their meaning to respondents. At the same time, some adjectives are ambiguous in their meaning. What does being childlike, for instance, entail? Is being childlike the same as being childish? How does it differ from being dependent or shy? Does it represent a positive or a negative connotation to respondents?

The non-specificity of individual adjectives also complicates comparison across studies and, at the same time, decoys into premature equivalency assumptions. Can it, for instance, be assumed that being kind equates to being gentle? Are the two adjectives semantically synonymous, or do they represent different mental images? The tables show that even studies using identical frameworks, like Williams

and Bennett (1975) and Werner and LaRussa (1985), find only moderate overlap in their characterizations of men and women. Although twelve adjectives characterizing female stereotypes actually do overlap, thirty-two other adjectives are significant in only one of the two studies. Similarly, eight adjectives concur for males, while thirty-six other adjectives described typical men in only one of the studies. Finally, Block's (1973) results raise the question to what extent agency and communion are suitable superordinate concepts to describe masculinity and femininity. She demonstrated that agentic factors are associated with males, while communal factors are associated with females. However, she also demonstrated that other adjectives that were neither associated with agency nor communion were also considered typical of males and females. Hence, agency and communion might only be one factor of a superordinate concept that entails additional factors to characterize men and women.

Table 1

Adjective Lists Conceptualizing Masculinity

Block, 1973 Unspecified adjective list	Bem, 1974 BSRI	Williams & Bennett, 1975 ACL	Werner & LaRussa, 1985* ACL
Agency	Masculine	Male stereotypes	Male stereotypes
Adventurous***	Acts as a leader	Adventurous***	Adventurous***
Ambitious ****	Aggressive***	Aggressive***	Aggressive***
Assertive***	Ambitious****	Ambitious****	Ambitious****
Competitive**	Analytical	Assertive***	Boastful
Critical	Assertive***	Autocratic	Courageous**
Dominating****	Athletic	Boastful**	Daring
Fair, just	Competitive**	Coarse	Dominant****
Feels guilty	Defends own beliefs	Confident	Forceful***
Independent****	Dominant****	Courageous**	Frank
Moody	Forceful***	Cruel	Hard-headed
Practical, shrewd	Has leadership abilities	Daring**	Independent****
Rational, reasonable**	Independent****	Disorderly	Industrious
Responsible	Individualistic	Dominant****	Logical**
Self-centered	Makes decisions easily	Enterprising	Masculine
Self-controlled	Masculine	Forceful***	Opinionated
Sense of humor	Self-reliant	Handsome	Outspoken
	Self-sufficient	Independent****	Reckless
	Strong personality	Jolly	Rugged
	Willing to take a stand	Logical**	Self-confident**
	Willing to take risks	Loud	Stubborn
		Masculine	
		Rational**	
		Realistic	
		Robust	
		Self-confident**	
		Severe	
		Stable	
		Steady	
		Stern	
		Strong	
		Tough	
		Unemotional	

* = Study includes the comparison with Sherriff & McKeefe (1957). Only adjectives significant over time were included here.
 ** = Significant in two out of the four studies
 *** = Significant in three out of the four studies
 **** = Significant in all four studies

Note. Adapted from Bem, 1974, p. 156; Block, 1973, p. 518; Werner & LaRussa, 1985, p. 1093; Williams & Bennett, 1975, p. 330; BSRI = Bem Sex Role Inventory, ACL = Adjective Check List

The four studies compared above were all published around the same time within the same geographical region (USA), implying homogeneity in generational and cultural factors. Assuming that

societal change and cultural influences impact gender stereotypes and gendered behavior, comparing more diverse studies could lead to even higher ambiguity. This is illustrated by Block's (1973) research which investigated stereotypes in the US and five other nations: England, Sweden, Denmark, Finland, and Norway. Only one of the 33 adjectives she found to be significantly associated with men/women in *at least one* of the included nations was found to be a stereotype in *all* of the included nations³ (Block, 1973, p. 518).

Table 2

Adjective Lists Conceptualizing Femininity

Block, 1973 Unspecified adjective list	Bem, 1974 BSRI	Williams & Bennett, 1975 ACL	Werner & LaRussa, 1985* ACL
Communion	Feminine	Female stereotypes	Female stereotypes
Artistic**	Affectionate****	Affected	Affectionate****
Cheerful**	Cheerful**	Affectionate****	Artistic**
Considerate	Childlike	Appreciative	Dreamy**
Curious	Compassionate	Attractive	Emotional**
Generous	Does not use harsh language	Charming	Excitable**
Helpful	Eager to soothe hurt feelings	Complaining	Fearful
Idealistic	Feminine***	Dependent	Feminine***
Impulsive	Flatterable	Dreamy**	Frivolous**
Loving, affectionate****	Gentle***	Emotional**	Fussy**
Perceptive, aware	Gullible	Excitable**	Gentle***
Reserved, shy***	Loves children	Feminine***	Kind
Sense of humor	Loyal	Fickle	Lovable
Sensitive****	Sensitive****	Flirtatious	Pleasant
Sympathetic***	Shy***	Frivolous**	Poised
Talkative	Soft-spoken	Fussy**	Religious
Uncertain, indecisive	Sympathetic***	Gentle***	Sensitive****
Vital, active	Tender	High-strung	Sentimental**
	Understanding**	Meek	Shy***
	Warm**	Mild	Soft-hearted**
	Yielding	Nagging	Submissive**
		Prudish	Superstitious
		Rattlebrained	Sympathetic***
		Sensitive****	Understanding**
		Sentimental**	Warm**
		Soft-hearted**	Well-mannered
		Sophisticated	
		Submissive**	
		Talkative**	
		Unexcitable	
		Weak	
		Whiny	

* = Study includes the comparison with Sherriff & McKeefe (1957). Only adjectives significant over time were included here
 ** = Significant in two out of the four studies
 *** = Significant in three out of the four studies
 **** = Significant in all four studies

Note. Adapted from Bem, 1974, p. 156; Block, 1973, p. 519; Werner & LaRussa, 1985, p. 1094; Williams & Bennett, 1975, p. 331; BSRI = Bem Sex Role Inventory, ACL = Adjective Check List

Bem's (1974) work draws attention to another important limitation in the interpretation of results obtained based on adjective lists. She found 'helpfulness' to be perceived as a neutral trait. Social role theory, however, argues that helpfulness is embedded differently in the social roles of men and women. Women's roles as homemakers or subordinates teach them to be serving and nurturing, whereas men's roles in jobs involve heroism (e.g., firefighter, policeman, soldier) that teaches them to be heroic, chivalrous, courteous. Hence, the likelihood and extent of helping behavior differ regarding quality and situational cues. Men help when they are not asked (because they are assertive), while women help when

³ "Being practical, shrewd" was a significant male stereotype in all nations (Block, 1973, p. 518).

they are asked (because they are compliant) (Eagly, 1987, pp. 42-52). Men help more when there is an audience or other potential helpers present that they can impress. Women, on the other hand, are socialized to avoid risks. They help when there is no risk of personal harm. Hence, the apparent neutrality of helpfulness provided by Bem (1974) is misleading. 'Helpful' is too general a term that comprises a wide range of different behaviors depending on situational cues. Different mental images that arose in respondents when asked to assess the helpfulness of men and women might have balanced each other out and led to the alleged neutrality of the adjective.

Remaining with the example of 'helpfulness', it is also conspicuous in Table 1 and Table 2 above that some adjectives generate highly ambiguous results. Werner and LaRussa (1985) agree with Bem (1974) that helpfulness is an ambiguous adjective that is not consistently considered a female trait. Block (1973) found helpfulness to be a stereotypically female trait in England, but in none of the other nations. However, according to Schein (1973), who sought to compare sex-related traits with traits ascribed to managers (see section 2.1.2), helpfulness was typical of women. The example demonstrated that ultimately classifying an adjective as representing femininity or masculinity is hardly possible. Consequently, the terms of masculinity and femininity or even agency and communion remain vague in their meaning – especially when it comes to specific behaviors and their demarcation.

This comparison of different publications does not claim to be a systematic review of the concept of masculinity and femininity or gender stereotypes, respectively. Instead, it exemplifies how different approaches within and across fields yield a confusing number of unsorted terms that refer to a multitude of constructs and behaviors. The two dichotomous terms, agency and communion or femininity and masculinity, offer loose guidance that might be sufficient to create mental images in those working with them but have severe limitations when it comes to implementing them into empirical research.

Several SDL researchers have explicitly applied the agency-communion-dichotomy (Gibson, 1995; Phelan, Moss-Racusin, & Rudman, 2008; Vinkenburg et al., 2011). Although a comprehensive list of agentic and communal qualities or behaviors is missing, researchers usually offer an exemplary list of descriptive terms to illustrate the meanings of agency and communion. Common terms used in leadership literature to describe agency comprise being assertive, aggressive, ambitious, controlling, competitive, dominant, forceful, independent, daring, and self-confident. Except for 'being controlling', all of these adjectives have also been found to be stereotypical in males in at least two of the four studies compared above. In employment settings, typical agentic behaviors can be speaking assertively, competing for attention, influencing others, initiating activity directed to assigned tasks, and making problem-focused suggestions (Eagly & Johannesen-Schmidt, 2001).

Communion, on the other hand, is described by terms such as being affectionate, expressive, gentle, friendly, helpful, interested in other people, interpersonally sensitive and facilitative, kind, nurturant, pleasant, and sympathetic. In employment settings, communal attributes become manifest in speaking tentatively, not drawing attention to oneself, accepting others' direction, supporting and soothing others, and contributing to the solution of relational and interpersonal problems (Eagly & Johannesen-Schmidt, 2001). The adjectives used for communion coincide less with the adjectives in the studies compared above. In fact, research seems to be more concurring on stereotypically male adjectives as compared to stereotypically female adjectives. One reason for this could be that women are more susceptible to environmental cues, while men react less to their environment (cf. Endler, Coward, & Wiesensthal, 1975; Jordan et al., 2013; Yang et al., 2018).

Only a few SDL studies assess agency and communion directly. Rudman and colleagues incorporated agency and communion as independent variables in their experimental research designs. Agency and communion in their experiments are manipulated by behaviors of real/fictitious individuals and then assessed by research participants as being typical of men and women (Phelan, Moss-Racusin,

& Rudman, 2008; Rudman & Glick, 1999, 2001). The problem with their studies is that, for one, there is no final agreement on what constitutes agentic and communal behaviors and, secondly, there has been no verified measurement instruments for agency and communion (Trapnell & Paulhus, 2012). Consequently, manipulation was done intuitively. In Rudman and Glick (2001), for instance, agentic behavior was described to participants as "technically skilled, ambitious, strongly independent, and able to work well under pressure" (p. 1006). Communal skills, on the other hand, were summarized as being "helpful, sensitive to the needs of new computer users, and able to listen carefully to clients' concerns" (p. 1006). Keeping in mind Bakan's original definition of agency, it is not straightforward to declare technical skills and stress resistance as agentic skills. They rather represent the male stereotypes that the authors want to evaluate regarding their impact on hiring decisions. Furthermore, the allegedly female attribute helpfulness is used as a stereotypically communal trait despite existing controversies (see above). The study design implies that the terms agency and communion are frivolously used interchangeably with the respective stereotypes.

The authors' lighthearted use of the terms agency and communion in their otherwise illuminative and inspiring work exemplifies the problem that runs through the whole field of SDL research. This problem can be summarized as follows: The loose psycho-philosophical dichotomy of agency and communion that originally did not relate to sex or gender has been adopted by social structural theory and in the process changed its meaning to be interchangeable with gender stereotypes. The list of specific gender stereotypes, however, is highly variable across studies and dependent on cultural as well as individual characteristics. As a consequence, these studies' descriptions of a group as stereotypically feminine or masculine provide little information on the specific behavior that is to be expected from members of that group. The situation becomes even more precarious when integrated with another field of research: leadership.

3.1.2 LEADERSHIP STYLES AND THEIR RELATIONSHIP TO AGENCY AND COMMUNION

As implied by its name, the sex differences *in leadership* literature incorporates a leadership perspective. The specific leadership perspective applied most commonly is that of behaviorism. The original behaviorists, starting with John Watson (1913), acted on the assumption that only *observable* phenomena should be of interest to researchers. The *origins* of behavior, however, were not observable and hence irrelevant. They believed that, although people are born with a set of behavioral responses (e.g., crying when being scared), observable behavior is the result of social experiences. Leadership theories based on behavioral styles hence neither consider social-environmental nor biological causes, but only what leadership looks like and how it evolves.

Behaviorist leadership theories followed the trait theories of leadership. Like the latter, they assumed a one-best-way-approach to leadership (Rowley, Hossain, & Barry, 2010). This viral stream of leadership research produced a humongous amount of literature concerned with a confusing variety of leader behaviors and their effects (Yukl, 2012). Utilizing factor analyses, researchers classified leader behavior into different *styles* of leadership. The leadership styles most frequently assessed in the SDL literature are task-orientated vs. people-orientated, democratic vs. autocratic, and transformational vs. transactional leadership. These dichotomies share many similarities and can be related to the terms of agency and communion (to some extent).

The classification of leader behavior into *task-orientation* and *people-orientation* goes back to the 1950s and developed over a period of approximately 30 years. Leadership research centered around three research groups at that time. The first group worked under the auspices of Harvard Professor Robert Bales, who assessed emergent leadership in laboratory studies. He and his associates distinguished between a leader's tendency to focus on either *task-accomplishment* or *social-emotional*

distinction (Bales, 1953). Task-accomplishment relates to organizing one's activities to perform the assigned tasks, while social-emotional distinction describes the leader's focus on people's morale and welfare.

The second research group at the Ohio State Leadership Center refined and relabeled these dimensions based on repeated factor analyses (Fleishman, 1953; Stogdill, 1963). They found the dimensions *initiation of structure* and *consideration* to describe leadership styles most appropriately. Initiation of structure refers to the amount of control that the leader exerts over his/her subordinates. Leaders high in initiating structure are concerned with their subordinates following rules and procedures, maintaining high performance standards, and making each subordinate's role and position in the organization or team explicit. Leaders high in consideration, on the other hand, are concerned with their relationships with their subordinates. The consideration includes behaviors such as helping and doing favors for subordinates, looking out for their welfare, explaining procedures, and being friendly, supportive, and available to followers (Stogdill, 1963). The Institute for Social Research at the University of Michigan (Kahn & Katz, 1953; Likert, 1961; Mann, 1965) identified essentially very similar dimensions of leadership, which they called *employee-oriented* and *production-oriented* behavior (Jogulu & Wood, 2006). Their research mostly relied on leaders' self-reports in interviews.

All streams within the behavioral leadership paradigm find two dimensions of leadership, of which one emphasizes *task-accomplishment* and the other *people-orientation*. These dimensions emerge in other streams of leadership research, e.g., in Blake and Mouton's (1964) managerial grid that is based on leaders' concerns for production and concern for people and even by contingency researchers like Hersey and Blanchard (1969) as well as Fiedler (1967).

Another distinction that is of interest to SDL researchers is *democratic* vs. *autocratic* leadership (e.g., Lewin & Lippitt, 1938; Likert, 1961; Vroom, 1964; Vroom & Yetton, 1973). The distinction emphasizes leaders' decision-making processes and their readiness to include followers in them. Vroom and Jago (1988) introduced five different leader approaches reaching from highly autocratic to highly participative. According to their theory, a situation's specifics are vital to determine which leadership style is most effective. Leaders are hence required to react to situational cues so that technically research using the distinction between democratic and autocratic leadership style is also related to contingency theories of leadership. However, situational factors are usually not included in SDL studies that utilize these leadership styles, so that the democratic vs. autocratic leadership approach is applied like a behaviorist approach to leadership (e.g., Van Engen & Willemsen, 2004).

The situation is similar concerning the most frequently used leadership style classification in SDL literature, *transformational* vs. *transactional* leadership (sometimes extended by *laissez-faire* leadership; Bass & Bass, 2008). Although some classify transformational leadership as related to charismatic leadership theory (e.g., Antonakis, 2018, p. 58), SDL literature treats transformational leadership as a behaviorist leadership theory. Transformational leadership is usually contrasted with transactional and *laissez-faire* leadership. All three leadership styles are assessed based on leaders' actions toward their followers (Deluga, 1990). Transformational leaders are charismatic, inspiring, intellectually stimulating, considerate towards the individual's needs, and willing to bring extra effort into the job. Transactional leaders, on the other hand, are characterized by contingent reward behavior, being controlling and corrective, or by only intervening in case employees do not meet required standards (*laissez-faire* leadership). Both democratic vs. autocratic and transformational vs. transactional leadership suggest a behavioral dichotomy that resembles the people- and task-oriented leader behavior.

In SDL literature, the general dichotomy of people- vs. task-orientation is commonly equated with the dichotomy of stereotypical masculine and feminine behavior. In their highly influential meta-

analysis, for example, Eagly and Johnson stated that "task and interpersonal styles in leadership research are obviously relevant to gender because of the stereotypes people have about sex differences in these aspects of behavior" (1990, p. 236). Just like many other gender researchers, Eagly and Johnson then subsume stereotypical behaviors of men and women under the terms *agentic* and *communal*. They list exemplifying adjectives to create a vague mental image and then go on to relate agency and communion to the leadership dichotomy of task-orientation and people-orientation. They highlight parallels between characteristics of task-oriented and people-oriented leadership styles and stereotypical male and female behavior without specifying these parallels any further. That way, SDL research even exacerbates the situation created by gender stereotype researchers. The contents of femininity and masculinity, which are insufficiently summarized by agency and communion, are now equated with two meta-categories of leader behavior that incorporate various distinct conceptualizations of leadership: people-orientation and task-orientation.

As demonstrated by Eagly and colleagues, research on sex differences in leadership style commonly equates people-oriented leadership with stereotypic feminine behavior and task-oriented leadership with stereotypic male behavior. When they find (no) sex difference in leadership styles, they automatically conclude that the sexes (do not) act according to gender stereotypes. Eagly and Johnson, for instance, stated that they "established that leadership style findings generated in experimental settings tend to be gender stereotypic" (1990, p. 249). The experimental studies that they base this conclusion on, however, never assessed leader gender stereotypicality, but leadership styles of men and women. Eagly and Johnson's (1990) conclusion would only be valid if the behaviors subsumed under the leadership style were shown to be gender stereotypic and encompassing all gender-stereotypic behavior relevant in leadership.

Two publications have systematically approached the congruence of leadership behavior and gender stereotypes. One of them tested to what extent the two dimensions from the Ohio State leadership studies – initiating structure and consideration – were perceived as masculine or feminine (Cann & Siegfried, 1990). The study found that, indeed, most items representing a considerate leadership style were perceived as feminine. Items representing initiating structure, on the other hand, were perceived as masculine. The study encourages equating the leadership style dichotomy with gender stereotypes. However, the findings should be handled with caution for several reasons. First, the authors assessed femininity and masculinity with a subjective subset of adjectives that Bem (1974) and Williams and Bennett (1975) assessed as gender stereotypical. As discussed above, the nature of these adjective lists actually reflecting universal gender stereotypes is questionable. Furthermore, the two questionnaires distributed were answered by only 31 and 40 participants, respectively, indicating low statistical power. Furthermore, participants did not have a neutral option. Instead, a forced-choice design coerced them to assign feminine and masculine stamps to items that they otherwise might have considered gender-neutral.

The other publication is concerned with the femininity and masculinity of transformational and transactional leadership (Hackman et al., 1992). One hundred and fifty-three students rated a leader that they had vivid recollections of regarding their transformationality and transactionality. Then they rated the same leader on 60 adjectives from Bem's Sex Role Inventory. The results indicate that it should not be assumed that transformational leadership represents feminine leadership, while transactional leadership represents masculine leadership. Particularly regarding transformational leadership, where SDL researchers assume that women have an advantage, the study found results inconsistent with that common assumption. Only one subscale, charisma, was actually significantly related to femininity. The other subscales showed no sex difference. Furthermore, the subscale intellectual stimulation showed a higher level of masculinity, although it was only significant at $p < .10$. This finding supports other

studies that highlight the leadership advantage of androgynous leaders (Korabik & Ayman, 1989). Hence, the results imply that concluding that women who show higher levels of transformational leadership than men are leading gender-stereotypically would be premature.

One important reason to assume that agentic and communal behavior as well as task-oriented and people-oriented leadership styles are not "quite similar" (Eagly & Johnson, 1990, p. 236) lies in the gendered social structures of the time in which leadership style theories were developed. The feminine movement that brought women into academia, working life, and leadership positions did not start until the 1960s. At least until then, research was guided by a predominantly male paradigm. Researchers and researched were primarily male and the rare female voices were silenced (Harding, 1986). Leadership researchers did not have female leaders in mind when developing their scales. Items asking about certain leader behaviors were modeled on male role-models and on the basis of male researchers' brains and imaginations. It is hence possible that those questionnaires omit behaviors that would measure leadership style and related constructs from a feminine perspective. More generally, the criticism has been that, similar to the unorganized adjective lists for masculinity and femininity, leadership styles had no solid theoretical basis and were mainly identified by factor analyses based on unsystematic samples and biased items (Yukl, 2012). Finally, leadership style research has been mainly based on leaders from lower organizational levels or student populations. This raises the question to what extent findings from behaviorist leadership research can be applied to top management positions.

Overall and contrary to Eagly and Johnson's enthusiastic claim that "leadership research provides an excellent opportunity to determine whether the behavior of leaders is gender stereotypic" (1990, p. 236), the researcher proposes that SDL research might not tell us much about the stereotypicality of male and female leaders. Instead, it presents us with results on differences between men and women in predefined leadership styles. Nevertheless, these differences represent the majority of our as yet existing knowledge on sex differences in leader behavior. The following subsections hence present the findings on sex differences in leadership styles in more detail and give a short overview of alternative approaches to the assessment of sex differences in leadership. The latter are divided into quantitative findings that focus on the correlation of female leader representation and companies' performance and qualitative approaches to sex differences in leadership.

3.1.3 AGENTIC MALE AND COMMUNAL FEMALE LEADERS? REVIEW AND CURRENT STATE OF RESEARCH

After critically reviewing the social structure framework which relies on the dichotomy of agency and communion intermixed with gender stereotypes, the following subsections summarize the findings produced by the SDL research field using that framework. The majority of research on SDL has been conducted regarding leadership styles. Several meta-analyses have aggregated their findings. However, other research focused on specific or implicit leader behaviors that are believed to be particularly important for organizational success, such as risk-taking or innovativeness. Finally, qualitative research assessed sex differences in leadership trying to take an open approach unbiased by predefined assumptions. The findings of these three research clusters are reviewed in the following subsections to demonstrate how the ambiguous theoretical predictions of social structure meta-theory and its vague framework have struggled to find satisfying answers to the question about the nature of sex differences in leadership.

3.1.3.1 Meta-Analyses and Reviews on Sex Differences in Leadership Styles

Five meta-analyses assessed the effect of sex on leadership style. The first meta-analysis on sex differences in leadership was conducted in 1986 by Dobbins and Platz and included 17 studies. It assessed the leadership styles of initiating structure and consideration and found no sex differences in leadership on either of the two dimensions. The other four meta-analyses report sex differences in leader behavior, and researchers interpret most of them to be congruent with gender stereotypes. However, all of them report effect sizes to be small, and on closer inspection, the findings across studies are contradictory. Despite the sex differences they found, researchers concluded that men and women were more alike than they were different in their leadership behavior.

In their holistic meta-analysis from 1990, Eagly and Johnson focused on interpersonal, task-oriented, interpersonal versus task-oriented, and democratic versus autocratic leadership styles. Including unpublished manuscripts and dissertational theses, they obtained 370 studies for their meta-analysis. Almost half of those studies (51%) reported sex differences in leader behavior that were congruent with gender stereotypes, i.e., women were more interpersonal or more democratic in leadership style. The other half either found no sex difference or a sex difference in the opposite direction, demonstrating the ambiguousness of the SDL literature. The analysis revealed two sex differences favoring women: Women were more *interpersonal* and more *democratic vs. autocratic* in their leadership styles than men. There was no sex difference in task-oriented and interpersonal vs. task-oriented behavior.

However, the effect found for interpersonal behavior persisted only within studies conducted in the lab; in the field, male and female leaders were equally interpersonal. This finding is a strong indication of the existence of selection/socialization processes. Women who occupy actual leadership positions are selected because of their masculine behavior and fit with the masculine standards associated with leadership positions. Furthermore, they experience the same socialization and learning processes as their male peers, which leads to the assimilation of male and female leader behavior. In laboratory experiments, on the other hand, leadership is simulated, implying that the participants have not experienced organizational socialization. Male and female study participants, therefore, rely more on their everyday patterns of gendered/sex-specific behavior. Considering the moderating effect of study design (laboratory vs. field) and the small effect size, the authors concluded that in the field, men and women leaders are more similar than different in their leadership styles. Furthermore, they argued that women could be more participative leaders because they are more likely to work in settings that require participative leadership. In this case, gender stereotypes would motivate decision-makers to employ an above-average number of women for positions that require democratic behaviors. Although Eagly and Johnson laudably included studies of low visibility to forgo publication bias and increase statistical power (Vecchio, 2002), their effort led to an imbalance in the representation of study settings. Of the 370 studies included in the meta-analysis, only 26 took place in business contexts. The considerable majority of studies, 210 out of 370, stemmed from educational settings. Hence there might have been a systematic difference between leaders in educational and business settings that distorted their results.

In 1992, Eagly, Karau, and Johnson (1992) conducted another meta-analysis on sex differences in leadership behavior. This time they eliminated potential bias through study settings by focusing on educational settings only. Their analysis of 50 studies set in educational contexts confirmed that female leaders were more democratic and less autocratic than their male counterparts. This time, however, they found no sex difference in interpersonal vs. task orientation and no sex difference in interpersonal leader behavior. Instead, contrary to preceding results, female leaders were more *task-oriented* than male leaders. Selection or socialization processes hence may have enforced a stronger deployment of task-oriented individuals, maybe because taking responsibility for subordinates is less typically a part of the job of teachers and other educators as compared to positions in for-profit companies.

To make the matter even more confusing, Van Engen and Willemsen (2004) conducted another meta-analysis. Based on 26 studies from both business and educational settings, they neither found sex differences in interpersonal nor in task-oriented behavior. However, in organizational settings only, women leaders acted stereotypically by being more interpersonal and less task-oriented than men. The meta-analysis hence contradicted Eagly and Johnson's (1990) explanation of socialization processes that cause the assimilation of male and female leader behavior. At the same time, however, they provided support for the results of Eagly and colleagues that women leaders are more democratic and less autocratic than their male colleagues (Eagly & Johnson, 1990; Eagly, Karau, & Johnson, 1992). In addition, Van Engen and Willemsen included transformational and transactional leadership in their analysis. They found female leaders to be more transformational than male leaders and reported no sex differences in transactional leadership.

One year before, Eagly, Johannesen-Schmidt, and Van Engen (2003) conducted a meta-analysis based on 45 studies that also included transformational and transactional leadership, as well as a laissez-faire leadership style. As Van Engen and Willemsen (2004), they found women to be slightly more transformational than men and men to perform more laissez-faire leadership behavior. In terms of transactional leadership style, however, they found women to score higher on the subscales contingent reward behavior and men to score higher on the subscales active as well as passive management by exception. Table 3 summarizes the findings of the five meta-analyses.

The table reveals one conspicuous feature: Men did not invest more than women in *any* of the leadership styles except for laissez-faire leadership. Either the sexes were equal in their leadership behavior, or the sex difference favored women. Women were not inferior to men in any of the leadership styles.

Table 3
Overview of Meta-Analyses on Sex Differences in Leadership

Meta-analysis	#n	Initiating structure/ task-oriented	Consideration/ interpersonal style	Task-oriented vs. interpersonal	Democratic vs. autocratic	Transformational	Transactional	Laissez-faire
Dobbins & Platz, 1986	17	No sex difference	No sex difference	-	-	-	-	-
Eagly & Johnson, 1990	370	No sex difference	Females more ($d = .04$)	No sex difference	Females more ($d = .22$)	-	-	-
Eagly, Karau, & Johnson, 1992	50	Females more ($d = -.16$)	No sex difference	No sex difference	Females more ($d = .21$)	-	-	-
Eagly et al., 2003	45	-	-	-	-	Females more ($d = -.10$)	-	Males more ($d = .16$)
Engen & Willemsen, 2004	26	No sex difference	No sex difference	-	Females more ($d = -.19$)	Females more ($d = -.10$)	No sex difference	-

Although that overall impression could represent reality, two other possible explanations might account for this phenomenon. First, there might be a self-selection process in study participants. Female leaders who volunteer to participate are more likely to feel they have conquered the male domain of leadership. They succeeded by adapting to the male rules of the game and want to share their success and inside view with other women by serving as role models. The second possible explanation is that findings depicting women's alleged weaknesses are not published (or not even written). Feminist authors or editors might shy away from publishing results that imply that women are inferior to men in any respect.

Furthermore, Table 3 indicates that the findings regarding sex differences in task-orientation and interpersonal leadership are inconclusive. Qualitative literature reviews agree that the findings in the field are ambiguous and do not provide evidence of any clear sex difference in leader behavior. In her early review, Bartol (1978) summarized the previous findings on sex differences in leadership concerning the dimensions consideration and initiating structure: "In most cases, there are either no differences or relatively minor differences between male and female leaders on leadership style, whether the leaders are describing themselves or being described by their subordinates" (Bartol, 1978, p. 806). Powell (1990) even suggested that "organizations should not assume that male and female managers differ in personal qualities.... There is little reason to believe that either women or men make superior managers, or that women and men are different types of managers" (Powell, 1990, p. 74). Vecchio (2002) summarizes that "the search for sex differences in the behavior of leaders has yielded results that are highly equivocal" (Vecchio, 2002, p. 651). Taking into account all of the meta-analyses cited above, Gipson and colleagues stated in the most recent review:

Taken together, findings indicate that women leaders tend to be more likely to manifest a democratic style and elements of transformational leadership than their male peers. Findings relating to other styles have been equivocal (i.e., task vs. interpersonal style) or are not yet robust enough for an empirical comparison by gender (i.e., authentic leadership). (Gipson et al., 2017, p. 48)

Following Gipson, there is a small sex difference in transformational and democratic leadership favoring women. Other leadership styles have yielded no clear effects across sex, either because findings have been ambiguous or underresearched. The *leadership style approach* has thus been moderately successful at best for enhancing our understanding of how and to what extent male and female leaders differ in their actual leadership behavior— especially taking into account the large number of studies conducted. More importantly, however, sex differences that are implied by those meta-analyses cannot be equated with gender stereotypicality. Knowing that women might be, on average, a bit more transformational entails little information about whether the sex difference in transformational leader behavior relates to behaviors that are stereotypically associated with women.

Despite the massive amount of studies which included sex as a variable in their assessment of leaders' leadership styles, their informative value as to whether men are agentic or communal is limited. The hitherto used framework of agency and communion has hence as yet failed to provide answers about the existence of sex-specific differences in men's and women's leadership behaviors.

3.1.3.2 Quantitative Assessments of Sex Differences in Leader Behavior Beyond Leadership Styles

Several researchers have approached sex differences in leader behavior outside the realm of leadership styles. One approach to assess possible differences in male and female leader behavior is to relate the number or share of women on companies' executive boards to their strategic decisions. For instance, companies with a higher female board representation engaged less in acquisitions regarding both the number of acquisitions and acquisition size (Chen, Crossland, & Huang, 2016). This finding is interpreted as risk aversion and related to a risk-avoiding leadership style in women. Others took the money invested in research and development as a measure to assess a company's (and its leaders') risk aversion (Mukarram, Ajmal, & Saeed, 2018). In contrast to those reporting risk-aversion in female leaders, they found female representation was related to higher amounts of risk-taking, i.e., R & D investments. Female board representation has further been associated with enhanced community engagement, stronger corporate governance, and more sustainable, environment-friendly decisions – all proxies for corporate social responsibility (Cook & Glass, 2018). Again, companies' strategic decisions were implicitly related to the supposedly differing leadership style of women. Studies like these do not assess actual behavior and hence have low explanatory power for sex differences in leadership behavior.

Some studies inductively derived relevant leadership behaviors based on qualitative pilot studies. A field study set in the British Army, for example, assessed leadership dimensions relevant to an officer "based on regular job analyses of a leadership position" (Anderson et al., 2006). It identified six leadership dimensions: oral communication, interaction, problem-solving, impact, drive and determination, and stress reaction. Trained, neutral observers assessed the behavior of 1,549 men and 263 women who participated in a large-scale assessment center for officer entry. Observers rated women higher on communication, interaction, and drive and determination. Men did not score higher on any of the dimensions.

Another study assessed sex differences in leadership in four clusters of competencies consisting of several subareas of behavior: cognitive competencies, motivational and learning competencies, directional competencies, and achieving competencies (Spurgeon & Cross, 2006). The authors had identified those clusters as relevant for managerial performance in a complex and dynamic environment. They found female leaders scored higher on all behaviors related to cognitive competencies as well as motivational and learning competencies. Cognitive competencies comprised information search, concept formation, and conceptual flexibility. Motivational and learning competencies included interpersonal search, managing interaction, and developmental orientation. Furthermore, female managers scored higher on the directional competency confidence-building. Most of these effects were only visible when matching for experience and controlling for low vs. high interactive situations. The female advantage concerning motivational and learning competencies disappeared with middle and high levels of experience, demonstrating that male and female leaders went through similar learning and socialization processes. The authors found "information search" to be the only sex difference (with women scoring higher) that was stable across different experience levels. One problem of quantitative studies that build on inductively derived leadership dimensions is that their measurement instruments are insufficiently validated. Furthermore, the studies are highly context-specific. As a result, their findings are isolated and not confirmed by others.

In sum, the findings of studies beyond leadership styles yield more sex differences in leadership behavior than the studies on leadership styles. However, they also resemble the findings from the meta-analyses in that some of the results feed into the stereotypes about women, whereas others depict women as excelling in typically masculine domains. Direct links between those individual behaviors and the framework of agency and communion are often missing.

3.1.3.3 Qualitative Assessments of Sex Differences in Leadership

Qualitative studies on SDL differ from quantitative studies in their research goal. While quantitative approaches aim to assess to what extent male and female leaders differ in their leader behavior concerning a pre-defined set of behaviors, qualitative approaches aim at identifying behaviors that are characteristic for male and female leaders, respectively. Those behaviors are often more specific than general leadership styles and allow in-depth insights into sex differences in everyday work life.

Emphasizing the shortage of feminine perspectives in previous leadership typologies, Stratham (1987), for example, led focus interviews with 18 male and 22 female managers and their respective secretaries to demystify sex differences in leader behavior. She described men as self-concerned and as keeping a distance from their subordinates. Men emphasized the power they possessed and their accomplishments. Women leaders, instead, paid careful attention to those around them and their tasks. Additionally, the women leaders' secretaries reported that the female leaders encouraged their subordinates' career growths.

Interviewing the subordinates of twelve male and four female housing managers, Rigg and Sparrow (1994) found sex differences in British housing managers' leader behavior. Female managers made

considered decisions that were neither snap decisions nor too hesitant. The male managers split into two groups. As predicted, one group of male managers made decisions analytically and systematically. The other group, however, was being more ponderous, less confident, and rule-based. Women leaders had interpersonal relationships with their team members that were understanding and caring. Male leaders, on the other hand, were more protective (i.e., defending their team) and paternalistic. As in Stratham's (1987) study, they were also more distant (Rigg & Sparrow, 1994).

Alimo-Metcalf's (1995; 2010) study focused on female and male leaders' abstract concepts of *good* leadership. Twelve male and twelve female managers in the British National Health Service reported what they thought constituted a good leader. Female leaders believed that good leaders' interpersonal skills comprised being sensitive, fun to be with, and considerate regarding how their actions affect others (Alimo-Metcalf, 2010). Male leaders, on the other hand, thought a good leader needed to be an engaging speaker and able to influence others.

In a more recent qualitative study, Eisner (2013) used secondary data to assess sex differences in leader behavior. She analyzed interviews of 40 female and 40 male CEOs printed in newspapers. Women prioritized different management areas than men. Women emphasized the importance of passion and commitment; teams; mission, vision, and values; focus, simplicity, clarity, and consistency; curiosity, open mind, and stimulation by diverse ideas; and receiving feedback and listening more than men. Men, on the other hand, rated the management areas of taking risks and being comfortable with problems as more important than their female counterparts.

As indicated in the study examples above, qualitative research on SDL broaches a multitude of issues and behaviors. The sheer number of behaviors identified to differ between sexes usually motivates researchers to fall back on leadership styles. In her classic interview study, Rosener (1990), for instance, found that women leaders described themselves as concerned with transforming subordinates' self-interest into concern for the whole organization and motivating their employees by relying on charisma and interpersonal skills. Men, on the other hand, described their leadership as successive transactions with subordinates based on position power and control. She concluded that women are transformational leaders, and men are transactional leaders.

Rigg and Sparrow (1994) and Alimo-Metcalf (2010) both concluded that female leaders were more people-oriented than male leaders. Stratham (1986), too, summarized that women leaders were more people-oriented. At the same time, however, she found them to be more task-oriented than male leaders, while the latter instead demonstrated a self-centered *laissez-faire* leadership style. Rigg and Sparrow (1994), on the other hand, ascribed male leaders either a traditional or "flamboyant" style of leadership.

Although qualitative researchers' return to leadership styles is comprehensible in terms of generalization, it undermines the purpose of qualitative research. Instead of developing new theory or an alternative taxonomy, the studies merely substantiate existing leadership concepts. Quantitative approaches with large samples and based on validated measurement instruments, however, would have been the more fitting approach for this purpose, making the qualitative investigation redundant. Furthermore, many of those qualitative studies hardly connect to any superordinate concept or theory. Their theoretical contribution and integration into existing research are thus often superficial. Nevertheless, qualitative assessments usually do find sex differences in leader behavior. They indicate that the often non-significant findings of quantitative approaches based on leadership styles do not mean that there is no difference in how men and women lead.

The preceding chapter reviewed the framework that guides the majority of sex differences in leadership research. It argues that the framework lacks rigor and explanatory power and is hence limited in its usefulness for assessing sex differences in leadership behavior. Most of the SDL literature explicitly adapting this framework examined sex differences in leadership styles. Despite a large amount

of research in that field, findings remain ambiguous and contradicting, indicating that the research field is stuck. Findings using other theoretical approaches than leadership styles, like qualitative approaches, also failed to expand our knowledge. The following chapter introduces a framework that aims at helping the SDL research field to gain momentum.

3.2 AN EVOLUTIONARY PSYCHOLOGY FRAMEWORK OF SEX DIFFERENCES IN LEADER BEHAVIOR

In an evolutionary psychology paradigm, the framework of agency and communion cannot be applied. Due to its philosophical roots and its major application in fields that relate to the nurture side of human behaviors, i.e., stereotypes, social norms, and culture, it does not connect with evolutionary principles and biological mechanisms of behavior. One goal of this research project was to outline a framework that approaches behavioral differences between men and women from an evolutionary psychology point of view. The framework introduced in the following was an intermediate result of the ethnographic field data analyzed in chapter 5 (the exact process is described in chapter 4.6). Preliminary findings from the field guided the literature research and helped identify the main theory used by Geary (2010) and related strategies.

The framework was then used to guide the empirical analysis of sex differences in the field. Qualitative analyses benefit from research frameworks because they make researchers' implicit assumptions about findings visible. This is particularly important in a research field as mature as the SDL research field, because that way the framework can build on already existing knowledge (Anfara & Mertz, 2006; Collins & Stockton, 2018). Since the analysis took place in a qualitative paradigm, a narrow framework based on specific behaviors, such as helping or aggression, would erode researcher openness and the study's explorative nature. So, on the one hand, the framework has to be flexible in terms of specific behaviors. At the same time, it has to be distinct enough to guide data analysis (Hill & Carley, 2011) by helping organize the large amount of collected data, which can otherwise be overwhelming and impede the researcher's ability to formulate clear insights (Miles, 1979).

A vast amount of research on sex differences in behavior exists in evolutionary psychology, most of it focusing on particular behaviors such as aggression, prosocial behavior, or verbal and nonverbal communication. Few have attempted to generate a more general framework that integrates those behaviors. One of the few is David C. Geary (2010). Within the second edition of his book "Male, Female: The development of human sex differences" (2010), he almost casually offers such a theoretical framework (Hannagan, 2011). He theorizes that sex differences in behavior can be traced back to men's and women's diverging *social motives*, i.e., "how individuals would prefer, in the absence of constraints, to organize their social relationships and community" (Geary, 2010, p. 251).

Humans live in groups or social communities (Richerson & Boyd, 2005). The traditional groups that ancestral humans are believed to have lived in comprised thirty to fifty members, and there is evidence that the human mind can balance a social network of up to 150 individuals (Zhou et al., 2005). Living in communities has been adaptive to both men and women due to benefits such as increased hunting success, better predator avoidance, and access to other group member's innovations (see Moosa & Ud-Dean, 2011). Other possible benefits are attention and affection (Harlow & Zimmerman, 1959), and cognitive stimulation (e.g., Krause & Ruxton, 2002; Kummer, 1978; Liker & Bókony, 2009; White, 1959; see Hawley, 1999). In sum, humans are better at gaining access to resources such as biological, physical, and social resources in groups than individually.

There are many ways to organize one's social environment, and the preferences of men and women, respectively, seem to differ. First, studies showed that men's and women's personal relationships are

different. Second, men and women differ in their preferred superordinate societal group structure. Geary (2010) proposed that males have a preference to build and act within the realm of coalitional competition. In coalitional competition, men form strategic alliances with other men to compete with other groups of men over resources. Through dominance and aggression, they seek to establish *dominance hierarchies* both within and across coalitions. Women, on the other hand, prefer altruistic, reciprocal relationships based on social equality. Based on those relationships, women aim at building a safe environment for children and the underprivileged. To support his argument, Geary cited men's higher social dominance orientation in politics and women's dedication to social justice when in control of political power (Geary, 2010, pp. 251). However, while Geary finds unambiguous labels and clear descriptions about the nature of men's preferred social structure, he remains vague about women's preferred social structure. The researcher hence drew on research from matriarchies and egalitarian societies to find that women's preferred social structure may be described as *egalitarian communities*.

If sex-specific social organizations improve men and women's survival, they should have triggered the evolutionary development of sex-specific strategies that support men and women in pursuing them (cf. Geary, 2010). Based on the scientific literature and the data from the ethnographic fieldwork presented in chapter 5, two strategies were derived for each sex that serve the manipulation of their social environment. To pursue dominance hierarchies, men have developed the strategies of *dominance behavior* and *coalition-building*. Women, on the other hand, pursue egalitarian communities by means of *intimacy-building* and *nurturing behavior*.

The subsequent sections elaborate on men's and women's diverging social motives. For both sexes, the researcher first (1) defines and discusses their respective social motives from an evolutionary psychology perspective based on their adaptive benefit and their relevance as well as evidence in organizational settings. Then she (2) connects the respective social motives to behavioral strategies. For men, those strategies comprise dominance and coalition-building, while for women, they comprise intimacy development and nurturing. All of those behaviors are linked to evidence from the sex differences in leadership literature. That way, the current research builds an interdisciplinary bridge between the evolutionary psychology framework and the field of organizational research. To ensure that the behaviors included in the research framework are relevant from an evolutionary psychology perspective, the researcher further (3) provides evidence for sex differences referring to phylogeny, ontogeny, and biological mechanisms for each strategy. After having elaborated on all sex-specific strategies in detail another section carves out the benefits of the evolutionary psychology framework as opposed to the agency-communion-dichotomy. Finally, the last subsection of the framework is devoted to summarizing the framework and the findings regarding research question RQ1a.

3.2.1 MEN'S SOCIAL MOTIVE: DOMINANCE HIERARCHIES

Savin-Williams (1987) vividly illustrated the different social motives of men and women in an ethological study. He observed adolescents aged 10 to 17 in two sex-segregated summer-camps throughout five summers in order to understand how dominance behavior determined hierarchy formation in boys and girls. Drawing on both quantitative and qualitative methods, he portrayed the social structures that arose within the cabins. The study is particularly valuable to the research matter at hand because it demonstrated the dynamics and outcomes of social interactions within each sex. In their roles as camp counselors, Savin-Williams and his research associates recorded dominance behaviors in four male and four female sex-segregated cabins. The cabin groups, which consisted of four to six youths, were randomly assembled by the camp administration while ensuring diversity in geographic representation and athletic ability, similarity in age, and the unfamiliarity of cabin group members.

The focus of the study lay in observing dyadic dominance/submission interactions used to form hierarchies. The authors had both the adolescents themselves and outsiders assess the dominance hierarchies within the groups. The vivid portrayals of social life within the individual cabins highlighted both the uniqueness of each group and the nonetheless existing differences between male and female cabins. When contemplating the overall group structures of male and female cabins, respectively, Savin-Williams (1987) concluded:

The male group structure, although far from a rigid peck order, is a dominance hierarchy that was readily perceived by group members and remained relatively unchanged over time and across behavior settings. Alterations were minor, consisting of near-ranked individuals exchanging positions. The female group structure, however, assumed a somewhat different form, a "cohesive dyarchy." ... One way in which this structure differs from a dominance hierarchy is that individuals are ordered in a less linear arrangement. The horizontality of the cohesive dyarchy implies that more than one person can occupy a rank. (p. 150)

The male adolescents in the study formed stable, linear hierarchies that were consistently predicted by both quantitative data and subjective observations. After only a short period – sometimes only hours after arrival – the boys started overtly displaying dominance behaviors, which resulted in open conflict and the establishment of status ranks. The emerging conflicts were mostly short-term, and grudges were unlikely to develop because boys made decent attempts to reconcile after aggressive encounters. Once stabilized, the boys' hierarchies remained the same and resulted in cohesive groups. Dominance behaviors dropped, and group harmony increased. Boys were more than girls able to accurately perceive their own rank within the hierarchy, and 90% of outside observers could detect the group hierarchy. Furthermore, boys showed high levels of interest in assessing the group structure. When asked by the researcher to rank the boys within the group and assign group roles and personality traits, boys participated enthusiastically and inquired about the results. They even "begged" (p. 126) the counselor to tell them how they were rated in terms of dominance by the other boys. The male hierarchies resulted mostly in cohesive groups that enjoyed competing with other groups in camp activities. Most boys enjoyed their stay in the cabin groups and intended to return in the forthcoming year.

Definition of hierarchies. Hierarchies like those in the male cabin groups are a "ranking of members in social groups based on the power, influence, or dominance they exhibit, whereby some members are superior or subordinate to others" (Koski, Xi, & Olson, 2015, p. 528). Hierarchies are linear in nature, implying that the relationships of its members are transitive. If A dominates B and B dominates C, A will dominate C (Savin-Williams, 1987). The formation of human hierarchies happens quickly and automatically (e.g., Berger et al., 1980; Gould, 2002), implying an underlying evolutionary mechanism in the human mind facilitating it. One study demonstrated how quickly hierarchies form in human groups. In this study, 59 groups were formed, consisting of three individuals who had not met before. In around 50% of the groups, a hierarchy was established within only one minute (Fisek & Ofshe, 1970, p. 343). This finding is supported by studies, which have shown that humans easily identify status symbols (Moors & Houwer, 2005) and assign ranks to other individuals, both strange and familiar (Zitek & Tiedens, 2012). Those identifications of status and rank are stable and consistent across individuals (Anderson et al., 2006). Furthermore, social hierarchies are common to all human cultures (Sidanius & Pratto, 1999, p. 31), implying that they are evolutionarily meaningful.

In organizations, hierarchies can be divided into formal and informal hierarchies. Formal hierarchies refer to the institutionalized roles within the organizational leaders, such as CEO, team leader, or shift leader. Informal hierarchies, on the other hand, are not institutionalized but result from organizational member interactions of dominance and submission. Hence, informal hierarchies are typical dominance hierarchies from the evolutionary psychology perspective, while formal organizational hierarchies exist irrespective of individuals' behavior. Although formal hierarchies and informal hierarchies coincide in many instances, they can also deviate (Diefenbach & Sillince, 2011).

Adaptive benefit of hierarchies. Evolutionary psychology's assumption is that men have more to gain from status-enhancing behavior than women because it is associated with their reproductive success (Van Vugt & Tybur, 2014). Throughout history, high-status men had higher access to female partners as compared to low-status men (Buss, 2004, p. 453-5; Van Vugt & Tybur, 2014). For example, Indian Maharaja Bhupinder Singh had a harem of 332 maharanis, Chinese emperor Huang-ti had sexual intercourse with 1,200 women, and the Inca had strict rules of how many women one man was supposed to have based on his status (Betzig, 1993). In modern societies, men's status and their access to mating partners still coincide. Pérusse found that male employees in higher positions reported having more sex partners than employees in less prestigious positions (1993, p. 267-7). Similarly, gang members reported having more sex partners than non-gang members (Palmer & Tilly, 1995, p. 216), and soldiers who received the Congressional Medal of Honor after World War II had more children than veterans who were not awarded (Rusch, Leunissen, & Van Vugt, 2014 as cited in Van Vugt & Tybur, 2014, p. 18).

Females benefit from high-status partners because the latter can provide better access to resources and offer protection (Jensen-Campbell et al., 1995). Furthermore, women suspect that the adaptive dominance-related skills and traits of their mating partners are genetically passed on to their offspring, ensuring a higher probability of survival (Snyder, Kirkpatrick, & Barrett, 2008). Hence selection should have favored women who preferred high-status males. Buss's (1989) cross-cultural study on mate preferences demonstrates that women worldwide prefer males with status relevant traits such as ambition. In women, on the other hand, high status negatively correlates with reproductive success (Fieder et al., 2005; Fieder & Huber, 2007; Hopcroft, 2006; Nettle & Pollet, 2008; Weeden et al., 2006). This relationship also holds for positions of status and power in organizations. Fieder and Huber (2012) found in a longitudinal study that men in supervisory positions had more children than their peers in non-supervisory positions. Women in supervisory positions, however, had on average fewer children than their peers in non-supervisory positions. Fieder and Huber concluded that due to this negative relationship, women have a "weaker evolutionary drive to increase their status" than men (2012, p. 200), providing an evolutionary explanation for the gender gap in top management positions.

Sex differences in hierarchy building. Geary (2010) noted a global, timeless sex difference favoring men in the desire to build hierarchies and seek high-power positions within them. As demonstrated by Savin-Williams (1987), male hierarchies form more quickly than female ones and are more strongly structured (Mast, 2001). Across cultures, generations, political ideologies, and socioeconomic status, men have more frequently been taking coercive strategies and establishing strong hierarchies, while women were more likely to strive for social equality (Pratto & Hegarty, 2000; Sidanius, Pratto, & Bobo, 1994; Sidanius, Pratto, Rabinowitz, 1994). Those differing preferences also surface in politics (Geary, 2010, p. 251). Geary argued that politics are "largely a manifestation of competition between coalitions of men, coalitions that include women in democratic societies" (2010, p. 251). An assessment of political agendas showed that men's political goals were more concerned with dominating other groups, e.g., through military spending, going to war, the death penalty, and capitalism, while women prefer to support political actions which empower low-status groups and therefore attenuate hierarchical structures (Pratto, 1996, p. 185-7; 1997a, p. 54). Additionally, men appreciate political activities more than the average woman (Fodor, 2002; Willingham & Cole, 1997; Verba et al., 1997), indicating that men might be more interested in actively controlling social structures. This is supported by findings suggesting that males of all age groups feel a greater desire to be in control (Burger & Cooper, 1979; Gunnar-von Gnechten, 1978; Epel et al., 1999).

Dominance hierarchies in organizations. The prevailing situation of men occupying the great majority of top leadership positions might be another indication of men's preference for hierarchies. By the end of 2014, only 10% of board members worldwide were women (Sojo et al., 2016). At the same

time, organizational structures in the mostly male-dominated companies represent classic dominance hierarchies that depend on opportunity, power, and the proportional representation of social groups (Kanter, 1976, 1977). A large-scale investigation revealed a positive linear relationship between the opportunity to progress in hierarchical position (measured as the number of career steps an employee could go during one promotion) and the percentage of male workers. The steeper the hierarchy, i.e., the more steps a worker could progress in the hierarchy during one promotion, the higher was the share of male workers (Grinker et al., 1970). In contrast, females are more likely to lead companies that are less concerned with status and individuals' success in competition with others (Gagliarducci & Paserman, 2015). A study investigated differences in the relationship between subjective well-being and status of position (Trzcinski & Holst, 2012). Status of position ranged from being unemployed (low-status rank) to being a manager (high-status rank). As predicted, men reported increasing life satisfaction with increasing status, with men in management positions reporting the highest level of well-being. In women, well-being was unrelated to status. Employed women reported comparable levels of well-being irrespective of their specific status – only unemployed women reported lower levels of life satisfaction.

The behaviors that serve the building of dominance hierarchies are manifold and vary between the sexes and over the life course (Savin-Williams, 1987). Typical behavioral strategies that serve the development of hierarchies are *dominance behaviors* and *coalition-building*.

3.2.1.1 The Male Strategy of Dominance Behavior

Definition of dominance behavior. Dominance is a “constellation of global behavioral styles linked to a motivation to gain high status” (Mehta & Josephs, 2010, p. 899). This broad and comprehensive definition of dominance applied here comprises both *dominance in a narrower sense* as well as other behaviors concerned with gaining and maintaining status. Other behaviors that are subsumed under dominance in this research work, but considered strategies equal to dominance in other publications, are *prestige* and *aggression*.

Dominance in a narrower sense has been described as being assertive, controlling, and intimidating (Maner & Case, 2016). Behaviors linked to this form of dominance can be clear and observable, like verbal commands, or subtler, like an expansive posture or verbal fluency (Kalma, 1991). Dominance behaviors that Savin-Williams identified within the pilot study for his summer camp investigations, for example, included behaviors like verbal directives, verbal ridicule, physical assertiveness with contact, recognition, physical or object displacement, verbal or physical threat, counter dominance, and verbal control (Savin-Williams, 1987, pp. 42-3).

Aggressive behaviors are one of the most assessed behaviors in terms of dominance and sometimes even treated equivalently to dominance in a narrower sense. Aggression is behavior which has the goal to harm or injure other people (see Coie & Dodge, 1998) and has been linked to status rank in dominance hierarchies (Francis, 1988).

Aggression can be expressed in overt, direct and covered, indirect forms. Direct aggression is characterized by its immediate effect on the victim and its openness (Ingram, 2014, p. 344). The aggressor can easily be identified by the victim and possibly third parties, which can cause social costs to the aggressor. Indirect aggression, on the other hand, affects the victim after a certain timeframe “via the negative reactions of others... [when] the victim gets into trouble at the end of a chain of mediating events and people” (Buss, 1961, p. 8). In this case, the aggressor is not as easily identifiable, so that social costs are reduced. On the other hand, the harm caused is more difficult to control.

Overt aggression helps to achieve status rank and prestige in children's groups, but people are increasingly driven away by overt aggressive behavior with age so that it fails to yield status later

(Hawley, 1999). Accordingly, overt aggression has been observed to decrease with age. In adult humans, overt forms of aggression are not part of every-day life but represent “only the tip of the iceberg of adult interpersonal aggression” (Björkqvist, Österman, & Lagerspetz, 1994, p. 32). Instead, starting from childhood, humans develop subtler and rather covert forms of aggression that aim at negatively influencing the victim’s social reputation (Archer & Coyne, 2005). Those forms of indirect aggression are more complex and mostly verbal.

While aggression is closely connected to dominance behavior in a narrower sense, *prestige* is an alternative route to dominance in a narrower sense at gaining and maintaining status in a dominance hierarchy (Halevy, Chou, Cohen, & Livingston, 2012; Henrich & Gil-White, 2001; Kakkar, Sivanathan, & Gobel, 2020; Maner & Case, 2016). Prestige-related behavior entails demonstrating competence, knowledge, or skills (Koski, Xie, & Olson, 2015; Mazur & Booth, 1998; Terburg & Honk, 2013) and willingness to share it with other members of a group (Henrich & Gil-White, 2001). Prestigious individuals are honored, well-respected, and looked up to. Instead of fear, which can be induced in others by dominance behavior, prestige-related behavior aims at creating admiration and a desire for proximity in others (Henrich & Gil-White, 2001; Snyder, Kirkpatrick, & Barrett, 2008). Further, prestigious individuals are observed and preferentially copied in their behavior (Henrich & Gil-White, 2001). Due to their position as role-models, prestigious individuals help others to achieve their goals, and, in return, they are offered enhanced access to resources (Hill & Kaplan, 1988).

The concrete values and skills that are admired in an individual may vary across cultures (e.g., Robinson et al., 2015) since they result from “the accumulation of knowledge and technical innovations over thousands of generations; they are the product of history” (Chapais, 2015, p. 173). Most prestige-enhancing skills in modern societies, e.g., programming computer software or writing a scientific paper, are only possible because of our ancestors’ preparatory work. Individuals in traditional societies can excel at skills like hunting, gathering, cooking, making tools, telling stories, playing music, dancing, wrestling, trading, waging wars, or dealing with supernatural entities (Chapais, 2015, p. 173).

Sex differences in dominance behavior. The majority of studies finds that males have a greater preference for social dominance compared to females (e.g., Arkoff, Meredith, & Iwahara, 1962; Neff & Terry-Schmitt, 2002; Sidanius, Pratto, & Brief, 1995, cf. Ellis et al., 2008, p. 759). In Savin-Williams’ camp studies (1987), for instance, boys displayed 16.25 dominance interactions per hour, while females displayed only 6.34 dominance interactions per hour. This sex difference favoring boys has been found to be stable across cultures as well as across demographic and situational factors such as age, religion, educational background, ideology, ethnic-cultural background, and gender-role relevant opinions (Sidanius, Pratto, & Bobo 1994; Sidanius, Pratto, & Rabinowitz, 1994).

Omark, Omark, and Edelman (1975) studied 950 children of 4 to 10 years of age in the US, Switzerland, and Ethiopia. The children were asked to rank their classmates with respect to whether they would successfully compete for money or candy thrown into a crowd of people. The dominance hierarchies that resulted consistently contained boys at the top of the hierarchy, while the bottom of the hierarchy was occupied with females. Further, the boys seemed to be more agreeing on the ranking compared to the girls, indicating higher consistency in male dominance hierarchies as found by Savin-Williams (1987) in the male cabin groups. In another cross-cultural field study in Okinawa, New England, Kenya, the Philippines, India, and Mexico, 8,500 social interactions between children were analyzed. In all six cultures, boys displayed egoistic dominance behavior more frequently than girls (Whiting & Edwards, 1992, p. 235). These consistent findings across cultures indicate that dominance preference in males may not result from cultural pressures and social-structural influences but be rooted in an evolutionary adaptive mechanism.

Direct forms of aggression are believed to have higher reproductive benefit in men as compared to women due to the differing benefit-cost-ratios for the sexes. An individual only has an incentive to behave aggressively when the benefits linked to the aggressive behavior outweigh its costs (Georgiev et al., 2013). The success of male-male competition in early-living humans and the resulting monopolization of fertile women depended on direct aggression (Ainsworth & Maner, 2012). Throughout history, there have always been societies that considered homicide an accomplishment that enhances an individual's status (Daly & Wilson, 1988). In females, on the other hand, direct aggression in same-sex competition is believed to have been of less benefit. Women depended on their social community and reciprocal relationships, which they could have jeopardized using direct aggression. Since human females compete for mates less (because they are the limiting factor in procreation), female-female aggression is not linked to reproductive benefit. Due to their weaker bodily force compared to males, females further took significantly higher risks of physical injury or even death by directly competing with males (Georgiev et al., 2013). Hence, it is assumed that females have developed a strategy of *indirect* aggression that gives them the opportunity to use aggressive strategies without jeopardizing their relationships.

There is a strong sex difference in direct and especially physical aggression favoring males; a finding supported by a variety of meta-analyses (Archer, 2004; Card et al., 2008; Eagly & Steffen, 1986; Hyde, 1984; Maccoby & Jacklin, 1974). In indirect aggression, however, females show levels of aggression which equal or even excel those of their male peers (Archer, 2004; Card et al., 2008; Heilbron & Prinstein, 2008). Archer (2004) conducted a meta-analysis on sex differences in aggression in real-world settings. Based on observational studies and self-, peer-, and teacher-reports, he concluded that physical aggression was higher in males across all countries independent of the method used. Similar results were obtained for verbal aggression, although the effect size was smaller. For indirect aggression, on the other hand, females showed higher levels compared to males. This was especially true for observational studies. In self-reports, the effect was still there, but small (Archer, 2004).

Another meta-analysis found that indirect aggression was higher in females when ratings by teachers and parents were considered, whereas self-reports yielded slightly higher scores in males (Card et al., 2008). The results of those high-quality meta-analyses are good examples of how study design and situational factors impact the direction and intensity of reported sex differences in aggression. The existence and extent of sex differences in aggression are highly dependent on different factors: type of encounter (e.g., male-male, female-female, male-female), what group the other individual belongs to (e.g., kin, work colleagues, strangers), as well as the type of aggression (direct or indirect; Björkqvist & Niemelä, 1992). Another important factor in the exhibited form of aggression seems to be age. Sex differences in direct and physical aggression, in particular, have been demonstrated to be largest in children, moderate in adolescents, and smallest in adults (Hyde, 1984). One possible explanation for the decrease of sex differences in aggression with age is that the biological predisposition for sex differences depends on sociocultural influences (Lippa, 2005, p. 140).

Just as with dominance and aggression, prestige is linked with higher status and reproductive success in males (von Rueden, Gurven, & Kaplan, 2011). There is some indication that in industrialized societies, women value prestige in potential mating partners even more than dominance in the sense of assertiveness (Snyder, Kirkpatrick, & Barrett, 2008). A study from 2006 analyzed data from the US General Social Survey and confirmed that high-income men report having more sex and more biological children than low-income men or high-income women. Highly educated men also had more biological children than highly educated women (Hopcroft, 2006).

Evolutionary psychology predicts that these merits should translate into increased efforts to demonstrate prestige in men. Accordingly, some significant sex differences in prestige-related attitudes

and behaviors have been reported. Men compared to women demonstrate a higher preference for tasks involving the demonstration of skills as compared to reliance on chance (Chantal & Vallerand, 1996; Feather, 1969; Hudgens & Fatkin, 1984). They have consistently been reported to have on average more general knowledge than women (Jensen & Reynolds, 1983; Lynn, Wilberg, & Margraf-Stiksrud, 2004; Lynn, Irwing, & Cammock, 2001), and they like to boast their abilities more than women do (Goldman et al., 1990). Their jobs are on average more central to their life when compared to women (Izraeli, 1994; Thompson & Blau, 1993), and they are more likely to achieve eminence within their occupation (Gang & Guiyang, 2000; McDermott, 2002).

Dominance in organizational settings. Experimental research found that dominance is a good predictor of leadership in same-sex dyads, but that in mixed-sex dyads, men are more likely to emerge as leaders (Hegstrom & Griffith, 1992; Nyquist & Spence, 1986; Ritter & Yoder, 2004). Furthermore, masculine (i.e., both men and women) and authoritarian individuals are more likely to occupy leadership positions (Ensari et al., 2011; Gershenoff & Foti, 2003). These findings imply a strong selection process according to which women end up in leadership positions who are no less dominant in a narrower sense than their male counterparts. This is supported by the lack of sex differences found in leadership styles such as task-orientation and initiating structure as well as transactional leadership (see section 3.1.3.1). Those leadership dimensions often entail behaviors related to assertiveness and authority and are hence related to dominance behavior.

Reaching leadership positions implies that one has successfully competed with others for those positions. This kind of competition is closely linked to dominance interactions. Research indicates that women, on average, do not enjoy those competitions (Lee, Kesebir, & Pillutla, 2016). Thus, they are likely to withdraw from them and, at the same time, contributing to the self-selection process through which mainly dominant women get to be selected for leadership positions. In fact, women are less likely to enter (Mayr et al., 2012) and more likely to exit competitive settings – especially as the share of women shrinks (Hogarth, Karelaia, & Trujillo, 2012). Especially when it comes to applying for leadership positions, women have been shown to draw back from the competition. In a laboratory experiment during which one person was needed to take on a “representative” role (i.e., a leadership position), men and women were equally likely to volunteer as long as the representative was chosen at random. When the representative needed to be elected in a competitive procedure, however, women were significantly less likely to apply for the position (Kanthak & Woon, 2015). Another study systematically manipulated a mass e-mail, which contained information about the procedure for running-for-office and was sent to highly active members of a political party. When women were addressed in a neutral manner, 20 percent showed interest by clicking on provided web links. When the first set of information highlighted the competitiveness of the running-for-office procedure, however, the percentage shrank to 5 percent. Men, on the other hand, were significantly more likely to click on links and watch informational videos than women irrespective of the condition (Preece & Stoddard, 2015).

Nevertheless, even those women that reach leadership positions engage in competitive behaviors less than their male colleagues (Robinson & Lipman-Blumen, 2017). The sex difference in competitiveness, however, is moderated by age and seems to disappear from the age of 50 (Flory et al., 2018). This is supported by a study demonstrating that women in their post-reproductive phase have a *higher* social dominance orientation than men. The authors argue that these women are no longer fertile and have passed their reproductive life-period. Hence being attractive to potential mating partners has lost relevance (cf. Sadalla, Kenrick, & Vershure, 1987), and male strategies to acquire resources might be more effective (Küpper & Zick, 2011).

The literature hence gives reason to believe that although men are overall more dominant than women, women in leadership position might be more dominant than women in the population. Depending on the specifications of the selection pressures (i.e., how much dominance is thought beneficial for that particular position), women leaders may be just as dominant as their male counterparts.

Several studies have investigated the occurrence of aggression in workplace settings, finding that both direct and indirect forms of aggression are common in workplace settings (Kaukiainen et al., 2001). Surprisingly, according to Baron and Neuman, direct forms of aggression are even more frequent than indirect forms of aggression (1996). Direct forms of verbal-passive aggression were not to return phone calls or ignoring somebody in a meeting. Direct verbal-active forms of aggression are yelling or shouting at someone or insulting them. They also noted direct physical forms of aggression and indirect aggression. Table 4 provides an overview of examples regarding the different forms of workplace aggression.

Table 4
Examples of Eight Forms of Workplace Aggression

Type of aggression	Examples
Direct (verbal-passive)	Failing to return phone calls Giving someone "the silent treatment"
Direct (verbal-active)	Insults, yelling, shouting Flaunting status or authority Acting in a condescending, superior manner
Direct (physical-passive)	Purposely leaving a work area when target enters Reducing others' opportunities to express themselves (e.g., scheduling them at the end of a session so that they don't get their turn)
Direct (physical-active)	Physical attack (e.g., pushing, shoving, hitting) Negative or obscene gestures toward the target
Indirect (verbal-passive)	Failing to deny false rumors about the target Failing to transmit information needed by target
Indirect (verbal-active)	Spreading false rumors about the target Belittling someone's opinions to others
Indirect (physical-passive)	Causing others to delay action on matters of importance to the target Failing to take steps that would protect the target's welfare or safety
Indirect (physical-active)	Theft or destruction of property belonging to the target Needlessly consuming resources needed by the target

Note. Adapted from Baron & Neuman, 1996, p. 164.

Björkqvist and colleagues focused on *sex differences* in aggressive behavior in the workplace (Björkqvist, Osterman, & Lagerspetz, 1994). They had 338 employees at a university fill out questionnaires about how they experienced co-workers' and superiors' aggressive behavior. In this questionnaire, they distinguished between two forms of aggressive behavior: rational-appearing aggression and social manipulation. Rational-appearing aggression complies with the definition for *direct* aggression since its effect is immediate, and the aggressor can easily be identified. Examples are interrupting or criticizing others, reducing their opportunities to express themselves, and judging their work in an unjust manner. Social manipulation refers to behavior that was classified as *indirect* before. Examples of social manipulation are spreading false rumors, negative glances, and 'do-not-speak-to-me'-behavior. The authors confirmed that overall direct aggression was used more frequently than indirect aggression. As predicted by research on sex differences in aggression, male superiors and coworkers were reported to apply more direct aggression, while females were more likely to use indirect aggression (Björkqvist, Osterman & Lagerspetz, 1994). A more recent study, however, found more direct forms of aggression in men and similar levels of indirect aggression between men and women (Arnold et al., 2011). Neither of the studies distinguished between leaders and non-leaders. One study

did assess both managers' and workers' expressions of direct and indirect aggression. Controlling for status position (i.e., leaders and non-leaders), it found men to show *both* more direct aggression as well as indirect aggression. Unfortunately, the authors did not compute results for the individual groups (Lee & Brotheridge, 2010).

The field of workplace bullying offers some more insights into the issue of sex differences in leader aggression. Workplace bullying is a widespread phenomenon that entails repeated aggressive behaviors towards an individual who feels helpless in terms of retaliation (Einarsen & Skogstad, 1996, p. 187). In a Norwegian study on 7,986 employees from 14 organizations, the authors found that around half of the workplace bullying (54%) is executed by employees in leading positions such as managers or immediate supervisors. For the rest of the article, the authors unfortunately did not distinguish between managerial and non-managerial bullies. Overall, 70% of the male victims in the study reported to being bullied by men, while 10% reported being bullied by women. The other 20 percent of male victims were bullied by both men and women. Of the female victims, on the other hand, 48% reported being bullied by women, and 31% were being bullied by men. Hence, same-sex-bullying was the most common, and it cannot be concluded that men are more aggressive than women in leadership positions. Interestingly though, the study found that irrespective of sex, bullying was significantly more likely to occur in male-dominated organizations ($p < 0.001$). Others confirmed that predominantly male organizations facilitate workplace aggression (Einarsen & Skogstad, 1996; Kaukiainen et al., 2001). A British study reported similar findings according to which same-sex bullying was common. Men were more likely to be bullied by another man (62 percent) than women were to be bullied by another woman (37 percent; Hoel, Cooper, & Faragher, 2001).

The findings above indicate that male leaders might express more aggressive behaviors than female leaders. Overall, however, the amount of research conducted on the matter thus far does not suffice to answer the question of whether and in what way leader sex differences in aggression prevail in organizational settings. As for now, the results demonstrate that aggressive behavior occurs in both male and female leaders and that the likelihood of such behaviors to occur is more likely in male-dominated structures.

Despite clear sex differences in prestige-related behaviors favoring men in population samples, no research has been conducted yet on sex differences in prestige-related leader behaviors. A meta-analysis on job attribute preferences reported no sex difference in preference for prestige as a job attribute (Konrad, Ritchie, et al., 2000). In another meta-analysis on a smaller sample, the same authors even found a sex difference in prestige favoring females (Konrad, Corigall, et al., 2000). Investigating the relationship between occupational prestige and the share of women, studies have consistently reported no linear relationship between the two factors (England, 1979; Glick, 1991; Xu & Leffler, 1992). However, men predominantly occupy prestigious leadership positions (England, 1979). Furthermore, occupations that are almost exclusively represented by men have higher on average prestige than occupations exclusively represented by women (England, 1979; Xu & Leffler, 1992).

3.2.1.1.1 Phylogenetic Evidence of Sex Differences in Dominance Behavior

Phylogeny is concerned with the evolutionary development of a species and its past and present relationships to other species. For evolutionary psychology, behavioral similarities across species are particularly interesting, because they hint at a common ancestry and genetic kinship. As in humans, the males of many animal species behave more dominantly and aggressively than females. Darwin had already observed that "male monkeys, like men, are bolder and fiercer than the females" (Darwin, 1871, p. 320). During aggressive encounters, for example, female macaques submit immediately in 87.5% of encounters, while males submit only in 55.1% of encounters and react more frequently with aggressive

behavior (Cooper & Bernstein, 2002). In a colony of rats, which was observed for 15 months, males demonstrated a higher overall level of aggression (Adams & Boice, 1983). Observing nine wasp colonies, the author of another study found that males “chased, bit and displaced females, while females responded to male aggressive behavior with subordinate behavior, including fleeing, crouching and flying from the nest” (O’Donnell, 1999, p. 276-7) and almost never acted dominantly towards males.

A review on 16 primate species concluded that non-human primates show no consistent pattern of sexual dimorphism in aggression since in some species males and in other species females were more agonistic in their behavior (Smuts, 1987, p. 411). The inconsistency could be caused by the lack of distinction between direct and indirect aggression. One reason for the adaptiveness of indirect aggression is the physical inferiority of one sex. In chimpanzees, females are physically smaller than males (Uehara & Nishida, 1987), indicating a benefit of indirect aggression. Holmström reported indirect acts of aggression during which female chimpanzees killed and ate other females’ offspring or refused mating advances by males (Holmström, 1992). He reported those acts of indirect aggression exclusively in females. His findings indicate that humans and other species where females are physically inferior to males might share the commonality that females have developed alternative strategies to harm competitors in their struggle for access to resources.

Smuts also found that in all 16 primate species, male-on-male aggression had more severe effects than female-on-female aggression (Smuts, 1987; Geary, 2010, p. 127), indicating that males were more violent than females. Various individual primate studies further consistently reported a sex difference in aggressive behavior favoring males (Altmann, 1968; Angermeier et al., 1968; Fedigan & Baxter, 1984; Hall & DeVore, 1965; Hinde & Spencer-Booth, 1967; Lovejoy & Wallen, 1988; Nagel & Kummer, 1974; Nieuwenhuijsen et al., 1988; Reinhardt, 1987; Wallen, 1996). Particularly in chimpanzees, man’s closest relative, studies report that males are responsible for the large majority of aggressive encounters and attack five times as frequently as female chimps (Muller, 2002; Nishida, 1970; Sugiyama, 1969; Van Lawick-Goodall, 1968).

The acquisition of skills that are related to prestige in humans depends on the accumulated knowledge of many generations and is deeply intertwined with human culture. Chapais (2015) concluded that since culture in animals is not cumulative (Dean et al., 2012; Tennie et al., 2009; Tomasello et al., 1993), competence and skill levels in non-human animals do not exceed very basic forms. Hence empirical evidence demonstrating individuals’ superiority in knowledge and competence is scarce in non-human animals (for exceptions, see Gruber et al., 2015; Horner et al., 2010). Still, animals too acquire competencies throughout their life-course, such as termite fishing, nut cracking, or hunting (Chapais, 2015). Whether there are sex differences in that domain in animals has as yet to be determined.

3.2.1.1.2 Ontogenetic Evidence of Sex Differences in Dominance Behavior

Infancy. No field studies report social motives and dominance related behaviors for infant males and females because the complexity of group interaction depends on a level of cognitive ability which is not reached in children before the age of 5 years (Freedman, 1974; Benenson, Duggan, & Markovits, 2004, p. 174). Accordingly, sex differences in dominance, such as aggressive behavior, are usually only reported for children older than the age of two (Maccoby & Jacklin, 1980; Parke & Slaby, 1983). As predicted, the sex differences reported in those studies favor males (Strayer & Strayer, 1976; Maccoby & Jacklin, 1980; Parke & Slaby, 1983; Tieger, 1980; Underwood, 2003). Nevertheless, two studies indicate that sex differences in aggression are already present in infants younger than two years of age. Missakian (1980) executed an observational study in a Synanon School, where children lived in peer groups from birth until the age of 16. The setting was convenient for the research purpose because the Synanon philosophy propagates minimal adult intervention and hence little gender-role stereotyping

through educators. Over twelve months, aggressive and submissive actions of 34 children (15 females) were recorded. In the infant group aged seven to twenty months, the study reported boys to demonstrate significantly more direct aggressive behavior than girls (Missakian, 1980). Another study measured infants' reactions to adults either cradling or hitting a balloon in a laboratory setting. Boys were significantly more likely to hit the balloon than girls when given the opportunity, demonstrating a preference for physically aggressive behavior (Benenson, Tennyson, & Wrangham, 2011).

2D:4D. Several studies found the predicted positive relationship between prenatal testosterone exposure and dominance behavior. Manning and his colleagues (2008) found a medium positive correlation between prenatal testosterone exposure measured through 2D:4D digit ratio and dominance behavior in 153,429 male and female heterosexuals. Investigating two traditional small-scale societies in Tanzania, Butovskaya and colleagues found men in those tribes to have higher self-assessed measures of dominance and lower 2D:4D digit ratios than women (Butovskaya et al., 2015). Looking only at women, Wilson had 985 females measure their own finger lengths and assess themselves in terms of assertiveness. As predicted, he found a low digit ratio to be related to greater levels of assertiveness (Wilson, 1983). Supporting these results, Neave and colleagues (2003) found a negative relationship between dominance and digit ratio in men and a negative relationship between digit ratio and masculinity in general. However, other studies report no interrelationship of prenatal testosterone and dominance (Putz et al., 2004; Vermeersch et al., 2008). Ryckmans, Millet, and Warlop (2015) argue that those discrepancies are resolved when participants' reactions to dominance cues instead of self-assessments are measured.

As yet, seventeen studies carried out analyses on the relationship between aggression and 2D:4D. The majority of them confirmed that males have higher levels of aggression than women. Four of them analyzed both male and female participants and found the expected relationship of low digit ratios and high levels of aggression (Butovskaya et al., 2015; Joyce et al., 2013; Shaw et al., 2012; Hampson, Ellis, & Tenk, 2008). Six out of the 17 studies found the expected correlation, too, but included only male participants in their investigations. They found that low 2D:4D ratios correlated with aggressive personality measures (Van der Meij et al., 2012), aggressive behavior in sport settings (Perciavalle et al., 2013; Mailhos et al., 2015), and academic settings (Coco et al., 2011), a preference for aggressive contents (Huh, 2011) and the susceptibility to aggression enhancing stimuli (Kilduff et al., 2013). Of the remaining studies, four reported the expected correlation between digit ratio and aggression in one sex, but not the opposite one (Bailey & Hurd, 2005; Benderlioglu & Nelson, 2004; Butovskaya et al., 2013; Kuepper & Hennig, 2007). Only three studies found no relationship between aggression scores and digit ratio (Putz et al., 2004; Vermeersch et al., 2008; Voracek & Steiger, 2009).

There are some indications from the 2D:4D paradigm that indicate a higher innate tendency in males to engage in prestige-enhancing behaviors. People who engage in professional sports are considered to excel in a particular skill and are considered prestigious by their peers. Low 2D:4D, indicating high prenatal testosterone exposure, correlated positively with success in professional sports such as football, rugby, rowing, endurance running, swimming, and slalom skiing (Hönekopp & Schuster, 2010; Longman, Stock, & Wells, 2011; Manning, Morris, & Caswell, 2007; Sudhakar, Veena, & Nadig, 2013). A study on women performing sports non-professionally (Paul et al., 2006) found that also in amateurs, individuals who perform sports on advanced levels have smaller digit ratios.

CAH girls. Based on the prediction that testosterone is positively related to direct aggression, girls affected by congenital adrenal hyperplasia should be more dominant than unaffected controls. A few studies have linked CAH with dominant behavior. Some of them indicated no behavioral differences in dominance (Dittmann et al., 1990b; Mathews et al., 2009). A later study, however, distinguished between the more severe salt-wasting form of CAH and the less severe simple-virilizing form of CAH.

Both the subjects and their mothers assessed the CAH girls' dominance behavior. The salt-wasting CAH girls differed significantly from both salt-virializing CAH girls and the group of healthy sisters in being more dominant (Dittmann et al., 1990a). This finding implies that other studies that did not find any differences between CAH girls and health controls could have been distorted by the lacking distinction between different forms of CAH.

The majority of studies on the subject further confirm that CAH girls are more aggressive than healthy controls (Berenbaum & Resnick, 1997; Gordon et al., 1986; Idris et al., 2014; Mathews et al., 2009; Pasterski et al., 2007), although two of them could not generate the expected result (Ohlsson Gotby et al., 2015; Slijper et al., 1984). The latter did not distinguish between the two types of CAH (Ohlsson Gotby et al., 2015). Furthermore, the latter used criminality as a measure of aggression, which is a special kind of aggressiveness that is socially not tolerated. With respect to prestige, no studies from infancy or CAH girls could be identified.

3.2.1.1.3 Mechanisms of Sex Differences in Dominance Behavior

There is growing evidence for the existence of neurological and endocrinological mechanisms that facilitate dominance behavior. Some of those mechanisms display sex differences in structure and function, demonstrating that differences in male and female behavior might have a biological root cause.

Brain. Brain features engaged in recognizing and building hierarchies that have been proposed to differ between the sexes are overall brain size and the amygdala. Brain size is associated with social competition, while the amygdala is mainly associated with the strategy of aggression.

Pawlowski, Lowen, and Dunbar (1998) and Sawaguchi (1997) found that the magnitude of social competition among non-human primate males for mating partners is positively related to brain size. In humans, brain size is one of the most heritable human traits (Miller & Penke, 2007). In general, the male brain is found to be around 9-11% larger in volume than the female brain, even when corrected for body size (Cosgrove, Mazure, & Staley, 2007; Craig, Harper, & Loat, 2004). This sex difference is already visible in infants and persists throughout the life course (Giedd et al., 1997; Gilmore et al., 2007). Men also have more gray matter and white matter (Gur et al., 1999). However, these differences do not concern all functional brain regions. Instead, some functional cortical and subcortical regions are indeed larger in male brains, while other regions are on average larger in female brains (e.g., Ruigrok et al., 2014; Craig, Harper, & Loat, 2004). Furthermore, when adjusted for brain size, women are often found to have a higher grey matter volume compared to men (Gur et al., 1999).

One brain area highly involved in aggression and frequently assessed for its sexual dimorphism is the amygdala. The amygdala is a subcortical brain structure highly interconnected with the rest of the brain and part of the limbic system. The amygdala is considered the center of emotional reactions, especially fear (LeDoux, 2000). Due to its central role in the emotional system, it is also considered to be responsible for aggressive behavior. For instance, people suffering from posttraumatic stress disorder and related anxiety states have an enlarged amygdala. In psychopaths and antisocial individuals, on the other hand, the amygdala is impaired (Colombo, 2014; Yang, Glenn & Raine, 2008). In the famous case of Charles Whitman, who shot 49 people in a rampage at the University of Texas, a brain tumor was found near the amygdala (Eagleman, 2011). In a review on brain lesions in the limbic system, Eichelman (1983) cites various studies demonstrating alterations in aggressive behavior due to lesions in the amygdala.

Studies consistently report that aggressive behavior is negatively correlated with the size of the amygdala, indicating that a small amygdala is associated with high levels of aggression. This result was obtained in studies examining males, females, and children, in longitudinal and large-scale

investigations (Bobes et al., 2013; Gopal et al., 2013; Matthies et al., 2012; Pardini et al., 2014; Thijssen et al., 2015). Furthermore, in aggressive individuals, the amygdala is more strongly activated than in less aggressive individuals when provoked by aggressive stimuli such as angry faces (Bobes et al., 2013; Coccaro et al., 2007; New et al., 2009). Scientists hypothesize that the level of amygdala activation is regulated by the prefrontal cortex. While the amygdala triggers an ‘automatic’ aggressive response, the prefrontal cortex provides analytic information which either supports or oppresses aggressive action (Siever, 2008). One study found that individuals with smaller left orbitofrontal cortices showed higher levels of trait aggression (Gansler et al., 2009). Another one found that aggressive individuals displayed increased amygdalae, but at the same time decreased orbitofrontal cortex activity (Coccaro et al., 2007), although others could not replicate that finding (Beyer et al., 2014).

Contrary to expectations, the amygdala is often found larger in men as compared to women (Caviness et al., 1996; Giedd et al., 1997; Goldstein et al., 2001). Functionally, however, sex differences in the amygdala are as expected. When confronted with threatening stimuli, for example, men show higher activation in the amygdala than women (Schienle et al., 2005; Tahmasebi et al., 2012). Concerning connectivity, research results also point in the expected direction. Women have been found to have a larger ventromedial prefrontal cortex and right lateral orbitofrontal cortex than men (Gur et al., 2002; Welborn et al., 2009). A meta-analysis including 88 studies revealed that the orbitofrontal cortex is more highly activated in women as compared to men when facing amygdala-activating stimuli (Stevens & Hamann, 2012), indicating that women might be better at controlling and inhibiting spontaneous reactions such as aggression (Campbell, 2013). The amygdala and prefrontal cortex have been shown to be interconnected differently in males and females (Tranel et al., 2005). While in males, the two brain regions are more strongly connected in the right hemisphere, in women, they are better interconnected in the left hemisphere. Again, it has been proposed that this difference might contribute to women’s superiority in inhibiting aggressive responses (Gur et al., 2002; Geary, 2010, p. 358).

Hormones. Testosterone levels correlate with dominance behavior, aggression, and status. While the relationship between brain morphology and dominance hierarchies is not well understood yet, the relationship between testosterone and dominance hierarchies has been more thoroughly researched (e.g., Beehner et al., 2006; Kraus, Heistermann, & Kappeler, 1999; Mazur, 1985), although studies on humans are still rare (Hamilton et al., 2015) and findings have not always been clear (Koski, Xie, & Olson, 2015).

The reciprocal model of testosterone and status suggests that status-related social events cause testosterone concentrations to fluctuate around their regular levels. Those fluctuations trigger status-seeking behaviors as a reaction to changes in status (Mazur & Booth, 1998). For example, when a rhesus monkey successfully challenged a member of its group, its testosterone level rose accordingly (Rose, Bernstein, & Gordon, 1975). Studies on humans showed that men and women with high basal testosterone levels demonstrated a decrease in testosterone after dropping in status rank (Josephs et al., 2003, 2006; Newman et al., 2005; Mehta, Jones, & Josephs, 2008). When gaining status, individuals with low basal testosterone levels, however, showed either no change in testosterone (Josephs et al., 2003; Newman et al., 2005; Mehta, Jones, & Josephs, 2008) or sinking testosterone levels (Josephs et al., 2006). The findings were interpreted to imply that testosterone serves as “biological marker of chronic status seeking motivation” (Knight & Mehta, 2014).

The positive relationship between status and testosterone level is commonly associated with the influence of testosterone on dominance behavior (for a review, see Archer, 2006b; Eisenegger et al., 2012). Studies on the relationship of competitiveness and testosterone levels in sport settings, for instance, indicate an increase of testosterone levels from before to after a competitive situation. This effect was greater in the winner as compared to the loser (Archer, 2006b). When individuals were

administered testosterone and confronted with angry faces, they showed less submissive behavior (Terburg et al., 2016).

Research on the relationship between prestige-related behavior and testosterone does not exist yet. Instead, the researcher hence focused on studies that assessed the relationship between individuals who have gained large expertise in a certain field, such as professional athletes and knowledge workers. Studies found that endurance-trained men have lower basal testosterone levels than untrained men (Hackney, 1996; Hackney & Szczepanowska, & Viru, 2003). However, other studies failed to replicate this relationship and did not find a significant difference in testosterone levels of trained athletes as compared to untrained men (Grandys et al., 2011; Storey & Smith, 2012). Another branch of research focused on testosterone in relation to occupational success (Dabbs, 1992; Purifoy & Koopmans, 1979; Schindler, 1979). In women, attorneys' basal testosterone levels were higher than those of athletes, nurses, and teachers (Schindler, 1979 as cited in Dabbs, 1992, p. 814). Testosterone levels in female students, professional workers, and technical workers were elevated as compared to testosterone levels in female clerical workers and homemakers, indicating that in women, prestige is related to increased testosterone levels (Purifoy & Koopmans, 1979).

Dominance research on females is comparatively scarce (Hamilton et al., 2015). One study on female college students found a positive relationship between testosterone levels and dominance behavior but a negative correlation between testosterone levels and assigned status by their suitemates (Cashdan, 1995). This finding indicates that, in women, dominance may not be related to status and reduces their likability instead (Williams & Tiedens, 2016).

The relationship between testosterone and dominance behavior is intertwined with aggression. For example, the reaction of the amygdala to angry stimuli can be manipulated through the administration of testosterone. Several studies show that the amygdala in both men and women reacts more strongly to threatening stimuli when exposed to increased testosterone levels (Derntl et al., 2009; Hermans, Ramsey & Van Honk, 2008; for a review, see Van Wingen et al., 2011). Furthermore, a recent study showed that the effect of testosterone could impact the covariance of the prefrontal cortex and the amygdala (Nguyen et al., 2016). Many researchers conclude that testosterone causes a rather male-typical response in amygdala activation and aggression (Campbell, 2013).

Most studies focus on the relationship between testosterone and aggressive behavior without including brain activation. The administration of testosterone leads to increased aggressive behavior in humans and many animal species, regardless of sex (Ellis, 1986, p. 525). A meta-analysis of 45 studies finds a positive but weak relationship between testosterone levels and aggression. Furthermore, it finds that this correlation is greater in younger individuals as compared to individuals above the age of 35 (Book, Starzyk & Quinsey, 2001). One explanation for this finding is that testosterone levels decrease with age, but more strongly in males. Archer (1991) too found only a small relationship between testosterone and aggression. He pointed out that the measures used to assess aggression differ widely across studies and are thus difficult to compare (Archer, 1991). Furthermore, he found that methods of data assessment, such as self-reports or peer evaluations, influenced study results (Archer, 1991). Accordingly, a variety of studies based on self-reports could find no significant relationship between testosterone and aggression levels (Archer, Birring & Wu, 1998; Campbell, Muncer & Odber, 1997; Rowe et al., 2004).

The most consistent findings have been reported in studies measuring testosterone levels and their correlation with criminal violence. Dabbs and colleagues have demonstrated in various studies that testosterone levels are higher in prison inmates, both male and female, who have committed violent crimes as compared to non-violent crimes (Dabbs et al., 1987; Dabbs et al., 1988; Dabbs et al., 1995; Dabbs & Hargrove, 1997; Dabbs, Jurkovic, & Frady, 1991). In a study utilizing data of more than 4,000

Vietnam War veterans, Dabbs and Morris found that those with higher levels of testosterone were more likely to have demonstrated delinquent behaviors as children and to more vigorously participate in active combat during the war (Dabbs & Morris, 1990). Some studies, however, found that relationship in males, but not in females (Lück, 2005; Maras et al., 2003), indicating that the correlation between testosterone and aggression might be more pronounced in men and depends on comparatively high testosterone levels.

In sum, there is compelling evidence that dominance behavior is a male strategy more frequently pursued by men than women. The adaptive benefit of dominance for males is substantiated by evidence from animal research, humans' ontogenetic development, and biological mechanisms. In primates and other animals, males display more or more forceful dominance behaviors than females. Studies on human development provide evidence that sex differences in dominance and aggression occur in stages so early that they cannot be explained by social influences. Some results from the 2D:4D paradigm further constitute that the same might be true for prestige-related behavior as a measure to achieve and maintain high status in a hierarchical structure. Biological mechanisms such as brain size, structure and functionality of the amygdalae, and the effects of testosterone relate to a sex difference in dominance behavior. Nevertheless, findings from organizational research are less clear at this preliminary point. Although there is some indication that the sex difference holds in organizational settings as well, self-selection processes distort women leaders' average behaviors to resemble that of men.

3.2.1.2 The Male Strategy of Coalition-Building

Definition of coalitions. From an evolutionary psychology perspective, a coalition is a goal-oriented group consisting of at least two members who deliberately join their resources in order to have better access to resources than they would if they did not join forces. Coalitions hence have the goal to execute dominant acts on outgroup members, both individuals and groups, in order to improve the reproductive situation of the group and by extension of its individual members (Duncan, 1976; Gamson, 1964; McDonald, Navarrete, & Van Vugt, 2012). Coalition-building is a second male strategy to achieve the social structure of dominance hierarchies.

According to the definition above, coalitions are groups that form within larger, superordinate groups. This definition entails what seems to be a circular argument: coalitions are built as a strategy to enforce dominance hierarchies, i.e., groups are built to enforce the social structure of another (superordinate) group. So, what social structure exists within coalitions, i.e., the group within the group? Caplow (1956) assumed that individuals *within* a coalition would have the same dominance relation as they would have had if they had not formed a coalition. In Savin-Williams' summer-camp studies, the sex-segregated cabin groups were internally organized as dominance hierarchies, while at the same time they acted as coalitions when competing in camp-wide championships against other cabin groups (1987, e.g., p. 67). His findings hence concur with Caplow's idea of a nested model of dominance hierarchies: several coalitions compete for status rank in a group hierarchy, while at the same time the individual members within each coalition compete for status rank in the intra-coalitional dominance hierarchy. A sports analogy may illustrate the phenomenon: Coalitions resemble sports teams that fight for a championship title. They engage in intergroup competition for resources and form group hierarchies that become manifest in sports league standings. The coalitions, i.e., the individual sports teams, are usually organized as dominance hierarchies. On the top level, there is a leader, i.e., the captain of the team, followed by a substitute captain, higher experienced players (who are usually deployed as starters), and on the lowest level, the least experienced players (who may sit on the substitutes' bench a lot).

Coalitions build when there is an unequal distribution of power within a group. Although each member of the group seeks to gain control over other members, it is the stronger members who will

control and hence dominate weaker members – unless the weaker members can build coalitions. Depending on the initial power distribution, coalitions will change the situation of individual members by augmenting or decreasing their power over other group members. Members' individual power thus stops being predictive of the amount of power they have over other group members (Caplow, 1956). Instead, the accumulated resources of the coalition now determine the individual's power.

The strength and resulting success of a coalition nevertheless depends on the virility of its individual members. Coalitions hence select new members based on their skills and/or the resources that they contribute to the joint pool of resources, e.g., their knowledge or social network (cf. Vigil, 2007). The success of the coalition further also relates to group cohesiveness (Balkundi & Harrison, 2006). Cohesiveness refers to the extent to which members identify with a group and intend to stay a part of it (Wendt, Euwema, & Van Emmerik, 2009). Furthermore, cohesiveness is related to a group's togetherness and unity (Dion, 2000, p. 7). In cohesive teams, individuals perform better (Chang & Bordia, 2001; Langfred, 1998) and have fewer conflicts (Jehn & Mannix, 2001; Nibler & Harris, 2003). In fact, individuals may actively engage in conflict-solving and conflict-avoiding activities to increase group cohesiveness and maintain flexibility as to whom they form alliances with. Individuals will form coalitions with those who are the most likely to increase their own reproductive benefit. Accordingly, individuals will be more successful in building effective coalitions when their pool of possible allies is as large as possible.

While dominance behavior consists of the strategies of assertiveness, aggression, and prestige-related behavior, coalition-building is assumed to rest predominantly on *cooperation* as has been demonstrated by coalition researchers from various fields (for an early review, see Murnighan, 1978). To some, coalition-building and cooperation are factually equivalent (cf. Van Vugt, Cremer, & Janssen, 2007). The extent to which individuals are willing to cooperate is closely related to their *trust* in others, which is reflected in their willingness to *take risks* (Simpson & Van Vugt, 2009, p. 84-6).

Trust refers to behaviors that deliberately expose oneself to vulnerability. Individuals who trust expect the other person to act in their interest (Mayer, Davis, & Schoorman, 1995). Trust is positively related to cooperation. A meta-analysis demonstrated that trusting others positively impacts work-related outcomes such as task-performance and citizenship behavior, and reduces counterproductive behaviors (Colquitt, Scott, & LePine, 2007). The same meta-analysis also demonstrated that high levels of trust relate to higher risk-taking. When individuals willingly make themselves vulnerable to others, they take the risk that their expectations will be violated and that they will be taken advantage of instead. Hence, trust and risk-taking are closely related. Accordingly, an innate tendency to build coalitions should be reflected by individuals' higher willingness to cooperate, demonstrate trust, and take risks.

Sex differences in coalition-building. The male-warrior-hypothesis postulates that coalitions used to be of higher benefit to men than to women because of intergroup conflict. Competing for resources, males of different tribes and groups have engaged in warfare throughout human history (Gat, 2006; Guilaine & Zammit, 2004). Due to their greater physical force and lower investment in offspring, males' engagement in these intergroup conflicts paid off reproductively, whereas, for females, the costs outweighed the benefits. To increase their chances to succeed in intergroup competition, men of each group formed coalitions. By joining their resources in the forms of physical and mental power, weapons, or other supporting equipment, men could obtain a strategic benefit over their competitors. Geary highlighted that in modern societies, politics are a common form of coalitional competition that men use to dominate other groups and to acquire resources (Geary, 2010, p. 251).

Members of coalitions have been shown to have greater status and more mating partners than non-members (Van Vugt, 2009). When men are part of a coalition, they identify with it more strongly than females and are more willing to invest in it (Markovits et al., 2017; Van Vugt, De Cremer, & Janssen,

2007). For instance, when male study participants were manipulated to feel like being a part of a specific group, which was being compared to other groups, they donated more money to it than when they felt no connection (Van Vugt, De Cremer, & Janssen, 2007). The coalition or group as a whole is important to them – not its individual members (cf. Gabriel & Gardner, 1999). As a result, groups of boys are usually highly interconnected, i.e., one boy's friends are also friends with each other. This is not true for girls' groups – larger groups of girls usually fall into unrelated clusters (Benenson, Apostoleris, & Parnass, 1998).

Due to its goal-orientation, coalition-building is pragmatic in nature. In order to maximize their options, males have been found to *reconcile* with their opponent quickly after conflicts (Benenson & Wrangham, 2016). Savin-Williams (1987), for example, reported that after fights, adolescent boys made decent attempts to reconcile. In the girl cabins, this kind of behavior was not observed. Benenson and Wrangham (2016, p., 2209) propose that in-group cooperation is evolutionary more common in men so that the affiliation behavior increases the likelihood of possible future coalitions. In a cross-cultural study on athletes from 44 different countries, they found that men engaged significantly more in post-conflict affiliation as compared to women. Women were more resentful than men indicating that once their trust had been violated, they were less likely to trust the other individual for a second time. A managerial study, for example, reported that one reason for female underrepresentation in top management positions is that women are less likely to apply for a job at a company that has rejected them in the past (Brands & Fernandet-Mateo, 2017).

In an early experiment, Vinacke and Gullickson (1964) investigated sex differences in coalition-building. For a board game, participants were assigned to one of three different situations: all players had equal power, all players had different amounts of power so that power distribution could be shifted by coalition-building, or one player was so powerful that the other two players could not exceed the one individual's power by coalition-building. Sex-segregated groups of three different age groups (1-8 years, 14-16 years, 18-22 years) repeatedly played the game at which the power distribution changed with each game. The findings show that male groups used different coalition-building patterns than female groups, especially in the college-aged groups. Male groups showed what the authors called an "exploitative strategy". For example, boys spent significantly more time bargaining to reach the best deal, they were more likely to build coalitions when power distribution was equal or different for all, they were more likely to build two-person-alliances against the third player, and they were less likely to split their win half-half after successfully forming two-person-alliances. Vinacke and Gullickson (1964) hence provide evidence that men form pragmatic, goal-oriented coalitions more easily than women.

A sex difference in coalition-building is further reflected by men's generally greater desire for group interactions as compared to dyadic interactions. There seems to be an inherent benefit in males organizing in groups more than females, as research found that boys who are part of a group have social advantages and more self-esteem than boys who do not interact in groups. This effect did not hold for girls in those studies (Benenson, 1990; Ladd, 1983; Waldrop & Halverson, 1975). In the summer camp studies, it was conspicuous that boys spent their free time in group activities such as playing team sports with their cabin mates, while the girls rarely engaged in group activities in their free time (Savin-Williams, 1987). A study analyzing 111,863 profile pictures on Facebook confirmed men's tendency to form groups. Men's profile pictures contained more people than women's profile pictures, no matter whether the groups were same-sex or mixed. The larger a same-sex group depicted on a profile picture, the more likely all individuals in that picture were male (David-Barrett et al., 2015). Fittingly, men further display on average higher contact affinity than females (Fedigan & Baxter, 1984, p. 283).

For groups such as coalitions to form, individuals need to be willing to trust others. Research revealed that there seems to be a sex difference in trust favoring men (Alesina & La Ferrara, 2002; Terrell &

Barrett, 1979), although there are situations in which this difference is reversed (e.g., trust in close friends, Roy, Benenson, & Lilly, 2009, p. 98; situational fear motive, Simpson & Van Vugt, 2009). A study on Facebook users' self-presentation, for instance, found that men worldwide are more concerned about sharing information through the social network, whereas females are more concerned with controlling their privacy settings (Kuo et al., 2013, p. 641).

A more common way to assess people's willingness to trust and cooperate with strangers is economic games. Playing economic games, men show more trusting behavior, e.g., by sending higher amounts of money to their opponents (e.g., Buchan et al., 2008; Dittrich, 2015). In a cooperation task, dyads that included at least one male were more successful than female-female-dyads. A study using brain imaging techniques found that in this situation, male-male-dyads showed a conspicuous congruence in individual brain activity of mentalizing brain regions, indicating that two men try to understand each other's strategy and motives. Women, on the other hand, relied on motoric brain regions that were unrelated to mentalizing processes (Baker et al., 2016).

A recent meta-analysis substantiated that male-male interactions were overall more cooperative than female-female interactions (Balliet et al., 2011). However, it found no overall sex difference in cooperation. It has been argued that this is due to differing motivational and structural factors that underly the various economic games that have been treated equivalently in the meta-analysis (Simpson & Van Vugt, 2009). The salience of group membership or personal relationships might also have biased the results of the meta-analysis. Maddux and Brewer (2005) demonstrated that men differ from women in their trust antecedents to support their innate preference for coalition-building. According to their findings, men trusted based on shared group status, while women trusted based on direct or indirect personal relationships with the trustee. To men, personal relationships did not predict trusting behavior.

Coalition-building in organizational settings. Early on, Duncan (1976) emphasized the importance of coalitions for organizational research. Coalitions are omnipresent in the corporate world. Organizations and companies are coalitions that compete with other companies for market share, customer loyalty, and economic success. Companies can be subdivided into other coalitions like subsidiaries and branches that compete amongst each other for resources and innovations. Finally, subsidiaries and branches consist of coalitional groups such as divisions and teams or other groups that form to strive for a common goal (March, 1962).

One group that has been of interest to SDL researchers is dominant male coalitions in organizations, the so-called old boys' networks, which are believed to represent an obstacle to women's advancement into top leadership positions (Brass, 1985; Linehan & Scullion, 2008). Old boys' networks consist predominantly of white males and include more high-status connections than networks of females or minorities. Research found that members of those dominant male networks receive twice as many job leads as members of other networks (McDonald, 2011), indicating that these networks represent status advancement and coalition-building. The men in those networks are careful at including new members into their networks and physically exclude potentially weak members, such as women (Linehan & Scullion, 2008). Males further utilize their networks more effectively for career progression than women (Forret & Dougherty, 2004; Ibarra, 1992). However, a study indicated that men and women might need different types of networks to advance their careers. Men needed larger, entrepreneurial networks, while women benefitted more from small, highly interconnected networks (Burt, 1998). This difference may reflect the differing preferences of men and women for groups and dyadic relationships, respectively.

Although networks represent coalitions, they do not necessarily have explanatory power regarding leader-specific behavior of coalition-building. Post (2015), however, assessed the effect of leader sex on group cohesion. She found no significant overall difference between group cohesion in teams led by male as opposed to female leaders. However, there was an interaction effect between functional diversity

and group size. Contrary to predictions of the male warrior hypothesis, female leaders' teams were *more* cohesive than male leaders' teams when they were more diverse and consisted of more members. The authors attributed this effect to female leaders' (stereotypically) higher people-orientation. Another study confirmed that effect by substantiating higher group cohesiveness for teams led by female leaders (Rovira-Asenjo et al., 2017). However, the authors also reported no overall sex difference for leaders' influence on group cohesion. Instead, they found that women leaders get "connections to cluster around them more than male leaders" (p. 13).

Women's lower benefit from larger, less interconnected networks concurs with women's lower levels of trust in networks. A more recent study found women and men to have networks of similar size, but women had smaller high-trust networks. Women particularly distrusted other women more and were not willing to take risks (Bevelander & Page, 2011). Another study focused on leaders only and had them fill out self-assessments of trusting behavior. The study found no sex difference. However, the questionnaire used assessed trust from a follower perspective and measured participants' willingness to rely on and share information with their direct superior (Heyns & Rothmann, 2016). Trust was hence not related to building or preventing a relationship, but referred to behavior within an already existing relationship.

Other research concurs with the precept that women leaders are less willing to take risks than their male counterparts. The *Lehman Sisters hypothesis*, for example, claims that the financial crisis from 2008 could have been prevented if more women were in the financial sector's top management positions (Van Staveren, 2014). The hypothesis is built on the premise that women are more risk-averse and would not have made the high-risk investments that their male colleagues had made. Several studies on risk-taking behaviors of male and female funds managers confirmed that premise and showed that women are less willing to invest in high-risk derivatives than men (Chang, 2010; Beckmann & Menkhoff, 2008; Niessen & Ruenzi, 2005; Olsen & Cox, 2001). The same sex difference also applied to men and women leaders (e.g., Skala & Weill, 2018). Wilson and Altanlar (2009) found that having only one woman at the top management level already reduced the company's insolvency risk by 20 percent. Those companies acquired less loan capital and had better cash flows than companies led entirely by men. Even more relevant to coalition-building is a study that showed that companies with women in top management positions were less likely to acquire competitors and other companies. If they did acquire another company, they were less likely to overspend on the acquisition (Levi, Li, & Zhang, 2014). Male leaders were hence keener on forming alliances with other companies. These studies were based on correlational data only, but they still provide evidence of a relationship between the presence of women in a company's leadership positions and its risk-taking actions (Baixauli-Soler, Belda-Ruiz, & Sanchez-Marin, 2015; Horak & Cui, 2017).

Male leaders are predicted to engage more in behavior that avoids or settles conflict because it is supposed to facilitate flexible future coalition-building with many individuals. One study used a role-play simulation in which participants with actual leader experience were assigned leadership roles (Korabik, Baril, & Watson, 1993). No sex differences in conflict management style occurred among the experienced leaders – neither in self-reports nor in observer ratings – indicating similar leadership behaviors of men and women. Male and female participants with *no* managerial experience, however, differed in their self-ratings. In contrast to male participants, females assessed their conflict management style to be more integrating, obliging, and compromising. Another field study confirmed that difference in leaders (Brewer, Mitchell, & Weber, 2002). In this study, female leaders were more obliging than male leaders. The same study found other differences in conflict management styles that were not related to the managers' biological sex but their gender role identity. Individuals with a masculine gender role orientation were more likely to report dominating conflict management behavior, whereas individuals

with a feminine gender role orientation reported more of an avoiding conflict management style. Androgynous individuals tended to utilize an integrating conflict management style. The two studies combined support the hypothesis that socialization/learning processes lead to similar leader behavior in women and men. A recent meta-analysis confirmed that there were no differences in managers' nor subordinates' conflict management styles in organizations (Dildar & Amjad, 2017).

3.2.1.2.1 Phylogenetic Evidence of Sex Differences in Coalition-Building

Animal studies support the idea of an innate preference for coalition-building in males. For example, male chimpanzees have been consistently reported to interact in larger groups than females. This is true for infants and adults across various communities both in captivity and in the field (Lonsdorf et al., 2014). Females, on the other hand, are more diverse in the time they spend alone, in dyads, or in small groups (Boesch & Boesch-Achermann, 2000; de Waal, 1994; Savin-Williams, 1995; Wrangham, Clark, & Isabirye-Basuta, 1992). Male chimpanzees cooperate more frequently and in a greater variety of contexts than female chimpanzees. They form long-term bonds with other individuals as a dominance strategy. Those bonds tend to change with the group's alpha male (Gilby & Wrangham, 2008), which demonstrates that those long-term bonds are related to the power structure in the chimps' social group. Because coalition partners change (de Waal, 1984) it is adaptive for males to reconcile after fights to maintain a high number of potential coalition partners. Just like in humans, studies reported that male-male opponents were more likely to reconcile after fights than female-female opponents (Cooper & Bernstein, 2002; Koski, Koops, & Sterck, 2007). In comparison to males' bonds, females' bonds were found to be weaker. Although the same two females tended to move around in the same subgroup, indicating they sought each others' company deliberately, they cooperated less than their fellow males (Gilby & Wrangham, 2008).

3.2.1.2.2 Ontogenetic Evidence of Sex Differences in Coalition-Building

Infancy. Experimental studies indicate that the behavioral strategy of coalition-building in males starts to develop during infancy. For example, six to eight-month-old male infants were already more intrigued with groups than were female infants. When confronted with two screens displaying either one or three human-like moving puppets, males looked significantly longer at the group screen than girls (Benenson, Duggan, & Markovits, 2004). When in a second study, the puppets were exchanged with pictures of boys and girls, again, male infants looked longer at the group setting as compared to the individual boys or girls. However, males looked longer at the group screenings only when they displayed boys. They did not differ from females in the average time they spent looking at individual and group images of female children (Benenson et al., 2007). Both studies provide evidence that a preference for groups is innate and stronger in males.

2D:4D. Several studies assessed the relationship between 2D:4D and participant behavior in economic games. Those studies investigate trust and cooperation towards strangers and are hence related to men's strategy of coalition-building. In congruence with males' preference for coalition-building, individuals with low 2D:4D digit ratios (high testosterone) were more likely to cooperate in a public goods game, i.e., to pay a fair share to achieve the best possible outcome for the group (Millet & Dewitte, 2006). In another set of studies, Millet and Dewitte used the dictator game to assess participants' social behavior (Millet & Dewitte, 2009). The dictator game is based on unidirectional one-time interactions and does not allow the recipient to reciprocate. Since men are less focused on individual relationships than on group outcomes, they were hypothesized to donate more in a dictator game than women. As predicted, low 2D:4D ratios indicated higher donations to the recipient. However, as soon as the participants were confronted with aggressive cues (e.g., an aggressive music video or a language test

containing aggressive words) the relationship was reversed, and high 2D:4D ratios (as typical of women) were linked to higher donations (Millet et al., 2009). Hence, men were less willing to donate as soon as situational cues implicated rivalry instead of a coalitional partnership. Outside the economic game paradigm, researchers found testosterone-related digit ratios to correlate with risk-taking behaviors across various domains, including financial, social, recreational, ethical, and health-related risks in men (Garbarino, Slonim, & Sydnor, 2011; Stenstrom et al., 2011; Xie, Page, & Hardy, 2017). However, findings indicate that this relationship might differ cross-culturally (Aycinena, Baltaduonis, & Rentschler, 2014; Stenstrom et al., 2011).

3.2.1.2.3 Mechanisms of Sex Differences in Coalition-Building

Brain. No research has as yet investigated neural correlates of coalition-building behavior. However, brain research shows some evidence on related behaviors such as trust, risk-taking, and reward anticipation. For example, one's readiness to trust others is heritable to a significant extent (Cesarini et al., 2008) and related to some specific structures in the brain, which concur to a large extent with brain structures that have been found to correlate with risk-taking behaviors. Trust and risk-taking have been hypothesized to be conceptually linked. This link is supported by their underlying brain structures, which have similar activation patterns in the brain. Those structures include the striatum and the thalamus, the insular cortex, the anterior cingulate cortex, and several cortical areas (cf. Rao et al., 2008; Riedl & Javor, 2012). Especially the caudate and the insula react differently in men and women to trust as well as risk-taking paradigms.

The caudate nucleus is part of the striatum, which is related to rewards processing and reward anticipation (Komura et al., 2001; O'Doherty et al., 2004). Several studies report higher activation in women's caudate nuclei as compared to men's (Korucuoglu et al., 2020; Lemmers-Jansen et al., 2019). In one study, men and women showed similar trusting behaviors in a cooperation task. Nevertheless, the caudate was activated more in females than in males (Lemmers-Jansen et al., 2019). This indicates that women's reward anticipation and reaction to benevolent behavior in the repetitive game might have been higher than men's. Women's higher reward anticipation/ reaction to benevolent behavior hence compensated for their overall lower levels of trust, leading to identical outcomes in men and women despite diverging sex-specific processes. When administered oxytocin, females' caudate activation was reduced (lower reward anticipation), indicating lower cooperativeness in women. In men, on the other hand, oxytocin increased the caudal reaction, indicating more trusting behavior and coalition-building (Feng et al., 2015; Rilling et al., 2014).

The insula is related to the detection of facial cues that express negative emotions (Phillips et al., 1997, 1998). Again, female brains reacted by a higher activation of the insula as compared to male brains when confronted with risk-related cues (Korucuoglu et al., 2020; Lee et al., 2009). Hence, men should be more willing to form a coalition even when encountering demotivating social cues, while to women, the risks of coalition-building are more salient.

Hormones. A recent review concluded a positive association between economic risk-taking and testosterone (Fisk, Miller, & Overton, 2017). Others have suggested that intergroup competition should be related to *low* levels of testosterone since the high levels of aggression would fit inter-individual competition, but not intergroup competition (because aggression prevents cooperation between individuals; Mehta, Wuehrmann, & Josephs, 2009). This suggestion unveils a conflict that exists between assertiveness and cooperation that has already been broached shortly above: can competitiveness and cooperation coexist (Radford et al. 2016)? For example, testosterone is associated with an upset response to conflict in the workplace, indicating a lack of conflict-avoiding behavior, which, in return, decreases group cohesiveness (Voracek & Schicker, 2010). Although assertiveness and

aggression enforce one's status and superiority in rank, they might also repel coalition partners and possible allies. The question that arises from this conflict is whether testosterone can, at the same time, be positively related to dominance behavior *and* coalition-building.

The scientific literature substantiated that testosterone is positively related to dominance behavior and status (see 3.2.1.1.3). Also, research found that testosterone administration can increase men's cooperativeness. However, the effect of testosterone administration depends on the individual's prenatal testosterone exposure. In one study, relatively low testosterone exposure prenatally led to high receptiveness for externally administered testosterone, i.e., low prenatal testosterone individuals contributed more in a public goods game after being administered testosterone, while high prenatal testosterone individuals showed no change in their contribution after testosterone administration (Eisenegger et al., 2010; Van Honk et al., 2012).

A different line of research assumes that cooperation decreases with rising testosterone levels. Relying on two case studies, a recent publication proposed that the trade-off between competitive (i.e., dominant) and cooperative behavior may be mediated by testosterone levels (Vernasco & Moore, 2020). Individuals of species that engage in both competitive as well as cooperative behaviors have higher circulating testosterone levels when engaging in competitive behaviors and lower testosterone levels when engaging in cooperative behaviors. However, the study relied predominantly on animal studies. Additionally, the cooperative behaviors were somewhat altruistic in nature (e.g., help raise superordinate individuals' offspring), so that they may not have represented coalition-building.

Summary. Coalition-building is an evolutionary adaptive behavior in males to gain resources. Both conceptual and empirical work on coalition-building is scarce. As a proxy, men's preference for groups and related skills and behaviors such as cooperation, trust, risk-taking behavior, and conflict-avoidance were reviewed. The researcher found scattered evidence from human phylogeny, ontogeny, and neural as well as endocrine mechanisms supporting a sex difference in coalition-building favoring males.

The differences in quality and intensity of coalition-building between male and female leaders based on existing research are unclear. Persisting dominant male networks that find no equivalent in women's networks indicate a male preference and unique tendency for coalition-building. Studies second this finding reporting that women are less trusting and less risk-taking than men in organizational contexts. However, some studies found that groups with a female leader might be more cohesive than groups with a male leader. Furthermore, women leaders appear to be equally conflict-avoiding as men on all organizational levels. These findings do not support that female leaders engage in coalition-building less than their male counterparts.

3.2.2 WOMEN'S SOCIAL MOTIVE: EGALITARIAN COMMUNITIES

In Savin-Williams' summer camp studies, the male cabin groups mostly met the author's expectations concerning dominance behavior and hierarchy formation. The female group structure, on the other hand, surprised him: "For adolescent females I am less sure about the nature of the group structure, although it is clear that a hierarchical structure exists" (p. 197). The dominance structure within the female groups was neither visible to outsiders nor the girls themselves. Girls were also less likely to perceive their status rank in the dominance hierarchy correctly. Demonstrating less interest in matters of status and dominance than the boys, the girls were not keen on filling out the questionnaires for the study. Questions about their assessment of other girls' ranks, dominance, or likability created feelings of unease and were considered private. While the boys engaged in dominance encounters shortly after arrival, girls kept being polite for several more days. When conflicts emerged, they were more often covert, and other than in the boys' groups, girls' dominance encounters did not become fewer

over time. As a result, conflicts between girls were often not resolved, and some even worsened throughout the summer. Not surprisingly, girls' groups turned out less cohesive than boys' groups. One female counselor concluded:

Basically, I had a horrible and miserable summer, topped by the last days of camp. But, it seemed to be a bad summer for many. There was not much cabin spirit as the camp mood changed so much from day to day. I saw much split allegiances with few girls seeing any reason to make the cabin work. Most did not give a damn about their tribe or their cabin group. They just did not care. (p. 124)

This account of an unstable, disconnected female group indicates that a linear hierarchy building on dominance and submission encounters might not adequately reflect female social structure. Savin-Williams notes that "the ...[results] raise doubts that the dominance hierarchical structure so prevalent in male adolescent groups is adequate to describe status differentiation among adolescent females" (p. 125). When studying other groups of older females, however, Savin-Williams (1987) acknowledged that the girls' young age at least partly caused the very incoherent female groups he observed in the summer camps. In the older groups, he observed:

the best friend pairs so prevalent among early adolescent girls are still evident ...; absent, however, are the constant changing of best friends and the backbiting, bickering, and cattiness. Best friend cliques were transformed among the late adolescents into a more cohesive, complex style of group functioning. (Savin-Williams, 1987, p. 150)

Accordingly, girl groups, too, can be cohesive. However, their group functioning does not rely on dominance and is hence not dependent on a linear structure and the implicit or explicit assignment of status and power. Behaviors recorded and analyzed by Savin-Williams and his research associates all represented dominance and were classified as relevant only when they established or maintained hierarchical structure. The dominance behaviors in the female cabins, however, did not reflect a traceable social structure. As a result, the findings from the girls' cabins were confusing rather than enlightening. What are the specifics of female social structures?

Exploring females' preferences in social structures. Geary remained rather vague in his statements about female's preferred social structures (Geary, 2010). He highlighted that reciprocal relationships are important to them and that they are more likely to politically engage in activities that serve the public good. However, he did not define or paraphrase what the resulting structure looks like on a group level. To identify female strategies, it is hence important to at first grasp a deeper understanding of females' social structure preference. To do so, the researcher drew on research from matriarchies and egalitarian societies.

In matriarchic societies, female thoughts and voices are believed not to be overruled by males and hence to be more authentic in their behavioral manifestations. Göttner-Abendroth – a leading scientist in the field of matriarchies – spent much time in matriarchically organized societies such as the Khasi in India and the Mosuo in China (Göttner-Abendroth, 2018). She defined matriarchies' social structure as non-hierarchical, horizontal societies of matrilineal kinship (Göttner-Abendroth, 2018). These societies are characterized by *equality* and strong *interpersonal relationships*.

Matriarchies are based on ecological and social equality between members (cf. Dunbar, 1996). Ecological equality is ensured by distributing resources equally among members and preventing individual members from accumulating excessive resources. In a matriarchy, all goods, including basic resources of survival like physical territory and food, are in the hand of the matriarch, who is also referred to as clan mother. In contrast to hierarchies, where resources are distributed according to one's rank, with higher rank referring to more resources, in matriarchic communities, the clan mother distributes the resources equally among clan members. The exchange of resources among members is based on gift-giving. When someone receives a gift, he or she is expected to reciprocate with a gift of similar value. Hence, the matriarchic social structure prevents individuals from acquiring resources to

increase status and promotes ecological equality. Politically, matriarchies build on social equality. Politics in matriarchies work based on a bottom-up process of common consent (i.e., a “grass-root democracy”) where each member of the society has equal influence and compromises rest on everyone’s agreement (Göttner-Abendroth, 2018).

Interpersonal relationships in matriarchies are based on kinship and relatedness. Matriarchies consist of clans consisting of at least three generations of women and their male blood relatives. They live together in so-called clan-houses where non-blood relatives, including spouses, may only sojourn as visitors. Complex marriage conventions help to bond matrilineal clans together so that “all inhabitants of a village or town are related by birth or by marriage” (Göttner-Abendroth, 2018, p. 7). With all the community members being connected either genetically or by marriage conventions, intergroup conflict is minimized so that violence and war are on the fringes.

Outside of matriarchic structures, women do not necessarily build interpersonal relationships with kin and relatives only, although it has been shown that even in industrialized societies, women hold closer relationships to their relatives than men (Moore, 1990). In natural tribes with patriarchic structures, women form *friendship networks* with other women they are related to and often also with women that they are not related to. These friendship networks rely on similar principles as matriarchic societies – sharing and gift-giving increase ecological equality, and the strength of the social bond is comparable to those of kin. In fact, prosocial actions may be targeted at non-related friends *more* than at sisters, aunts, and cousins because female friendships are no longer based on relatedness but increasingly on reciprocity. Females choose their friends based on the willingness and ability to reciprocate actions, gifts, and loyalty so that non-kin can become more important in a woman’s network than unreciprocative kin. These friendship networks serve the major goals of sharing and mutual support. Aggressive behaviors are evaded, and women even invest resources in avoiding antagonizing relationships with potential enemies (Rucas, 2015).

The strength of the social bonds females have with kin and friends became visible in the summer camp studies as well. Girls, who were randomly placed together by camp administration, were not able to build a cohesive group structure or a friendship network. Instead of bonding and getting to know their cabin mates, the adolescent girls took refuge with kin and hometown friends and spent free time away from their assigned cabins (Savin-Williams, 1987). When having access to intimate friends and kin, girls prioritize spending time with them over investing resources in unfamiliar individuals.

However, when females have no access to familiar individuals, they still prefer egalitarian structures - even with strangers. In an experimental study, Vinacke and Gullickson (1964) assessed sex differences in the formation of coalitions and demonstrated that females are not interested in exploiting power positions but invest in equality among group members. As described above (see 3.2.1.2), boys and girls were grouped in same-sex triads and instructed to play a competitive board game. The power structure within the groups was manipulated according to three different constellations: all three players were equally powerful, or all three players were different with no one being stronger than the other two in combination, or one player was all-powerful. The authors observed the strategies taken by the individual players depending on their influence. They summarized the females’ behavior as follows:

The female triads often arrive at triple alliances and 50/50 deals (in two-person coalitions), thus manifesting a distinct preference for decisions based on equal treatment of members of the group. Females tend to bargain less actively than males ... Furthermore, they tend more often to establish alliances in the All-Powerful pattern, when coalitions are not necessary to win-and, in fact, when it could be argued that any sort of alliance is futile. ... Females evidently orient their efforts more towards the mutual satisfaction of the members of the group than towards the goal of winning itself. (Vinacke & Gullickson, 1964, p. 1228)

Their findings highlight that women are likely to form groups that are based on equality without any outside pressure to do so, even if it is related to costs (i.e., loss of power).

The social structures preferred by women seem to build on two important pillars: ecological and social equality as well as strong, person-oriented relationships. Social structure with these characteristics will be referred to as *egalitarian community* in the following.

Definition of egalitarian communities. While there are many definitions and investigations on hierarchies, female social structures, i.e., egalitarian communities, have received little attention in the organizational or psychological literature. Furthermore, despite the term “egalitarian” implying a community devoid of ranks, researchers agree that truly egalitarian societies do not exist (Flanagan, 1989, p. 246). Nevertheless, some natural tribes like the !Kung Bushmen, the Pandaram, or Hadza are classified as egalitarian societies. These communities share several basic characteristics that shed light on women’s preferred social organization in contrast to male organizations (Woodburn, 1982). They are characterized by the active enforcement of egalitarian structures, a complex non-linear group structure, the freedom to associate with anyone in the group, and more intimate relationships.

Woodburn (1982) argues that the form of communal organization that a society adopts – hierarchical versus egalitarian – depends on whether it has a delayed-return or an immediate-return system. The type of system depends on the timing of when people obtain the return for their labor. Immediate return systems are typically hunter-gatherer-societies living nomadic lives. Their members’ lifestyle consists of geographical mobility and only a few possessions. Immediate-return systems are likely to be the primordial system that ruled for several tens of thousands of years, while delayed-return systems existed for only about 5,000 years (Boehm, 1999; Rogers, 2012).

Delayed-return systems, as opposed to immediate return systems, depend on the accumulation of assets since the return of one’s labor is not obtained immediately. Delayed-return systems in hunter-gatherer-societies are built on agriculture or rearing of livestock and, in the industrialized world, on paid labor. Today almost all human societies are not only paternalistic but have a delayed-return system that promotes resource accumulation. That is not a coincidence, but a demonstration of the interdependence of asset accumulation and hierarchical systems based on inequality and dominance.

The principles of egalitarian societies are not merely the result of the *absence* of a hierarchical system but of their active *enforcement*. The accumulation of goods and resources is discouraged and even punished in egalitarian societies because it would interfere with the nomadic lifestyle. Like matriarchic societies, egalitarian societies adopt customs and mechanisms that prevent individuals from gaining disproportionate amounts of power over resources.

The social structure of egalitarian communities is more *complex* than that of dominance hierarchies. The linearity and transitive nature of hierarchies provide stability and clarify the position of each individual relative to all other members of the group. In egalitarian communities, on the other hand, subgroupings have fluent boundaries and change their composition permanently. It is hence more difficult to assess an individual’s position (not rank!) and its relationship to other members.

All members can move freely within the community and *associate with anyone*. That is not the case in hierarchies. High-status individuals in hierarchical systems (e.g., political leaders, royals, movie stars) are the more difficult to approach the lower the rank of the contact seeking member. Boundaries and restrictions are more likely to apply to lower-ranking community members than to high-ranking ones. Furthermore, individuals in hierarchical communities are often dependent on specific members to gain access to resources. In egalitarian communities, on the other hand, it is rare for individual members to hold influential key positions (and if they do, their criteria for distribution will diverge from those in hierarchies). Interestingly, interpersonal relationships in egalitarian communities are less binding than in hierarchical communities. Long-term dependencies are common in hierarchies, while egalitarian societies stress mutuality in interpersonal relationships.

Unfortunately, Woodburn (1982) did not investigate the nature of those mutual relationships in detail. Based on the literature on matriarchies and beyond described above, however, female social structures are assumed to consist of *more intimate relationships* between individuals than male hierarchies. Because resource possession ceases to apply as an indicator of popularity in egalitarian societies, other characteristics must take its place. These characteristics are not specific but vary depending on the contact-seeking individual's needs. Furthermore, the characteristics are less visible than material wealth and need to be identified through intimate contacts, e.g., verbal inquiries. Hence, relationships may be more personal and less exchangeable in egalitarian communities as compared to dominance hierarchies.

Adaptive benefit of egalitarian communities. Dominance hierarchies are related to increased stress levels due to the ongoing battle for resources and the related competitiveness in inter-individual and intergroup conflicts. Those conflicts frequently escalate into traumatizing incidents such as physical violence, wars, murder, rape, physical as well as mental abuse, and a lack of resources ensuring survival, such as physical territory, food, and medicine. There is some evidence that from an evolutionary psychology perspective, organizing their social group as a dominance hierarchy would be *maladaptive* to women. Men and women react very differently to stress, which is, in return, related to a great variety of health outcomes (Kajantie & Phillips, 2006). Cortisol levels in women are higher than in men starting with the age of 8 years (Van der Voorn et al., 2017), which is about the time in life when personal social networks and interactions become increasingly important.

There is increasing evidence that women react more strongly to stress than men. Ongoing competition is related to more significant increases of health-related factors such as cortisol levels and leukocytes in women as compared to men (Silva et al., 2020). Women suffering from acute traumatic stress react with higher levels of self-harming behaviors such as substance abuse and HIV risk behaviors. They are more prone to mental health problems as well as physical health problems than persons with non-acute traumatic stress and men (Stephens, Murphy, & McKnight, 2003). When comparing men and women, who are exposed to political violence and riots, women usually report higher levels of stress inducing outcomes such as anxiety, fear, and physical complaints (Bar-Tal, Lurie, & Glick 1994; Kimhi & Shamai, 2006; Slone & Mayer, 2015). In the long run, perceived psychosocial stress is more likely to lead to strokes in women than in men (Booth et al., 2015). Job strain, in particular, is also more likely to lead to strokes in women than in men (Huang et al., 2015). Furthermore, women react more strongly to stressful events involving individuals within their interpersonal relationships (Baldwin, Harris, & Chambliss, 1997).

Geary (2010) argues that in addition to being hurtful to women themselves, disharmonic, conflict-laden environments are hurtful to their children. According to parental investment theory, women are more concerned about their children's well-being than men. Hence, they should be more engaged in building a peaceful, supportive environment for them (Geary, 2010, p. 252-3). Studies show that children growing up in unstable, disharmonic environments are more likely to suffer from illnesses (Flinn et al., 1996; Flinn & England, 2003). Especially when children lose one of their parents, e.g., their fathers, who are more likely to die during intergroup conflicts, they tend to develop antisocial and emotional disorders (Whitehead, 1979). In order to provide stable environments with low levels of conflict, women hence have an incentive to build egalitarian communities that prevent individuals from excessive resource accumulation, which would, in turn, increase the likelihood of intergroup conflict. Instead, resources are distributed equally among members to enforce well-being and minimize individuals' motivation to disturb the communal harmony for their own benefit.

Sex differences in egalitarian communities. Resource distribution based on equality is consistently promoted more by women than men, although this effect is not context-invariant (Major & Deaux, 1982; Sampson, 1975). Women's efforts to create egalitarian communities and prevent disharmonic, conflict-

laden environments become visible when comparing men's and women's political agendas. For example, several studies reported that women are significantly less likely to support military interventions than men (Shapiro & Mahajan, 1986). Their relative lack of support became visible during various conflicts, such as World War II, the Korean War, the Vietnam War, the Gulf War, and the Iraq War (Bendyna et al., 1996; Burris, 2008; Conover & Sapiro, 1993; Eichenberg, 2016; Kam & Kinder, 2007; Sidman & Norpoth, 2012). By not supporting wars, women can actively contribute to peace and low-stress-environments.

Women's but not men's ethical behavior is guided by a desire for utilitarianism (Beekun et al., 2010). Utilitarianism refers to actions that increase the aggregated well-being of all individuals affected by that action. Accordingly, surveys consistently find women to be more engaged in environmental and communistic activities, i.e., in policies that benefit everyone even-handedly. A cross-cultural study across twenty nations assessed the level of public and private environmental behavior of men and women. In countries with comparatively high gross national income, women engaged significantly more in private environmental behavior (e.g., sort litter for recycling, buy organic products, or cut back on driving) than men, which alludes to females' intrinsic and possibly innate motivation to serve the well-being of the group. In no country did men engage more in private environmental behavior than women (Hunter, Hatch, & Johnson, 2004). Accordingly, in Germany, the Green political party (Die Grünen) and the Left political party (Die Linke) are the reigning political groups with the highest share of women (40.5% and 36.6%; FU Berlin, 2019). In the United States, too, women in politics are more likely than their male colleagues to support pro-environmental legislation (Mohai & Kershner, 2002).

Egalitarian communities in organizations. Most social structures are not exclusive dominance hierarchies or egalitarian communities, but hybrid forms that integrate both hierarchical as well as egalitarian principles. Nevertheless, male groups usually place more emphasis on hierarchical principles, while female groups emphasize egalitarian principles more.

Just as societies, organizations differ in the steepness of their hierarchies. Although hierarchical structures are used in almost all organizations, some of them build more on horizontal cooperation and interaction of equals, allow more bottom-up processes and encourage participative leadership (Diefenbach & Sillince, 2011; Tannenbaum et al., 1974). In the last two decades, some companies have even been experimenting with non-hierarchical organizational structures, such as holacracy (Robertson, 2015) and the teal organization (Laloux, 2015). These new organizational forms build on self-managing teams or 'circles' which are interconnected in a nested model, i.e., large teams consist of smaller teams which consist of even smaller teams that all form on behalf of a certain task or project and are dissolved as soon as the task or project is accomplished. Members of self-managed organizations share "accountability for their work, authority over how goals are met, discretion over resource use, and ownership of information and knowledge related to the work" (Bernstein et al., 2016). Each employee is a member of various circles and can hold different positions within each circle. Leadership roles do exist, but they are contextual. Members that own a "lead link" role in one circle can have a non-leader role in another circle (Bernstein et al., 2016).

The new non-hierarchical models of organizations with their fluid subgroupings are highly interesting from a gender and management perspective. Women's averseness to hierarchies has been named as one reason for their underrepresentation in top management positions (Kanter, 1967, 1977b). The non-hierarchical structure of organizations could hence be an opportunity to effectively increase the number of women in positions of power and to enforce authentic female leadership. Unfortunately, no systematic investigation of gender variables in the context of self-managing teams has been conducted. Although there seems to be a trend towards more egalitarian structures in organizations, their meaning for sex differences in leader behavior cannot be assessed yet.

In an ethnographic account on leadership in a prestigious US American all-girl prep school, the girls described their preferred leadership style as listening to everyone's opinion without excluding anyone and make people feel like *they* have done something (Lyons, Salstonhall, & Hanmer, 1990). One of the girls stated:

I think that the best thing a leader can do would be to involve herself in the group that she's leading and when she talks to them not to say "you" but to say "we" and not make such a separation between I'm the leader and you're the followers, just that it's we ... (Lyons, Salstonhall, & Hanmer, 1990, p. 187)

This statement is a vivid account of females preferring equality across positions. The leader is on the same level as the followers, and this equality needs to be emphasized. It could be argued that due to the lack of male influences and the young age of the girls, this statement represents an authentic account of female leadership preference.

In organizations, female employees place more emphasis on their superior's fairness than men (Singh, Nadim, & Ezzedeen, 2012, p. 11). Their wish seems to be met by female leaders' behavior. Female leaders scored significantly higher than male leaders on an equality scale (Chusmir & Parker, 1991; Parker & Chusmir, 1990), which implies that they enhance group equality within the organization by treating all employees as equals and improving the situation of oppressed group members. This self-ascribed preference for equality seems to translate into women leaders' management decisions. A study found that during restructuring measures, women's cuts in salary were five percent higher than men's (inequality). When, however, the company in question had an above-average share of female board members, the discrepancy between men's and women's salary cuts was reduced by 50 percent (Tate & Yang, 2015). Female leaders also promote gender equality in promotions. A study found that higher shares of females at the next higher ranks in the hierarchy are positively related to equal promotions of men and women (Kunze & Miller, 2017). In another study, psychology students assumed the role of a leader and were presented with a vignette in which a subordinate had made a costly mistake. Afterward, they were asked to fill out a questionnaire to indicate their attitude towards the appropriateness of different corrective actions. While male "leaders" rated equity-based actions as most appropriate, female "leaders'" actions were based both on equity and equality (Dobbins, 1985, 1986).

Women, irrespective of hierarchical level, promote gender equality in organizations more than their male colleagues. Schreiber (1979) found that men in predominantly female jobs or organizations experienced almost no hostility from female co-workers, while O'Farrell and Harlan (1982) found that women in predominantly male organizations had been treated with hostility by male co-workers. Furthermore, men were found to be socially integrated into the workgroup when in the minority, whereas women were less integrated into male-dominated groups (e.g., Fairhurst & Snavely, 1983; Kanter, 1977b; Ibarra, 1992; Brass, 1985). In fact, women who were in the majority showed the most egalitarian attitudes toward the other sex (Konrad, Winter, & Gutek, 1992).

If women's preferred social structure is egalitarian communities, they should have developed adaptive behavioral strategies that promote them. However, while male strategies to promote hierarchies have been carved out in numerous publications, it is considerably less well understood what female strategies serve the building of egalitarian societies. Geary, too, only rather vaguely adumbrates that "the social relationships that develop among girls are more consistently communal— manifesting greater empathy, more concern for the well-being of other girls, more nurturing, intimacy, social/emotional support, concern for equality and so on" (Geary, 2002, p. 45). Based on this statement, the empirical data, and the scientific literature, two strategies were identified as particularly important and are highlighted in the following section: *intimacy* and *nurturing*.

3.2.2.1 The Female Strategy of Intimacy-Building

As an explanation for the instability and low cohesiveness of the adolescent girl groups in the summer camp studies, Savin-Williams (1987) proposed that girls might not adapt to a large camp setting and “contrived cabin groups imposed on them by the camp administration” (p. 127). Boys enjoyed spending their time in large groups, while girls seemed to avoid them. In their free time, for instance, girls did not engage in organized group activities, such as sports, but “preferred to associate with sisters, cousins, hometown-friends, or extra-cabin-friends” (p. 126) in dyads or sometimes triads. Boys, on the other hand, automatically bonded with those that they were randomly placed with in the same cabin. The male cabin groups developed a cohesive structure and turned out to be functional in camp activities and intergroup competitions. The girls’ groups, however, did not represent cohesive clusters since most girls interacted with those that they had already had relationships with outside summer camp. Because the camp administration tried not to place acquaintances within the same cabin, these interactions took place outside the girls’ cabin groups and increased cabin group segregation. A communal group structure was hence not achieved in any of the cabins. Girls were not interested in building relationships with unknown girls when they had access to kin and hometown friends in adjacent cabins. The summer camp studies indicate two important facets of female social motives: Girls prefer *dyadic interaction* to group interaction, and they are *choosier* about whom they interact with. Both of these observations are related to a major female strategy in building egalitarian communities: intimacy.

Definition of intimacy-building. Intimacy is an ill-defined construct. However, researchers agree that intimacy is a factor that determines the psychological closeness of individuals in interpersonal relationships (Parks & Floyd, 1996). Intimacy is related and sometimes considered equal to other concepts such as self-disclosure, emotional expressiveness, unconditional support, trust, and physical contact (Monsour, 1992). Despite the large range of related concepts discussed in the literature, *self-disclosure* seems to be one of the most important determinants of the nature of relationships (Harvey & Omarzu, 1997; Prager, Fuller, & Gonzalez, 1989; Reis & Shaver, 1988) and of intimacy in particular (e.g., Caldwell & Peplau, 1982; Rawlins, 1992). It refers to people’s willingness to share information about themselves with others (Greene, Derlega, & Mathews, 2006). By sharing information about themselves, people encourage their counterparts to disclose information about themselves too and hence start a dialectic process that results in increased knowledge about one another and - depending on the quality of the information - in intimate relationships (for a review, see Dindia, 2000). The more sensitive and personal the information, the more intimate the resulting relationship (Greene, Derlega, & Mathews, 2006).

Providing information about oneself makes individuals transparent and vulnerable to potential future enemies. Those could take advantage of the information they obtained and utilize them in competition for mating partners and resources. Disclosing information about oneself in order to build intimate relationships is thus related to risks. Accordingly, trust is an important determinant in self-disclosure (Monsour, 1992, p. 280). As noted in the section on trust in male coalition-building strategy, trusting strangers is on average stronger in men than in women. That way, men can more easily form coalitional relationships with many individuals. Women’s comparatively lower trust levels, on the other hand, are adaptive because the number of time-consuming, intimate relationships a person can maintain at the same time is lower, and the costs of trusting the “wrong” person are hence higher. For instance, losing one out of four close friends that an individual spent years building intimate relationships with is costlier than losing one out of twenty coalition partners, with whom one has had a superficial relationship.

Due to the risks linked to intimate self-disclosures, individuals are usually careful about with whom they choose to build intimate relationships. In a dyadic, reciprocal process, individuals disclose self-relevant feelings and information and respond to each other’s disclosures. Whether the interaction

classifies as intimate depends on the interaction between the two individuals. Both the quality of the information disclosed as well as the reaction of the responder, are important factors. The responder needs to react in a way that makes the self-disclosing individual feel understood, validated, or cared for in order to enable intimacy development. Often the responders reciprocate by disclosing self-relevant information as well (Miller & Kenny, 1986; Laurenceau, Barrett, & Pietromonaco, 1998; Reis & Shaver, 1988). If the responder shows no appropriate reaction to the intimate information shared, he or she will impede the relationship-building process or halt it altogether.

Because of its complex nature, intimacy is best suited for dyadic interactions. A study demonstrated that in dyads, as compared to triads, participants disclosed more intimate information and were also involved more nonverbally (Solano & Dunnam, 1985). Large groups are hence not well-suited for relationships that build on intimacy and closeness. Accordingly, it is not surprising that Savin-Williams (1987) could not extrapolate from girls' dyadic relationships to hierarchical structures. While boys' dyadic dominance interactions served the goal to establish hierarchies, girls' dyadic dominance interactions were irrespective of their preferred superordinate social structure. This explains why boys were merely described as being "mean" to each other, whereas girls' conflicts were labeled "vicious" and "cruel", as well as why girls' conflicts were less likely to be resolved by the end of the summer (p. 123). If Savin-Williams had not only focused on dominance behaviors but had included behaviors that serve intimacy-building, the girls' social structure may have become clearer.

Although regarded here as a means to manipulate social structure, intimate relationships seem to have an adaptive benefit of their own to women, because intimate relationships have positive effects on women and their offspring with regard to health and survival. A study found that women who had fewer intimate relationships than other women (despite being socially no less active) sought more health care than women who had very intimate relationships. The study found no equivalent relationship in men (Reis et al., 1985). Comparing men and women who have either very few or very many social contacts revealed that women's mortality rate rose more strongly when they had fewer intimate relationships (Berkman & Syme, 1979). Similarly, the quantity and quality of intimate relationships and resulting social support was found to positively correlate with good labor progress and children's health (Collins et al., 1993). In traditional societies, too, a large interpersonal network was correlated with women's reproductive success, i.e., their number of children (Rucas, 2015). Women, who have access to social support, experience less distress when their child is sick (Hobfoll & Lerman, 1988).

Sex differences in intimacy-building. The male strategy of coalition-building and the female strategy of intimacy both serve the formation of social contacts (Baumeister & Sommer, 1997). However, when interacting with other individuals, women's social motive is to build strong interpersonal relationships, while in men, the social motive is to join resources with their interaction partners for their reproductive success (Fung, 1992). While men and boys prefer interacting in larger groups and are better interconnected with each other in those groups than females (Benenson, Apostoleris, & Parnass, 1998), women and girls around the world and of all ages have closer interpersonal relationships (Ellis et al., 2008, p. 658).

As a fruitful constellation for intimacy building, interpersonal dyads are women's preferred social interaction pattern (e.g., David-Barrett et al., 2015). Boys prefer to spend their time organized in relatively large groups, while girls rather spend their time with their best friend (Benenson, 1993; Benenson et al., 2008; Freedman, 1974; Weisfeld, Omark, & Cronin, 1980; Woolard, 1997). When, for example, a new person is introduced to a same-sex dyad, boys are more likely to welcome this transition than girls (Feshbach, 1969; Feshbach & Sones, 1971). Males also tend to describe themselves more in terms of group membership, have larger overall networks, and invest more resources to help a group than a friend (Balliet et al., 2011).

Although both men and women report their friendships to entail self-disclosure, emotional expressiveness, unconditional support, physical contact, and trust (Monsour, 1992), there are systematic qualitative sex differences that distinguish the friendship patterns of men and women (cf. Helgeson, Shaver, & Dyer, 1987). The ability to build up intimacy develops in adolescence, but significantly earlier in girls. Girls' friendships increase in intimacy at around the age of fourteen, whereas males' friendships do not increase in intimacy until the age of seventeen (Buhrmester & Prager, 1995). Furthermore, intimacy plays a more important role in women's friendships from childhood through adulthood (e.g., Aries & Johnson, 1983; Aukett, Ritchie, & Mill, 1988; Hall, 2011; Johnson & Aries, 1983). Literature reviews, both quantitative and qualitative, consistently find women self-disclose more in their friendships than men (see Berndt, 1982; Buhrmester & Prager, 1995; Dindia & Allen, 1992). Since most acts of self-disclosure are verbal, it is not surprising that talking is a major activity in female friendships, whereas male friendships are more often based on physical activities (Aries & Johnson, 1983; Aukett et al., 1988).

Emotional expressiveness and support are also exhibited more in female friendships. Women report more desire to support their friends in difficult times and during positive events (Roy, Benenson, & Lilly, 2000, p. 98). They are also more willing to seek support from their friends when they experience difficult times (Burda, Vaux, & Schill, 1984; Burke & Weir, 1978; Moore & Boldero, 1991; Reisman, 1990; for a review, see Belle, 1989). Men's friendships, on the other hand, are more instrumental in nature (Swain, 1989). Women's intimacy building can be instrumental, too, e.g., when it serves a tend-and-befriend response. In support of the tend-and-befriend hypothesis, women facing acute stress in a cooperative game were more likely to cooperate with their cooperation partner even if the partner's offer was unfair (Youssef et al., 2018).

Intimacy-building in organizations. One of the adolescent female leaders interviewed at the all-girl prep school provides first insights into how women's need for dyadic relationships might translate into leader behavior:

I decided that I really don't like the politics of the school, or maybe I don't like politics in general. ... everything is so harsh, and people's feelings just, they don't get considered, when you work with the administration and there are so many rules ... And so it gets very frustrating ... to work with one hundred people at a time, because when you work with one hundred people, it's hard to reach people individually. And so ... it's almost artificial when you are standing up there in front of a hundred people and telling them things and trying to get everybody's opinions, because you are not going to get everybody's opinions. And so I thought as a proctor, I would have to work with twenty people at the most, so it would be much more individual ... it's more involved, when someone has a problem now in the class, it is usually about money or something like that. But being a proctor, the problems you are faced with, other people's problems, are usually personal – like friendships and things – and so I would rather work like individually. (Lyons, Salstonstall, & Hanmer, 1990, p. 189-190)

This quote portrays how female leadership can be based on dyadic interaction. The student highlighted that it was important to her to connect with her followers individually. She was frustrated by dealing with an anonymous mass of followers based on rules instead of her understanding of individuals' needs and opinions.

Qualitative studies on women in leadership confirm that women emphasize interpersonal relationships more than men. The latter like to emphasize their own position and difference in rank hence enforcing inequality and reducing the possibility for intimacy (Rigg & Sparrow, 1994; Stratham, 1986). A set of UK studies investigated the skills and attributes of male and female housing managers (Rigg & Sparrow, 1994; Sparrow & Rigg, 1993). With respect to interpersonal relationships with their own team as opposed to clients, male and female housing managers portrayed very different accounts. With respect to interpersonal relationships, no matter whether they referred to clients or subordinates, female managers emphasized that a good housing manager needed to be understanding and caring. In addition, they were expected to be sensitive (with own team) and empathetic (with clients). Male managers, on the other hand, expected housing managers to support and defend their own team and to use pressure on

clients if necessary. Women hence focused on aspects that are typical of intimate relationships: understanding and support. Male managers, on the other hand, depicted behaviors typical of coalitional intergroup conflicts: one's own team, i.e., the coalition, is supported, whereas the opposing group, i.e., the clients, are fought (Rigg & Sparrow, 1994; Sparrow & Rigg, 1993). Unfortunately, the aforementioned studies focused on mental images of male leaders and female leaders rather than behaviors.

Some studies indicate that the reality of female managers' intimacy-building behaviors on the job might deviate from the mental images of ideal leaders. A study found that male managers were significantly more likely to describe their nearest colleagues as "friends". The likelihood grew with manager age. Women managers, however, were *less* likely to refer to their colleagues as friends, and this effect grew with age as well (Waldstrøm & Madsen, 2007). This finding had already been indicated in Ibarra's earlier research on homophily in organizational networks (Ibarra, 1992). In a qualitative study, women leaders separated more strongly between their professional lives and their private lives than men, indicating that they did not consider friendships and hence intimacy as part of their professional lives (Benshop, 2009). One of the women described her attitude towards close personal relationships at work as follows:

Sometimes I meet contacts outside office hours, but only sporadically. I prefer to keep things separate. And my social life really takes place elsewhere and that is fine, I want to keep it that way. And my colleagues are simply my colleagues and it's great when you can get along because you can get things done faster then ... Yeah, I do think that you have to keep it perfectly clear that you have a business agreement above all ... But you know, you do talk about, like, 'How was your weekend?' That kind of thing, a bit of chit-chat. You see, I come here to do my work and not for socializing and sometimes I see that other people in the organization see things differently ... But I cannot afford to do that, because I have to meet my targets every month, every day, and if I don't meet them, I will be held responsible. (Benshop, 2009, p. 229)

The woman made it clear during her interview that she was not interested in maintaining close personal relationships at work because she feared that those could interfere with her work performance. Male leaders, on the other hand, do see building relationships with others as part of their professional lives. Although those "professional friendships" may lack the intimacy typical of close female friendships, they can be more intimate than those very superficial relationships that the female leader described above. These findings hence cast doubt on whether the intimate relationships so typical in females will find their counterparts in organizational settings. At any rate, research found no sex difference between friendships of *non-leaders* in professional and non-professional settings (Sapadin, 1988).

3.2.2.1.1 Phylogenetic Evidence of Sex Differences in Intimacy-Building

Although dominance hierarchies are the prevalent social organization in many animal species, there is some indication that, especially in primate species, females more than males promote equality among social group members. De Waal (1997) and Brosnan and De Waal (2003) conducted several interesting tests on reciprocal exchange behaviors of brown capuchin monkeys. In the first study, two capuchins were put in a cage that was separated by a mesh partition. For twenty minutes, one of the capuchins received a bowl with cucumber slices. When it was removed, the other capuchin received a bowl with apple slices. The authors observed whether and to what extent the capuchins would share their food and to what extent the sharing behavior of the first animal influenced the sharing behavior of the second animal (reciprocity). As predicted by the preceding chapters, the female capuchin monkeys were more likely to reciprocate the behavior of their predecessor and establish equality in their relationships. Seven of nine female capuchins reciprocated, while only one of four male monkeys did. Alpha males were the least likely to establish a reciprocal relationship (De Waal, 1997, p. 375). However, in the first twenty minutes, male animals were more likely to share their food than females (De Waal, 1997, p. 373). This

concur with the theory of males being more trusting and discriminating less in their helping behavior as compared to females.

A second study demonstrates an even more complex understanding of equality in female capuchin monkeys. In this study, monkeys were assigned in pairs to one of two conditions. In the equality condition, the monkeys received tokens that they could exchange with the experimenter for cucumber slices. In the inequality condition, one of the monkeys received cucumber in exchange for the token, while the other monkey received grapes – which monkeys prefer to cucumber. Females reacted more strongly to the inequality by being less likely to exchange their token for the less preferred food when the other monkey received grapes. No such effect emerged for male monkeys in the inequality condition. Their exchange behavior remained unchanged irrespective of what happened to the other monkey. The findings imply that females are more sensitive to inequality and are more likely to punish behavior that promotes inequality (Brosnan & de Waal, 2003).

Grooming is another way for primates to express intimacy. Grooming is an activity where one animal picks through the fur of another individual in order to remove insects, dirt, or parasites (Seyfarth & Cheney, 1984). It often occurs among kin, but also non-related animals can be observed grooming, which indicates an affiliative relationship between them. Seyfarth and Cheney (1984) demonstrated how grooming behavior strengthened dyadic bonds between female primates. They played the recorded sounds of a female requesting social support near several female vervet monkeys. If the female who heard the request had received grooming from the requesting female previously, she reacted more strongly than other females who had not received grooming from that individual. This phenomenon applied to non-relatives only. If the female hearing the request for support was *related* to the requesting female, the reaction was always strong - regardless of previous grooming activities (Seyfarth & Cheney, 1984). Concurring with this finding is the consistent report of various studies that female primates engage more in grooming activities than male conspecifics. Female monkeys groomed more partners, reciprocated grooming more frequently (Cords, Sheehan, & Ekernas, 2010; Di Bitetti, 1997), and spent more time grooming (Bernstein, Judge, & Ruehlmann, 1993). The recipients of female grooming activities most commonly are other females, demonstrating that grooming does not serve submission towards males or mating purposes, but the reinforcement of social bonds (Hall & DeVore, 1965).

3.2.2.1.2 Ontogenetic Evidence of Sex Differences in Intimacy-Building

Infants. The behavioral strategies to build egalitarian communities are more complex than those to establish dominance hierarchies. They develop only in species with brain structures comparable to those of humans. Behaviors such as intimacy, reciprocity, empathy, and prosociality require cognitive skills that take longer to develop in humans over their life-course. As demonstrated by Savin-Williams (1987), even young adolescent girls still struggle to apply those strategies successfully in order to build cohesive social structures. Only when approaching adulthood, the girls in his study produced strategies consistent and cohesive enough to build communal structures that allow for egalitarian relationships. Accordingly, there is little research on infants and the influence of prenatal hormone exposure on behaviors that lead to egalitarian social structures.

Nevertheless, some findings on sex differences in infants indicate that the preference for intimate relationships in females is present right from the day of birth. For instance, infant girls show a stronger interest in social interaction compared to infant boys. Only one-day-old infant girls already maintain more eye contact with other individuals than do boys (Haviland & Malatesta, 1981). Within the first months of an infant girl's life, this behavior increases, while it remains unchanged in boys (Leeb & Rejskind, 2004). At the age of 12 months, girls still engage in more eye contact than boys (Lutchmaya et al., 2002a). Furthermore, girls show higher responsiveness when vocally addressed by their mothers

and are reported to initiate social interactions more frequently than infant boys (Gunnar & Donahue, 1980).

Because intimate relationships often build on self-disclosure in verbal interactions, sex differences in verbal and nonverbal skills favoring females are believed to represent a sex difference in intimacy-building. In infants, verbal and nonverbal skills have consistently been demonstrated to be higher in females than in males. Lutchmaya and colleagues, for example, found that 18 months old girls had a vocabulary more than double that of boys at that age. Aged 24 months, girls still knew 40% more words than their male peers (Lutchmaya, Baron-Cohen, & Raggatt, 2002b). This female superiority in infants' vocabulary production was confirmed by a number of large-scale studies (up to 6,112 participants) across different nations, including the USA, Sweden, and Denmark. Using different methods, they not only demonstrated a female advantage at vocabulary production, but also at vocabulary comprehension (Berglund, Eriksson, & Westerlund, 2005; Bleses et al., 2008; Bornstein, Hahn, & Haynes, 2004; Feldman et al., 2000; Fenson et al., 1994). With respect to nonverbal communication, a study on 32 two- to three-day-old neonates found that infant girls engaged more in reflex smiles than boys (Korner, 1969). The level of early reflex smiling is related to an individual's actual smiling behavior later in life (Freedman, 1974).

2D:4D. There is only very scarce evidence on prenatal testosterone levels and intimacy-related variables. A dissertation thesis reported that in men with extra high intrauterine testosterone exposure, the number of sexual partners in adulthood was significantly higher than for men with lower levels of prenatal testosterone exposure (Schwarz, 2008). This indicates that men who experienced higher masculinization before birth were less interested in building lasting, intimate relationships with their sexual partners. Concerning nonverbal behavior, one study found that duration and frequency of eye contact in infants correlated positively with digit ratio (Saenz & Alexander, 2013). Those with extremely low digit ratios (i.e., high testosterone exposure) were the most likely to make mistakes when interpreting emotional facial expressions (Barona et al., 2015). In the field of verbal ability, one study confirmed that individuals with high prenatal testosterone exposure had lower scores on verbal intelligence tests (Luxen & Buunk, 2005).

CAH girls. One study assessed the personality characteristics of 22 CAH girls aged 17 to 34 years and compared them to an equal number of healthy controls (Helleday et al., 1993). Amongst others, the CAH group scored significantly higher (and more man-like) on the Detachment scale (Helleday et al., 1993). The scale measures distance in social relations and is strongly gender differentiating. Hence the masculinization in CAH girls was related to more distance and less intimacy in their relationships.

3.2.2.1.3 Mechanisms of Sex Differences in Intimacy-Building

Brain. One cerebral area important for social behavior demonstrating sex differences is the *corpus callosum*. The corpus callosum consists of over 190 million axonal projections, or fibers, connecting the two brain hemispheres (Tomasch, 1954, p. 132). It is the largest, though not the only, connection between the two brain hemispheres and is therefore important for information exchange (Aboitiz et al., 1992). Although the corpus callosum seems vital for a functioning brain, it is possible to live without it – even “with surprisingly subtle behavioral consequences in everyday life” (Paul et al., 2007, p. 291).

Individuals who suffer from the rare congenital disorder Agenesis of the corpus callosum (AgCC), lack the corpus callosum either partially or completely; a defect that affects at least 1 out of 4,000 individuals (Paul et al., 2007, p. 290). Studying the lives of patients suffering from AgCC, scientists could derive important findings of the corpus callosum's function. One consistent finding on AgCC individuals is that they often “lack insight into the complexities of social behaviour” (Brown & Paul,

2000, p. 146). For example, AgCC individuals with normal intelligence, who are in general not impaired in language processing for literal statements, have difficulties processing the nonliteral and emotional prosodic meanings of language (Paul et al., 2003, p. 320), comprehending narrative humor (Brown et al., 2005), and telling made-up stories including fictive characters (Paul, Schieffer, & Brown, 2004). Due to their social deficits, AgCC individuals are often compared to autistic individuals, with whom they overlap in many typical traits (Badaruddin et al., 2007). The social abilities lacking in individuals without a corpus callosum are particularly important for interpersonal interactions that rely on mutual understanding. Mutual understanding is an important pillar of intimacy-building. Hence, sex differences in the corpus callosum should favor women.

Overall, empirical research substantiates the existence of a sex difference in the corpus callosum. Although overall results are mixed (e.g., Luders, Toga, & Thompson, 2014), many studies suggest that the corpus callosum is larger in women as compared to men (Ellis et al., 2008, p. 60; Leonard et al., 2008). In fetuses, the thickness of the corpus callosum is greater in females, and it develops earlier in female fetuses as compared to male fetuses (Achiron, Lipitz, & Achiron, 2001). In adults, several studies report a larger corpus callosum in women than in men, although the result seems to be dependent on brain size. Leonard and his colleagues found a negative relationship between brain size and corpus callosum, which explained the smaller corpus callosum in men, who on average have larger brains than women (Leonard et al., 2008). However, other studies indicate that not the overall corpus callosum is smaller in men, but that only the splenium, the posterior end of the corpus callosum, is comparatively larger in women (Davatzikos & Resnick, 1998; De Lacoste-Utamsing & Holloway, 1982; Leonard et al., 2008). The splenium is reported to be more bulbous and larger in women compared to the rest of the corpus callosum, while in men, it is more cylindrical and continuous in width (De Lacoste-Utamsing & Holloway, 1982). There is some indication that in addition to structure, corpus callosum *functioning* differs between the sexes. A study found that hemispheric connectivity is the most important brain feature for predicting a participant's gender based on a task-fMRI (Sen & Parhi, 2019). Finally, 59.3% of AgCC individuals are males (Jeret et al., 1987), implying that deficiencies in the corpus callosum are, in adaptive terms, less damaging to males than females.

Hormones. The hormone most associated with social behavior is oxytocin (for reviews, see Bartz et al., 2011; Churchland & Winkielman, 2012; Crockford et al., 2014; De Dreu, 2012; Heinrichs et al., 2009; MacDonald & MacDonald, 2010; Ross & Young, 2009; Olf et al., 2013; Veening & Olivier, 2013). The oxytocin receptor gene is related to social behaviors, such as maternal sensitivity and empathy, and its mutation can lead to social impairments (Tost et al., 2010). When study participants were administered oxytocin, for example, the participants had a better memory for social stimuli such as faces (Rimmele et al., 2009), were better at judging the nature of human relationships (Fischer-Shofty, Levkoveitz, & Shamay-Tsoory, 2013) as well as the mental state of others (Domes et al., 2007; Shahrestani, Kemp, & Guastella, 2013), and were more likely to approach angry faces instead of fleeing from them (Radke, Roelofs, & de Bruijn, 2013).

Supporting the prediction that women are more prosocial and communal in their behavior, women in social stress situations are more likely to secrete oxytocin, which increases affectionate behaviors and hence may trigger a tend-and-befriend reaction. Men, on the other hand, are more likely to secrete androgens, which are associated with aggressive behavior and a fight-response (Taylor et al., 2000). Furthermore, the administration of oxytocin leads to increased in-group love and in-group trust (De Dreu et al., 2011) and at the same time to less out-group hate and out-group distrust (De Dreu et al., 2010; Shamay-Tsoory et al., 2013). For example, a study found that women who received a dose of oxytocin were more strongly trying to integrate excluded players in a virtual ball game (Riem et al.,

2013). Behaviors like these result in less intragroup as well as intergroup conflict and hence promote the development of intimate relationships (for a review, see De Dreu, 2012).

Summary. Women prefer an egalitarian communal structure instead of a dominance hierarchy. By building intimate relationships, women enforce egalitarian communities, because intimacy development requires reciprocal interactions on an eye-to-eye level that do not allow for differences in status. Women's adaptive benefit in building intimate relationships is substantiated by women's lower trust levels towards strangers, preference for dyadic interactions, and higher investment in self-disclosure. Ethological studies on primates support that non-human female animals enforce equality. Furthermore, female infants show a preference for social interactions that could be an antecedent of later intimacy-building behavior. High 2D:4D ratios and CAH, which are signs of high testosterone exposure in utero, are related to impaired social skills, which can hinder intimate relationship development. Finally, the corpus callosum and oxytocin are biological mechanisms enforcing intimate relationship-building that work in favor of women. Organizational research, however, indicates that women might deliberately hinder themselves from building intimate relationships in the workplace.

3.2.2.2 The Female Strategy of Nurturing Behavior

Prosociality is an important determinant in creating egalitarian communities, in which individuals are not judged based on their contribution to the group or their accumulated power and resources (as it is common in dominance hierarchies). Due to their physical strains during pregnancy and childbirth, women are highly likely not to be able to provide for themselves for some periods in their lives and to become dependent on others during that time. Living in societies that take care of those in need is hence more adaptive to them than living in competitive environments where they are judged based on their current strength and contribution. Furthermore, women should enforce social structures that increase the survival rate of their children in case they cannot care for them themselves (e.g., due to illness or death). Social norms and structures that build on prosocial, *altruistic* actions are more adaptive to women than the competitive, equity-based principles of dominance hierarchies. Women are hence motivated to act nurturing by implementing structures and rules that benefit those who cannot provide for themselves. In female social structures, people in need are provided with necessary resources irrespective of their ability to reciprocate. For instance, the elderly, children, sick people, and disabled people may be unable to return the resources they were given. In acting nurturing towards them, women ensure that they themselves will be provided for as soon as they lose the ability to provide for themselves.

Definition. Prosocial behavior is defined as voluntary behavior that intends to benefit another individual (Eisenberg, Fabes, & Spinrad, 2006). Prosocial behavior comprises caring for others and comforting them in times of crises, helping and cooperating with them, as well as sharing one's own resources with them (Radke-Yarrow, Zahn-Waxler, & Chapman, 1983). However, this definition is very broad and includes many different kinds of behavior that benefit both men and women from an evolutionary perspective (Barclay & Van Vugt, 2015). For example, cooperating and sharing resources are typical of male coalition-building and hence do not represent an exclusively female strategy.

A great variety of factors affect helping behavior. Environmental factors, such as socio-cultural norms, for example, can cause or prevent helping behavior (Eisenberg et al., 2006). Situational factors, such as the helper's immediate costs and benefits, and the situation's stereotypical fit with one's sex may also influence helping behavior (Wilson & Kahn, 1975). Motivational causes, on the other hand, are intra-individual and range from altruistic reasons, triggered by empathetic processes, to selfish reasons, like a social or material reward (Eisenberg & Miller, 1987; Hawley, 2014). The sex difference in helping behavior has been suggested to mainly result from men and women's different *motives* when helping others.

Men and women engage in different kinds of prosocial behavior. Social role theory suggests that men and women differ in the quality of their helping behaviors in a way that concurs with their respective social roles. Men tend to help more when it makes them seem heroic and chivalrous, while women help more in situations where they can be nurturing and caring (Eagly & Crowley, 1986). Savin-Williams (1987) found girls to help more by providing verbal support, while boys helped through physical assistance. In one example, he described how a girl hurt herself when a cable on her bike broke. While girls, who offered help, comforted the victim by asking her how she felt or putting an arm around her, a boy helped her later by assisting her in repairing her bike (Savin-Williams, 1987, p. 170). Like in the example, males like to invest in prosocial activities that are highly visible and increase their reputation and status among peers and make them more attractive as potential mating partners (Simpson & Van Vugt, 2009). Consequentially, men are more inclined to demonstrate helping behavior in dangerous situations, when there is an audience to witness their helping act, and when other potential helpers are available. Women, on the other hand, are prescribed by their gender role to be prosocial in a communal and interpersonal way that includes caring for the personal and emotional needs of others. Furthermore, men are more inclined to help strangers in short-term encounters, whereas women's helping behavior is most likely to be directed at close individuals with whom they have long-term relationships, such as family and friends. In her meta-analytic review of 172 studies, Eagly (1987) found support for this qualitative sex difference in helping behaviors regarding men being more helpful than women in short-term interactions.

Biologically, women's helping behavior has been related to their greater *empathetic concern* towards others. Empathy refers to an individual sharing and understanding another individual's state and feeling motivated to improve the other individual's situation (Christov-Moore, 2014; Zaki & Ochsner, 2012). People who experience higher levels of empathy are hence more motivated to improve the other's situation (e.g., Bagozzi & Moore, 1994). In fact, empathy has been argued to be closely linked to altruistic acts, during which individuals risk their own physical integrity in order to help others, without any outside pressure or promise of immediate return (Eisenberg & Fabes, 1990).

In women, *empathy-based* prosocial behaviors have been consistently found to be more common than in men, so that in the following, the researcher focused on this kind of prosocial behavior. To distinguish it from the more general term of prosocial behavior, she referred to it as *nurturing* behavior. The term nurturing comprises all behaviors that aim at the successful development and growth of a living thing or intangible asset (e.g., ambition or talent; Cambridge Dictionary, n.d.). Although the term is often used concerning young children, it also refers to helping behaviors that aim at improving the development and well-being of other people in general.

Being empathetic and acting prosocially can benefit both men and women (Batson, 1990); however, empathy-based prosocial behaviors are believed to be more adaptive in women than in men. One central argument here is the mother-infant relationship (Darwin, 1872; Plutchik, 1987; Preston & De Waal, 2002). The primary caretaker hypothesis (Babchuk et al., 1985; Hampson et al., 2006) predicts that women should be more nurturing than men due to their higher parental effort (see section 2.2). Infants cannot express themselves verbally, and so their survival depends on other's ability to infer their current state and react adequately. A mother, who is able to correctly assess her offsprings' level of distress and the related causes, will be more likely to take the right measure in order to counteract her children's distress. Cross-cultural research substantiates that women's higher levels of empathy are not culturally induced. Around the world, young girls aged three to ten are more likely than boys to offer emotional support or help (Whiting et al., 1992).

Another argument for higher adaptiveness of empathy in women is unrelated to prosocial behavior. It refers to women's position as the ones to choose their mating partners. Because women's costs in

choosing the “wrong” mate are higher than that of men (because they can produce more offspring with more mating partners), they need to be more sensitive to cues concerning their prospective mating partner’s feelings and intentions (Vongas & Hajj, 2015b) – a skill that is positively related to the ability to empathize with others. From an adaptive benefit point of view, empathy may contribute significantly to a woman’s survival.

In men, on the other hand, empathy can impair reproductive success, indicating that its evolution differed from that in women. In interpersonal and group conflicts that serve the reproductive success of men, empathy with one’s enemy may hinder men in going through with their harming intentions and prevent them from accumulating resources or increase their power (Baron-Cohen, 2004). Hence, men who empathize *less* are more successful at inter-individual competition.

Sex differences in nurturing. Much research substantiates that women engage in actions that serve the goal to establish prosocial, nurturing norms. In their political activities, women are more liberal on social welfare spendings, equal rights, and health care issues (Lizotte, 2016, 2018). For example, they advocate higher taxes to spend on social welfare or more public daycare investment (Pratto, 1996).

Additionally, women are more tolerant than men towards group members who are unusually withdrawn, unfortunate, or disagreeable (Crystal, Watanabe, & Chin, 1997; Strong, 1943), indicating their desire to include those who may have difficulties getting help themselves. They are more likely than men to choose occupations in the social service sector or helping occupations (Powers & Wojtkiewicz, 2004). Generally, women show more altruistic and charitable behaviors than men (Becker & Eagly, 2004; Thiessen & Ross, 1990; Thompson, Robinson, & Kenny, 2003). They attend more to others’ needs and provide more emotional support (Mickelson, Helgeson, & Weiner, 1995). Also, they are more willing to share their resources with others (Mikula, 1974).

As alluded to above, women’s greater engagement in nurturing activities is believed to be related to their more strongly evolved empathetic skills. A large body of research substantiates that females have better evolved empathetic skills than males in all age groups (Baron-Cohen & Wheelwright, 2004; Davis, 1983; de Corte et al., 2007; O’Brien et al., 2013). They are better at assessing others’ emotional expressions (Hall & Matsumoto, 2004) and at decoding nonverbal cues (Hall et al., 2000). Research on autism, which involves a severe lack of empathy and social abilities, also feeds in this line of argument. Autism is a neurological syndrome that is significantly more frequent in males than females (Folstein & Rosen-Sheidley, 2001). In fact, the extreme male brain theory (Baron-Cohen, 2002) states that males tend to have brains that have developed for systemizing, while females tend to have brains that have developed for empathizing. According to this theory, autistic brains are extreme male brains that developed pathologically little empathizing skills.

Despite the consistent findings on females being more empathetic than males, the sex differences in the relationship between empathy and nurturing behavior may be less straight forward than implied. As predicted by Eagly (1987), females have been found to direct their nurturing behaviors towards friends more than towards strangers. According to one study, empathy in boys was a strong predictor of prosocial behavior towards peers. In girls, however, empathy resulted in prosocial behavior towards friends, but not towards peers in general. Although girls were overall more empathetic than boys, it did not result in more prosocial behavior (Roberts & Strayer, 1996, p. 461). This finding concurs not only with social role theory but also with predictions made by evolutionary psychology. Boys helping non-friends or strangers more than girls matches the male strategy of coalition-building and the female strategy of dyadic interpersonal relationships. Women, on the other hand, build costly intimate relationships. Prosocial behaviors in women are reserved for those with whom they chose to build intimate bonds (Ackerman et al., 2007).

Nurturing behavior in organizational setting. Little is known about sex differences in leaders' prosocial or nurturing behavior. Looking at matriarchies, however, indicates that nurturing behavior might be more relevant for female leaders than male leaders. When Goettner-Abendroth (2018) assessed how matriarchic societies select their clan mothers, she experienced the following incident:

When we asked Mosuo to describe which sort of qualities they seek in choosing the 'ablest woman' as dabu or matriarch, they responded that they voted for the person who cares the most for everyone. When we pressed them as to how they would know that, they laughed amiably and responded, "But you can see it!". (Goettner-Abendroth, 2018, p. 17)

Caring and looking out for followers are the most important tasks of matriarchic female leaders. Similarly, Lyons, Saltonstall, and Hanmer (1990) found that female adolescent leaders at Emma Willard School were expected to "make sure that they are actually leading the people that they are representing and not just carrying out their own whims" (p. 193). From a female perspective, the leader's task is to *help* execute the followers' wants and wishes. This notion of a helping leader concurs with the idea of servant leadership (Reynolds, 2016).

The nurturing nature of servant leadership was manifested by Greenleaf (1970), the pioneer of servant leadership, when he highlighted that servant leaders "make sure that other people's highest priority needs are being served" (Greenleaf, 1970, as cited in Greenleaf, 1977, p. 27). Servant leaders enable their followers to grow as persons and are "healthier, wiser, freer, more autonomous, [and] more likely themselves to become servants ..." (Greenleaf 1970, as cited in Greenleaf 1977, p. 27). From a servant leadership perspective, leadership itself is considered a prosocial act. Later, others explicitly highlighted altruism as a vital factor in servant leadership (Barbuto & Wheeler, 2006). Some studies provide evidence that women tend to concur with the characteristics of authentic servant leaders, although most of them do not include a male comparison group (Sims & Morris, 2018; Toledano & Karanda, 2014).

Drawing on evolutionary psychology, Vongas and Hajj (2015b) argued that the phenomenon "think crisis – think female", or glass cliff phenomenon, is related to females' greater levels of empathy. The glass cliff phenomenon assumes that women are the more likely to be appointed into leadership positions, the riskier the situation in the respective company (e.g., companies making severe losses or encountering an existential crisis; Ryan et al., 2016). Vongas and Hajj (2015b) pointed out that the (small) sex difference in transformational leadership favoring females is related to women's higher empathy levels. Additionally, they stated that the frequently cited "female leadership advantage" is usually based on women's elevated levels of nurturance, sharing, and compassion (Coughlin et al., 2005; Vongas & Hajj, 2015b). Due to this image and people's need for understanding and nurturing during crises (Rink et al., 2012), women should be appointed to leadership positions in companies that face moderate types of crisis (Vongas & Hajj, 2015b). Unfortunately, Vongas and Hajj (2015b) provide no primary data to substantiate their argument. They conclude by urging researchers to empirically test their proposition and continue their effort to "go beyond transformational leadership and begin considering emotional traits and abilities, and biologically based arguments" (Vongas & Hajj, 2015b, p. 10).

According to their definitions, transformational and servant leadership focus on people, while in traditional leadership and leadership in dominance hierarchies a focus on performance is more common. Accordingly, studies found women to be more likely to hold leadership positions in non-profit companies as compared to for-profit companies (Claus, Callahan, & Sandlin, 2013) and to be more willing than men to share rewards in a situation where they were underpaid (Kahn, 1972). Women in leadership positions have further been linked to organizational prosocial behavior. Companies with a higher share of women in leadership positions undertook fewer workforce reductions (Matsa & Miller, 2013), were more invested in environmental issues (Birindelli, Iannuzzi, & Savioli, 2019; Kassinis et

al., 2016; Post, Rahman, & Rubow, 2011), and were considered more ethical as well as better corporate citizens (Landry, Bernardi, & Bosco, 2016). Unfortunately, most of these findings represent correlative relationships between women leaders' presence and corporate behavior on a macro-level. Organizational macro-behavior is highly visible and usually strategically oriented – hence the empathetic concern underlying those behaviors remains unclear. Concluding that female leaders are more nurturing than male leaders would thus be speculative. Without more specific classifications of the nature of the prosocial acts and assessment of actual leader actions (instead of correlations on a macro-level), no definitive conclusion can be drawn.

3.2.2.2.1 Phylogenetic Evidence of Sex Differences in Nurturing Behavior

Nurturing behavior is not only found more in human females but also in the females of many animal species. Female primates and female elephants, for example, are more likely than males to console distressed individuals (Cordoni et al., 2006; Plotnik & de Waal, 2014). In bats, who are famous for their altruistic food-sharing behavior, it turned out that sharing occurred primarily among females and never among adult males (Carter & Wilkinson, 2013). When they see a conspecific in need, female primates (Drayton & Santos, 2013; Liebal et al., 2014) and female rats (Ben-Ami Bartal et al., 2011; Langford et al., 2010) are more likely to approach the individual in an attempt to help.

In female rats, the helping behavior even endured when they were not allowed contact with their conspecific afterward, when the helping led to decreased food intake, or when they were offered a food reward instead of the possibility to help (Langford et al., 2010). This behavior indicates that the female motivation to help in these cases did not originate from selfish reasons but probably from an empathetic response to the other individual's distress. Interestingly, female rats did not try to help *unfamiliar* conspecifics (Langford et al., 2010), and adult primate females were more likely to share food with those with whom they had strong social bonds (Eppley et al., 2013). As in humans, females in these species discriminate between those with whom they have strong relationships versus unfamiliar individuals. This substantiates that helping behavior in females serves a social organization motive and is not plain altruism.

As in humans, however, prosocial activities are not a prerogative of females but occur in males as well. Interestingly, the pattern of females acting prosocially to enhance equality, and males rather helping to demonstrate prestige and heroism, also seems to hold true in animals. Preston and De Waal (2002) provide vivid accounts of prosocial behaviors they observed in primates during their life-long careers as primatologists and ethologists. Kuni, a female bonobo in an English zoo, captured a starling, which she tried to set free in the most human-like manner. De Waal described the scene:

Kuni took the bird outside and gently set it onto its feet, the right way up, where it stayed looking petrified. When it didn't move, she threw it a little, but it just fluttered. Not satisfied, Kuni picked up the starling with one hand and climbed to the highest point of the highest tree ... She then carefully unfolded its wings and spread them wide open, one wing in each hand, before throwing the bird as hard she could towards the barrier of the enclosure. Unfortunately, it fell short and landed onto the bank of the moat where Kuni guarded it for a long time against a curious juvenile. (de Waal, 1997a, p. 156)

Another case of primate female empathy was not observed by Preston and de Waal themselves but is cited by the authors as on the most famous case of empathy” (Preston & de Waal, 2002, p. 297) in primates. It is the case of Binti, an eight-year-old gorilla female, who rescued a three-year-old boy, who had fallen six meters into the primate exhibit of Brookfield Zoo in Illinois. Binti approached the boy in front of the screaming crowd, and – to everyone's astonishment – started cradling him in her lap and patted his back until help arrived. When the door to her enclosure opened, she gently put the boy on the floor for the rescuers to take.

The cases of Kuni and Binti demonstrate altruistic helping incidents directed towards individuals of a different species that probably result from empathy. While Kuni's and Binti's help was very nurturing in nature, examples of male primates' prosocial behavior have a more heroic character. During one incident, a male chimpanzee lost his life while trying to rescue a three-year-old infant who had fallen into the moat surrounding their enclosure (Goodall, 1986; as cited in O'Connell, 1995). Another incident cited by Preston and de Waal (2002) features a male chimpanzee who observed a female chimpanzee struggling with a technical problem. When she gave up and left the scene, the male chimp solved the problem and brought her the item she had tried to obtain. Although empathetic motives might have driven the male chimpanzees in both incidents, there are also self-serving opportunities inherent in these incidents that might have motivated them.

3.2.2.2.2 Ontogenetic Evidence of Sex Differences in Nurturing Behavior

Various researchers concerned themselves with the ontogeny of the ability to empathize and act prosocially towards others. Research both on infants and prenatal hormone exposure confirms that a sex difference in empathy seems to be innate.

Infancy. Although empathy develops and becomes more distinct over the life-course, *sex differences* in empathy seem stable at every age (O'Brien et al., 2013). Some studies assessed whether sex differences in empathy already exist in infants (Martin & Clark, 1982; Sagi & Hoffman, 1976; Simner, 1971). Empathy in infants is operationalized by reflexive crying. Reflexive crying occurs when infants witness another individual crying and respond by starting to cry as well. Out of seven studies, six found a sex difference in reflexive crying favoring girls. A meta-analysis revealed that the overall sex difference was significant (Eisenberg & Lennon, 1983), implying that infant girls were more empathetic compared to infant boys. In most of the studies, the infants were only a couple of days old, and to ensure that the crying was related to an empathetic response, infants were confronted with other distressing stimuli as well. Later studies confirmed this first meta-analytic result (Mokrusch, Schüler, & Harms, 1989; Spinrad & Stifter, 2006; Zahn-Waxler, Radke-Yarrow, & Wagner, 1992). In a longitudinal study over one year, mothers were instructed and trained to document their infants' prosocial behavior (Zahn-Waxler et al., 1992). The mothers reported higher levels of empathetic concern in girls than in boys (Zahn-Waxler et al., 1992). A twin study by Zahn-Waxler, Robinson, and Emde (1992) on 14- and 40-month-old infants confirmed that empathy is heritable. They, too, found infant girls to demonstrate more empathetic concern than infant boys.

2D:4D. Although many studies assessed the relationship between the 2D:4D ratio as a proxy for prenatal testosterone exposure and empathy, their overall results provide only weak evidence of such a relationship. Around the same time, two independent groups of researchers published meta-analyses on the relationship between 2D:4D and autism, systemizing, and empathizing skills. The first one included nine studies that assessed participants' digit ratios and different measures of empathy (Hönekopp, 2012). It found a positive correlation between digit ratio and empathy, indicating that low prenatal testosterone exposure is linked to high empathizing skills. However, the relationship was not significant, leading Hönekopp to conclude that there is no relationship between empathizing and prenatal testosterone exposure (Hönekop, 2012).

The second meta-analysis included three additional studies (Teatero & Netley, 2013). It, too, found only a weak positive relationship, which was not significant. The authors argued that, except for one, none of the studies provided sufficient statistical power (Teatero & Netley, 2013, p. 2673). Furthermore, the studies included in the meta-analyses did not usually differentiate between the different types of empathy, e.g., cognitive empathy and affective empathy. Only one study did so explicitly. Kempe and Heffernan (2011) found a sex difference in affective concern favoring women and a positive, significant

correlation of affective concern and 2D:4D ratio. In cognitive empathy (or mentalizing), on the other hand, they found neither a sex difference nor a positive relationship with digit ratio (Kempe & Heffernan, 2011). This missing explicit differentiation in other studies could be one explanation for the only weak relationship between empathy and prenatal testosterone exposure. Others suggested that the relationship between prenatal testosterone exposure and prosocial behavior is not linear, but rather U-shaped (Brañas-Garza, Kovářík, & Neyse, 2013; Buser, 2012; Galizzi & Nieboer, 2015).

Two studies further showed that the effect of prenatal testosterone exposure might be a moderator of current hormone-induced effects. Van Honk and colleagues (2011) demonstrated that cognitive empathy is impaired when testosterone is administered. The strength of this effect correlated with the 2D:4D ratio, indicating that high prenatal testosterone exposure resulted in a higher impairment of empathetic skills (Van Honk et al., 2011). Another study found a moderating effect of variations in the oxytocin receptor gene on the relationship between digit ratio and cognitive empathy in men (Weisman et al., 2015). Hence the missing control for current endocrinologic states could be an explanation for the only weak relationship found between 2D:4D digit ratio and empathetic concern.

CAH girls. As described in the section on intimacy, CAH girls scored significantly higher on the Detachment scale than healthy controls. The items in the Detachment scale include questions on empathy so that the authors suggested a relationship between CAH and low empathy levels (Helleday et al., 1993, p. 350). Due to the masculinizing effect of the CAH syndrome, CAH girls' lower empathy levels indicate that women benefit more from empathetic skills than men from an evolutionary psychology perspective.

3.2.2.2.3 Mechanisms of Sex Differences in Nurturing Behavior

Brain. One sex difference in the brain relates to empathy as the basis of prosocial behavior as well as intimate relationships and is found on the cellular level: mirror neurons (Christov-Moore et al., 2014). In 1992, DiPellegrino and colleagues found that monkeys had neurons in their ventral motor cortex and their inferior parietal lobule that fired both when the monkey performed a certain action and when it merely *observed* another individual perform that same action (DiPellegrino et al., 1992; Gallese et al., 1996; Rizzolatti et al., 1996). This study became famous in the neurosciences and beyond because it demonstrated the existence of neurons that reacted to *another individual's* actions and sensations. By copying other individuals' brain activity, the human brain hence developed a biological mechanism that allowed individuals to experience events and emotions that are not actually their own. Non-surprisingly, mirror neurons have been of great interest to empathy researchers ever since (Decety, 2011; Ferrari et al., 2003).

Studies assessing the role of mirror neurons in sex differences in empathy are challenging, as they can only be conducted on conscious patients during brain surgery, and sample sizes are usually relatively small (Christov-Moore et al., 2014). One study investigated the number of mirror neurons in four brain areas in six male and eight female epileptic patients and found a sex difference in the number of mirror neurons in the left amygdala (Newhoff et al., 2015). A meta-analysis on over 100 fMRI studies concluded that *brain regions* associated with mirroring were the posterior inferior frontal cortex and the inferior parietal cortex (Caspers et al., 2010). Fittingly, women appeared to have larger grey matter volumes in the posterior inferior frontal cortex and the anterior inferior parietal cortex (Cheng et al., 2009). Furthermore, when presented with facial emotional expressions, female inferior frontal cortices showed higher average activation when focusing on both own and others' feelings (Schulte-Rüther et al., 2008).

On indirect routes, various studies indicate that the *functionality* of mirror neurons varies between males and females in a way that could lead to increased levels of empathy in women (Cheng et al., 2008; Christov-Moore & Iacoboni, 2019; Groen et al., 2013; Kato & Takeda, 2017; Proverbio et al., 2009; Singer, 2006). One of those studies is particularly interesting because it additionally supports the male preference for coalition-building. In that study, participants played an economic game against either cooperative or non-cooperative confederates. After the game, participants watched the confederates inflicted with pain. The participants' mirroring responses showed a strong sex difference. If the confederate was a cooperative play partner, males' and females' brains showed identical mirroring responses. If, however, the confederate had been non-cooperative during the economic game, male participants showed a significantly reduced mirroring response as compared to the female participants (Singer et al., 2006). For men, it was more adaptive to empathize with those that they joined resources with to win intergroup conflicts. Empathizing with individuals from the other group would have been obstructive because it might have increased sympathy with one's rivals and impeded one's readiness to damage them.

The study further demonstrates that strategic coalitions are not related to mirroring responses in women. Women rather discriminate between individuals they have intimate relationships with and strangers (in the study, all other participants were strangers to them) as compared to confederates and non-confederates. Unfortunately, no study has as yet compared differences in mirroring reactions of men and women towards intimate associates as compared to strangers. It should be noted, however, that women showed overall higher mirroring responses to both confederates and non-confederates in the study, indicating an overall higher readiness to empathize with other individuals as compared to men.

Hormones. As the hormone connected to childbirth and nursing (Donaldson & Young, 2008), Oxytocin has been tested in several studies on its relationship with empathy and prosocial behavior. Indeed, males, who were administered oxytocin as part of a study, reported increased affective empathy. In fact, their empathy levels could be raised to the level of untreated females (Hurlemann et al., 2010). Later the effect was replicated in an Asian population of men and women, demonstrating that the effect was stable across cultures (Geng et al., 2018). Another study found an effect of oxytocin administration in men, but only for implicit measures (Theodoridou, Rowe, & Mohr, 2013), demonstrating that depending on the stimuli and method of empathy assessment the effect can be reduced. For example, one study found that the sex of the individual participants had to empathize with influenced the results. In that study, oxytocin administration led to increased empathy toward women, but not toward men. The authors argued that empathy is most likely evoked by more vulnerable individuals (Palgi, Klein, & Shamay-Tsoory, 2015). Oxytocin was also tested concerning its effects on social actions. Both sexes were more likely to act altruistically in an ultimatum game when oxytocin was administered beforehand (Barraza & Zak, 2009). In another study, women shared pictures more often when they had been administered oxytocin. However, the effect emerged only when women had access to a friend – they were not more likely to share social stimuli with strangers. In men, no such effect was found (Ma et al., 2018). These results concur with the prediction that empathy leads to increased nurturing and other prosocial behaviors of women towards kin and friends only.

As discussed in the section on dominance behavior, testosterone is positively related to aggression in many instances. However, nurturing and aggressive behaviors are often conflictive because aggression is defined as deliberately harming another individual, whereas nurturing aims at improving others' well-being. Hence, experiencing empathy decreases individuals' readiness to damage others for their own benefit. Research substantiates that testosterone can inhibit the effects of oxytocin (Okabe et al., 2013; Riedl & Javor, 2012). High levels of free testosterone are related to lower empathy levels

(Chen et al., 2018; Ronay & Carney, 2013) and less pronounced prosocial personality characteristics (Harris et al., 1996).

One study assessed testosterone levels and the level of *leader* empathy reported by the participants' peers and work colleagues. As predicted, leader testosterone negatively correlated with perspective-taking and empathetic accuracy. Furthermore, empathetic accuracy mediated the negative relationship between testosterone and others' perceptions of interpersonal leadership. Study participants with high testosterone levels demonstrated significantly lower average empathetic accuracy, which led to decreased perceptions of interpersonal leadership skills (Ronay & Carney, 2013). Unfortunately, the study did not test for sex differences in this effect. In psychopaths, who usually lack empathy with others, high testosterone levels seem to be one of many interacting etiological factors (Yildirim & Derksen, 2012).

Summary. Nurturing behavior is a second female strategy that facilitates egalitarian communities. By being nurturing, other individuals' well-being and general situation are improved. Those individuals are usually in need and not able to satisfy their current needs themselves. By acting prosocially towards those who are in need, women (and men) can enforce more equality between group members. However, research from various fields substantiated that women are more likely to be nurturing towards close others or on a normative level, e.g., by advocating general norms and rules that benefit larger groups. In various studies, women were not more nurturing than men towards strangers.

Animal studies from several species support the sex difference in nurturing behavior favoring females. Regarding ontogenetic development, no study assessing nurturing behavior was identified. However, studies on empathy provide some indication that females empathize more with others than males. Physical mechanisms such as mirror neurons in the brain and the effects of oxytocin also seem to favor women in empathizing, which is an important antecedent of nurturing behavior.

3.2.3 COMPARING FRAMEWORKS: SOCIAL STRUCTURE VS. EVOLUTIONARY PSYCHOLOGY

The preceding section elaborated on two independent and, in many ways, still concurring behavioral frameworks that can be related to sex differences in leader behavior. The first one stems from social structure meta-theory and distinguishes between men's agency and women's communion. The second one is derived from an evolutionary psychology paradigm and highlights the differing social motives of men and women based on differing recurring adaptive problems that result from differences in parental investment between the sexes.

The sex differences proposed by the research framework do not contradict the sex differences subsumed under the terms agentic and communal in the gender and management literature. In fact, stereotypes about men and women and findings from evolutionary psychology often concur. It is hence not the contents of the two meta-theories that do not concur, but their beliefs about the origins of those sex differences. Nevertheless, the framework introduced based on evolutionary psychology assumptions has at least five advantages compared to the social structure's framework of agency and communion.

The social structural frameworks used in the scientific literature are ambiguous and rely on lists of behaviors and adjectives that seem arbitrary and are often inconsistent with research on gender stereotypes. The evolutionary psychology framework, on the other hand, offers a *theoretical guideline that clearly predicts the nature of behaviors* or attributes subsumed under the respective structure. For example, arguing that empathy is adaptive in women more than men due to their higher investment in children's upbringing makes empathy-based helping a behavior that is predicted to occur more in female leaders than in male leaders. Due to the theoretical argument used for the classification (in contrast to brainstorming adjectives in one's office, for example), empathy cannot be predicted to occur more in

male leaders or be identical across the sexes unless the theoretical argument is changed. Social structure-based research is much more unspecific in its predictions because behaviors are attributed to the loose concept of gender stereotypes that vary considerably across studies.

The evolutionary psychology framework still allows for social influences and - like the superordinate evolutionary psychology paradigm - does *not* propagate biological determinism (see section 2.2). *Behavioral flexibility and socio-cultural adaptability are granted* by the level of behavioral strategies used to pursue the respective social motive. The evolutionary psychology framework does not make predictions about which strategy will be used to what extent in what particular way. For example, although direct aggression is an often-successful strategy in building dominance hierarchies, socio-cultural influences may as well prevent its successful application. For example, many forms of direct aggression are legally prohibited or banned by cultural norms. Especially in organizational settings, direct aggression can be hurtful to one's own reputation or otherwise damage the aggressor. Accordingly, other strategies might be more expedient. Demonstrating expertise and skills, for instance, are an accepted way to demonstrate superiority and maintain or even increase one's status rank. The framework predicts that men will pursue dominance hierarchies, and women will pursue egalitarian communities. It leaves open which strategy from within their repertoire they will use and which specific behaviors they will apply to serve that strategy.

The social structure framework is vulnerable to socio-cultural influences in a way that makes it difficult to predict sex differences in leader behavior. Although gender stereotypes have been shown to be surprisingly robust over periods of around 30 years (e.g., Haines, Deaux, & Lofaro, 2016; Lueptow, Garovich, & Lueptow, 1995), social roles of men and women can differ significantly across time and geographical regions. Especially at a time when homemakers and female multibillion-dollar CEOs coexist, predictions of leader behaviors based on social roles are increasingly difficult to make.

The framework provided by evolutionary psychology, on the other hand, offers the benefit that it focuses less on behaviors per se but rather on the social motives that drive behaviors. These social motives are theorized to be directly related to evolved sex differences stemming from the different reproductive behaviors of men and women. Due to the long time they needed to develop and their slow adaptiveness to environmental changes, *sex differences relevant from an evolutionary psychology perspective are more stable and less vulnerable to socio-cultural influences*. Hence, while social roles and stereotypes can vary according to an individual's environment and over time, men and women's social motives are stable across environments and time.

The guiding framework of social motives further helps to *gain more clarity about the individual behaviors of male and female leaders*. Behaviors like 'aggressiveness' and 'helpfulness' are often used vaguely without distinguishing between their different specifications. Aggressiveness can be direct or indirect, for instance, and helpfulness may serve very different goals and take on very different forms. Accordingly, it is difficult to make predictions about behaviors to expect from men and women leaders based on stereotypes. At the same time, it is equally difficult to assess whether results concur with or contradict social structures. By proposing that behaviors need to be assessed in relation to the social motive they serve, the evolutionary psychology framework introduced above distinguishes between behaviors in a more sophisticated manner. Behaviors that appear to represent helpfulness or aggression can be both central or irrelevant, depending on the actor's (both conscious and unconscious) intentions and the environment in which it occurs.

The evolutionary psychology paradigm assumes that behavior is not predetermined but relies on external environmental influences just as much as it depends on underlying biological mechanisms. Hence, *the framework allows for individuals to apply strategies from the opposite sex*. Male leaders can demonstrate nurturing behavior, and women leaders might act dominantly, for instance – particularly,

if the use of a strategy or its related behaviors is enforced by the socio-cultural environment. A follow-up study of the Vinacke and Gullickson (1964) experiment (see 3.2.1) illustrates that point. Vinacke and Gullickson (1964) demonstrated that females playing a board-game were more likely to increase the other players' well-being instead of taking advantage of them. The board-game designed for the experiment had a non-competitive character and involuntarily rewarded building partnerships by reducing uncertainty and risk, which is a more typical female goal. When the conditions were changed to increase competitiveness and not to reward building relationships, sex differences disappeared, and females were just as competitive and exploitative as their male peers (Kanter, 1976; Lirtzman & Wahba, 1972). Transferring this finding to organizational settings implies that organizational structures and norms impact whether women will pursue their social motives. In an organization that does not allow for building intimate relationships and punishes nurturing behavior, women leaders are less likely to promote egalitarian communities. If they do, their behaviors will be hidden and difficult to assess from the outside.

Focusing on social motives, the framework presented here highlights possible leader behaviors that aim at realizing the respective sex's preferred group structure. Women leaders should apply female strategies and enforce egalitarian communal structures, whereas male leaders should apply male strategies to enforce dominance hierarchies. Understanding male and female leadership hence entails assessing the leaders' behaviors, but also assessing the social structure that has formed under the leader's auspices. Depending on the leaders' socio-cultural environment, the application of congruent sex-specific strategies as well as the resulting group structures may be more or less distinct. To account for the socio-cultural environment, it is hence necessary to assess the leader's direct organizational environment as well as influencing background information (e.g., education, nationality).

3.3 RQ1A: WHICH SEX DIFFERENCES IN LEADERSHIP EXIST THEORETICALLY FROM AN EVOLUTIONARY PSYCHOLOGY PERSPECTIVE OF BEHAVIOR?

The evolutionary psychology framework represents a preliminary answer to the first research question of (RQ1a) which sex differences in leadership exist theoretically from an evolutionary psychology perspective of behavior. The framework was derived in an iterative process based on both the empirical research that will be introduced in chapter 4 and the scientific literature. Drawing on Geary (2010), the researcher suggested that male leaders' actions should serve the purpose of building dominance hierarchies, whereas women leaders' behavior should serve the development of egalitarian communities. While literature on dominance hierarchies and related concepts was abundant, literature on egalitarian communities or, more generally, women's preferred group structure was scarce. To derive defining characteristics of egalitarian communities, the author hence borrowed from research on matriarchies and egalitarian societies. Dominance hierarchies and egalitarian communities were then related to their evolutionary benefits for the respective sexes to demonstrate why evolutionary selection pressures favored the development of inheritable mechanisms in men and women that serve those strategies. To substantiate the existence of the preference for different social structures, examples of empirical studies showing sex differences related to those preferences were presented. If possible, cross-cultural research was included to account for cultural variability. Both social structures were shortly linked to organizational contexts, before the corresponding strategies were introduced.

Two strategies common in males to pursue dominance hierarchies are dominance behavior and coalition-building. Two strategies were identified for women's egalitarian community-building as well, and those are intimacy-building and nurturing behavior. All strategies were defined and linked to behaviors from the scientific literature. For the male strategy of dominance behavior, three related behavioral concepts were identified: dominance in a narrower sense, which entails being controlling and

assertive, aggression, and prestige-related behavior. The male strategy of coalition-building was more challenging to capture due to the scarcity of research concerned with the matter. Cooperation was identified as a central characteristic of members in cohesive coalitions. Further behaviors that related to coalition-building were trust and risk-taking due to the interrelatedness of the two concepts in social interactions. Finally, the tendency to reconcile and quickly resolve conflicts were found to be linked to coalition-building. The female strategy of intimacy-building was linked to a preference of dyadic interactions and intimate information exchange. Although other behaviors like physical contact were also named as linking to intimacy, personal information disclosure was highlighted as the most important determinant of intimate relationship development. Finally, the female strategy of nurturing was demarcated from the more general helping behavior. Nurturing behavior was described as relying strongly on empathetic concern for others and often containing altruistic components.

For each strategy, the author presented empirical evidence of existing sex differences. Cross-cultural studies were again preferred in order to demonstrate the universality of the sex difference. Subsequently, the respective strategies were linked to organizational settings. This was easy to do for dominance behavior, but less so for coalition-building, intimacy-building, and nurturing behavior. The author hence relied on related phenomena. Differences in group cohesiveness of teams led by men as opposed to women or networking behavior in work contexts were considered proxies for coalition-building. Intimacy-building was found to play an important role in adolescents' ideas of rewarding leadership and approximated by workplace friendship. Nurturing behavior was assessed through leadership styles like servant leadership or through prosocial actions on the organizational level.

Following the detailed assessment of each strategy regarding the sexual dimorphism in its application, the scientific evidence on Tinbergen's (1963) four "problems" was applied to substantiate the evolutionary relevance of sexually dimorphic behaviors regarding the building of dominance hierarchies and egalitarian communities, respectively. Male animals, especially primates, show preferences for dominance behaviors and hierarchies, while female animals demonstrate a preference for equality and intimacy. Infants up to the age of two years – though unable to interact with others yet – show sex-related behavioral differences that enable them to pursue their respective adaptive strategies when they grow older. Infant boys prefer groups to individuals, and infant girls show more empathetic reactions to others' distress than boys. Correlations of prenatal hormone exposure and social-motive-related behaviors in later life fortified that those sex differences are heritable and have a biological component. Finally, specific physical mechanisms exhibit sexual dimorphism and hence further substantiate that sex differences in men and women's social motives have a biological correlate. Male brains are larger than female ones, even when corrected for body size. The amygdala – a brain structure associated with aggression – displays sex differences in size, connectivity, and functionality. Testosterone, a hormone substantially higher in males, relates to various status-related behaviors. Female brains, on the other hand, seem to be "better" interconnected through the corpus callosum. The interaction of the two brain hemispheres, which is facilitated largely by the corpus callosum, seems to be related to interpersonal behaviors that facilitate intimacy development and prosocial behavior. Another mechanism in women that might promote increased empathy and egalitarian community building is mirror neurons. Some brain structures have been found to accommodate more mirror neurons in women than in men. Also, there is some indication that the functionality of mirror neurons in men and women differs. Finally, oxytocin, a hormone found to be higher in females, relates to both in-group and out-group love and hence promotes intimacy-building and altruistic helping behaviors.

Chapter 3.2 introduced the evolutionary psychology-based research framework summarized in Table 5 which predicts sex differences in behavior. One basic assumption guiding this research project is that general evolutionary-based sex differences should occur irrespective of role, because the psychological

mechanisms influencing those sex differences are inherent in an individual's mind. Hence, the sex differences presented by the framework are equally relevant to leaders and non-leaders and play a role in men and women's leadership.

However, although research on adaptive benefit, phylogeny, ontogeny, and underlying mechanisms substantiates the sex differences between men and women in the specific strategies, organizational research on the matter consistently demonstrates that these sex differences do not easily transgress organizational borders. At least, they do not emerge as clearly in organizational contexts that they can be detected through questionnaire-based approaches that rely on the somewhat fuzzy framework of gender stereotypes. Utilizing the evolutionary psychology framework introduced above, the subsequent chapters hence assess sex differences in leader behavior from an evolutionary psychology perspective based on a qualitative research approach.

Table 5

Summary of the Evolutionary Psychology Framework of Sex Differences in Behavior

	Preferred male social structure: dominance hierarchies		Preferred female social structure: egalitarian communities	
Adaptive benefit	High status males have higher access to mating partners, because females benefit from mating partners' resources because of increased likelihood of offspring survival.		Disharmonic and conflict-laden environments are hurtful to women's and their children's survival.	
Strategies	Dominance behavior	Coalition-building	Intimacy-building	Nurturing behavior
Related behaviors	<ul style="list-style-type: none"> • Dominance in a narrow sense (e.g., assertiveness, control) • Aggression • Prestige-related behavior 	<ul style="list-style-type: none"> • Cooperation • Trust/risk-taking 	<ul style="list-style-type: none"> • Disclosure of personal information • Preference for dyadic interactions 	<ul style="list-style-type: none"> • Altruistic prosocial behavior that is based on empathic concern (e.g., caring, comforting, sharing resources)
Sex differences	<ul style="list-style-type: none"> • Cross-cultural: boys are more dominant • Direct aggression higher in males; indirect aggression higher in females • High status in men related to more children 	<ul style="list-style-type: none"> • Men engage more in politics/invest more in groups/spend more time in groups • Male athletes engage more in post-conflict affiliation • Boys build more strategic coalitions in experimental board game • Men trust more in strangers 	<ul style="list-style-type: none"> • Females around the world have closer inter-personal relationships starting earlier in life • Females spend more time in dyads • Females self-disclose more in their friendships • Females seek and provide support more in their interpersonal relationships 	<ul style="list-style-type: none"> • Females politically more invested in enhancing social welfare • Females more altruistic/charitable behavior, esp. toward disadvantaged individuals • Females higher in empathy and assessing others' expressions • Limitation: effects stronger toward close others than toward strangers
In organizational settings	<ul style="list-style-type: none"> • Dominant individuals more likely to be in leadership position • Women withdraw from competitive situations • Within leader positions mixed results on sex difference in dominance 	<ul style="list-style-type: none"> • Men tend to build old boys' networks • Men more trusting in their networks' members • Men more risk-taking in professional contexts (e.g., investments) • Mixed results on sex difference in conflict management 	<ul style="list-style-type: none"> • Prep school girl leaders want leadership to be based on close interaction with followers • Understanding and supporting people more important to female leaders • Females less likely to interact closely in business environments 	<ul style="list-style-type: none"> • Preliminary evidence of women being more likely to meet characteristics of servant leaders • Females more likely to hold leadership in non-profit than for-profit companies • Female leaders undertake fewer workforce reductions/invest more in environment
	Empirical evidence for evolutionary psychology relevance of strategies			
Phylogeny	<ul style="list-style-type: none"> • Males in many other species, e.g., chimpanzees, wasps, more aggressive • Primate males' aggression more violent • No research on prestige-related behavior 	<ul style="list-style-type: none"> • Male chimpanzees interact in larger groups • Chimpanzee male-male opponents more likely to reconcile after fights • More cooperation among male chimpanzees 	<ul style="list-style-type: none"> • Female capuchins more likely to share food and to punish unequal treatment • Grooming more common in females 	<ul style="list-style-type: none"> • Females of various species more likely to comfort, share resources, help when others are in need • Less heroic, more caring behavior in females
Ontogeny	<ul style="list-style-type: none"> • Male infants more dominant/aggressive • Conclusive reports on positive relationship between prenatal testosterone and dominance/aggression/prestige 	<ul style="list-style-type: none"> • Infants look longer at groups (of boys) • Low 2D:4D related to high donations in economic games and high risk-taking 	<ul style="list-style-type: none"> • Female infants show higher interest in faces when they are one day old • Verbal superiority in infant females to facilitate personal relationship development • Low prenatal T related to more interest in intimacy and more eye-contact 	<ul style="list-style-type: none"> • Infant girls more empathetic than boys • Small effect of prenatal testosterone exposure on prosocial behavior and empathy
Mechanisms	<ul style="list-style-type: none"> • Brain. Brain size larger in males (competition); higher activity of amygdala in males (aggression); stronger oppression of amygdala by frontal-cortical areas in women • Hormones. Positive relationship between T and status, dominance, aggression, high-prestige professions, criminal violence 	<ul style="list-style-type: none"> • Brain. Caudate nucleus – lower activation in males relates to higher risk-taking behavior; lower insula reaction in males to negative cues implies that men react less to risks • Hormones. Positive link between T and economic risk-taking (moderated by prenatal T exposure) 	<ul style="list-style-type: none"> • Brain. (Parts of the) corpus callosum larger in females and different activation pattern than in males • Hormones. O leads to higher in-group trust and in-group love and less out-group hate and outgroup-distrust 	<ul style="list-style-type: none"> • Brain. Females larger grey matter in brain areas where mirror neurons are located; more activation in those areas when seeing others in pain • Hormones. O administration leads to increased empathy; moderated by stimuli and method of empathy assessment

Note. T = Testosterone; O = Oxytocin

4 ETHNOGRAPHIC FIELD WORK: A COMPARISON OF FOUR LEADERS IN A STANDARDIZED WORK ENVIRONMENT

The evolutionary psychology framework introduced in the preceding section served as the guideline for an ethnographic assessment of leaders' sex differences in behavior. The research question (*RQ1b*) *Which sex differences in leadership exist from an evolutionary psychology perspective of behavior in organizational contexts?* is addressed empirically by a qualitative approach. The sections below frame the findings that are introduced in chapter 5 by elaborating on their underlying philosophy of science and research design as well as by describing the research setting, research method, data collection, and data analysis in detail.

4.1 ONTOLOGY, EPISTEMOLOGY, METHODOLOGY: EMPIRICAL RESEARCH AS A PRAGMATIC REALIST

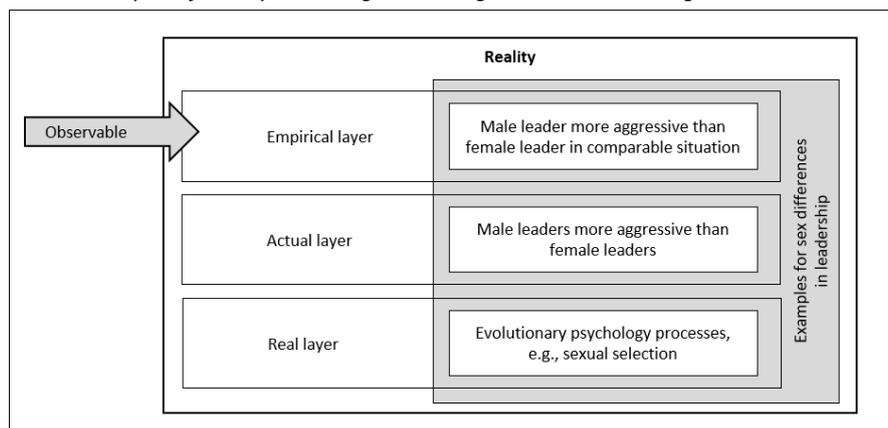
A *pragmatic realist paradigm* is guiding the empirical investigations of this research. As suggested by Watson (2011, p. 202), it offers “a powerful rationale for good ethnographic work” and lends itself to the majority of organizational ethnographies in the scientific management literature (Van Maanen, 2011, p. 45). Pragmatic realism is constituted by the superordinate notions of *pragmatism* and *realism* concerning its ontology, epistemology, and methodological approach.

4.1.1 ONTOLOGY: THE PRAGMATIC REALITY OF SEX DIFFERENCES IN LEADERS

Both the pragmatic and the realist paradigms assume that *there is a real, objective world out there that exists independently from subjective experiences and interpretations* (Caticha, 2014). According to realists, this reality consists of three different layers. Humans can observe the *empirical* layer. Another layer of reality exists independently of time and space and is more abstract. That is the *actual* layer. Finally, the third layer - labeled the *real* layer - is founded on structures, powers, and liabilities that are the basis for all social phenomena and observable behavior to emerge (Mearns, 2011, p. 362; Bhaskar, 2010).

Figure 5 depicts the three layers and an example of how the field of sex differences in leadership relates to them. The *real* layer of sex differences in leader behavior could be the laws of evolution and the power of group selection and reproductive success. It accounts for *actual* probabilistic principles of sex differences in behavior regarding, e.g., dominance behavior or nurturing. These principles result in

Figure 5
The Three Layers of Reality According to the Pragmatic Realist Paradigm



the *empirical*, observable layer of reality. It consists of single events at which females are more likely to show behavior resulting from empathy, and men are more likely to show aggressive or dominance-related behavior.

Both the pragmatic and the realist paradigms concur in their view on observations being contextualized (Cherryholmes, 1992; Mearns, 2011). This implies that *reality cannot be interpreted separately from the circumstances that it occurred in*. Hence, although reality exists independently of subjective individuals' interpretations, the pragmatic realist paradigm acknowledges the individual's role in reproducing and transforming it (Bhaskar, 2010; Mearns, 2011, p. 361).

4.1.2 EPISTEMOLOGY: GAINING KNOWLEDGE OF SEX DIFFERENCES IN LEADERS

Pragmatic realism clearly distinguishes between reality and knowledge about reality. Although it highlights the existence of an objective reality, it acknowledges that *the great levels of abstraction and theory necessary to understand and analyze reality might exceed humans' intellectual and mental abilities* (Johnson & Duberley, 2000). A pure realist takes on a "God's-eye point of view" in order to pursue the ultimate goal to understand and explain reality or what "the world is really like" (Caticha, 2014; Cherryholmes, 1992, p. 15). Pure pragmatists, on the other hand, are convinced that humans have no way of assessing reality once and for all. Instead, they can only find new theories and approaches that explain expected or desired results better than existing ones and thus increasingly approximate reality (Cherryholmes, 1992). Hence, "truth" in pragmatism is not about getting a correct image of reality but about increasing the "power to act in relation to an environment" (Joas, 1993, p. 21; Watson, 2011, p. 208). So, pragmatism aims to find relative truth as opposed to the absolute truth pursued by objective realism. In pragmatism, every research question and data analysis focus on practical consequences (James, 1907). Gaining knowledge about these practical consequences then helps individuals to make sense of information, actively manipulate their environment, and solve problems they encounter in daily life (Johnson & Duberley, 2000).

Accordingly, pragmatic realists believe in the *iterative character of theory building*. During the research process, theories, frameworks, principles, and laws are successively replaced by those new theories, frameworks, principles, and laws that better explain the observations of the empirical layer without claiming to understand reality in all its depth (Mearns, 2011). While there is an objective reality, knowledge, on the other hand, is subjective (Mearns, 2011; Sosa, 1993). Although two observations made by two different individuals on the empirical layer can overlap, the underlying real layer – which is not directly observable – is only accessed through subjective beliefs and interpretations. To give an example: When two independent researchers observe an event in which a man reacts more aggressively than a woman, they may interpret that event differently. One researcher may deduct the reality of kin selection and reproductive success, while the other researcher may deduct the reality of social learning and gender schema theories. However, the pragmatic realist is not concerned with explaining this deepest layer of reality but with the practical implications of his subjective knowledge. To what extent does it predict social phenomena and events? How can it improve social life? These questions are the focus of pragmatic realism. The pragmatic realist paradigm hence concurs with the research goal at hand. The goal is neither to confirm evolutionary theory nor to question social role theory. The goal is to apply the knowledge of evolutionary theory within a new context. Furthermore, the goal is to build new subordinate theories at the *actual* layer and explain what can be observed at the *empirical* layer of reality.

4.1.3 METHODOLOGY: ASSESSING SEX DIFFERENCES IN LEADERS

Pragmatic realism builds on the philosophy of perception. Individuals access knowledge and reflect on experiences using their senses rather than aggregate numbers. To reflect on sensual experiences, a researcher who adopts a pragmatic realist paradigm needs to enter the social field of the individuals of interest. Accordingly, the research at hand is based on a qualitative field study conducted in an organizational setting. The researcher hence deliberately deviates from the predominantly quantitative approaches in the SDL research field. By choosing a qualitative approach, the researcher explored behavioral sex differences with a fresh eye instead of assigning them to pre-defined categories (Girtler, 2001, p. 54). Hence the researcher remained flexible during the inquiry and based theory building on multifaceted social interactions (Girtler, 2001, p. 55).

Furthermore, pragmatic realists embrace multi-disciplinary approaches in order to strengthen the validity of their findings (Mearns, 2011, p. 360). The researcher recognizes the realists' claim for multi-disciplinarity by applying a framework derived from a multitude of research fields. Despite the openness of qualitative research, the framework was vital because the more is known about a research field, the greater the requirement for adopting a framework that helps the researcher connect with existing research (Marshall & Rossman, 2006). The initial framework was nonspecific and served as the starting point for an iterative framework development process that resulted in the framework described in section 3.2. That framework was then applied to data analysis and the presentation of results in section 5. Hence, in this study, the pragmatic realist approach framed the role of evolutionary sex differences in leader behavior by contrasting the theoretical predictions of the framework and the empirical findings of the ethnographic fieldwork (Mearns, 2011, p. 360).

Qualitative research traditionally incorporates an inductive research logic at which specific events lead to generalizations (Glaser & Strauss, 1967). Next to the inductive logic, the current research relies heavily on the *abductive* research logic introduced by one of pragmatism's founders, Charles Sanders Peirce. Abduction is closely linked to the experience of the *unexpected*. Anomalies and surprises that occur during the research process are highlighted and used to make assumptions about possible laws that would explain the surprising event and make it a matter of course (Alvesson & Kärreman, 2007; Locke, 2011; Peirce, 1965). Scholars have emphasized the benefits of qualitative approaches in applying abductive reasoning for theory building. At the same time, they criticized that its application had been neglected in the past (Locke, 2011; Van Maanen, Sorensen, & Mitchell, 2007). The research at hand embraces abductive reasoning as a means for theory building and theory elaboration. In particular, surprise findings are utilized to form theoretical relationships that would explain them. Alvesson and Kärreman (2011, p. 58) highlighted how abductive reasoning is particularly well-suited for research endeavors that aim at "the problematization and re-thinking of dominating ideas and theory". Hence, abductive reasoning is a promising approach to theory-building, given the research goal, which is to augment and better understand the scope of sex differences in leader behavior beyond the social structure paradigm.

4.2 USING A QUALITATIVE RESEARCH DESIGN

The empirical analysis of the research question followed a qualitative paradigm. Qualitative research is particularly useful when the researcher wants to explore the reality of what is going on in the field. The hitherto presented results on sex differences in leadership were found to be ambiguous and to contradict predictions made by evolutionary theory as well as social role theory. At the same time, they contradict the observations made by practitioners and journalists, who treat women as distinct from men in their leadership abilities. The ambiguous results on sex differences in leadership were argued to be

caused by the unspecificity of the underlying meta-theory. Taking a new paradigmatic approach with different underlying assumptions equals reopening the field and treating it like a new, unexplored field of research (Palmer, 2018). Due to the lack of definitions and measurement instruments that characterize new fields and the researcher's reservation about specifying what they expect to find, qualitative paradigms are particularly appropriate for such research endeavors (Corbin & Strauss, 2014).

The research question at hand is well-suited for qualitative research. It is wide in scope and allows the researcher to remain open for what she may find and does not restrict her regarding what to explore. The researcher stays flexible during data collection and analysis and can adapt the course of action to the twists and turns arising during field research. Based on "thick descriptions" (Geertz, 1973), the researcher can, in congruence with abductive reasoning, select and concentrate on those phenomena that are surprising (Alvesson & Kärreman, 2007), interesting (Bartunek, Rynes, & Ireland, 2006), and promising regarding theory building.

A major advantage of taking a qualitative approach is its potential to uncover those leader behaviors that actually differ between the sexes. Especially gender-related subjects (which are deeply intertwined with sex differences) have been argued to be hidden and elusive (Alvesson & Billing, 2009, p. 10). Existing research has drawn on theoretically derived behaviors developed based on leadership research, e.g., leadership styles such as consideration and initiation of structure (Fleishman, 1953; Stogdill, 1963), or behaviors supposedly linked to organizational success, such as risk-taking (Colquitt, Scott, & LePine, 2007) and innovation (Damanpour, Szabat, & Evan, 1989). Those behaviors were usually assessed by a quantitative approach. However, the qualitative approach taken here allows for behaviors to prove relevant that may have been overlooked by leadership researchers or organizational theorists, e.g., because they appeared as less crucial for organizational performance (cf. Mumford, 2006).

Quantitative research is an effective way to test previously identified behaviors for the frequency and intensity of occurrence. Quantitative paradigms, however, can only insufficiently account for explaining (leader) behavior (Hunter, Bedell-Avers, & Mumford, 2007; cf. Girtler, 2001, p. 46-7). First, behaviors usually result from individuals' interpretations of their social environment. Hence, behaviors, including leader behaviors, are the result of interactive, dynamic processes that rely on the interacting individuals' personalities, roles, experiences, expectations, and abilities (Hunter, Bedell-Avers, & Mumford, 2007). Secondly, behaviors are influenced by situational and environmental effects, which can hardly be depicted in their complexity by quantitative questionnaires (Daft, 1980, p. 632). Third, quantitative measurement methods often do not assess behaviors directly, but only indirectly on several levels. In the majority of research, leader behavior is assessed by others such as by followers (Hansbrough et al., 2015). However, follower perceptions can be distorted by various factors (Antonakis & Day, 2018, p. 11; Hansbrough et al., 2015). A meta-analysis on 479 studies concluded that follower perceptions and measurement errors explained half to two thirds of the variance in follower ratings (Wang, Van Iddekinge, Zhang, & Bishoff, 2019). Followers may be biased by their implicit leadership theories (Eden & Leviathan, 1975; Rush et al., 1977) and the performance outcomes that the leader is responsible for (Lord et al., 1978). Leader evaluations also seem to systematically differ in relation to follower sex (e.g., Scott & Brown, 2006).

Self-assessments are not necessarily more accurate. In addition, they usually diverge considerably from follower ratings. An interesting sex difference was observed regarding the strength of this effect. The discrepancy between men's self-assessments and other ratings is larger than women's (McKee, Lee, Atwater, & Antonakis, 2018). Furthermore, questionnaires often rely on past behaviors or average, common, or usual behaviors. Sometimes, behaviors are assessed hypothetically so that the questions do not assess actual behavior but how a person believes he or she would act in a fictitious situation. Finally, answers given in questionnaire approaches are in danger of being distorted by cognitive simplifications

(Lord, 1985), selective attention (Johnston & Dark, 1986), social desirability (Arnold & Feldman, 1981), or memory inaccuracy (Bradburn, Rips, & Shevell, 1987).

In taking a qualitative approach to answering the research question, the aforementioned problems of quantitative research designs can be overcome. Behavior is observed first-hand, and the researcher does not have to rely on others' reports. It can further be assessed concerning its timing and quality. In entering the field, the researcher gets to know the individuals observed and is able to take factors into account such as mood, personal background, and relationship with interaction partner. Furthermore, the influence of situational variables can be assessed (Yukl, 2012). By immersing themselves in the field, qualitative researchers gain the possibility of understanding underlying assumptions and norms that define behaviors as either adequate or inadequate in a specific environment (Girtler, 2001, p. 40-1). Hence, although a qualitative approach is rather unorthodox in the given research topic, their inherent strength in assessing the complexity and entirety of a phenomenon may make them an appropriate if not superior way to identify sex differences in leader behavior.

A multi-sited ethnographic research design was used to identify sex differences in behavior. Watson (2011) pointed out that pragmatic realism is a suitable and promising paradigm for ethnographic fieldwork, as it allows researchers to assess "how things work" in organizations. By applying an ethnographic approach, the researcher draws from first-hand observations of leader behavior as it occurs in the organization during daily routines. The ethnographic approach facilitates "close observation of and involvement with people in a particular social setting and relates the words spoken and the practices observed or experienced to the overall cultural framework within which they occurred" (Watson, 2011, p. 205-6). As discussed in the theory section, social influences such as culture, gender roles, and stereotypes affect behavioral differences between the sexes. Organizational leaders usually act within the frameworks of national, industrial, and organizational cultures, each of which entails specific explicit and implicit guidelines of behavior (Sackmann, 2017, p. 67). Those behaviors can both reinforce or impede the demonstration of sex differences in leadership.

By entering the field and personally interacting with the research subjects, the ethnographer aims at understanding the social pressures that mold leader behavior in a given environment and distinguishing evolutionarily relevant sex differences from culturally adaptive ones. Due to their roots in anthropology, organizational ethnographies are particularly well-suited for assessing how people in a specific environment act, feel, and think (Locke, 2011; Zickar & Carter, 2010). In her groundbreaking work, Kanter (1977b) had adopted an ethnographic approach and found male structures in organizations to significantly influence women's career paths and behaviors. Ethnographies have also been used to assess leader behavior in specific settings (e.g., Dalton, 1959; Denis, Langley, & Pineault, 2000; Eriksson, Henttonen, & Meriläinen, 2008) and gendered cultures (Clawson, 1944; Collinson, 1992; Pollert, 1981). An ethnographic approach hence seems promising in exploring sex differences in behavior by at the same time assessing cultural influences that may moderate those sex differences.

To assess differences in leader behavior between men and women, it is important *to compare the behaviors of male and female leaders*. To be able to compare leaders and ensure that those leaders did not influence each other in their leader behavior (e.g., by token effects, stereotype threat), four different leaders were observed independent of each other at four different sites. Applying a comparative analysis of multiple sites instead of collecting data from only one site is beneficial in various ways (Bechky & O'Mahony, 2016). First, a comparative analysis might better explain mechanisms that contribute to outcome variance. When data stems from only one site, surprising events and deviations from theoretical predictions are difficult to classify. Are they outliers? Do they hint at a theoretical relationship that has not been considered yet? How did situational and individual characteristics influence the observation? Comparative analysis was applied to more easily derive generalizations from the observations

concerning different contexts. Choosing multiple sites that varied in their context variables increased the scope of the findings and derived theories. Furthermore, intra-organizational processes and specifics of the organizational environment can be specified and linked to the institutional framework.

Bechky and O'Mahony (2016) criticized that most studies investigating multiple sites then apply a quantitative "replication logic" which appears to increase the validity of their findings but may not optimally make use of the qualitative data. It was stipulated in those studies that a higher number of sites increases the credibility of results – as it is common in statistical analyses. However, those studies fail to utilize the various sites to build theory based on the *differences* between cases. Qualitative research does not build on replication, instead it explores the unknown and addresses surprises and ambiguities. Hence both commonalities and variance across cases were utilized to build theory.

4.3 THE FOUR GOFFCO STORES: RESEARCH IN A STANDARDIZED WORK ENVIRONMENT

The following subsections introduce the research setting in detail. The research sites were four stores of a globally operating fast-food company, which is referred to as GOFFCO in the following. The first subsection elaborates on the benefits of conducting research in a standardized environment. Afterward, the sample, which consists of four stores within a standardized environment, is illustrated regarding the commonalities and differences across sites. Finally, all research sites are depicted in detail to provide the reader with a deep understanding of the environment in which the male and female leaders acted.

4.3.1 BENEFITS OF RESEARCH IN A STANDARDIZED WORK ENVIRONMENT

To ensure comparability across sites, the field study was set in a franchising company. Franchising is a business form that consists of a franchise organization, the *franchisor*, which owns an economically successful business model based on a service or product, and *franchisees*, who are contractually allowed to use that business model. The franchisee is usually a self-financed, owner-managed small company that operates using the franchisor's trade name and builds its business based on the franchisor's standardized model (Curran & Stanworth, 1983, p. 11). Next to the trademark, the franchise model comprises processes and procedures, organizational prescriptions, technical information, and equipment and supplies. Accordingly, the franchise model is a holistic business package and not based on an isolated business element, such as marketing or distribution. Despite its similarity with other franchisees and the franchisor itself, each franchisee is an independent business (Stanworth & Curran, 1999, p. 325).

Based on the standardized settings at the franchise companies, any deviations from the standard can be observed more clearly than in non-standardized settings, where deviations may be mediated by the specifics of the research site (cf. Barley, 1996; Edmondson et al., 2001; Kellogg, 2009). Due to their high visibility of deviations from standards, franchise companies are popular sites for cross-country and cross-cultural research (e.g., Ashenfelter, 2012; Eckhardt & Houston, 2002; Maciel, da Rocha, & da Silva, 2013; Royle, 1995). Just like any other store, franchise stores are exposed to a wide variety of environmental influences. These environmental influences comprise national (Royle, 1995; Maciel, da Rocha, & Ferreira da Silva, 2013), regional (cf. Sasaki & Yoshikawa, 2014), and local cultural influences as well as the unique influences that each restaurant experiences due to its specific characteristics (e.g., the range of products it offers, the sociodemographic background of its neighborhood). In franchise stores, however, cultural influences become visible, while they cannot be distinguished from the store-specific culture in non-standardized settings.

Cultural influences can also moderate sex differences in leader behavior. When distorted by cultural influences, such as national culture, organizational culture, and specific subcultures, sex differences might become invisible. Past research often concluded that the effect of sex differences was either rather

small or failed to demonstrate it altogether. Social influences, such as organizational socialization and role stereotypes, have been made responsible for the lack of sex differences in leaders. The standardized environment at the franchise company, however, allows for deviations and differences to become particularly visible during comparative analyses. When cultural influences and organizational determinants are held constant, differing behaviors between male and female leaders become more meaningful.

At the various sites of a franchise organization, many factors are constant. All stores serve the same products and provide the same services, they are evaluated by the same performance indications, and they appeal to the same target groups. Furthermore, the franchisor determines the interior design, technical equipment, supplies and suppliers, as well as binding norms concerning processes and procedures. As a result, the store leaders' scope of actions and decisions is limited (Øgaard, Larsen & Marnburg, 2005). The leaders' limited scope of actions and similar environments allow for the researcher to observe and compare leader behaviors across settings. Comparing two leaders of the opposite sex, who work in two very different settings, e.g., a grocery store and the accounting division of an insurance company, may be overwhelming due to the multitude of factors that affect leader actions. In a franchise company, on the other hand, the standardization of many facets enables the researcher to focus on what is relevant to the research question. In the long run, however, even in the highly standardized fast food industry, success depends on "the ability to adopt best practices in all facets of their operations and segment and tailor products to local variations in taste and preferences" (Øgaard, Larsen & Marnburg, 2005, p. 23). Hence, franchise leaders' impact on their stores should not be underestimated.

Furthermore, the franchise setting is well-suited for the research purpose due to its specifications. The leaders observed were in non-public positions and represented the top of the store hierarchy. Other than in many existing studies on leader behavior, the leaders here were less aware of their sex due to a lack of comparison with peers. Their singularity as leaders and the lack of public interest in their actions prevented them from effects based on tokenism (Taylor et al., 1978) or stereotype threat (Roberson & Kulik, 2007).

4.3.2 SAMPLING: CHOOSING THE RESEARCH PARTNER AND RESEARCH SITES

The research took place in four stores of a *globally operating fast-food company* (GOFFCO). At the time of data collection, GOFFCO's German board of directors was exclusively male. Nevertheless, 40 percent of restaurant managers at GOFFCO Germany were female, and almost half (48%) of all assistant managers and shift supervisors were female, indicating a relatively low level of masculinization at GOFFCO. Two of the stores were located in a large city in Southern Germany, referred to here as *South City*, and were run by GOFFCO Germany, while the other two stores were set in a metropolitan region in Western Germany, referred to as the *Metro Region*, and run by franchisee Konstantin Melsbach⁴. GOFFCO operated a small share (< 10%) of fast-food restaurants itself, in the following referred to as *Company Stores*, while franchisees operated the large majority of restaurants, in the following referred to as *Franchisee Stores*. At the time of data collection, Melsbach operated more than ten GOFFCO restaurants, which were distributed across several cities in the Metro Region, and are hence also referred to as *Melsbach Stores*.

To ensure a holistic GOFFCO culture, GOFFCO was very careful in choosing their franchisees. Franchisees like Melsbach had to go through a costly and time-consuming process in order to become a

⁴ All names used are fictitious and were created by an online name generator which produces random names that match a predefined sex and nationality.

GOFFCO franchisee. The process required various highly specific investments from the applicant and lasted for about two years. During this time, the applicant had to pass several interviews with GOFFCO executives and accomplish unpaid on-the-job training programs as well as several months of classroom sessions. Access to this training program was only granted to the applicant if he or she provided sufficient financing to invest in a franchise license – usually a high six-digit number. This strenuous training program demanded a high level of commitment from potential franchisees. This process assured the selection of highly motivated, solvent, and capable managers trained to carry the GOFFCO system and culture into their stores.

Gaining access to research sites is often difficult, and success is, in the end, often facilitated by personal contacts or by “being known” by the gatekeepers (Girtler, 2001, p. 69; cf. Jackall, 1988). In the present case, private contacts enabled access to the research sites. A relative of one of the supervising professors worked in the human resources department at the GOFFCO headquarters, and one of the researcher’s fellow research assistants happened to know a GOFFCO franchisee. Both gatekeepers were contacted independently but informed about the respective other gatekeeper being approached as well. After initial meetings in person and via phone, the gatekeepers received a written research proposal that contained the details of the research endeavor. It highlighted that the research was neither concerned with assessing information about the franchisor and the franchisee nor with assessing the quality of products, services, behaviors, and so on. Instead, it aimed at neutrally describing and interpreting behaviors of store leaders and staff in order to carve out sex differences between the leaders and assess the social structures that emerged in their respective stores.

As an incentive, the gatekeepers were offered the researcher’s free work if, in return, she was allowed to observe, document, and publish behaviors relevant to the research question. The researcher set two conditions in her proposal: (1) she needed to work in two stores that were led by a male leader and a female leader, respectively, who were comparable in terms of (a) age, (b) education, (c) and ethnic background, and (2) the stores were not to be informed in advance about the research purpose so that the leaders and staff members would not become self-aware and act unnaturally in front of the researcher. The gatekeepers added that to increase comparability, they would furthermore try to match the male and the female store concerning revenue, number of employees, services provided, type of customer, and other relevant factors. The research hence followed a *matched sampling strategy*, which requires the cases that are compared to have common attributes (Bechky & O’Mahony, 2016, p. 171).

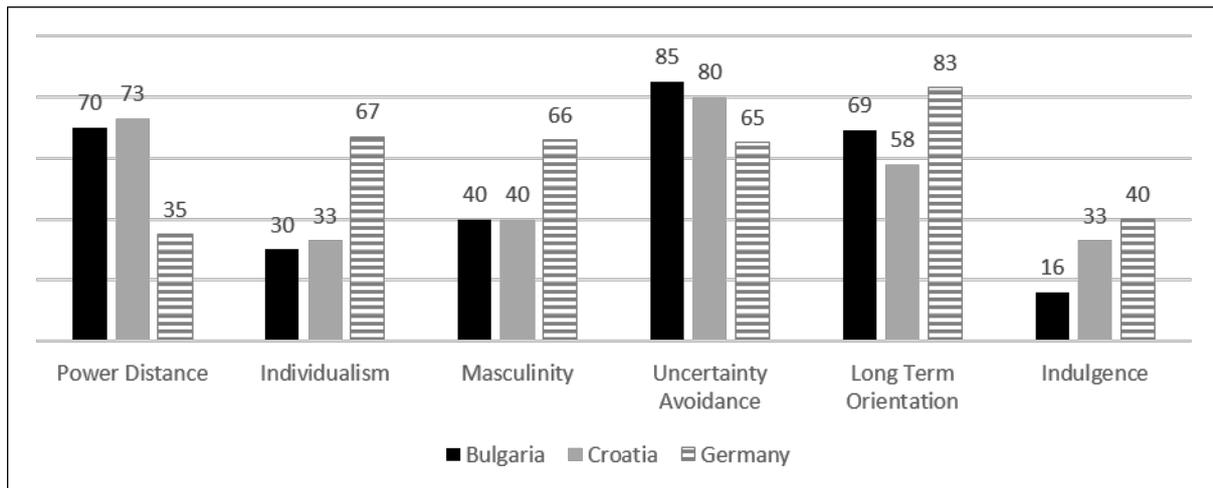
In the GOFFCO stores in South City, the male and female leader were both in the age group between 35 and 45, had a Croatian and Bulgarian background, and had studied a business-related subject in their home country. The headquarters considered the Croatian male leader and the Bulgarian female leader comparable in their country of origin. On closer inspection, the researcher adopted that view and neglected the different countries of origin between the two GOFFCO leaders. According to a comparison of Hofstede dimensions⁵, the two cultures of Croatia and Bulgaria concur significantly in the original

⁵ Geert Hofstede’s six cultural dimensions are a popular way to assess a country’s culture and the resulting leader behavior (e.g., Offermann & Hellmann, 1997). The six dimensions Hofstede discovered by having IBM employees in over 70 national subsidiaries of the technology giant (Hofstede, 1980a, 1980b; Hofstede, 2011) have been a reliable measure to compare and identify a country’s basic beliefs. These dimensions refer to the cultural members’ preference for *power distance*, *individualism*, *masculinity*, *uncertainty avoidance*, *long term orientation*, and *indulgence*. Power distance refers to cultural members’ willingness to accept the existence of hierarchies and single individuals’ positions within those hierarchies without questioning or even fighting them. Hence, in cultures with large power distance, inequalities are tolerated. Superiors consider subordinates to be “different” from them. Superiors are inaccessible, entitled to privileges, and to look as powerful as possible (Hofstede, 1980a). Individualism conceptualizes people’s preference for the self as opposed to the group. In highly individualistic countries, people are mainly concerned with caring for themselves and their immediate family or closest friends only. On the other side, countries that score low on individualism are collectivistic, meaning that their people are concerned with the well-being of the group first and are willing to abstain from their own desires for the sake of the group. Masculinity as opposed to femininity describes a culture’s members’ preference for competition, achievement, and success. Consequently, in highly

four dimensions of power distance, individualism, masculinity, and uncertainty avoidance (see Figure 6). Furthermore, Bulgarian and Croatian are both South Slavic languages, which represents the two countries' shared history and cultures (cf. Kramsch & Widdowson, 1998). The leaders in the Franchisee Stores in the Metro Region were slightly younger, being in the age group 30 to 35. They were both German and after their high school graduation they started their management apprenticeship at GOCCFO. After completing the training program, they were employed as restaurant managers at the respective franchise locations.

Figure 6

Culture Comparison of Hofstede Dimensions in Bulgaria, Croatia, and Germany



Note. Applied from Hofstede Insights (<https://www.hofstede-insights.com/>)

Although the samples were homogenous *within* the respective subcultures (i.e., Company Stores and Franchisee Stores), there were several variations *across* the respective subcultures. Leaders at the Franchisee Stores across subcultures differed concerning age, country of origin, and educational background. In conjunction with the differences in age, the somewhat older leaders at the Company Stores were married and had children, while the leaders at the Franchisee Stores were single. Due to the importance of reproduction for the development of sex differences in behavior in the evolutionary psychology paradigm, having children and taking on the domain of parenting may lead to systematic variations in behavior between parents and non-parents. For example, a female leader who has children might be more nurturing than a female leader without children due to neurological and hormone-induced changes in her physiological makeup.

Educational background may influence leader behaviors with sex differences being stronger in low-educated leaders and diminishing with increasing educational levels (Barbuto et al., 2007). Accordingly, sex differences in the GOFFCO Stores were expected to be less visible as compared to leader sex differences in the Melsbach Stores.

masculine societies it does not matter what you do as long as you are successful doing it. If a society is feminine in contrast, winning a competition is secondary. Instead quality of life and caring for others are the priority. Countries that have a high preference for avoiding uncertainty, are usually highly regulated or have implemented institutions that help them deal with uncertain events when they occur. Countries that score high on the scale of long-term orientation are rather pragmatic in nature and are concerned with preparing for the future using any necessary measure. Countries that are short-term oriented, on the other hand, are highly connected with their past in the form of traditions and history. Adapting to current trends and developments is difficult to them. The dimension indulgence is a measure for people's effort to control their "desires and impulses" with respect to social desirability. When the level of indulgence is high, the effort is low and when the level of indulgence is low, the effort to control one's desires is high indicating a highly restrained country. Both aggression and empathy tend to have an emotional component, which can lead to impulsive actions.

GOFFCO Stores and Franchisee Stores were furthermore located in different geographical and demographic regions. Ethnographic research found that the specifics of the local area of a franchisee may affect its organizational (sub-) culture in considerable ways (O'Toole, 2009). Finally, the GOFFCO leaders differed from the franchisee leaders in their ethnic background. Research found that leader cultural background influences their leadership style and behavior (Haire, Ghiselli, & Porter, 1966; Heller & Wilpert, 1981; Hofstede, 1980a, 1980b; Hofstede & Bond 1988; Randall 1993). A comparison of Hofstede's dimensions reveals considerable differences between the German and the South Slavic cultures, particularly concerning power distance, individualism, masculinity, and uncertainty avoidance (see Figure 6). Comparing the dimensional patterns of the two cultures indicates that masculine behaviors that yield status rank, such as competitiveness and achievement, play an important role in both the South Slavic cultures and the German culture. However, although Germans score higher than Slavs on masculinity, they emphasize individualism more and are less willing to accept authorities than their Eastern European neighbors. Hence, stable dominance hierarchies should be more difficult to develop in Germany than in Bulgaria and Croatia. The different scores in uncertainty avoidance substantiate that notion. Germans are more willing than South Slavs to accept the uncertainty that results from unstable hierarchies and versatile social structures (Hofstede Insights, n.d.).

At first sight, the existence of systematic differences concerning social influences between the stores might seem challenging and even problematic for the research purpose. Since the research goal is, however, to uncover the impact of evolutionarily imprinted biological sex differences on behavior, the heterogeneous elements are not a hindrance but helpful. Sex differences in behavior become more meaningful when they persist across cultures (e.g., Buss, 1989). Hence, if sex differences are present *across* the two subcultures, they are more likely to originate from several millennia of evolution instead of short-term socialization processes.

4.3.3 GOFFCO

The following subsections provide detailed descriptions of the specifications and environments of the four research sites to create transparency and traceability. First, the standard GOFFCO store, i.e., the concurring features at all stores, is depicted concerning its social structure, store design, store operations, tasks, and performance evaluations. Subsequently, all four stores are shortly introduced.

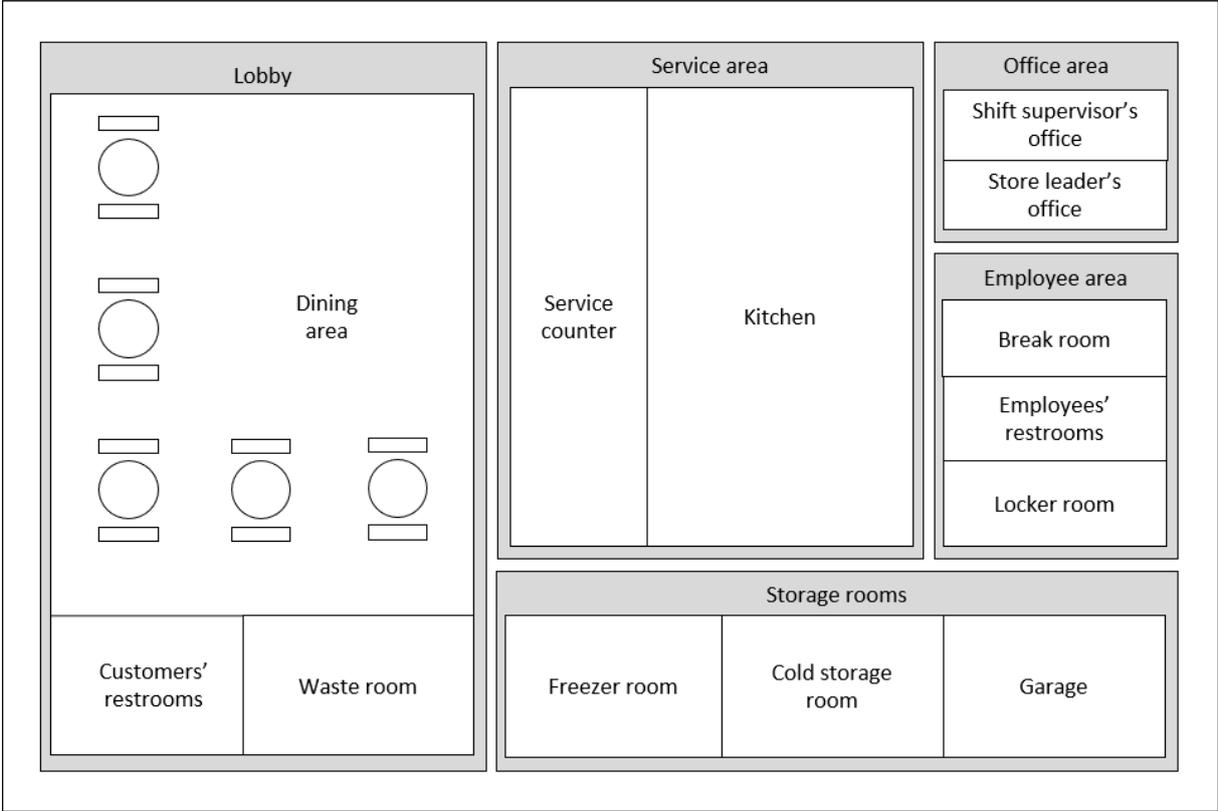
4.3.3.1 The Standard GOFFCO Store

Social structure at GOFFCO. The GOFFCO organizational structure was hierarchical in nature. The formal hierarchy within a GOFFCO restaurant had the restaurant manager at the top of the hierarchy, followed by his or her substitute, i.e., the assistant manager, shift supervisors, team leaders, and regular staff. The restaurant manager's superior was the district manager. District managers made regular visits to all of their subordinate stores. During those visits, they controlled for overall appearance and proper workings of the store and exchanged relevant information with the restaurant manager. Restaurant managers were in charge of the store's economic success. The restaurant managers' tasks entailed managerial tasks such as forecasting, planning, budgeting, and analyzing store performance. They further represented the store to all stakeholders outside the restaurant. The shift supervisors were in charge of coordinating operative business during their respective shifts. They assigned people to their tasks, ensured that rules were adhered to, and that the operative business ran smoothly. At the same time, they kept an overview of existing stock and placed orders for the periodic deliveries. Below the shift supervisors in rank were the team leaders. Team leaders were only deployed in large stores with high traffic and played a minor role so that they are neglected in the following. The lowest level was made up of regular employees, who mostly worked autonomously in their assigned operative position. During

their shifts, employees had to wear a GOFFCO uniform comprising a shirt, trousers, a belt, and – for workers working in the kitchen - a headgear. Shift supervisors wore a uniform that distinguished them from regular workers. Restaurant managers, however, were free in their choice of dress.

Store design. As illustrated in Figure 7, a GOFFCO store consisted of five physical areas: the office area, the service area, the lobby, the employee area, and the storage rooms. The office area contained computers that were synchronized with the GOFFCO IT system. It consisted of at least two office rooms: one for the restaurant manager and the assistant manager and the other for the shift supervisor on duty. The service area was the area where the operative business took place. It contained the kitchen and the service counter, and customers were not allowed there. The lobby contained the dining area for the customers as well as the customer restrooms. Furthermore, it contained a waste room where used trays were cleaned, and left-overs and garbage were sorted and disposed of. Usually, it was also used as a smoking area for employees. The waste room was off-limits to customers. The employee area was the area accessible to employees who were not working at that moment, e.g., because they were on their break or waiting for their shift to begin. Facilities within the employee area were a locker room, employee restrooms, and a break room. Finally, the storage rooms contained all types of stock and a garage that held garbage cans and additional stock. Storage rooms differed regarding room temperature. Non-food was stored in regular rooms or the garage, whereas food products were stored in two cold rooms that either held chilled or frozen foods.

Figure 7
Store Design of the Standard GOFFCO Store



Store operations. GOFFCO stores were open all day, even on weekends, and also part of the night, depending on their location. Traffic in the stores peaked during rush hours from 11:30 am to 2:00 pm and 5:30 pm to 8:30 pm. The employees in the stores worked in shifts. A regular shift lasted eight hours, although some workers worked fewer hours per shift. People started and stopped their shifts at different times so that the people one worked with changed frequently. People who worked longer than six hours

were entitled to a 30-minute-break. The shift-supervisors coordinated breaks, i.e., the employees could not time their break autonomously. During their break, employees could consume GOFFCO products at a reduced price, but not outside their shifts or outside the stores.

During night shifts, store operations deviated from the operations during the daytime, which led to a distinct subculture. There was less fluctuation of workers during the night so that it was mostly the same people who worked together regularly and knew each other well. The night shift employees were predominantly men. First of all, store cleaning took place during the night shift, which contained the moving of heavy machines and furniture. Furthermore, supplies were delivered at night, which entailed carrying and moving heavy objects and interacting with the mostly male delivery men. Secondly, the customer profile changed at night. The customers then were mostly male too; in addition, some of them were intoxicated and acted aggressively or antisocially. Due to males' superior physical strength, the night shift conditions were considered to be better met by male than by female employees.

Tasks. The different operative tasks corresponded to the store area in which they were executed. The *counter area* entailed three different tasks. First of all, the counter area contained the cash registers at which the employees took the customer orders. After the customers had placed their orders, an employee assembled their specific orders. The assembly usually contained tapping the drinks at the soda fountain, getting fried products from the fried products batch cooker, getting food items out of refrigerators or heating devices such as the production bin. Because the deep fryer was located in the counter area, another task there was to deep-fry frozen products. Only during rush hours or other particularly busy periods, one designated employee was in charge of the deep-fryer. The person who took the customer order was usually also the one in charge of assembling the order. During busy times, the cashier was sometimes supported by another employee, who helped to assemble the order. This task was referred to as “doing backup” in the stores.

The *kitchen area* consisted of two main work stations: the grill and the assembly platform. Employees at the grill were responsible for all foods that were based on grilled products, while at the assembly platform, only products were prepared that were based on pre-cooked food items. At the grill, products were prepared in advance and kept as a small stock ready to be sold in the production bin. At the assembly platform, however, products were only prepared on demand. There were more men working in the kitchen area, while there was a tendency for women to work in the counter area more – although that tendency was stronger in the Company Stores as compared to the Franchisee Stores.

Working in the *lobby* entailed three tasks. First, to keep the lobby clean, employees had to clear the tables of trays and waste, clean the tables and the seats, and sweep and wipe the floor. Second, the customer restrooms had to be kept clean, meaning that employees wiped the floor, cleaned the sinks and mirrors, and refilled toilet paper and soap during their regular patrols. Finally, working in the lobby entailed taking used trays off the tables and clearing them of waste. Before cleaning the trays, employees further sorted the waste and took it to the designated garbage cans in the garage. While in large stores, at least two people were working in the lobby, in smaller stores, no particular employee was responsible for the lobby. In these stores, the people from the counter area went to ensure the lobby's cleanliness several times an hour in between orders.

Store performance. Store performance was measured by so-called Mystery Shopper Visits (MSVs). Those surprise visits could take place any day in the time from 10:30 am to 2:00 pm and 5:30 pm to 8:00 pm. Mystery shoppers followed a certain scheme during their visit that included ordering from a certain range of GOFFCO products and using the restroom. Because the mystery shoppers had to send in a receipt together with their reports, customers specifically asking for a receipt were often suspected to be mystery shoppers by store workers. After their visit, mystery shoppers filed a report based on their individual experience in the store. They evaluated service (e.g., waiting time), quality of products (e.g.,

food temperature), and the ambiance (e.g., cleanliness of the restroom). Based on the reports, the GOFFCO headquarters generated a store ranking that depicted the likelihood of a customer having a better experience at a given restaurant. A restaurant that ranked at 0% was at the top of the ranking, because it offered the best possible experience to its customers. The likelihood that the customer experience could be better was zero percent. The higher the percentage, the lower the restaurant's rank, because the more likely it was that customers had a less-than-optimal experience at the restaurant.

The description of the GOFFCO standards applied to all of the four stores that were included in the study. However, each store had its own characteristics and specifications that are discussed in more detail below. Furthermore, the two stores operated by the GOFFCO headquarters and the two stores operated by the franchisee deviated from each other in some respects, which is also described in the following subsections.

4.3.3.2 Store 1: Victor Kovac's Flagship Store

The restaurant manager of the first store was Viktor Kovac. At the time of the study, he had been leading the store for four years. For this study, Kovac's store was labeled the *Flagship Store* because it was used as a model store by the GOFFCO Germany headquarters. Whenever the headquarters expected visitors who wanted to see GOFFCO operations, they brought them to Kovac's store. Furthermore, the store was described as a "training center" for interns and other GOFFCO employees. A second reason for the store being labeled as "Flagship Store" was its outstanding overall performance – in the GOFFCO store ranking, the store had had a top position for the previous two years. The Flagship Store was the largest of the four stores included in the study. It was located in South City next to the parking lot of a large industrial area. Store hours were 23 hours per day, i.e., the store only closed for one hour at night. The store was very busy, and cash registers were often staffed with two employees to ensure short waiting times for guests. The store had won an award for serving the most customers in Germany within one hour. As a reward, the employees had been invited on a trip to an amusement park. The employees were highly aware of their store's high ranking and eager to sustain their past success. During the first week of my stay at the Flagship Store, there was a coupon promotion that led to a significant increase in customers and made the store even busier.

4.3.3.3 Store 2: Eva Velitchkov's Family Store

The restaurant manager of the second store was Eva Velitchkov. She was the oldest participating restaurant manager. She had been leading the store for three years. Velitchkov's store was located in a suburban area in South City and was labeled the *Family Store* because a high share of customers were families and teenagers. The Family Store was designed according to a different operating system than the other stores included in this study. Two major changes in tasks resulted from the new system in the Family Store. First, employees at the grill produced most products on-demand, which meant that during rush hours and traffic peaks, the workload in the kitchen rose significantly. Second, due to the increased workload, the work tasks were segmented into smaller units.

The Family Store was struggling to implement the new system. As a consequence, especially during rush hours, customers had to wait longer for their orders to be assembled. The resulting hastiness of the workers resulted in increasing error rates and unsightly trays on which the products were lying piled up in a disorderly manner. The employees were, at times, even hectic outside rush hours when there were only a few guests in the restaurant. Guests were often dissatisfied and complained a lot about missing or wrong products and long waits or cold food. Furthermore, the employees contributed to the long waiting times by making the processes more complicated by not consecutively serving the customers,

but preferring smaller orders and hence prolonging the waiting times of, e.g., families who had placed large orders.

Overall, there was less traffic in the Family Store as compared to the Flagship Store. Opening hours were from 7:00 am to 3:00 am on weekdays and 7:00 am to 5:00 am on weekends. However, the average order was significantly larger than in the Flagship Store, which compensated for the lower number of guests. According to the MSV ranking, the Family Store was one of the most successful restaurants with a ranking score of 8%, though less successful than the Flagship Store. In contrast to the Flagship Store, employees seemed to be less aware of the excellent ranking and struggled to maintain their good position.

4.3.3.4 Store 3: Marta Solberg’s City Center Store

The third store, a Franchisee Store, was managed by Marta Solberg. She had been head of the store for approximately one year. It was labeled *City Center Store* because it was located near the city center of a town in the Metro Region. The City Center Store was the store with the lowest traffic. Accordingly, it had the shortest opening hours. The store operated from 7:00 am to 2:00 am from Monday to Thursday, 7:00 am to 5:00 am on Fridays and Saturdays, and 8:00 am to 2:00 am on Sundays. Traffic was significantly lower in both Franchisee Stores as compared to the Company Stores. The MSV performance of the Family Store was 29 percent.

4.3.3.5 Store 4: Eric Holzhammer’s Highway Store

Eric Holzhammer was the restaurant manager of the fourth store, the second of Melsbach’s Franchisee Stores included in the study. It was located in the Metro Region next to an industrial area of large German retail chains similar to the one next to the Flagship Store. Because it was right at the end of a highway exit, it was labeled “Highway Store” for the purpose of this study. Holzhammer had been leading the restaurant for five years. The Highway Store’s performance was in the upper-middle range of the GOFFCO ranking with an MSV evaluation of 27 percent. Traffic in the store was comparable to the traffic at the City Center Store. In Table 6, the four stores and their overlapping, as well as deviating features, are summarized.

Table 6
The Features of the Four GOFFCO Stores

	Company Store male	Company Store female	Melsbach Store male	Melsbach Store female
Assumed name	Flagship Store	Family Store	Highway Store	City Center Store
Store leader	Victor Kovac	Eva Velitchkov	Eric Holzhammer	Marta Solberg
Ethnic background	South Slavic (Croatian)	South Slavic (Bulgarian)	German	German
Age	35-45	35-45	30-35	30-35
Education	University abroad	University abroad	High school + apprenticeship	High school + apprenticeship
Local area	South City	South City	Metro Region	Metro Region
Store size	Large	Large	Medium	Medium
Services provided	all	all	all	all

4.4 METHOD: COVERT PARTICIPANT OBSERVATION

As it is common for ethnographies, data was gathered through close observation and involvement with people in the field (Watson, 2011, p. 206). More specifically, the research method was *covert participant observation*. The method was chosen to ensure a high level of authenticity regarding the research subjects and their behaviors.

Tinbergen has already emphasized the importance of getting in touch with “the natural phenomena” and investigating behavior based on observations in the field instead of testing them experimentally (Tinbergen, 1963, p. 411). In using observation as the primary method of data collection, the approach used here therefore concurs with Tinbergen’s critique of the trend in behavior-related topics of neglecting “actual behavior” and focusing on questionnaires and other methods that merely approximate behavior instead (Baumeister, Vohs, & Funder, 2007; Gans, 1999). To observe behavior in the field means to assess behavior embedded in the real world with all of its social and other environmental dynamics. Subjects who are being observed act in both routine and non-routine situations in a setting that feels natural to them. As opposed to experimental designs in which participants are highly aware of others’ behavior and their own behavior, the field setting is more likely to provide authentic behavior that may lead to true insights about sex differences in leadership behavior.

Due to the sensitivity of the research topic, the observations were conducted *covertly*. Neither the restaurant manager nor the staff members in the stores were informed about the researcher’s background. The decision not to inform research subjects about the research was based on the assumption that communicating the research purpose being about sex-related behaviors would have increased the leaders’ salience concerning their biological sex, which in return would have influenced their behavior (Schwartz & Jacobs, 1979, p. 52). The reliability and validity of interviews on a subject as personally sensitive as gender/sex have been questioned before (e.g., Alvesson & Billing, 2009, pp. 10-1).

GOFFCO headquarters complied with the condition not to inform the individual stores about the researcher’s role as a participant observer. Instead, she was introduced to the restaurant managers and the staff members as a temporary intern, who worked at the stores for free because she thought about starting a career at GOFFCO and wanted to get to know the inner workings of the company at its core. Store leaders and shift supervisors were thus aware that she was not a regular worker at the store and were not surprised by the many questions she asked about GOFFCO and their respective stores. At the same time, the cover story prevented them from becoming particularly self-aware and should not have prompted them to put an extra effort in making themselves, their store, or the organization look good. Although it is natural for people to want the organization they work for to look good (Watson, 2011, p. 211), this desire should be greater if their counterpart was introduced to them as a researcher or journalist, i.e., someone who may publicly report about the organization.

As indicated above, in addition to being covert, the observation was *participant*. First, participant observation enabled the researcher to enter the field because her participation was one of the benefits that the company profited from and was hence key in getting access to the research site. Second, Roland Girtler who studied various social subcultures, e.g., police officers, smugglers, and sex workers, by participating and observing highlighted that the observer who truly participates in the field is more qualified to generate true and interesting findings (2001, p. 98). By entering the field as a new member of the group, ethnographic field researchers can experience the effects of leader behavior first hand and understand the intentions and subtexts of their actions better, as compared to watching them as an uninvolved bystander. Although “going native” is commonly considered a phenomenon that endangers the researcher’s neutrality, it is actually vital to truly understand the norms and structures of the research setting (Girtler, 2001, p. 78). Others highlighted that in *organizational ethnographies*, the researcher is

not in danger of going native to a harmful extent anyway, because other than in anthropological research, the researcher does not spend 24 hours a day in the given setting (Delamont, 2004, p. 208-10). Although the researcher experienced feelings of going native over the course of the research due to her involvement with employees and her increasing skills as well as her increasingly independent working style, the feeling never grew so strong that she forgot about the research purpose. As predicted, she instead felt that she had gained true insight into the GOFFCO world and its leadership.

4.5 DATA COLLECTION AS PARTICIPANT OBSERVER

During participant observation, the researcher assumed the role of a short-term intern (cf. Gobo, 2008, p. 122). The restaurant managers and employees were told that she was a graduate student about to finish her Master's Degree in business studies, and was thinking about starting a career at GOFFCO. In an unpaid internship, she allegedly sought to familiarize herself with the GOFFCO culture and its core work to decide whether GOFFCO would meet her criteria as a future employer. The researcher worked for two weeks, eight hours per day, in each company store, and for two weeks, six hours per day, in each of the Franchisee Stores. All contact with GOFFCO workers outside working hours was also documented and included in the analysis. Those contacts included the planning of data observation with gatekeepers from the administration office, time spent with franchisee Melsbach, having a drink after work with a GOFFCO coworker, or attending the Melsbach franchisee Christmas party.

As participant observer, the researcher took part in all operative tasks pursued by regular GOFFCO workers. In three of the four stores (both Company Stores and the first of the Franchisee Stores), the restaurant leaders assumed that she had no prior experience working at GOFFCO or another fast-food company. In the second franchisee store, however, the restaurant leader was informed about her prior internship in the first franchisee store. Due to the frequent interaction of restaurant leaders at Melsbach and the scarcity of interns there, the researcher's presence could not have been concealed. Although this irregularity may have slightly reduced comparability across sites, it also had the positive effect that the increasing routine the researcher gained over time could be explained by the alleged prior internship. In the three stores, where the leaders believed that the intern had no prior experience, she received different forms of initial on-the-job training, whereas this was not the case in the fourth store. However, she was deployed at different tasks in each of the stores (e.g., cleaning the lobby, serving customers, working as a cashier) irrespective of prior experience.

Leaders assigned the researcher to different shifts in each store. In the Flagship Store, she mostly worked the shift from 12 pm to 8:30 pm, while most of her shifts at the Family Store lasted from 9 am to 5:30 pm. In the City Center Store, shifts commenced between 10 am and 12 pm, while shifts in the Highway store started between 1 pm and 3 pm. Again, comparability of sites may have been somewhat reduced by those differences because different shifts systematically differed in coworker characteristic (e.g., men in the evenings, women in the mornings) and workloads (e.g., only one rush hour between 9 am and 5:30 pm, but two rush hours in shifts from 12 pm to 8:30 pm). At the same time, decisions concerning the intern's deployment were important actions of the leaders that potentially inhered sex differences. Hence the researcher was careful not to interfere with those decisions but, for the most part, abided by the plans that restaurant leaders made for her.

To ensure researcher flexibility and openness, nothing was explicitly excluded from the observation. Instead, the researcher took a "just get out and do it" approach (Bate, 1997, p. 1152). Nevertheless, awareness is selective, and, in the case of competing stimuli, the researcher needed to decide which type of information was more relevant to the research purpose (cf. Greve & Wentura, 1997, p. 13). The researcher placed emphasis on every behavior and interaction that included or concerned the restaurant leaders. When there was no leader-related behavior to observe, the researcher focused on other

employees, such as shift supervisors and regular employees, and their actions. Those observations provided information about the social structure and the organizational (sub-) culture. Incidents that were non-routine or emotional in nature were observed more closely than routine work because they appeared to offer more insights into people's motives and inner lives.

Individuals outside GOFFCO, such as customers, visitors, and suppliers, were included in the observations, especially concerning their interactions with GOFFCO leaders and employees. Those observations could also provide information about the consequences of leader behavior and employee actions. For instance, a customer proudly telling the researcher that he knew the restaurant leader well contained information about the leader's treatment of customers. Most interactions and behaviors that the researcher observed included her in some way, which is inevitable in participant observation. How leaders and other store members treated her, and, in particular, differences in those treatments were hence an important aspect of the observation (Silverman, 2013, p. 220). When no people were present, observation included artifacts, such as the facilities or work uniforms, to deduce leader behavior and social structure.

Since the observation was both covert and participant, extensive note-taking was not possible. However, the researcher managed to occasionally make some notes on her cell phone or paper (e.g., a napkin). Possibility for note-taking was given during (1) regular food breaks, (2) irregular short breaks workers were allowed to take from time to time in order to drink, eat, or smoke cigarettes, and (3) bathroom breaks. Because cigarette breaks appeared to be particularly well-suited for getting into contact with others or to make notes, the researcher introduced herself as a smoker when she was asked about it on her first day. All of the situations above were used to make *jotted notes* based on the mental notes the researcher had made continuously during her stays in the field (cf. Lofland & Lofland, 1984). The limited time mostly only allowed the researcher to write down some keywords. Although those notes usually did not contain more than about 50 words, they helped the researcher remember incidents or even verbatim phrases.

After the end of each shift, the researcher immediately started producing full field notes based on her memory with help from the jotted notes as described above. By minimizing the time between the actual observation and writing the full field notes, the researcher ensured a minimum memory decay and that the memories would not be overwritten by new memories. The importance of this approach became visible during the two incidents when the researcher was unable to produce full field notes right after getting home. After working night shifts until eight am, the researcher was exhausted and went right to bed, postponing writing full field notes to the afternoon. The result was that the full field notes of those night shifts were significantly shorter and less detailed than the observation minutes of any other observation time frame.

The full field notes were written in the form of an observation diary from the point of view of the researcher. The researcher transferred observed actions, spoken language, and emotional incidents into written text that served as the basis for data analysis. The text was recorded via speech recognition software Dragon NaturallySpeaking because that way, memory access and flow of speech were not interrupted by the typing process. The resulting texts were made "readable" (Jarzabkowski et al., 2014, p. 277) by correcting errors made by the program and incomprehensible parts that resulted from changes or corrections of the train of thought. The first two pages of the observation protocol are displayed in Appendix A to illustrate the nature of the raw data collected.

The narrative contained descriptions of episodes that were formulated in neutral language and illustrated actual actions without interpretations. Those purely descriptive parts were supplemented with relevant knowledge to provide context and suggested interpretations of those behaviors. Overall, the observation minutes accumulated to a research diary of 146,903 words on more than 300 pages. That

diary was analyzed to assess sex differences in leader behavior and differences in the social structures that came to exist in male-managed as compared to female-managed stores.

4.6 DATA ANALYSIS: CODING AND NARRATIVE DEVELOPMENT

On entering the field, the researcher had adopted an evolutionary psychology paradigm and focused on the research question (*RQ1b*) *Which sex differences in leadership exist from an evolutionary psychology perspective of behavior in organizational settings?*. To avoid biased data collection based on selective attention, the researcher had not developed the extensive framework introduced in section 3.2 prior to her visits to the field. Instead, the focus on Geary’s theory of men preferring hierarchical structures as compared to women preferring egalitarian, communal structures was the outcome of an iterative process in which emerging themes from the data had been continuously compared to existing theoretical and empirical findings.

Figure 8
Eight Steps of Data Analysis

Step 1	Pre-structuring of observation minutes: Multiple reading & coding behavior-related incidents of each individual
Step 2	Categorizing behaviors: Paraphrasing, generalization, interpretation, and clustering of coded passages
Step 3	Identifying a preliminary framework: Settling for Geary’s theory and related behavioral strategies
Step 4	Recoding of observation minutes: Coding the data according to the preliminary framework
Step 5	Identifying specific behaviors: Subclassifying behavioral strategies into specific behaviors based on the data
Step 6	Comparing cases: Contrasting behaviors within and cross stores as well as within and across sex
Step 7	Developing narratives: Connecting behaviors to tell the story of each store and its leader
Step 8	Finding sex differences in leader behavior: Identifying behavioral sex differences in leaders by contrasting of narratives

Data analysis followed the basic principles of grounded theory as they are typical of all inductive research endeavors: building thick descriptions, coding raw data, finding second-order themes and constructs, and comparing intermediate findings to the data as well as the literature in order to generate new insights (Eisenhardt, Graebner, & Sonenshein, 2016). Overall, data analysis consisted of eight steps, which are depicted in Figure 8 and described in the following.

The *first step* of data analysis was dedicated to pre-structuring the observation minutes to enable easy access to text passages representing behavior. After closely rereading the observation minutes several times (Morgan, 1993), the researcher fed the observation minutes into the qualitative data analysis software MAXQDA. With the help of the software, the data was then coded according to organizational subcultures and individuals’ behaviors. Each observation that revealed information about cultural assumptions, norms, and rules in GOFFCO Stores and the Franchisee Stores was coded with an individual code. Similarly, each person observed at any point in time was assigned an individual code. Every time that individual was observed or their behavior was referred to by others, the text passage

was marked with that individual's code. Most of the time, the coded passage started when an individual caught the researcher's attention and ended with the end of the episode. The coded passages represented *incidents involving specific individuals* rather than single behaviors. Hence, one coded passage could (and mostly did) contain more than one action. For example, one coded passage representing the behavior of individual J. reads as follows:

When the rush of lunchtime was over, and I started feeling useless, I approached J. and asked him if I could help out outside, i.e., walk around the lobby and collect trays. But J. denied this and rather gave me the feeling that I should "not stress myself". When he realized that this answer did not really help me, he suggested that I should ask the girl who worked at the far end of the outermost cash register whether she could show me how to operate the cash register.

The protagonist J. in this incident acted more than once. He denied a request, he told the researcher to relax, and he realized that his first suggestion did not yield the desired outcome, and made an alternative suggestion. Nevertheless, the different behaviors were not coded individually but collectively as one incident.

Coding each action individually would have meant to separate actions from the context they occurred in. However, in congruence with the goal of qualitative research in general and the goals of this research project in particular, it was crucial to assess behavior in relation to the given context. That way, the researcher could infer the actor's motives and the outcomes of that behavior. For example, a leader who acted surprised by a follower's reaction to their own action revealed that they had not intended that reaction, which in return reveals information about that leader's motives. The code in this example would have included the leader's action, the follower's reaction, and the leader's reaction to the follower's reaction.

Care was taken to ensure that even the smallest possible coding unit was self-explanatory to the researcher in its meaning, indicating that codings could not only consist of individual words (e.g., "scream") but needed to contain sufficient information to remind the researcher of who was acting at what time under what conditions in that situation. That way, codings were recognized by the researcher and could be interpreted without the surrounding text passages. For example, on encountering the coded passage, "he laughed with his whole body and slapped his hands on his knee", the researcher remembered the exact situation that the code referred to without having to consult the raw data, i.e., the observation minutes. Most coded text passages consisted of several sentences and represented a semantic unit by including all information directly related to the observed behavior, as indicated above.

Because many incidents featured more than one actor, text passages often had to be marked with more than one code. Actors did not have to be physically present to be coded. For example, when one employee verbally referred to a coworker's behavior, the passage represented both the behavior of that employee in the form of a verbal comment and information about the behavior of the coworker. Hence the passage was marked with the respective codes of the two individuals. Overall, 2,861 text passages were assigned to 138 different individuals. There were considerable differences in the number of coded passages allocated to each individual. In congruence with the predefined focus of the observation process, the highest number of passages was coded for restaurant managers, ranging from 117 to 174. The restaurant managers were followed by the shift supervisors of whom the one with the highest number of codings was assigned 82 coded passages. Of the 103 regular employees who were assigned coded passages, many were encountered only a few or even only a single time, while others, whom the researcher regularly worked with, were observed quite frequently. The highest number of observations coded for an individual regular employee was 38. As a result of this initial coding process, all behaviors of one individual could be easily accessed through selecting the respective code. Additionally, the codes were clustered according to store, function, and sex. In this manner it was possible to easily access all behaviors of, e.g., all-male shift supervisors in the Flagship Store or all-female regular employees in the

Company Stores. The researcher also coded her own behavior so that she could identify systematic alterations of behavior over time or in specific situations that might have interfered with individuals' actions. She finally identified and coded 1,663 behaviors of her own. Finally, the researcher also coded 266 text passages which represented additional information about the organizational subcultures at the Company Stores and the Melsbach Stores.

The *second step* of the data analysis aimed at clustering the restaurant managers' behaviors into more general behavioral categories and subcategories. First, the coded data was exported into MS Excel. Using the filtering option offered by MS Excel, the data in the stores could still be sorted according to employee function (e.g., regular employee) and sex. In Excel, several columns were added to the MAXQDA output, in which each coded passage was paraphrased and/or explicated as well as generalized, interpreted, and categorized as illustrated in Table 7 (Mayring, 2010).

Table 7
Process from Coding to Generalization

Coded passage	Paraphrase/ Explication	Generalization	Interpretation	Categorization
After I had been doing backup for a while, Kovac, who was working at the deep fryer, asked me whether I wanted to substitute for him.	Kovac asks me to substitute for him at the deep fryer.	Kovac actively encourages employees to engage in new tasks.	Kovac actively increases his employees' autonomy by allowing them to learn new skills and to expand their scope of action. By asking instead of demanding, he already grants his employees the autonomy to decide for themselves to what extent they want to engage in new tasks.	Emphasizing employees' autonomy

Paraphrasing entailed eliminating redundancies and emotional contents and summarizing the relevant behavior neutrally. When the interpretation needed additional information to be transparent, it was added to the paraphrase. Furthermore, highly specific content was generalized, and the behavior was interpreted on a higher level. One coded passage, for example, read:

After I had been doing backup for a while, Kovac, who was working at the deep fryer, asked me whether I wanted to substitute for him.

The coding was neutrally paraphrased as "Kovac asks me to substitute for him at the deep fryer". The paraphrase was then generalized to "Kovac actively encourages employees to engage in new tasks". This generalization was then abductively interpreted in terms of underlying motives. In the given example, Kovac's encouragement was assumed to indicate that he

... actively increases his employees' autonomy by allowing them to learn new skills and to expand their scope of action. By asking instead of demanding, he already grants his employees the autonomy to decide for themselves to what extent they want to be autonomous.

The behavioral *category* that the coded passage was assigned to was named "emphasizing employees' autonomy". Some passages offered not only one, but a variety of abductions. When the researcher felt that there was more than one very plausible interpretation of the behavior observed, the passage was duplicated and interpreted according to those other plausible motives as well. As soon as all passages had been paraphrased, interpreted, and categorized, the categories were clustered to reduce the data and identify broader categories of behaviors to guide further analyses.

At that point, the behaviors identified resulted from the data only. To connect with existing research and theoretical concepts, the *third step* of data analysis consisted of an iterative process in which the researcher traveled back and forth between the abductive interpretations, categories of behavior, and the

scientific literature on those behaviors from the field of evolutionary psychology. Categories were adapted and changed based on the theoretical concepts identified, and codings were re-interpreted with the help of new theoretical insights.

It became increasingly clear that the social structures encountered in the four stores differed from each other and that understanding employee behavior and store norms would provide just as many insights into leader behavior as the actual leader behavior itself. While trying to extract behavioral universals that could be compared across sites, the researcher additionally searched for literature that dealt with sex differences in the behavioral categories that had been identified by then. The researcher continued this iterative process until a point of theoretical saturation was reached (Glaser & Strauss, 1967; Locke, 2001). Geary's theory of men's and women's preferred social structures came to the fore and became increasingly important in the development of the final framework. Geary's merely rudimentary descriptions of dominance hierarchies and egalitarian communities and his omission of descriptions for behavioral strategies that support the establishment of those structures could be supplemented by the researcher based on the data and the scientific literature.

A preliminary framework resulted from the iterative process of the third step of data analysis. This framework was already based on men's preference for dominance hierarchies and women's preference for egalitarian communities. Additionally, the behavioral strategies of dominance behavior, coalition-building, intimacy-building, and nurturing had already been identified based on an iterative juxtaposition of the literature and the field data. However, the very specific behaviors that were applied by the actors in the given setting to achieve, e.g., coalition-building or the establishment of an intimate bond with another individual, had not been defined at that time. For example, intimacy-building is a higher-level behavior that may be achieved through a variety of specific behaviors. Individuals at GOFFCO increased intimacy between them and their coworkers by sharing personal information. At the same time, they also created intimacy by genuinely expressing interest and sympathy when their coworker was experiencing an emotional episode.

In the *fourth step* of data analysis, the observation minutes were re-coded for each individual according to the behavioral categories from the preliminary framework. As a result, the researcher could access all incidents of a specific individual displaying a certain behavior. For example, all incidents during which Velitchkov had displayed dominance behavior were now at the researcher's fingertips. The codes were numbered consecutively, with the first digit representing the store number and followed by a subsequent dot the number of the chronologically organized coding in that store. The coded passage 1.14 for example hence represents the 14th coding of the data from the first store. Coded passages starting with "0" represent information about the subcultures of the GOFFCO Stores and the Melsbach Stores.

During the *fifth step*, the newly coded data was used to determine specific behaviors displayed by individuals in the stores that were related to their social motives. Behaviors were now consistently classified across situations and store cultures and interpreted in terms of the behavioral strategy they might have served. This was not always easy. For example, helping behavior could be interpreted as very different behaviors depending on the situation. A male coworker that helped me operate the cash register did so very differently as compared to one of the female coworkers. While he demonstrated features of the cash register to me and had me watch him do the actual work, the female coworker stepped back and encouraged me to work out the features of the cash register myself. What higher-level behaviors should those two incidents be assigned to? On the one hand, they could both simply represent nurturing behaviors, with the two coworkers being driven by altruistic motives wanting to improve the situation of the still inexperienced intern. On the other hand, the male coworker could have been expressing dominance in demonstrating his superior skills, while the female coworker could have been trying to create an intimate bond between the two of us. Or, maybe, the male coworker was

demonstrating his skills at operating the cash register as part of a mating ritual during which he wanted to impress a woman and increase his chances of future procreation. In that case, the behavior would have been irrelevant for social structure building.

Additional information like the tone of voice, body language, and behaviors of the individual in other situations helped to classify behaviors and assign them to behavioral strategies. The researcher also considered her reactions to behavior an indicator of what effect the behavior actually had and hence of the actors' intentions. Her own emotional reactions were further used as a clue to assess emotional reactions in other individuals. For example, when a leader's behavior made her feel rushed and pressured, she assumed that at least in some of the other individuals present, the leader's behavior had the same effect.

Behavioral categories were formed by contrasting and comparing all behaviors that were assigned to the same behavioral strategy during the second coding process. Over the course of clustering behaviors, categories were subclassified into more specific behaviors, which were again subclassified into even more specific behaviors. However, the researcher did not classify behavior on its most basal, motor-driven level (i.e., stretching one's arm to the front, taking another person's hand), but remained on the level of semantically meaningful behavior (i.e., greeting someone with a handshake). By making those different levels of behavior explicit in an intermediate step of data analysis, the researcher gained a better understanding of behaviors and was able to make the same degree of assumptions and interpretations that were inherent in the observations she had made in the field. The result of this step of data analysis, however, was to identify behaviors on the next specific level following the behavioral strategy. Hence, all subclassifications only served as a means to develop a first draft behavioral framework and were dropped in the portrayal of findings later on.

Using the finalized framework, the *sixth step* of data analysis comprised the systematic comparison of behaviors within and across the four cases. For each behavioral strategy, the researcher juxtaposed the behaviors of the store leaders and their staff, the behaviors of the two male leaders, the behaviors of the two female leaders, and the behaviors of the two leaders from each subculture.

The first comparison provided insights into the relationship between leader behavior and the resulting store structure. Would, for example, a highly dominant leader be surrounded by followers who behaved in a dominant way or in a submissive way? Second, comparing the two male leaders, on the one hand, and the two female leaders, on the other hand, aimed at finding consistencies in behavior *within* sex. Consistencies within sex indicated that the behavior applied might be sex-specific and is thus highly relevant to the research question. Of course, inconsistent behaviors in leaders of one sex were not automatically dismissed as irrelevant or non-sex-specific. Cultural and other social influences that leaders experienced were instead related to those behaviors and assessed as possibly distorting effects. Nevertheless, the evolutionary paradigm guiding the research at hand places more emphasis on robust sex differences in behavior so that consistent behaviors were treated as more meaningful due to their lower levels of ambiguity.

In a second substep, the consistent sex-specific behaviors were contrasted *across* sex – if some behavior was consistently demonstrated by the leaders of both sexes, it would be classified as behavior that went with the leader role and would not be considered any further. Finally, comparing the male leader with the female leader within the same subculture helped identify subcultural influences on leader behavior. As a result of steps five and six of data analysis, the researcher obtained the final set of sex-specific strategic behaviors.

Story-telling is an important part of ethnographic fieldwork and its outcomes (Gibb Dyer Jr & Wilkins, 1991). The observation minutes had told the story of the researcher's presence in the four stores; they contained the story of what it was like to be a member of their staff and be a part of their

daily routines. Because the observation minutes were written as a diary, the researcher automatically became the protagonist of that story. In *step seven* of data analysis, the researcher now told the story of each store regarding its norms and climate as well as the stories of their leaders. The codings for each store and each leader were used to expand the data by a narrative that connected individual incidents and linked them to theoretical conceptualizations. Each leader's and each store's story were narrated along the structure provided by the framework. The roles of dominance, coalition-building, intimacy, and nurturing were described in detail for each leader and for the cultural norms in each store. Specific episodes, which were particularly vivid portrayals of the behavior patterns observed, supplemented the narrative for the purpose of transparency and traceability (cf. Van Maanen, 2001). It was surprising how connecting behaviors and incidents in a narrative produced a large variety of new insights and led to links between behaviors that had not stood out before. The resulting narrative, which consisted of over 100 pages or more than 50,000 words, served as the starting point for the final formulation of sex differences in leader behavior. Excerpts from the narratives are illustrated in Appendix B.

Step eight of the data analysis was dedicated to finally extracting the differences between male leaders and female leaders and finding resulting differences between the store structures. Although behaviors had already been contrasted across sex in step six of the data analysis is, this step had not been sufficient for a qualitative analysis of sex differences in leader behavior. Step six had provided the opportunity to assess the intensity of sex differences concerning the frequency of behaviors. For example, it became visible when a male leader repeatedly took care of customers himself, and a female leader, on the other hand, never showed a comparable behavior. Locke (2011) articulated the insufficiency of coding processes for qualitative analyses:

As too many novice ethnographers come to realize as they conscientiously code, categorize, sort, compare, and memo their ongoing fieldwork experience, including the accumulating masses of particularities expressed in documents, images, field notes and provoked narratives of everyday life, there are no theoretically relevant insights patiently waiting for them at some ostensible end to these operations ... (Locke, 2011, p. 630)

The quote indicates that working with coded data is a typical process step in qualitative data analysis, but not the ultimate step in building new theory and generating novel insights. In the current research, too, theory-building was ultimately only achieved by comparing the narratives that resulted from the preceding step. Bringing the incidents and behaviors observed into a semantically coherent and consistent relationship enabled the researcher to assess and understand differences between store structures, leader behaviors, and organizational subcultures as described in the following chapter.

The preceding classification of the data analysis into steps implies a continuous process in which finalizing one step meant moving on to the next step without looking back. The reality of the process, however, was less rigid and involved many iterations as well as alterations of previous conclusions.

5 FINDING SEX DIFFERENCES IN LEADER BEHAVIOR

The subsequent chapters depict the findings generated by the eight steps of data analysis described in chapter 4.6. These findings help answer the first research question of what sex differences in leadership behavior occur from an evolutionary psychology perspective. While the framework answers that question theoretically and irrespective of the influences of gendered organizational cultures, the findings from the empirical analysis connect the evolutionary adaptive behaviors of men and women to the modern environment of men and women in organizational leadership. The research gathered on the evolutionary psychologically relevant behaviors already indicates that selection processes and environmental pressures mask or even reverse many of the sex differences – at least if assessed from afar through quantitative research approaches.

The following subsections 5.1 – 5.3 address three questions:

- (1) What behaviors can be observed that leaders and subordinates apply in order to follow their evolutionary strategies for social structure manipulation?
- (2) In which behaviors did male leaders and female leaders, respectively, concur and which behaviors reflected strong social influences?
- (3) What social structures developed in stores led by male leaders as opposed to stores led by female leaders?

In seeking answers for those questions, the researcher aimed at providing rich descriptions which are illustrated with examples during which the respective finding became particularly visible. The focus is on making the researcher's interpretation of the observed behavior transparent and traceable.

The data analysis revealed that, in sum, male leaders engaged in male strategies more than female leaders, whereas female leaders engaged in female behaviors more than their male counterparts. However, female leaders' stronger engagement in female strategies was very subtle. Furthermore, one of the female leaders additionally displayed much dominance behavior, indicating that male strategies and female strategies are not mutually exclusive.

Leader behavior concurred considerably with organizational subculture. Each store had developed a unique store structure, which was linked more firmly to organizational subculture than to leader behavior. All stores represented dominance hierarchies as prescribed by GOFFCO norms. However, the dominance hierarchies varied considerably concerning the consistency and level of coalition-building. Despite GOFFCO norms stipulating hierarchical structures, some egalitarian patterns emerged predominantly in two stores. Egalitarian patterns emerged in one of the female stores⁶, where the leader neither displayed dominance nor coalition-building behavior. The other one was led by a male leader who was very high in dominance and coalition-building and even counteracted intimacy-building and nurturing behaviors.

The first of the upcoming three sections (5.1) presents the specific behaviors identified to serve the strategies of dominance, coalition-building, intimacy-building, and nurturing. These behaviors served as a guideline in assessing whether and how leaders manipulated the social structure in their stores. They also served as a guideline in assessing the social structures that had developed in the stores. The second section 5.2 assesses sex differences in leader behavior across sub-cultures. The third section 5.3 relates the leader behaviors and sex differences in behavior to the social structures of the stores. Finally, in the fourth section 5.4, the findings are discussed and interpreted concerning their interrelations with the SDL research field.

⁶ To avoid using the lengthy expression of “stores led by a female leader” or “stores led by a male leader”, the researcher will refer to these stores as *female stores* and *male stores*.

The framework developed in section 3.2 described two different strategies to establish dominance hierarchies; dominance behavior and coalition-building, and two strategies to establish egalitarian communities; intimacy-building and nurturing. Various behaviors served the four strategies. Most of the behaviors identified from the data had been discussed or at least broached by the scientific literature and were carved out and defined in line with existing research in an iterative process. Some of the behaviors identified, however, have not yet been considered in the literature. In the following, each of the behaviors is defined, explicated, and illustrated with examples from the data. The exact demarcation of the specific behaviors is necessary to create a shared comprehension of the specifications of each strategy for later comparisons.

5.1.1 SPECIFIC DOMINANCE BEHAVIORS

Dominance is any behavior linked to an individual's motivation to gain or enforce their social status compared to other individuals of the same social group. Based on the data, the following behaviors resulted from an individual's motivation to gain or enforce their social status: *emphasizing rank*, *exercising control*, *counter dominance* (which all represent dominance in a narrower sense), *prestige-related behavior*, and *direct aggression*.

When emphasizing rank, store members could highlight *their own rank* or *another individual's rank* within the hierarchy. In the first case, the behavior was a direct form of dominance behavior since store members emphasized their position, including its status and benefits. Emphasizing others' ranks within the hierarchy, however, was interpreted as an indirect form of dominance behavior. To be classified as dominance behavior, a store member had to emphasize another member's rank in front of a third, inferior individual. The individual whose rank was being emphasized was not present. Hence, emphasizing others' ranks was not a direct act of submission, highlighting inferiority in a dominance-submission-interaction, but served a different purpose.

Power positions in organizations usually rise and fall with the cohesiveness of their hierarchies. In companies where authorities play a subordinate role, leaders have to exert themselves more to be accepted than in companies where official leadership positions automatically come with authority and follower submissiveness. Consequently, highlighting the superiority of others highlights one's positional power. The following example demonstrates how by openly submitting to superordinate directives, a shift supervisor emphasized her rank:

The ... [bottle], which did not fit well in its shelf and kept tilting to the side, making the whole shelf look untidy, did not please K. at all. He noted that the boss who would come next [he referred to the next shift supervisor in charge] was very sensitive concerning issues like that and that she liked things neat and straight [When she arrived,] she did not really care about the row of ... [bottles]. However, she rebuked me for many other products that I had placed on the shelves. She told me proudly that she adhered precisely to the specifications made by the headquarters' and that she always stacked the fridge correctly. (1.243, 1.244)⁷

By applying and passing on the rules distributed by the headquarters' office, the employee in this example *directly* emphasized the power and authority of the headquarters and *indirectly* emphasized *her* position as a shift supervisor within the hierarchy. Her position and the power that came with it resulted from the rigidity of the GOFFCO hierarchy. If it had lost coherence and stability, her position would have deteriorated as well. She was keen to enforce the store rules and act as the ideal supervisor in the

⁷ All data was anonymized as described in section 6.5. More information about the underlying data, i.e., the observation protocol and documentation of categorizations, can be requested from the author.

eyes of her superiors not (only) out of fear of punishment or due to pedantry, but because it indirectly strengthened her position in the company hierarchy.

Exercising control is another form of dominance behavior. Controlling behaviors aim at ensuring that other people's actions are in one's own interest. They can directly manipulate another individual's actions, e.g., through verbal or nonverbal directives, or they can be passive and merely involve monitoring others' actions, e.g., watching people and asking questions. In the research setting, both leaders and employees exercised control over others in various ways. The most direct way of controlling others in the stores was to *give them directives*. For example, leaders directed both their shift supervisors and their employees by telling them what to do and how to do it:

In the meantime, I heard how Mr. Kovac talked to N. and dropped my name again and again and ordered her to have me work at the cash register. He also talked about other people whom he wanted to work at the cash register ... (1.126)

Other ways to exercise control were to *ask questions* and to *demonstrate omnipresence*. Asking questions was a subtler way to exercise control as compared to giving directives. It demonstrated individuals' effort to understand the situation and prepare for correcting actions to gain control over the situation. Demonstrating omnipresence was a behavior only displayed by store leaders. Leaders that demonstrated omnipresence visited all store areas regularly and sought contact with their employees. Leaders who demonstrated omnipresence were also frequently giving directives and asking questions.

Individuals who controlled (i.e., dominated) others caused counter dominance sometimes. Counter dominance occurred when an individual who was being dominated reacted with their own act of dominance, e.g., by exercising control or emphasis of rank, instead of submission. Counter dominance was rare *across* hierarchy levels and most common within hierarchy levels. In one store, an employee reminded a coworker that it was his turn to clean the lobby:

R. addressed an employee saying that service staff was already asking whether they should clean the lobby [implying that he was neglecting his assigned task] ... The guy talked back, saying he had stipulated by contract that he only had to clean the tables and the floor[, but not the trays]. (3.274)

Instead of complying with R.'s request, the employee found an excuse for not doing the task. A.'s excuse was invalid and a blatant lie, representing a direct act of counter dominance.

Prestige-related behaviors observed mainly consisted of leaders and employees *sharing their skills and knowledge* with others. In doing so, individuals demonstrated their abilities and substantiated their position in the store. Accordingly, prestige-related behaviors were mostly demonstrated by individuals in leadership positions such as district managers, store leaders, and shift supervisors. In one of the stores, for example, a shift supervisor stood out for actively teaching me about the assembly platform:

Mr. P. and I went to the assembly platform ... He had a nice way of explaining things and let me try to do everything myself right from the beginning and asked things like "how long do you think it takes for the toaster to toast buns?", or "how do you think the wrapping process should be arranged?", and "why do you think that is?". Then he also explained which tongs were used for which products and how the warming station worked and when it beeped for what reason ... he also explained to me how to fry the different kinds of meat on the different grills and so on. (3.156)

The shift supervisors' patient explanations and genuine interest in teaching the researcher about the work at GOFFCO evoked positive emotions in her. The researcher admired and respected him for his behavior. This reaction reflects the effects of prestige-related behaviors as described in section 3.2.1.1.

Aggressive behaviors aim at harming others. An essential part of that definition is that the outcome of the behavior must be *intentional*. However, people's intentions were difficult to assess by observation only. For example, when a store leader told me that he was unsatisfied with the performance of one of his shift supervisors, one could argue that the leader engaged in indirect aggression. By telling me about the shift supervisor's unsatisfying performance, the leader hurt the shift supervisor's reputation. Knowing

that the researcher was in contact with the headquarters' office, the store leader risked (or hoped?) that she would share this piece of information with people from human resources or other policymakers, who then might have considered this evaluation in future personnel decisions. On the other hand, the store leader in question might have wanted to share his concerns with someone, looking for emotional support. He also might have wanted to give me an authentic image of the store leader's role, including

Table 8
Specific Dominance Behaviors

Behavior	Definition	Expressed by (e.g.)	Example
Emphasizing rank	Highlighting one's own or others' position or skills or other specifics linked to the position within the hierarchy in front of others.	<ul style="list-style-type: none"> • Highlighting one's own rank • Highlighting another individual's rank 	"The ... [bottle], which did not fit well in its shelf and kept tilting to the side making the whole shelf look untidy, did not please K. at all. He noted that the boss coming next [he referred to the next shift supervisor in charge] was very sensitive concerning issues like that ... [when she arrived,] she did not really care about the row of ... [bottles], but she rebuked me for many other products that I had placed on the shelves. She told me proudly that she adhered exactly to the specifications made by the headquarters' and that she always stacked the fridge correctly."
Exercising control	Behavior that aims at ensuring that other people's actions are in one's own interest. Those behaviors can actively manipulate another individual's actions or be more passive and involve the monitoring of another's actions as long as they do not violate one's own interest.	<ul style="list-style-type: none"> • Giving directives • Asking questions • Demonstrating omnipresence 	"In the meantime, I heard how Mr. Kovac talked to N. and dropped my name again and again and ordered her to have me work at the cash register. He also talked about other people whom he wanted to work at the cash register ..."
Counter dominance	Counter dominance occurs when an individual who is being dominated, reacts by an own act of dominance instead of submission.	<ul style="list-style-type: none"> • Counter dominance within rank • Counter dominance across rank 	"R. addressed an employee saying that service staff were already asking whether they should do the lobby [implying that he was neglecting his assigned task]. ... The guy talked about having stipulated by contract that he only had to clean the tables and the floor."
Prestige-related behavior	Behavior that aims at sharing one's skills and knowledge with others.	<ul style="list-style-type: none"> • Sharing knowledge • Demonstrating skills 	"Mr. P. and I went to the assembly platform ... He had a nice way of explaining things and let me try to do everything myself right from the beginning and asked things like "how fast do you think does the toaster toast?", or "how do you think does the wrapping have to be arranged?", and "why do you think that is?". Then he also explained which tongs were used for which products and how the warming station worked and when it beeped for what reason ..."
Direct aggression	Behavior that aims at harming or injuring other people and that is directed directly towards the victim and has an immediate effect.	<ul style="list-style-type: none"> • Yelling • Deriding others 	"She, like the others, said that Sunday had been so busy and that they were understaffed. I now suspect that the angry discussion between Gina and Ms. Hammer had arisen because Gina had justified herself for the poor MSV."

its difficulties in dealing with mediocre staff members. Possible adverse effects on the shift supervisor would, in that case, have only been side-effects of the store leader's action. In those instances, however, his behavior could not have been classified as aggression because he did not *intend* to hurt the shift supervisor.

Due to the ambiguity of instances of indirect aggression, these instances were excluded from the analysis. Only incidents of *direct aggression* were included. Those occurred when the aggressor's actions were directed towards the victim directly and had an immediate effect. Direct forms of aggression observed in the GOFFCO Stores comprised *yelling* at others or *deriding* them. Behaviors like these were classified as direct aggression and included in the analysis as they were less ambiguous than indirect forms of aggression and hence less prone to misinterpretations. All specific dominance behaviors and their expressions as well as examples are summarized in Table 8.

5.1.2 SPECIFIC COALITION-BUILDING BEHAVIORS

Distinctive features of evolutionarily adaptive coalitions are still largely unknown. Accordingly, this section attempts to describe behaviors specific to the building and maintenance of cohesive, effective coalitions that engage in inter-coalitional competition. The extent of coalition-building achieved by the store was best observed in the quality of *cooperation* between employees and the effort they put into *conflict avoidance*. Leaders positively influenced coalition-building by *reinforcing group cohesion* and *demonstrating trust in their subordinates*. Furthermore, they improved the coalition or its position within the system by *affiliating outgroup members*. All coalition-building behaviors are illustrated in Table 9.

Behaviors that reinforce group cohesion unify all group members in their efforts to reach a common goal, e.g., increasing store sales. One way to reinforce group cohesion was to *treat employees equally*. By treating employees equally, leaders prevented the development of subgroupings. That way, staff members could interact on an eye-to-eye level and feel like one cohesive group. If employees received special treatment or received benefits that others did not, it had to be based on factors that were transparent and accessible to the other employees. One factor that was used for transparency by store leaders was performance. Employees who worked hard and performed well, for instance, were rewarded with permission to take an extra break or the opportunity to work extra hours. If benefits were based, however, on untraceable factors, e.g., intimate information that coworkers did not know about, special treatments rather facilitated imbalance and rivalries among employees. One example of an effort to increase group cohesion occurred when the researcher inadvertently induced a riot in one of the stores by extending one of her breaks. Because store-cultural norms stipulated employees to return from unscheduled breaks after a few minutes, her prolonged absence led to feelings of injustice among her coworkers. After a verbal conflict between the researcher and two employees, the shift supervisor and staff members at the store displayed a heightened awareness of breaks taken by the researcher:

Mr. U. sent me off for a short break the second C. was back from her break ... Today, he seemed to be much less accommodating about my break than last week. When I had put some food on a tray ... [coworker] M. said [teasingly] to me, "but just a brief one, right?". I blew him a kiss, and he laughed. Nevertheless, this could be a sign that in the meantime, word had got around that a few employees were indignant about the fact that I had taken such a long break the day before ... The feeling was intensified by the fact that Mr. U. started to explain to me at some point that I was officially not entitled to have a break during a six-hour-shift ... He made it seem a little bit as if they had made a one-time exception [when granting me that break]. I inquired about the other employees, who were also allowed to have food during six-hour-shifts. He affirmed but stressed that they had to ask for those breaks as well. (3.258)

Another mechanism to reinforce the coalition was to just *speak about the coalition* in non-negative terms. Mainly leaders talked about the superordinate GOFFCO organization or franchise company. That way, they increased the salience of group membership and implied unity among employees.

Cooperation was an important factor in coalition-building. It occurred when employees supported each other without giving the impression that the support was motivated by sympathy or the specific relationship between the supporter and the supportee. Instead, the support had to benefit the coalition. Cooperation could take forms such as *teamwork*, *correcting others*, or *teaching* them how to (better) handle their tasks. By improving coworkers' performance, individuals can improve the coalition's performance and, by extension, their individual performance. In the following coding, an employee lectured a coworker during a stressful situation:

F. tried to help by taking the lid off of the ... container so that one could pour the sauce in from above through an opening behind the lid. A. was not satisfied and took the lid and tried to drape it the way that she allegedly always used, namely upwards, so that the ... sauce could be poured in at the bottom. ... When she finally managed to fix the lid the way she wanted, she, however, did not pour in the chocolate sauce but started telling F. why her [A.'s] approach was much more efficient. (1.152)

A. put teaching F. a better way to refill the sauce ahead of serving the customer, which usually had the highest priority at GOFFCO. A. had hence reckoned that increasing F.'s efficiency outweighed the costs of displeasing the waiting line of customers in front of the counter. In helping F. improve her approach, A. helped improve the efficiency of the coalition.

The sequel of that same incidence demonstrates a third type of behavior that served coalition-building: *avoiding conflict*. Triggered by the stressful situation and the growing line of waiting customers, the researcher reacted indignantly to A.'s decision to teach F. her way of refilling sauces instead of just doing it herself, which would have been faster:

Our customer had now been waiting for quite a while for his ice cream, which had already started melting. Suddenly I heard myself say in the heat of the moment, "Just do it!", and I was startled by the abruptness of my tone. Surprisingly, without any further comment, A. started filling the container with chocolate sauce, and F. laughingly gave me a nudge and grinned like a Cheshire cat because I had put A. in her place. The rest of the day, I noted no difference in A.'s behavior towards me, although we even sat next to each other during our lunch breaks so that she really did not seem to take my earlier behavior amiss. (1.152)

Effective cooperation is complicated when cooperating individuals have ongoing conflicts or openly express their antipathy. Hence conflicts impede the flexibility of cooperation: conflicts prevent individuals from helping each other, increase distrust, and reduce communication. Effective coalitions hence benefit from keeping conflicts at a minimum, e.g., by *not criticizing others*, *not reacting to provocations*, and *quick reconciliation after conflicts*. In cohesive coalitions with high levels of cooperation, individuals actively tried to avoid conflict, as A. did in the example above. When conflicts developed despite the efforts to avoid them, coalition members usually sought to reconcile quickly. By keeping conflicts low, the staff ensured that cooperation among coworkers remained possible.

Trust was an important part of coalition-building, since coalitional members are motivated by being informed and even included in decisions as well as communication networks. It furthermore increases their understanding and flexibility when making decisions for the benefit of the coalition. Trust-related behaviors extracted from the data mostly comprised of *sharing sensitive information* and *trusting other's abilities* (e.g., by granting them autonomy in their actions), but also *deliberate misbehaviors* in front of others accompanied by the expectation that the witnesses would not tell on the misbehaving person. A shift supervisor expressed trust in a colleague's ability, for example, after some customers claimed that the colleague had offered them free food at the restaurant to make up for an erroneous order:

Later, B. approached me ... and said: "That was another typical case of 'impudence wins!'". I learned that the four individuals who had approached me earlier had had a pretty expensive order at the store worth between 40 and 50 Euros and taken it home. At home, they had realized that one product and several sauces were missing from their order. So they had called the store and got C. on the phone. According to them, he had told them ... to come to the store and eat for free for the whole night. As the conversation proceeded, B. told me that although he had known C. for only a short period of approximately one year, he just knew that C. would never promise anything like that over the phone. (4.190)

The shift supervisor affirmed that he trusted his colleague in his abilities as a shift supervisor, or more specifically, in his abilities to deal with customer complaints. This trust motivated him to continue

Table 9
Specific Coalition-Building Behaviors

Behavior	Definition	Expressed by (e.g.)	Example
Reinforcing group cohesion	Behavior that aims at unifying all members of the coalition in their effort to reach a common goal, e.g., treating all staff members of the same rank equally.	<ul style="list-style-type: none"> • Treat employees equally • Speak about the coalition 	“Mr. U. sent me off for a short break the second C. was back from her break ... today he seemed to be much less accommodating about my break than last week. When I had put some food on a tray, ... M. said [teasingly] to me “but just a brief one, right?”. ... this could be a sign that in the meantime word had got around that a few employees were indignant about the fact that I had taken such a long break the day before ... The feeling is intensified by the fact that Mr. U. started to explain to me at some point that I was officially not entitled to have a break at a six-hour-shift ... I inquired about the other employees, who were also allowed to have food during six-hour-shifts. He affirmed, but stressed that they asked for those breaks as well.”
Cooperation	Supporting others in their work to improve the situation of the coalition by achieving better outputs (e.g., serving a customer faster).	<ul style="list-style-type: none"> • Teamwork • Correcting others • Teach others to handle their tasks better 	“F. tried to help by taking the lid off of the ... container and draping it in a way that one could pour the sauce in from above through an opening behind the lid. A. was not satisfied with that and took the lid and tried to drape it the way that she allegedly always used, namely upwards, so that the ... sauce could be poured in at the bottom. ... When she finally managed to fix the lid the way she wanted, she however did not pour in the chocolate sauce, but started telling F., why her [A.’s] approach was much more efficient.”
Conflict avoidance/reconciliation	Behavior that prevents conflicts from developing or escalating or that aims at ending an existing conflict between two or more individuals.	<ul style="list-style-type: none"> • Not criticizing others • Not reacting to provocations • Quick reconciliation after conflicts 	“... suddenly I heard myself say in the heat of the moment “Just do it!” and was startled by the abruptness of my tone. Surprisingly, without any further comment, A. filled the container with chocolate sauce and F. laughingly gave me a nudge and grinned like a Cheshire cat, because I had put A. in her place. The rest of the day I noted no difference in A.’s behavior towards me, although we even sat next to each other during our lunch breaks, so that she actually did not seem to take my earlier behavior amiss.”
Demonstrating trust	Behavior that deliberately exposes oneself to vulnerability having the expectation that the other person will act in terms of one’s own interest.	<ul style="list-style-type: none"> • Sharing sensitive information • Trusting others’ abilities • Deliberate misbehaviors in front of others (and expectation not to be told on) 	“... I learned that the four individuals who had approached me earlier, had had a pretty expensive order ... At home they had realized that one product and several sauces were missing from their order. So they had called the store and allegedly got C. on the phone. According to their version of the story, he had told them... to come to the store and eat for free for the whole evening. As the conversation proceeded B. told me that although he had known C. for only a short time period of approximately one year, he just knew that C. would never promise anything like that over the phone.”
Affiliating outgroup members	Building friendly, long-term relationships with outgroup members that are of value to the coalition now or might be valuable to the coalition in the future.	<ul style="list-style-type: none"> • Seeking friendly contact to outgroup members 	“When he asked in a scrutinizing and almost provocative manner whether I had understood what he had just explained, I summarized his statements in three sentences. He was so pleased with me that he called to Kovac (who was still at the fryer): “Hey boss, she is good, we need to hire her right away!”. Furthermore, he raised his hand to give me a high five, which I did smilingly.”

cooperating with his fellow shift supervisor and hence served coalition-building.

Affiliation of outgroup members concerns the way that ingroup members build relationships with outgroup members. The term affiliation highlights the effort to build friendly, long-term relationships with especially those outgroup members that are of value to the coalition now or might be valuable to the coalition in the future. Although affiliating outgroup members does not target ingroup members, it is important for their coalition. Good relationships with outgroup members can enhance the position of a coalition, e.g., when a handyman is willing to work overtime to fix a broken machine because they are on good terms with the store leader. Store leaders affiliated outgroup members by seeking friendly contact to outgroup members, e.g., by calling them to have small talk and joking around with them or giving them presents.

Affiliating outgroup members is related to nurturing behaviors. The actions related to outgroup-member-affiliation often aim at improving the outgroup member's situation, which is also the immediate goal of nurturing actions. The differences between the two kinds of behavior are twofold. First, the beneficiary of outgroup member affiliation is an outgroup member, while nurturing behaviors are directed towards ingroup members. More importantly, however, the affiliation of outgroup members is motivated by an ingroup member's desire to improve the coalition's situation in the long run. Nurturing behavior, on the other hand, aims at improving another individual's situation in the short run, irrespective of its effect on the group. Taking on the role of an intern, the researcher experienced that whether she was considered an ingroup or an outgroup member differed noticeably across stores. Depending on her status, behaviors directed at her that improved her situation were assessed either as affiliation of outgroup members or as nurturing.

5.1.3 SPECIFIC INTIMACY-BUILDING BEHAVIORS

Building and maintaining intimacy is a strategy to build egalitarian communities. Intimacy-related behaviors are actions that aim at increasing the closeness of individuals in interpersonal relationships. Intimacy-building behaviors identified in the four stores were *emphasizing equality across ranks*, *intimate information exchange*, *playful teasing*, and *physical contact*.

While the strategy dominance behavior builds on emphasizing the distance between ranks, the strategy intimacy builds on emphasizing equality across ranks. Equality was emphasized either by *highlighting equality between individuals of different ranks* or by *actively reducing distance across ranks*. Emphasizing equality across ranks enabled the development of intimacy between individuals because it took the focus off of the inferiors' dependency on their superiors. Instead, superiors and subordinates felt close and approachable to each other. That way, intimate interactions and other intimacy-building activities were facilitated.

One way to decrease distance across ranks was to use an *informal form of address*. Although addressing each other formally is common in German business settings, some store leaders and shift supervisors emphasized their closeness to employees by having them address them by their first name. Sometimes, the form of address was even more intimate, e.g., by the use of nicknames. Other actions creating equality across ranks were subtler. Superiors complying with requests or ideas of subordinates or participating in low-level work, for example, reduced the distance in ranks between them and their inferiors. In the following vignette, a shift supervisor actively enforced equality across ranks by interacting with one of the regular employees on an equal footing.

... [shift supervisor M.] didn't seem to be quite sure whether his statement was true, and he called something over to A. and asked him whether it was true... Also, on other occasions, I noticed that M. approached ...[A.] as if actually A. was the shift supervisor and knew more [about store operations than M.]. At first, I concluded

that M. was a relatively new shift supervisor, who simply appreciated the employee's wealth of experience. But then M. told me that he had been working with the employee since 2001 [i.e., for 13 years]. (3.17)

Intimate information exchange was the most common form of intimacy-building observed. Both leaders and subordinates engaged in varying forms of intimate information exchange. In those instances, individuals either *revealed* intimate information about themselves or *demonstrated interest* in intimate information about their counterparts. Intimate information exchange was bidirectional. The degree of sensitivity of intimate information ranged widely from information that was rather unspecific and did not reveal much about the individual to very intimate information that dealt with an individual's current problems, opinions, thoughts, or feelings. For example, a newly-hired employee told the researcher about her former jobs and how she felt since she had started her job at GOFFCO:

C. told me that she had worked at the cash desk of ... [a grocery store] and later at night, in the locker room, that she had also worked in a bakery. She furthermore told me that she found her new colleagues to be very friendly and that everyone was very helpful, and that she felt accepted. She compared this with her prior work situations and concluded that at times she had had "very different" [types of] colleagues. (1.155)

The information the employee revealed was personal but rather general and did not reveal any information that was particularly sensitive or putting her at risk of being exploited. In contrast, another employee shared very personal and significantly more sensitive information with the researcher:

... on my way to the changing room I met A. She told me: "tonight I am going to cry". I asked her whether she was referring to the neck pain that she had told me about before ... When she indignantly said "no", I remembered that she had told me at midday ... that she had failed her driver's license test that morning. Now I learned that this had been the second time she had failed the test ... She complained about how expensive the whole driver's license issue had been, costing her about 4,000 € already, and asked me whether I knew if she could still change her driving instructor at that point. (1.141)

In the second vignette, the employee gave the researcher sensitive information about personal failure, weakness, and negative emotions. She was hurt when she first did not remember the information she had shared with her before. By sharing personal issues, she had made herself vulnerable to the researcher. She had risked the possibility that the researcher might think less of her because of her inability to pass a driving test or that the researcher might tell others and subject her to ridicule.

The more personal the insights people give others into their inner self, the higher the risks. Others could judge and denunciate them for their true self and use the information to hurt them. At the least, people gain a clearer picture of them and can either identify with them or dissociate from them. Hence, revealing intimate information shapes relationships – and prevents them from being neutral.

Showing interest in one's counterpart builds intimacy because it puts the other individual with his or her specific story, emotions, and opinions in the center of attention. Interest in intimate information manifested itself in several ways. Sometimes it was demonstrated through direct questions. In other instances, interest in intimate information revealed itself in people's knowledge of each other. A third option was that people picked up on a piece of intimate information they had learned about earlier. That way, they demonstrated that they had listened and made an effort to memorize intimate information about the other individual. In the preceding example, where the researcher first failed to relate to information the employee had given her before, the employee's reaction demonstrated well how dismissing intimate information can damage an intimate relationship.

Playful teasing between individuals of different ranks reduced differences in hierarchical levels as well. However, it also created intimacy between individuals of the same rank. Teasing refers to verbal or nonverbal behaviors that aim at ridiculing another person in a friendly and good-natured way. It requires an understanding of others because of the thin line between making people laugh and affronting them. In the following instance, employees teasingly mocked a shift supervisor's background:

Then they made a few jokes concerning promotion prospects at the shift supervisor's expense. According to them, he used to polish the employees' cars [before becoming shift supervisor] ... The shift supervisor seemed

to like the joke and even responded to another one, which insinuated that he used to be a terrorist before coming to GOFFCO. The shift supervisor said that this was true and that he was trying to identify GOFFCO's weak points to determine where he could plant the most effective bomb. (3.90)

By inventing silly background stories for the shift supervisor, the employees in this example built intimacy using two mechanisms. For one, they changed the shift supervisor's professional identity: as a mechanic or a terrorist, he was no l

Table 10

Specific Intimacy-Building Behaviors

Behavior	Definition	Expressed by (e.g.)	Example
Emphasizing equality across rank	Behavior that highlights equality between individuals of different ranks or actively reduces distance across ranks.	<ul style="list-style-type: none"> • Highlighting equality between individuals of different ranks • Reducing distance across ranks • Informal form of address 	"... [shift supervisor M.] didn't seem to be quite sure whether his statement was true and he called something over to A. and asked him if it was true... Also at other occasions I noticed that M. approached ...[A.] in a way that one almost had the feeling that A. was the shift supervisor and knew more [about store operations than M.]. At first, I concluded that M. was a relatively new shift supervisor and simply appreciated the greater wealth of experience of the employee. But then M. told me that he had been working with the employee since 2001 [i.e., for 13 years]."
Intimate information exchange	Deliberately revealing information about oneself to another individual or a group of individuals OR demonstrating interest in or trying to obtain personal information about another individual.	<ul style="list-style-type: none"> • Reveal intimate information about oneself • Demonstrate interest in personal information of counterpart 	"... I ... went to change whereat I met A. She told me: "tonight I am going to cry". I asked her, whether she was referring to the neck pain that she had told me about before When she said "no" indignantly, I remembered, that she had told me at midday ... that she had failed her driver's license test that morning. Now I learned that this had been the second time she had failed the test ... She complained about how expensive the whole driver's license issue had been, costing her about 4,000 € already and asked me whether I knew if she could still change her driving instructor at that point."
Playful teasing	Verbal and nonverbal behaviors that aim at ridiculing another person in a friendly, good-natured way.	<ul style="list-style-type: none"> • Joking within and across rank at the counterpart's expense 	"Then they made a few jokes concerning promotion prospects at the shift supervisor's expense. According to them he used to polish the employees' cars [before becoming shift supervisor] ... The shift supervisor seemed to like the joke and even responded to another one, which insinuated that he used to be a terrorist before coming to GOFF Corp. The shift supervisor said that this was true and that he was trying to identify GOFF Corp.'s weak points to determine where he could plant the most effective bomb."
Physical contact	All behaviors that result in physically touching another individual with parts of one's own body, including behaviors that did not directly aim for physical contact, but tolerated physical contact as a secondary outcome.	<ul style="list-style-type: none"> • Shaking hands • Kissing • Picking people up and whirling them around 	"What also struck me was that despite all the jostling and the frequent physical contact, everyone remained patient according to the circumstances (also according to their character). Rarely did one hear an apology, even more rarely did one hear someone complaining about it. Personally, I usually react to such unwanted physical contact in a quickly annoyed and aggressive way. Although I didn't feel the emergence of such emotions this time, I apologized non-stop for touching someone - whether with or without intention. I kept doing this even after I realized that this was not the custom."

onger their superior, but in a position that was status-wise closer to their positions as regular GOFFCO workers. Also, they diminished the shift supervisor's qualification since the joke insinuated that prerequisites to becoming a shift supervisor at GOFFCO were arbitrary. Secondly, the fact itself that the employees openly joked about their shift supervisor's qualification demonstrated intimacy. The employees did not fear that the shift supervisor might misinterpret their behavior or become irritated by their presumptuousness. Instead, the joint prosecution of their jokes implied concurring ways of thinking and interpretations.

Physical contact is all forms of behavior that result in physically touching another individual with one's own body, including behaviors that did not directly aim for physical contact but tolerated it as a secondary outcome. Physical contact with people, who are not one's immediate family, romantic partner, or close friend, is unusual in Germany. Surprisingly, physical contact occurred quite frequently at the Company Stores. The forms of physical contact ranged from *handshakes* to *kissing* to *picking people up and whirling them around*. They occurred almost exclusively among employees and not among leaders or across rank (except for handshakes). Acts of physical contact were often deliberate. Sometimes, however, they did not serve an obvious purpose but displayed existing intimacy among people as described in the following vignette:

What also struck me was that despite all the jostling and the frequent physical contact, everyone remained patient ... Rarely did one hear an apology; even more rarely did one hear someone complaining about it. I am usually quickly annoyed by such unwanted physical contact. Although I didn't feel the emergence of such emotions this time, I apologized non-stop for touching others ... I even kept doing this after I had realized that this was not customary [in the store]. (1.16)

Like in the vignette above, people in stores with higher levels of intimacy were more tolerant toward physical contact as compared to people in stores with lower levels of intimacy. While the researcher was not used to this and felt uncomfortable bumping into others, having physical contact, regular employees did not mind. They had accepted it as a side effect of the busy pace behind the service counter. Table 10 summarizes all intimacy-building behaviors.

5.1.4 SPECIFIC NURTURING BEHAVIORS

Nurturing behaviors are voluntary behaviors triggered by empathetic concern that intend to benefit another individual. Nurturing that enhanced egalitarian community development was one of three different types of behavior: *caring for other's well-being*, *offering emotional support*, and *doing personal favors*.

Caring for other's well-being comprised all behaviors that aimed at *improving or maintaining the other person's physical and mental health as well as satisfaction with their overall work-situation*. For example, during her first night shift, the researcher had difficulty keeping up due to the unaccustomed work-schedule. Her coworkers in this situation cared for her well-being:

I had not taken a break the entire shift. At approximately 5 am, I was approached various times about not having had a break and prompted to let them know when I wanted to go for a smoke or whether I was hungry. Since I was not used to working at night, I wasn't hungry at all, and whenever they sent me smoking, I just went into the break room to drink a cup of tea or later coffee to do something against my splitting headache. (1.218)

The employees' behavior in this example was rather unusual because the shift supervisors usually coordinated breaks of any kind and had to permit them. Giving the researcher general permission to take a break whenever she wanted, to do whatever she wanted, showed that her coworkers tried very fiercely to take care of her by giving her the space to attend to her needs.

Caring for others' well-being and *offering emotional support* are highly intercorrelated since both increase or maintain the other person's well-being. Nevertheless, emotional support is a distinct

behavioral category. While "caring for other's well-being" focuses on others' permanent basic needs, such as nutrition, sleep, or necessary work equipment, "offering emotional support" puts acute, individual situations in the center of attention. Hence, emotional support was more *reactive* and connected to an individual's current situation. Emotional support was more verbal than caring for others' well-being because the latter often contained *taking action in organizing food, breaks, or clothes for a person in need*. Emotional support, however, relied on offering another person understanding, solutions, or comfort. The very first coded data reads as follows: "Another employee behind the counter winked at me encouragingly, after he had realized that I was a new employee" (1.1). This code was assigned to the behavioral category *offering emotional support*. The employee in this example reacted to the researcher's very personal situation and her as an individual. He seemed to have realized that the researcher was a new employee, who was nervous and insecure about the new situation, and unconsciously looked for a friendly gesture, which he promptly offered.

Both behaviors, caring for other's well-being and offering emotional support, helped to build egalitarian communities because they increased equality between members. By investing their resources to increase other's well-being or emotional stability, store members contributed to decreasing the gap between community members' resources. The increasing equality between members prevented individual members from accumulating excessive resources, while other group members suffered want and became increasingly dependent on the few who owned scarce resources.

Doing personal favors was a behavior that aimed at helping or pampering another individual. While, in coalition-building, helping in the form of cooperation aimed at helping the *coalition*, nurturing behavior benefitted an *individual*. Therefore, doing personal favors required individuals to know each other's situation and current needs. For example, a store leader, who asked an employee to work extra hours, could in one instance, be doing them a favor, e.g., in case the employee needed the extra money and was waiting for the opportunity to earn a little extra. In another instance, the same behavior – asking an employee to work extra hours – may not have had such an effect or even been detrimental in its effect. For instance, the employee might have had a working spouse and three kids at home, so that working extra hours was a great logistical problem and very energy-sapping to the already exhausted worker. In the following example, a shift supervisor wanted to do the researcher a favor:

It was around 12:30 pm when the shift supervisor approached me to ask whether I smoked. I said yes, and he said that I could have a smoke as soon as the "young man" was back. (3.57)

By directly asking the researcher whether she was a smoker, the shift supervisor in this example ensured that she benefitted from his plan to send her smoking. During other incidents, the individual's need was not inquired by the helper but directly communicated by the helpee. A shift supervisor did the researcher a favor after becoming aware of her current situation based on a question she posed:

... I then asked him whether it was OK if I took an apron from the locker room since I had not taken the one I had gotten the day before home with me. He said, "of course", and even went to the locker room himself and opened the door to look at the hook with the aprons. He pointed to it and said I should take an apron. (3.48)

The shift supervisor in this example understood that the researcher needed an apron. Furthermore, he remembered that it was one of her first days in the store and that she hence probably did not know her way around. As a consequence, he interrupted his work to show her where she could find the aprons. For actions to be coded as doing favors, the actor needed to invest time, energy, or other resources in the recipient without receiving any direct rewards in return (besides the recipient's gratitude). In the example above, the invested amount of resources is relatively small; however, there were incidents during which the agent spent significantly more resources on the recipient:

When she returned, I asked her how the disposal of the garbage bags was handled because in the small chamber, many garbage bags were piling up, and due to the two tray carts, the room was even more crowded. She explained it to me, but shortly afterward, she offered to take the garbage bags out herself. (4.166)

In this example, the employee derived from the researcher’s question that the high number of garbage bags in the small room was bothering her and that she wanted to dispose of them. Although an explanation of how the garbage bags were disposed of would have sufficed, the employee offered to take the bulky, foul-smelling bags and bring them to the trash cans herself. Doing people individual favors like that promoted egalitarian communities instead of dominance hierarchies. Doing favors enhanced good-will, demonstrated interest in another individual’s situation and needs (i.e., it also increased intimacy), and strengthened the dyadic bond between individuals. All of the examples and the corresponding nurturing behaviors are depicted in Table 11.

Table 11
Specific Nurturing Behaviors

Behavior	Definition	Expressed by (e.g.)	Example
Caring for others’ well-being	Behavior that aims at improving or maintaining the other person’s physical and mental health as well as satisfaction with their overall work-situation.	<ul style="list-style-type: none"> • Ensuring that others are saturated, hydrated, rested, etc. • Giving others the opportunity to attend to their needs 	“I had not taken a break the entire shift. At approximately 5 am, I was approached various times that I had not had a break and that I should just let them know when I went for a smoke or whether I was hungry. Since I was not used to working at night, I wasn’t hungry at all and whenever they sent me smoking, I just went into the recreation room to drink a cup of tea or later coffee to do something against my splitting headache.”
Offering emotional support	Similar to “caring for others’ well-being”, but puts acute, individual situations in the center of attention. It is mostly verbal and has a rather reactive character. It strongly connects to an individual’s personal situation, mood, or background.	<ul style="list-style-type: none"> • Offering understanding, solutions, or comfort to others when they suffer from negative emotions 	“Another employee behind the counter winked at me encouragingly, after he had realized that I was a new employee.”
Doing personal favors	Behavior that aims at helping or pampering another individual with regard to their personal situation.	<ul style="list-style-type: none"> • Sharing resources such as time, workforce, personal belongings for one’s counterpart’s good 	“It was around 12:30 pm when the shift supervisor approached me to ask whether I smoked. I said yes and he said, that I could have a smoke as soon as the “young man” was back.”

5.2 DIFFERENCES IN LEADER BEHAVIOR

Based on the framework of specific behaviors developed in the preceding section, leader behavior was systematically contrasted and analyzed. Comparing leaders within sex and across sex as well as comparing them within and across subcultures provided interesting insights. For one, those insights concerned the nature of organizational subcultures at GOFFCO and their impact on leader behavior. Second, the comparison revealed qualitative differences in behavioral strategies within each sex and, at

the same time, consistent sex differences between male and female leaders that prevailed despite subcultural, regional, and personal differences.

5.2.1 LEADER DIFFERENCES IN BEHAVIOR ACROSS SUBCULTURES

One main finding was that the Company Store leaders and the Melsbach Store leaders were in some respects more similar in their behavior than leaders within the same sex. Overall, the Company Stores and the Melsbach Stores deviated from another in two important aspects: a performance-based vs. a cost-based strategy and customer-orientation vs. employee-orientation. The Company Stores were characterized by high customer-orientation and a performance-based strategy, while the Melsbach Stores pursued an employee-oriented and cost-based strategy. Those systematic differences between the two subcultures considerably influenced leader behavior. Accordingly, Kovac (male) and Velitchkov (female) at the Company Stores were more similar in their behavior than Kovac and Holzhammer (male) or Velitchkov and Solberg (female). The high congruence among leaders within subcultures demonstrates subcultures' strong influence on leader behavior. The high performance-orientation in the Company Stores was accompanied by male strategies such as dominance and aggression. Accordingly, the social structures in the Company Stores were dominance hierarchies rather than egalitarian communities. The Melsbach Stores, on the other hand, were cost-oriented instead of performance-oriented and satisfied with moderate levels of success. They built on a familiar culture that comprised elements of an egalitarian community, although the overall structure was still hierarchical. Being connected to others and building cordial relationships were more important there than a prestigious GOFFCO ranking. The subcultures of the Company Stores and the Melsbach Stores are described in the following two subsections. Because of their considerable effect on leader behavior, sex differences cannot be assessed without considering the subcultures in the analysis.

5.2.1.1 Leadership at the Company Stores: A Performance-Oriented Subculture

In the Company Stores, the overall store culture was characterized by the store members' desire to perform well and to be among the top GOFFCO restaurants in Germany. Both stores ranked in top positions within the GOFFCO store ranking, and Kovac and Velitchkov were determined to maintain or even improve store performance. Hence store performance and a smoothly running business were the Company Store leaders' top priority. Kovac once talked about his one priority explicitly:

... he also said that "the business must always keep on running" and that that was the most important thing and that everything else could be done later. So he made his priority clear – that nothing should interfere with the flow of operations ... other things could be taken care of afterward. (1.320)

In congruence with the high-performance orientation, the daily routine in the Company Stores revolved around the potential MSVs. Both Company Store leaders had developed strategies to present their store in the best possible shape within the potential MSV time frames. For one, they both scheduled their shifts to coincide with the critical MSV periods so that they could control store performance. Furthermore, both store leaders predominantly helped out with the operative business during these periods. Both Kovac and Velitchkov took on central positions that helped them monitor the happenings in the store while they supported the staff with store operations. Other individual strategies also aimed at improving store performance during a potential MSV. Kovac, for instance, made additional patrols through the store before the MSV periods, and Velitchkov had instructed her workers to call into the kitchen in Bulgarian to make a "nice" product when a potential mystery shopper placed an order.

In the Melsbach Stores, on the other hand, MSVs seemed to play a subordinate role. None of the store leaders talked about or behaved differently around the MSV periods. They did not mention the position of their store in the GOFFCO ranking and did not give shift supervisors or employees specific

orders that referred to MSVs. Solberg never even mentioned the MSVs, whereas Holzhammer did mention them but showed no negative emotions when talking about recently failed MSVs:

He gave me a Mystery Shopper report, just like the one I had already seen in ... [the City Center Store]. It was the latest report from November. He explained some points of the report and what it was all about. The store is at 27 percent in the ranking, and the last report was positive ... He also explained that the consequence of too many failed controls would be that controls, even internal ones, multiplied and "nobody wants that". Basically, however, he seemed satisfied with their performance. He also explained why they had had two failed controls in two consecutive months [of the previous year]. The reason was that there had been a coupon campaign and much additional traffic. Both controls had failed because the total experience time had been larger than 300 seconds and therefore too long. Shortly afterward, he said, "we will have to do something about this eventually". However, he did not seem to consider the matter too urgent, as there was a good explanation [for the failed MSVs]. (4.15)

Holzhammer's way of talking about the performance of his store lacked ambition. It indicated overall satisfaction with the current situation, although his account also indicated that there was room for improvements.

In the Flagship Store, in contrast, a failed MSV that occurred during observation triggered very negative emotional reactions in Kovac. The store leader appeared to be agitated and locked himself into his office. When I⁸ wanted to follow him to ask him some questions, a shift supervisor stopped me and predicted that Kovac would be "angry for the entire week" (1.349). Similarly, in the Family Store, a failed MSV had led to an open dispute between Velitchkov and the employee that appeared to be responsible for the deficits reported by the mystery shopper (2.254).

The way Kovac and Velitchkov included me – an additional worker, who was free of costs – into store operations confirmed that performance orientation was their top priority. Both store leaders ensured that my presence would cause little interference with the store's daily routine while at the same time assigning me to tasks that benefitted the store but were of low value to an intern aspiring to learn about store operations. For example, Kovac was the only one of the four leaders who decided right from the beginning that I should not operate the cash register. He was worried that I might cause a flawed MSV and made sure that I never officially worked as a cashier as long as he was in the store and particularly during MSV periods (1.19). Velitchkov, too, was worried that I might cause an erroneous MSV. While Kovac told me to my face that he did not want me to work at the cash register, Velitchkov used a different approach. She let me work at the cash register only at times when there was no risk of getting into an MSV and instructed her shift supervisors not to let me work at the cash register during critical periods (2.56; 2.60; 2.93). Nevertheless, it happened that I operated a cash register during MSV periods. In those cases, Velitchkov did not stop me herself but sent employees to replace me at the cash register (2.117; 2.219). It even happened a few times that I started serving a customer who was suspected by Velitchkov or a shift supervisor of being a mystery shopper. In those instances, they literally pushed me out of the way and took over (2.124; 2.236). This radical measure demonstrated how important it was to the store leaders not to imperil store performance.

Both Company Store leaders ensured that my presence benefitted the store by assigning me to work that would not require much training and input from other store members. Velitchkov, however, decided also to deploy me at the cash register, because as one of the few native German speakers working in the store, it was easier for me to communicate with customers. Although operating the cash register required some training, she balanced this disadvantage by having me work exclusively in the service area. She was hence the only store leader who did not have me work in the kitchen area at all. Neither did she have me do the lobby. Since Velitchkov deployed me in the same position the entire time, she ensured that my skills improved and that I was a valuable contribution to the store. She made no visible effort to

⁸ In sections 5.2 and 5.3 the researcher used the first-person narrative, for one, to highlight her involvement with the research subjects and her own subjective experiences, and second, to make the research account more readable.

consider my needs and design my time in her store in a way that I would benefit in terms of my alleged goal during the voluntary internship to learn as much as possible about GOFFCO store operations. Kovac, on the other hand, acknowledged my goal by assigning me to a multitude of positions. However, although he made sure to offer me the opportunity to see many aspects of GOFFCO store workings, he exploited my free labor for the rest of the time. For instance, he had me work exclusively in the lobby for many hours for several days in a row. A fellow employee even expressed her sympathy for the amount of time I worked on low-level tasks:

Before ..., I had been in the corridor in front of the break room to get my mobile phone. There I had met A. ... She said it was so boring in her spot, and I jokingly offered to switch and let her do my lobby work instead. She was surprised that I had been assigned to the lobby again and asked, "what are you supposed to learn there?". She obviously remembered that I was a trainee who was there to learn something about GOFFCO and not to do stupid, monotonous work non-stop. I have to admit that I was annoyed, too, as I was waiting the whole time for someone to finally tell me that I could leave the lobby and help out somewhere else. (1.136)

Working in the lobby was quite unpopular since it contained sorting waste, cleaning the restrooms, and comprised only little interaction with coworkers or customers. The task, however, was intuitive, required little training, and ensured that I would do valuable work (cleanliness of the store was part of the MSV evaluations!) without requiring time-consuming explanations or training.

In the Melsbach Stores, store leaders were more willing to invest time in my training and were hence exploiting my free labor less than their colleagues in the Company Stores. Solberg assigned me to work in the kitchen before sending me to work in the service area. She argued that I "should work in the kitchen at first, so I would see how the goods that I would sell later at the cash register were produced in the first place" (3.12). Furthermore, she actively prompted shift supervisors to explain to me store operations and processes. On my second day, she approached shift supervisor K. and ensured that he taught me details about working at the grill:

... Ms. Solberg suddenly approached us and asked K. whether he had already explained something to "the young lady". She suggested that he should do a temperature measurement. K. mumbled something like that there was too much going on and that this was why he hadn't shown me anything yet, and Ms. Solberg said while she was already turning away that he should do it as soon as he had the time. (3.64).

Other shift supervisors at the Melsbach Stores invested much time in explaining procedures and corresponding background information to me. While shift supervisors at the Company Stores did not teach me any background information, the shift supervisors in the City Center Store were highly communicative and enthusiastic about training me. In the Highway Store, it was not shift supervisors, but Holzhammer himself, who invested much time in explaining store operations. Particularly during my first days, he repeatedly fetched me away from the service counter to elucidate yet another aspect of working at GOFFCO (4.9; 4.10; 4.15; 4.40).

During the lectures Holzhammer and the shift supervisors gave me, I did not participate in operative work and hence did not contribute to store performance. The Melsbach Store leaders designed my stay in their stores in a way that was advantageous for me – although it entailed forgoing the free work that I would have executed during that time. In the Company Stores, store leaders ensured that even the time that they spent training me was not lost. Kovac granted me a whole day to learn about the store leader's job by shadowing him. That way, he was able to do his regular work while still offering me the opportunity to learn. Velitchkov, on the other hand, only agreed to give me insights into her job on my explicit request. She, too, started her lecture doing the tasks she was currently working on. However, she did not want me to see too many details and realized that she could not work efficiently like this. As a result, she talked to me about the restaurant leader's job and her experiences for only as much as one hour, before ending the meeting and sending me back to work.

Dominance behavior in the forms of exercising control and aggression was strongly related to the strong performance-orientation of the Company Stores. Both Company Store leaders were considerably

more dominant than the leaders at the Melsbach Stores and, in particular, exercised control more often and with higher intensity. They had high expectations concerning subordinate leaders like shift supervisors (e.g., 1.340; 2.202). When those failed to meet their expectations, Company Store leaders expressed anger, which sometimes resulted in aggression. All aggressive incidents observed in Kovac and Velitchkov were related to allegedly poor performances by subordinates. Both of the store leaders confronted shift supervisors openly when they were dissatisfied with them. The most aggressive act Kovac displayed was directed towards his assistant manager. The assistant manager had disappointed Kovac several times that day. While Kovac, his assistant manager, and a shift supervisor were perusing a to-do list, Kovac prompted the assistant manager to read the list aloud. When he did not start immediately, Kovac added with a malicious smile: "You can read, can't you?" (1.1.180). Though masked as a joke, the comment was a clear demonstration of dominance through aggression.

In contrast to the Company Stores, the Melsbach Stores used a cost-based strategy to stay profitable. For example, while in the stores run by the headquarters, products were hardly ever out of stock and all machines were permanently in use, the Melsbach Stores often ran out of specific products or could not produce a particular product because the corresponding machine was out of order (0.91; 0.1680; 0.1726). What seemed to be the result of mismanagement at first turned out to be an artifact of the Melsbach Store culture. One day in the Highway Store, a customer was frustrated about a specific sauce being sold out. Bringing the issue up during a conversation with Holzhammer, I learned about the Melsbach Stores' cost-based strategy:

Then we sat down again in the lobby and talked. The topic of the sold out ...[sauce] came up. At about 3 pm, I had sold the last package with the ... [sauce] for the [*]⁹. ... Of course, shortly afterward, it happened that a guest, who had been waiting for quite a long time, wanted to order a [*] ... I immediately pointed out to her that the corresponding ... [sauce] was no longer available. She was furious and said that she would not buy anything given the circumstances ... I told this story to Mr. Holzhammer. I asked Mr. Holzhammer how they handled running out of a product in general. He explained to me that it was better not to open new packages just before a campaign ended, as full packages could still be returned [to the supplier]. Concerning the specific guest, he also said that it was not possible to satisfy every guest. Then I told him that salad had often been sold out in ... [the City Center Store]. He explained that hold time was only four days and that it happened quickly that you threw out a whole pack, which cost 25 Euros. Therefore, they always calculated carefully with salad. He also said that he could stop by other stores if something was out. He referred to a concrete example according to which it had happened to one of his colleagues that he had made a mistake and typed into [the computer system] that he had 32 packs of fries left on stock instead of the actual 12 he had. Since French fries are ... delivered according to a push and pull system, the supplier did not bring any French fries with the following delivery, although the restaurant manager urgently needed them. I asked what restaurant managers could do in situations like these since it would have been difficult not to offer any fries for several days in a row. Mr. Holzhammer then said that there were two possibilities: the restaurant manager could drive to fellow stores and scrape the packs together, or the supplier could make an extra delivery, which they charged extra ... (4.100)

Several comments included in this vignette reveal that the Melsbach Stores focused on minimizing their costs instead of building on customer satisfaction and high revenues. Holzhammer explained that employees were instructed not to open new boxes at the end of a promotion campaign that included specials like the respective sauce because only closed boxes were refundable. If the store had taken a performance-oriented approach, it would have risked opening a new carton in order to increase customer satisfaction and not risk the adverse effects inherent in dissatisfied customers. The customer, who complained about the sold-out sauce, for instance, reacted negatively by deciding not to buy anything at all. That way, she punished the store for its shortage. Additionally, there was some possibility that the customer would stop frequenting the store after that incident. The customer might have generalized her negative experience and extended it to the entire GOFFCO. In that case, she might have avoided other Melsbach Stores as well as other GOFFCO Stores following her negative experience in the Highway Store. The decision not to open a new box hence had both direct negative immediate effects and long-

⁹ When quotations entailed names or terms that could reveal GOFFCO's identity, they were substituted by "[*]".

term effects. Besides which, the customer might have shared the negative experience with her social network and damaged the store's and GOFFCO's reputation by causing a chain reaction of negative communication. Holzhammer attributed the phenomenon of the sold-out salad in the City Center Store to that same effect.

In order not to risk wasting food (i.e., money), the stores ordered a minimum amount of perishable food at the expense of customer satisfaction. The Highway Store leader had resigned himself to the possible negative effects of dissatisfied customers on reputation and revenue. He explicitly stated that "it was not possible to satisfy every guest". Although taken by itself, this sentence might be true, embedded in the context of his lecture, it rather appeared as justification for not even trying to satisfy customers when it *was* possible. Holzhammer's illustrations hence confirmed the cost-orientation at the Melsbach Stores. In case the store ran out of standard products, it faced two options: either to place an extra order, which comprised extra delivery costs, or to drive to other stores and ask for spare packs. Although the latter option was very time-consuming, it was the Melsbach Stores' preferred option, since it entailed no additional costs.

The Company Stores handled product shortages differently. First of all, shortages were rare, which indicates that the Company Stores avoided them for the most part by foresightful planning. Second, when shortages occurred despite all preventive measures, it was a priority to prevent the customer from noticing the shortage. To do so, store leaders sometimes violated internal rules. For instance, one day, the Family Store ran out of onions. To solve the problem, one of the shift supervisors called an employee who was on her way to the store to start her shift. The shift supervisor asked her to buy onions at the supermarket on her way to the store (2.204). Buying products from the supermarket, however, is prohibited by GOFFCO regulations because these products could not be controlled and matched with GOFFCO norms and endangered the standardization of the GOFFCO food selection. The following excerpts from the observation diary demonstrate how the store norm to satisfy customers also led to small acts of deception:

When I noticed that the coke was too light in color, I pointed it out to [*], who pressed the corresponding button and saw that almost pure water was coming out of the dispenser. She told someone to go to the basement and reconnect the coke, but since we had some orders waiting that contained coke, she told me to fill diet coke ... instead.

In another situation, I realized that the [*] (one had just been ordered) had already expired, so I wanted to take another one that hadn't expired and put it in a bag ... Then I saw that there already was a [*] in one of the ... bags and when I looked at it closely I realized that the sticker [with the expiration date] had been removed. I had also seen this once in ... [the Flagship Store] when a customer was served a salad one night, which had already expired according to the time [noted on the sticker]. (2.137)

Giving customers the wrong beverage or expired food was not normal in any of the stores. Expiration dates for products were very strict at GOFFCO. I never observed any severe violations of GOFFCO regulations that concerned hygiene or important customer needs (e.g., selling pork to a Muslim or packing products that may have gone foul). Stores tried to abide by the rules most of the time. Nevertheless, when the alternative to selling an erroneous product would have been to disappoint customers, rules were sometimes bent.

5.2.1.2 Leadership at the Melsbach Stores: An Employee-Oriented Subculture

While putting less emphasis on performance-orientation, the Melsbach Stores did emphasize creating a familiar atmosphere that extended over all of their stores. Holzhammer explained how he perceived the Melsbach culture:

Then he also told me that at Melsbach, they were very familiar, sometimes even "more familiar than you'd like". I asked him what he meant by that and he told me that Mr. Melsbach would like to say to high-ranking international employees at GOFFCO that ... [he and Mrs. S.] were like husband and wife. Mrs. S.[, the general

manager at the Melsbach administrative office] was accordingly called "the mommy" and apparently the one wearing the breeches at Melsbach. Mr. Holzhammer told us that she sometimes called him over the phone and then, just like his mother at home, liked to yell at and get after him. She yelled, "Holzhammer, what the hell are you doing, do it better!". The next day she would stand in the middle of the store and say "see, it works!". Mr. Holzhammer adjusted his voice and made affected gestures to imitate Mrs. S. He told me that they were usually back in love immediately and he seemed to enjoy the relationship with her. (4.118a)

According to Holzhammer's report, Melsbach and Mrs. S were the leaders of the Melsbach empire and, in some respects, they treated their employees like parents treated their children. Particularly Melsbach enforced this image by depicting his relationship to Mrs. S. as similar to a marriage. As it is typical for families, criticism was communicated directly without extenuation. However, it did not damage the relationship, as angry feelings dissolved quickly. Interestingly, in both Melsbach Stores regular employees of the opposite sex had referred to each other as work-spouses, indicating that the familiar atmosphere Melsbach promoted had found its way into the stores.

Melsbach reinforced group cohesion by naming his conglomerate of stores "Team Melsbach". He promoted the name on a website presenting his stores and his "team" consisting of the administrative staff and the restaurant managers. Further, he promoted the brand "Team Melsbach" by distributing giveaways with the name and prominently displaying them as often and openly as possible (0.153; 0.157). Melsbach also promoted his beliefs in person. He went on regular patrols through his stores, organized events, hung large pictures of his children and himself on the walls of store lobbies and had a life-size figurine of himself – a birthday present from his employees – standing in his office (0.114; 0.154).

In congruence with the familiar atmosphere, Melsbach promoted equality across rank and flat hierarchies. Although the employees acknowledged his superiority and displayed respect and sometimes even reverence for him (0.149; 0.189), he liked to downplay his position and emphasize the hard work done by the regular staff (0.96; 0.130; 0.164; 0.171; 0.174). Only when feeling disrespected, he stressed his superiority (0.183). He executed control through regular patrols in the stores (0.176; 0.177; 0.221), but he also displayed cooperative leadership elements by involving restaurant managers and administrative officers in his decision-making processes and seeking consultations when necessary (0.129; 0.130; 0.186; 0.201). Furthermore, he engaged in low-level activities when going through the stores, e.g. picking up trash (0.178; 0.179), demonstrating his closeness to regular workers.

Melsbach Store employees adapted to the flat hierarchies and became irritated when leaders deviated from that principle by emphasizing their superiority. An employee confirmed this impression, when she told an anecdote about a former store leader, who had ordered an employee to clean up after her:

Then she named [store leader] Mrs. R., who apparently had worked in ... [the Highway Store] until ... Mr. Holzhammer came to the store. The employee said that she did not get along with her. I asked why not and she told an anecdote in which Mrs. R. had spilled some coffee on the floor in her office during a very hectic working hour and had called for an employee to have the coffee wiped away ... (4.70)

Store leader R. in this example had deployed an employee to do something that she could have done herself in the eyes of the employees, particularly regarding the tense situation in the crowded store. Although the employee telling the anecdote said more generally that she had not got along with R., it is this incident she used to illustrate R.'s character. This indicates the strong negative emotional reaction R. caused in her by demonstrating her superiority in rank – even although the employee had not even been involved in that incident herself.

Both Melsbach Store leaders, Holzhammer and Solberg, adapted to the familiar culture of the Melsbach Stores. They were considerably less dominant and controlling than their colleagues in the GOFFCO Stores. Furthermore, not a single incident of direct aggression was observed in the Melsbach Stores. The leaders interfered only little with their employees' work and did not emphasize their superiority in rank. Solberg was particularly cautious about giving directives and getting involved in

operative business. She was often not present during the day, because she was the only store leader who worked night shifts and hence demonstrated to her employees that no work was beneath her. Shift supervisors were granted a lot of autonomy and sometimes left with the responsibility to make their own decisions and take care of daily operations. Some of the shift supervisors in her store had even complained about the large share of responsibility they bore without being reimbursed for it. Holzhammer, too, granted his shift supervisors much autonomy and hardly ever interfered with operative tasks. Nevertheless, he exercised more control than Solberg, e.g., by showing up in the service area more often, being approachable, and taking control over the drive through during rush hours. He had developed a strategy to compensate for incidents of controlling demeanor by downplaying his superiority in rank. He did so verbally by telling anecdotes, in which he had made mistakes, suffered failures, or had made a fool of himself in the past (e.g., 4.39a; 4.75; 4.168). In this way he attempted to narrow the gap between his subordinates and himself.

Particularly in Solberg's City Center Store, shift supervisors, too, contributed to flat hierarchies and emphasized equality between them and regular employees. For example, most of the shift supervisors had their employees address them on a first name basis (3.166). They did back up for their employees (3.115) and actively asked for their employees' input before making decisions (3.101; 3.259; 3.291). Sometimes it even was hard to distinguish between shift supervisors and regular employees from the outside (3.17). A shift supervisor surprised me one day by asking for my opinion concerning his eligibility as GOFFCO trainer working for the headquarters' office. His reaction to my feedback demonstrated that he genuinely valued my opinion despite my low status (3.291).

Instead of status and rank, it was people who played a major role in Melsbach's vision. Almost every story or anecdote he mentioned centered around his interactions with people (0.97; 0.102; 0.110; 0.156; 0.158; 0.169; 0.170). He emphasized how much he enjoyed working with people and he was proud of his social contacts (0.131; 0.210; 0.254). He strongly appreciated as well as engaged in reciprocal actions and relationships (0.95; 0.147; 0.151; 0.180; 0.181; 0.214; 0.217). Melsbach's preference for dealing with people also extended to his employees (0.165; 0.173; 0.184; 0.192; 0.196; 0.197; 0.222; 0.230; 0.246). For example, he congratulated them on their birthdays or invited them to events, trips, or drinks (0.71; 0.81; 0.105; 0.143; 0.144; 0.145; 0.228) and complimented them (0.117; 0.247). Hence, instead of hierarchical structure, Melsbach liked to emphasize the importance of people and personal contacts. He appreciated his employees' loyalty and effort irrespective of outcome. One example for his appreciation was the annual Christmas party Melsbach organized for all of his employees and other stakeholders. Although the party was costly (0.73; 0.135), it was very important to Melsbach that it happened and appealed to his employees (0.82; 0.255). During the Christmas party, he honored employees who had been working for him for ten years or more (0.259). Other guests received presents as a sign of Melsbach's appreciation (0.248). Melsbach started the official part of the program at the Christmas party with a speech, in which he highlighted the importance of employees and other stakeholders:

Mr. Melsbach gave a speech, in which he started with the statement that there were a lot of VIPs present this evening. Then he said that these VIPs were the company's employees. Thanks to their "passion and devotion" Team Melsbach was "halfway fine". He told us that he had often thought about whether he could even let the Christmas party take place from a financial point of view and afterward he thanked all the companies who had agreed to sponsor or who had significantly lowered their prices. (0.255)

The year of the observations was financially challenging to the fast-food franchise industry due to increasing competition and dwindling sales. Hence, the extensive Christmas party had been at risk. Melsbach emphasized in his speech that the financing of the party had been difficult. He conveyed to his employees, how much effort he had put in thanking and appreciating them for their "passion and devotion" that had saved Team Melsbach from more severe financial losses. Furthermore, he subtly

demonstrated his good relationships with other companies and sponsors, who had helped finance the Christmas party through discounts and donations.

Just as it was important to Melsbach to express his appreciation for his stakeholders, the Melsbach Store leaders expressed their appreciation for Konstantin Melsbach. Even Solberg, who was very restrained in referring to other people, praised Melsbach's transparency towards the store leaders:

Ms. Solberg ... told me that as a store leader, she does not find out how much [money] "goes into Mr. Melsbach's pocket". That means she knows things like the store's gross profit, but not what is left after deducting franchise fees, etc. However, she stressed twice that elsewhere (I assume she means stores that do not belong to Melsbach) the store leaders get even less information about financial figures than they do. (3.183)

Solberg appreciated that franchisee Melsbach shared sensitive financial information with her and demonstrated that she was aware that the level of trust granted to Melsbach's store managers distinguished them from other franchise groups in a positive way. Holzhammer and Solberg did not directly express their gratitude towards employees, but they nevertheless seemed to be on cordial terms with them. While Kovac and Velitchkov had kept a formal distance between them and their employees, the Melsbach Store leaders interacted with employees informally. Those interactions were always friendly and employees behaved very authentically and on equal terms with their bosses (3.189; 4.69). Interactions between employees were allowed and particularly in the City Center Store they had led to several romantic relationships between employees. Particularly in the Flagship Store, on the other hand, interactions between employees were actively suppressed. Kovac as well as shift supervisors would regularly reprimand workers who were talking to each other – even if the conversation was work-related or if it did not interfere with employees' productivity.

Melsbach's efforts to build a familiar franchisee culture extended to workers from the administrative office as well as store leaders and shift supervisors. Consequently, those people knew each other quite well and started building social bonds with one another. Holzhammer described vividly the many opportunities that leaders at Team Melsbach had to get acquainted with each other:

I asked him if he knew most of the restaurant managers and shift supervisors and how this came about. He said, yes, he knew most of them, and then he told me that they would get to know each other through the high mobility across stores, because he had already worked in different stores. Of course, there were also events like the Christmas party or events during which you apparently climbed trees together during the day and then at the end "got hammered". (4.66a)

Melsbach's initiative bore fruit. While in the Company Stores, each store was a distinct unit with little contact to other stores, at Team Melsbach, employees interconnected and borders between stores were obliterated. Store leaders and shift supervisors knew each other through Melsbach-wide events and work-related functions. Many shift supervisors and some of the employees worked at more than one store. The interconnectedness of the stores became visible in the face of pending controls. The Franchise Stores had developed a system to warn each other about upcoming controls (0.74; 0.141; 0.242). Each time Melsbach or external inspectors visited a store, it warned other stores via phone call about the respective inspector being on their way to them (3.81; 4.50). Furthermore, the interconnectedness of the Melsbach Stores led to stores helping each other out in case of product shortages (see above) and staff shortages (4.100). The interconnectedness of Melsbach workers was reflected not only across stores but across ranks as well. Playful teasing across rank, for instance, was a phenomenon that occurred predominantly in the Melsbach Stores (e.g., 3.90; 4.39) and hardly ever in the Company Stores.

5.2.2 LEADER DIFFERENCES IN BEHAVIOR ACROSS SEX

After elaborating on the subcultures of the Company Stores and the Melsbach Stores, the section continues by focusing on sex differences in behavior between the male leaders and the female leaders. The systematic comparison of the four cases revealed that congruently with the predictions of the

theoretical framework, male leaders pursued male strategies in executing their leadership. Female leaders pursued male strategies as well, but *less consistently* than their male counterparts. Furthermore, both male leaders engaged in *both* male strategies, dominance and coalition-building, to establish a stable dominance hierarchy. Female leaders, on the other hand, did not engage in coalition-building and thus facilitated the development of *incohesive* group structures. Female leaders engaged in female strategies more than male leaders, although female strategies played an inferior role in all of the four leaders' behaviors. Behaviors related to female strategies were mostly subtle and difficult to observe. Regarding nurturing behaviors, women leaders had developed alternative strategies to avoid openly demonstrating stereotypically female behaviors and still act in a nurturing manner.

5.2.2.1 Leader Sex Differences in the Application of Male Strategies

Male leaders engaged in male strategies that aimed at building dominance hierarchies more than their female colleagues. Although the magnitude of dominance itself did not differ between Kovac and Velitchkov, the quality of their behaviors still indicated that only Kovac aimed at building a consistent dominance hierarchy. Velitchkov, on the other hand, rather pursued establishing authority over her subordinates. The Melsbach subculture rejected overt dominance. Solberg reacted to the cultural norm by hardly exercising any control over her employees, which led to dissatisfaction among shift supervisors. Holzhammer, on the other hand, developed strategies to exercise control in subtle ways that were compatible with cultural norms.

Male leaders' more sophisticated dominance behavior was complemented by their efforts to facilitate and maintain coalition-building in their stores. Staff members were treated alike, and performance as well as store rank were the only attributes related to differences in treatment. Male leaders actively engaged in affiliating outgroup members and created salience for the store's belonging to a greater system. Female leaders, on the other hand, did not engage in coalition-building behaviors. They treated their stores as independent from the headquarters or other GOFFCO stores. Furthermore, they differentiated between individual members based on their personal situations. Men and women leader's applications of the male strategies of dominance behavior and coalition-building are illustrated at the end of this section in Table 12.

5.2.2.1.1 Leader Sex Differences in Dominance Behavior

The Company Store culture was characterized by considerably higher dominance levels than the Franchise Store culture. Nevertheless, the systematic comparison of the two male and two female cases revealed that the two male leaders resembled each other more in terms of their dominance behavior than the two female leaders. In fact, the two female leaders appeared to be polar opposites regarding their dominance behavior. The male leaders, on the other hand, although still strongly influenced by their reflective organizational cultures, showed some noticeable overlap.

Emphasizing rank. Both male leaders tried to enforce their shift supervisors' status rank in the store hierarchy by sharing their authority over employees with them. This entailed not interfering with the shift supervisors' directives and granting them the space to make their own decisions. Kovac made a great effort to acknowledge his subordinate leaders' authority, although due to his conflicting desire to exercise control, it occasionally came to mix-ups and contradicting orders. When I asked him for my next task, Kovac sent me to ask the shift supervisor in charge because "the allocation of employees was ... [their] job" (1.77; 1.274). Other times, however, he overruled the shift supervisors' authority so that there was some confusion in employee allocation (1.69; 1.84). Nevertheless, in sum, Kovac managed to enforce the overall formal hierarchical structure of the store.

Holzhammer, too, tried to acknowledge the shift supervisors' authority openly. For example, on my first day, Holzhammer wanted to fetch me away from the service counter to show me something. He came to the service counter where I was working under the auspices of a young female shift supervisor, but instead of just demanding me to follow him, he asked for the shift supervisor's permission:

It was a few minutes past six when ... [Holzhammer] approached me and the shift supervisor ... He asked the shift supervisor if he was allowed to "kidnap" me quickly for a second time. She said, grinning, "sure, help yourself", whereupon the store leader laughed and looked back at her over his shoulder, smiling, while I was already following [him] ... (4.27)

Furthermore, allowing supervisors to make their own decisions meant acknowledging the chain of command inherent in the formal hierarchy. Male store leaders interacted primarily with shift supervisors, while shift supervisors interacted primarily with employees. Kovac, for example, made sure to instruct shift supervisors privately outside the work area, e.g., in the break room or in the hallway, so that their orders would appear more autonomous and authoritarian to employees later. When working in the service area himself, Kovac rarely gave instructions to shift supervisors or employees despite being very alert and involved with people. Holzhammer, just like Kovac, was very present when working in the service area – he talked loudly to customers over the headset, making jokes and entertaining the entire store. Nevertheless, he hardly interfered with his shift supervisors' authority. When he did interfere by giving directives or reassigning employees, he included his shift supervisors in the decision and communicated his directive in a careful way that diminished his own authority, leaving space for shift supervisors to get involved.

The female leaders, on the other hand, did *not* enforce the shift supervisors' positions within the hierarchical structure, although they did so in very different ways. Velitchkov undermined her shift supervisors' authority by not granting them any control as soon as she was present. When supporting the operative business during rush hours, Velitchkov dominated both shift supervisors and regular employees alike by giving them orders and correcting their work if necessary. Hence, she did not abide by the formal chain of command. Instead of enforcing the shift supervisors' positions, Velitchkov undermined their authority by criticizing their decisions and actions in front of regular employees. Her excessive and sometimes humiliating acts of criticism were not balanced by praise or rewards when her expectations were met. Once, she rebuked a shift supervisor in front of other staff members for not using the store "code" for a potential MSV correctly:

When I started to work again, I heard W. calling into the kitchen to make the burger "nice". This was code in the store for a potential MSV order. I had heard Mrs. Velitchkov call this into the kitchen many times before. However, when W. was doing it this time, Mrs. Velitchkov said in a slightly evocative and latently aggressive tone that he was supposed to say this in a lower voice as she had already told him ... before. W. replied apologetically, "I have forgotten the Bulgarian word for it". Mrs. Velitchkov made a dismissive comment, and the conversation was over. (2.241)

Solberg, on the other hand, hardly ever interfered with shift supervisors and employees in front of others, so that she failed to make the dominance hierarchy in the store visible and salient. Shift supervisors lacked guidance and were forced to make their own decisions to the extent that they felt it exceeded their job description. Congruent with that lack of guidance, the range of leadership styles exhibited by shift supervisors in the City Center Store was larger than in any other store. While some chose an informal approach, others tried to keep a formal distance between them and their subordinates. The first type had employees address them on a first-name basis, openly asked for their opinions, and acknowledged their knowledge and experience. The latter type wanted to be addressed formally and enforced their own superiority by acting very distantly and in an authoritarian manner.

Male store leaders referred to superordinate individuals and institutions more than women. In doing so, they demonstrated that they regarded themselves and their store as part of a greater system. They did not perceive their positions as absolute but in relation to a greater hierarchy. Although they held the

most powerful positions within their respective store, they were aware of power positions outside the store as well:

Mr. Kovac then told me about the great opportunities that GOFFCO had offered him. He said he was grateful that GOFFCO had given him a chance back then, ... [although he had not graduated from a German university], and how he now had the opportunity to earn good money and make regular business trips to cities like L. A. (1.256)

Not only did Kovac express his gratitude in this excerpt, but he also revealed how he perceived the power structure that he was a part of. He felt that his career at GOFFCO had been enabled by GOFFCO's goodwill to employ him despite his foreign degree. Although he had achieved some advancement within the company hierarchy, he was thankful for the benefits included in his position, and he acknowledged that his future progression in the company hierarchy still depended on GOFFCO. This vignette hence illustrates how male store leaders not only saw their own position of power or a limited section of the hierarchy but the hierarchical system and their position within it as a whole.

In congruence with that way of thinking, performance and achievement were topics of great interest to the male restaurant leaders. They both talked about and assessed their own as well as others' achievements since those achievements were considered to be directly related to professional success. For instance, both male restaurant leaders expressed admiration for my college education (1.256; 4.56). To Holzhammer, it was obvious that my academic achievements would translate into a prestigious job at GOFFCO:

Holzhammer also said that with my studies, my master's degree, and all my qualifications, I would, of course, have a completely different basis for negotiation and would automatically earn more [at GOFFCO] ... Basically, I had the impression that he appreciated my qualifications very much and admired them. The day before, he had assumed that I had to have much theoretical knowledge, and when I did not react to it, he explicitly asked me to confirm it, which I did. Then he told me something about possible jobs in administration and about a certain job in in-house consulting, consisting of consultants visiting stores all day and telling the respective store leader what they were doing wrong. (4.56)

Furthermore, they talked about achievements and how to accomplish them. At the same time, they were surprisingly humble about their own achievements. As indicated above, Kovac emphasized that he had been given a great opportunity by GOFFCO when being deployed as restaurant leader (1.256). Hence, he did not trace back his achievements to his own performance only but acknowledged his dependency on superiors' goodwill. Holzhammer, too, took care not to show off when talking about his achievements. His strategy was to relativize his accomplishments by simultaneously mentioning the mistakes he had made. For instance, he proudly reported that he was responsible for improving the drive-through sales in the store and hence highlighted one of his achievements. In the same breath, he attenuated his performance by adding that the improved drive-through-figures had been made at the expense of shrinking in-store numbers (4.15). Another time, Holzhammer told me that he had won a monetary prize for suggesting an innovation at the Melsbach Stores that had actually been implemented (4.29a). Subsequently, however, he mentioned another suggestion he had made that had not been adopted by the GOFFCO officials (4.29a). The humbleness displayed by the male leaders seemed to be related to their awareness of their medium position within the overall GOFFCO hierarchy.

Kovac not only emphasized the existing ranks but actively created informal hierarchies among employees of the same formal rank. He openly evaluated his subordinates concerning both positive as well as negative performances. On my first day, for instance, he praised an older, very experienced employee, who had been in charge of making the salads in the store for 25 years:

She had already been introduced to me on my first day by Kovac. In doing so, he put an arm around her, beamed at me, and recounted that she had already been working at the store for 25 years, making salads. When she was making the salads, there were never any customer complaints, and as soon as she went on vacation, complaints about the salads started coming in. (1.266)

Kovac highlighted the employee's experience and his confidence in her abilities. By openly communicating his assessment of her performance, Kovac made clear that she was on his radar and appreciated for her work. He accordingly raised her status in contrast to other regular employees who received no positive performance evaluation. Holzhammer did not engage in this strategy to enforce informal hierarchical positions. This difference between male leaders is congruent with the deviating subcultures since performance played a considerably larger role in the Company Stores.

Neither of the female store leaders referred much to hierarchical structures outside their store. Solberg hardly ever mentioned Melsbach or fellow store leaders. Even when talking about the trips she had made to exotic places for international GOFFCO meetings, she did not refer to other authorities or express any appreciation towards her superiors. GOFFCO, however, only invited franchisees such as Melsbach to those international meetings. When I explicitly asked Solberg, she did not even seem to be aware that it was not a matter of course for restaurant leaders of Franchisee Stores to be invited to those trips. Instead, it was the franchisee, in this case Melsbach, who decided who was allowed to participate and who paid for the expenses (3.207). Velitchkov, too, obscured the existence of the greater hierarchical structure that she was part of. Visits of individuals like Ms. O. from the headquarters or the district manager, who were higher in rank, were handled casually and, for the most part, unnoticed by the workers of the Franchisee Stores.

Instead of highlighting the overall hierarchy by acknowledging others' status, Velitchkov focused on her own achievements. She told me about an international award she had won and emphasized that she was "doing her job well" (2.213). In sum, the female store leaders shared important commonalities: they neither emphasized others' ranks nor seemed to acknowledge the overall hierarchical system that they were part of. However, they used different approaches regarding their own ranks. While Velitchkov made sure her prime status in the store was uncontested, Solberg retreated into her office and let subordinate individuals take control over the store.

Exercising control. Both male store leaders exercised control, although they did so in differing ways. The male store leaders shared the commonality that they both helped out in central positions during rush hours so that they were noticed by their employees. Although they made sure not to undermine the shift supervisors' authority, they sometimes gave directives to regular employees or reassigned them to new tasks. Kovac usually exercised control through a direct and clear way of giving directives. He knew exactly what he wanted and did not tolerate any forms of contradiction. Holzhammer, on the other hand, used a subtler form of executing his power. His directives were often not as clear and seemed to allow for negotiations. For example, he playfully challenged employees to do a certain task or gave a directive and apologized for it at the same time. For example, when he wanted an employee to do the lobby, instead of explicitly ordering him to clean the lobby, he said, "it's time! E., how long do you think you need for [cleaning] two tray carts?" (4.95).

Furthermore, both male store leaders demonstrated more omnipresence than their respective female counterparts. While Velitchkov was only present during rush hours when she took over store operations, Kovac additionally emphasized his presence by means of regular patrols through the store, e.g., on his arrival at the beginning of his shift or right before pending MSVs (1.312; 1.341). In the Melsbach Stores, Solberg was hardly ever available for employees and stayed in the office area most of the time. Holzhammer was out in the operative area far more often, particularly when helping out during rush hours.

In terms of exercising control, Velitchkov and Solberg were polar opposites. Velitchkov, on the one hand, was extremely dominant. She controlled both shift supervisors as well as employees and explicitly undermined the shift supervisors' authority. She took control of all store operations as soon as she was present and gave clear directives to her subordinates.

What was particularly noticeable was that Mrs. Velitchkov took on a coordinating role during the midday rush. While I did not hear other staff members talking to each other at all . . . , Mrs. Velitchkov's voice was heard all the time. She talked about leaving out certain products and hollered when products were particularly urgent or missing. She was also constantly giving out instructions . . . that she now needed French fries in this size and a beverage in that size. She sounded very authoritarian and efficient, but also a bit hectic, and I did not find it pleasant to have her working next to me. (2.38)

Solberg, on the other hand, was extreme in her non-directive way of leading. Even when present in the service area during rush hours, Solberg took on quiet, humble positions like that of doing back up. She never interfered with shift supervisors or employees, which conveyed the notion that she was not in control at all.

Prestige-related behaviors. Demonstrating one's abilities, sharing knowledge, and helping others to adopt new skills are prestige-related behaviors. It was conspicuous that male store leaders engaged a lot in those behaviors, while female leaders only rarely engaged in those behaviors in front of me. Both male leaders enjoyed themselves teaching me about GOFFCO norms and operations. They taught me abstract principles and helped me understand those principles by providing examples. For instance, when Holzhammer heard that I had not heard about some basic GOFFCO operating principles yet, he was eager to fill that void:

He was very interested in what I had already learned and was quite baffled when I said that I had not learned about the "first four stations" . . . He then led me into the shift supervisor's office and pulled out a folder to take a sheet out of it. Then he asked me if I knew what the difference between cleanliness and hygiene was . . . He explained that cleanliness is when you cut onions and then simply wipe the leftovers off the board. This makes the tray look clean, but it is not hygienic. Only when it was disinfected it would get hygienic. The sheet he pulled out contained similar instructions on how to work hygienically and avoid lack of hygiene . . . He gave me three other sheets, which, together with the first one, seemed to represent the theoretical basis of . . . the four principles. (4.9)

Kovac liked to take new employees aside and give them short demonstrations of individual work steps. When talking to me about GOFFCO, he often chose general topics, such as characteristics of suitable employees for the company or strategic decisions (1.258; 1.343). The female leaders, however, were very restrained at demonstrating their own skills or sharing knowledge. Velitchkov even surprised me several times when she demonstrated that she was not capable of doing some of the operative tasks (2.29; 2.145). One time, for example, Velitchkov wanted to take a customer order herself when there was no one at the cash register. Although it was a simple order of a standard GOFFCO product, an employee finally had to take the order for her:

During a phase when there was not much going on in the morning, two guests arrived who wanted to place their order . . . Mrs. Velitchkov interrupted her conversation with M. and jumped at the cash desk. You could hear the customers ordering a [*], and Mrs. Velitchkov's started searching [for the right button] with her finger hovering over the cash register. I think it was Mi., who was already shouting "to the right!". Then Mi. came to operate the cash register, whereupon Mrs. Velitchkov moved away, relieved, and explained that she could not manage the cash register. She laughed. (2.145)

During other similar incidents, Velitchkov confirmed that she was unfamiliar with some elements of basic GOFFCO procedures (e.g., the meaning of a sign on the monitor displaying orders; 2.29). Her openness about her lack of skill was surprising since a lack of skill demonstrates a lack of competence, which, in return, can quickly result in diminished authority. Consequently, she seemed to be unaware of the effect that her demonstration could have on subordinates. Solberg did not demonstrate any lack of skill; however, she also refrained from demonstrating her abilities or sharing her knowledge. She primarily ordered shift supervisors or experienced employees to show me things.

Aggression. Although aggression occurred only in the Company Stores, there were some conspicuous differences between Kovac and Velitchkov. Kovac displayed direct aggression during one-on-one interactions and composed himself quickly. On a store patrol, for instance, Kovac found that the garbage cans on the terrace had not been emptied. He immediately got angry, as revealed by his tone of voice and his mimicry. After emptying them himself, he sought out an employee working in the terrace-

area. Although he merely asked her who had been responsible for the terrace, his mimicry, tone of voice, and body posture had a menacing and aggressive air. The employee felt threatened and responded in a defensive manner, blaming another employee for having missed emptying the garbage can (1.315). As a response, Kovac just turned away from her quickly without making any accusations. In another situation, Kovac directly confronted a shift supervisor with the bad condition of the parking lot. The shift supervisor turned red and boldly responded that Kovac himself should have looked after the parking lot's condition. Instead of displaying anger in return for that bold comment, Kovac stayed calm and resolved the situation on a factual level (1.340).

Although Velitchkov displayed direct aggression even more frequently than Kovac, her behavior deviated from his in two ways. Most of the incidents where Velitchkov acted aggressively resulted from stressful situations – usually when the waiting queue in front of the counter got longer increasingly longer, and guests were starting to complain (2.56; 2.120; 2.124). Kovac, on the other hand, handled stressful situations by easing up the situation and even motivating his employees by joking with them (1.33). His aggressive acts were usually triggered by the mediocre performance of one of his subordinates. Hence his acts of aggression seemed to be more controlled and more intentional than Velitchkov's, while hers seemed to be rather impulsive. This impression was supported by the second deviation. When Velitchkov acted aggressively as a reaction to some employee's mistake, she did so immediately and irrespective of who was present to see it (2.116; 2.122; 2.136; 2.239). Consequently, Velitchkov appeared to be less aggressive than Kovac because much of her aggressiveness was reactionary and resembled a defense mechanism. Kovac, on the other hand, was very in control of the situation, so that his aggressive actions seemed to be much more conscious and intentional. With intention being defined as a prerequisite of aggression, Kovac was actually more aggressive than Velitchkov.

5.2.2.1.2 Leader Sex Differences in Coalition-Building

Male and female leaders conspicuously diverged in their tendency to build and maintain coalitional relationships within and outside their stores. While male leaders behaved in a way that facilitated and enforced successful coalition-building, female leaders behaved in a way that prevented or at least impeded coalition-building in their stores. Male leaders tried to treat all employees equally, whereas female leaders tended not to treat store members equally but to adapt their behavior towards them based on their individual situation. This became particularly visible in males' efforts to integrate me into the staff. They treated me, for the most part, like any other employee, while female leaders' efforts aimed at respecting my unique position and complying with my explicit requests. However, female leaders did not react to my alleged implicit request to learn for a possible future career at GOFFCO and made no other effort to affiliate me as an outgroup member. In fact, female leaders did not try to affiliate any outgroup members, while their male colleagues placed emphasis on building good long-term relationships with customers and other stakeholders in the store. In sum, the consistent differences between male leaders and female leaders regarding coalition-building point to a relatively unambiguous sex difference with respect to coalition-building.

Reinforcing group cohesion. Male leaders made sure that all employees, including me, had the same rights and followed the same rules. For example, they ensured that as long as I was working with regular employees, I was treated as equally to them as possible. For example, both male store leaders had me work night shifts. Female leaders, on the other hand, only assigned me to day shifts. It appeared as if they wanted to go easy on me and not expose me to the more challenging night shifts. Kovac further denied me any special treatments with respect to my shifts or breaks. While particularly the female

leaders were careful to consider my personal preferences when scheduling my work week, male leaders were stricter about assigning me to shifts or breaks like they did with regular employees.

Due to the different subcultures, Holzhammer was more accommodating than Kovac. He made sure that all requests I had about my work schedule were clarified right from the beginning. On the other hand, Kovac had already prepared my schedule for the first week without including me at all. Although he gave me some say in scheduling the second week, he made sure that this leeway was within certain boundaries and that he would be the one to design my work schedule in the end. With regard to breaks, male store leaders were stricter about me being treated like any other employee as well. Kovac even explicitly denied my request to change the timing of my break because “there was actually no discussion” about that with employees (1.272). Kovac found a way to work around it later by allowing me to schedule my break (within certain boundaries) as a *reward* for my hard work. Performance-based rewards were accepted in the Flagship Store and sometimes even demanded by employees (1.31; 1.74).

Kovac further extended his effort to treat employees equally to his hiring standards. He had a clear picture of prospective store workers in his mind and screened as well as tested potential new hires thoroughly for whether they were suitable for his coalition:

... [Kovac] said that people were either good or bad and that he had never met a person who had been bad and became good afterward. He also explained that he tested employees during the first six months, during the probationary period, to be sure that they were good people. I asked him what he meant by “bad people”, and he said they were people who lied, cheated, and talked badly about others. He further told me ... about a friend he used to have ... and who had misbehaved several times ..., which his friends had more or less tolerated for a while by finding excuses. When after a certain time, the behavior had not changed; the friend was expelled from the circle of friends. Mr. Kovac said that this person had not amounted to anything until today and was still struggling with the same problems ... One moral ... of this story was that ... good people move forward [in life]. In other words, it is important to be good in order to achieve something. (1.343)

Kovac described that he wanted to work with honest people on whom he could rely. He believed that their behavior resulted from their innate personality and was not changeable. During the probational period, he “tested” whether potential candidates were “good” or “bad”. However, being good was not the only criterion Kovac used to distinguish between suitable and unsuitable workers. He also expected his employees to work autonomously and think for themselves (1.258). To find appropriate candidates, he relied on employees’ recommendations (1.324).

Velitchkov, on the other hand, granted me much autonomy in scheduling my breaks and reinforced my habit of taking prolonged breaks by not reprimanding me for it and even telling me that it was “no problem” (2.90). Holzhammer, too, took more control over my breaks than his female colleague within the Melsbach subculture. Because I worked only six hours in the Melsbach Stores per day, while I had been working 8 hours (+ 30 minutes lunch break) in the GOFFCO Stores, I was not entitled to a prolonged food break in the Melsbach Stores. Solberg waited for me to approach her or the shift supervisors in case I wanted a break. I was rarely prompted to take a break when I did not ask for it. Hence, Solberg expected me to take breaks autonomously according to my preferences. In Holzhammer’s Highway Store, on the other hand, shift supervisors sent me to have short food breaks almost every day. As regular employees, I was hence dependent on shift supervisors’ directives.

In contrast to the female store leaders, male leaders did not hesitate to deploy me at unpopular tasks like cleaning the lobby. Just like everyone else, I cleaned floors, tables, and restrooms. Kovac even had me work in the lobby so much that even some of my coworkers started questioning his directives (1.136). Velitchkov, on the other hand, never had me do the lobby. Because shift supervisors were given much responsibility in the City Center Store, it remains unclear to what extent Solberg was involved in assigning my tasks, but some of the shift supervisors there did send me to clean the lobby. However, I spent less time in the lobby there as compared to the Highway Store.

By treating me (more) like a regular employee, male leaders laid the foundation for staff members accepting me and treating me like one of them. Accordingly, it was easier for the workers in those stores to integrate me into their coalition. The male leaders were less considerate of my position as an unpaid intern who was in touch with the administrative office. This indicated that their overall strategy tended towards enabling coalition-building by treating employees as equally as possible (only exception: performance-based discrimination). They impeded the building of subgroupings based on special treatments of certain groups or individuals and cleared the way for successful coalition-building, leading to efficient cooperation and little conflict between employees.

The female leaders, on the other hand, had in common that they enabled the development of subgroupings. Velitchkov, for instance, discriminated between Bulgarian and non-Bulgarian employees. Because of her Bulgarian origin, she had hired many Bulgarian workers who hardly spoke any German. Velitchkov talked in Bulgarian to these workers, and they spoke Bulgarian amongst themselves, too. The Bulgarian subgroup was received negatively by the other employees – the ironing lady, an 80 something worker, who had worked in the store for more than 40 years, even stated that the restaurant was “in Bulgarian hands” (2.177). She told me about the measures Velitchkov had taken to counteract employees’ uneasiness with the situation:

She said that so much Bulgarian was spoken nowadays that even guests had complained about it. She pointed to a pinboard on which a sheet of paper was hung out, saying that employees were asked to speak only German with each other and that non-compliance with this rule would lead to consequences. However, the ironing lady said that this sign had been there for months, and nothing had changed so far and that Mrs. Velitchkov continued to speak Bulgarian. (2.177)

Although Velitchkov had realized that the subgrouping was hurtful to the store and had prompted employees to speak in German with each other, she had not stopped talking Bulgarian to her employees, and hence the situation had not improved. Other employees further reported that Velitchkov treated certain groups of employees differently. An employee from the headquarters confirmed in an informal interview that women leaders tended to discriminate between workers. He told me female leaders “picked favorites and employees felt and disliked that” (2.266).

The female leaders did not have their employees rotate positions during or across shifts. The GOFFCO system, however, foresaw that employees rotated positions. That way, employees adopted the whole range of skills necessary to work at the different work stations and could be deployed wherever they were needed. Furthermore, the changing positions were supposed to prevent boredom and one-sidedness. Nevertheless, female leaders did not promote employee rotation in their stores. In the Family Store, I confronted a shift supervisor with the lack of employee rotation and learned that it resulted from Velitchkov’s orders:

When it got a little bit quieter, and there was nothing for me to do because we had to wait for products again, I talked to W. and said that I was surprised that although there was supposed to be a rotation system, I could not see it. W. reacted very evasively and said that I should turn to Mrs. Velitchkov because she could tell me more about that. I asked further questions and had him confirm that he was ... in charge [at the moment]. So I asked whether he was going to have employees rotate, and he said no. But he also said that he was merely following Mrs. Velitchkov’s instructions ... (2.303)

Although no employee explicitly complained in front of me about the missing rotation in the Family Store, employees in Solberg’s City Center Store openly expressed their dissatisfaction with it. In the following excerpt, an employee explained how she was desperate for some job rotation:

She told me she'd had the job since June ... and that she got it through the unemployment agency. She had been supposed to [be trained at different skills] ..., but she complained that she was always standing at the cash register day in, day out and that the promises made had not been kept... I believed her that no actual rotation took place, as I had not been able to observe any rotation either. She also told me that only a few employees would rotate and that she understood why some of them would only be assigned to certain areas. For example, she pointed out one employee who spoke very little German, and therefore, understandably, worked exclusively at the grill. (3.130)

Another employee, whom I had observed work in various positions around the store, confirmed his coworker's account:

Then I asked about his work, whether he rotated a lot concerning his tasks. The day before, I had seen him working at the cash register; and we had worked together in the kitchen on my second day. He told me that he rotated a lot, but that many people only worked in one place ... He told me that many of them worked only at one work station, as they couldn't do anything else since they had not been taught any more work stations ... (3.148)

The employee's account illustrates that the missing rotation resulted from store leaders not training their employees to work in various positions. The lack of rotation might reflect female leaders' lack of awareness of how the missing rotation affected store structure. Due to the missing rotation, employees did not have the opportunity to interact with many of their coworkers. Instead, it was mostly the same coworkers with whom they worked. Hence, they had the opportunity to build strong relationships with those employees, but there were many other employees with whom they could not build any relationship due to the lack of contact. This imbalance led to subcultures that centered around the various work stations, e.g., the kitchen or the service area. In contrast to the female leaders, the male store leaders did promote employee rotation. Hence, the evolving employee networks were more balanced. In informal conversations with employees in the male stores missing rotation was never an issue.

In addition to paving the way for coalition-building, male leaders were aware of being part of an even greater coalition than their own stores, namely the entirety of GOFFCO or "Team Melsbach", respectively. In congruence with the familiar culture of the Melsbach Stores, Holzhammer often referred to other Melsbach members at the administrative office or from other stores. He was well informed about current issues and enjoyed talking about GOFFCO's strategy and norms. He had much background information about reasons for the design of individual policies and rules and defended decisions made by the GOFFCO headquarter. Kovac, too, felt like part of a greater coalition. He enjoyed discussing current GOFFCO developments with me (1.257a) and highlighted the importance of information and directives that were distributed by the headquarter (1.327). The female store leaders, on the other hand, hardly ever mentioned the superordinate organization their store was embedded in. They seemed to focus on their stores only and identifying themselves less as GOFFCO or Team Melsbach members.

Trust. Male leaders demonstrated higher trust levels than their female counterparts, particularly when taking store leaders' trusting or distributing behavior towards me into account. Both male leaders enjoyed sharing information with me about working at GOFFCO, about standard procedures in the stores, and the stores' financial situations. They let me listen to casual phone calls with suppliers, shared the content on their computer screens with me, and showed me confidential financial figures. Their high levels of trust and transparency towards me were part of their overall trust and transparency towards their staff. In the Flagship Store, staff members went in and out of Kovac's office no matter if the door to his office was open or closed. In the Highway Store, staff members too approached Holzhammer frequently and were usually not refused. Holzhammer further actively invited staff members to join in conversations irrespective of the matter he was currently discussing.

Approximately six months before the observations started, a German investigator had sent confederates to work undercover at several German stores of a large fast-food corporation, where they had revealed some deficits in hygiene and employee treatment. As a result, several of the fast-food chains' branches had to close, and the fast-food industry as a whole had suffered reputation damage and revenue losses. Since interns were unusual at the Melsbach Stores, both Melsbach store leaders were initially suspicious of me and feared that I might be a spy who wanted to convict them of violating GOFFCO rules or health regulations. Hence, Holzhammer's openness towards me was an especially strong sign of his willingness to trust. The dilemma he faced due to his suspicion, on the one hand, and his generally trusting demeanor, on the other hand, became particularly visible in the following incident:

Once Mr. Holzhammer took me aside ... He said that I must, of course, always say to everyone, i.e., to every outsider and every superior, particularly Mr. Melsbach, that everything [in the store] was done strictly according to standard. Before, when we had been sitting in his office, I had put on my glasses once, and he had looked very closely at my face, into my glasses, and asked, "is there a camera in there?". (4.19)

By prompting me not to share the information he gave me and the observations I made, Holzhammer displayed his fear of me telling on him or his staff for deviating from GOFFCO norms. At the same time, however, he believed that all members of his coalition – even loose ones like me – stuck together and would not hurt him. One time, he even asked me to be a confederate in a harmless conspiracy. He knew that for one day, I would be on tour with Melsbach visiting several of the Melsbach Stores – including the one he would be substituting at as store leader that day. In order to have the store look its best the moment Melsbach arrived, Holzhammer asked for my help:

Mr. Holzhammer ... summoned me using the words, "you are my friend, right?". I looked at him and repeated, "I'm your friend?". He said, "yes, you are my friend", and said he had a favor to ask me. I told him to go ahead, and he stated that [he knew] I was going to be on tour with the boss on Thursday. He himself would not be at [the Highway Store] ... on Thursday, but at a store in R. Then he said that in case the boss and I were going to the store in R., I should let him know. I had his number, and a short text message would be nice ... he explained that it was always good to know when the boss was coming and that these calls were common. As soon as the boss leaves a store, the store will call the others and warn them that the boss is on his way. (4.50)

Holzhammer called me his "friend", highlighting how he believed that there was automatically a bond between us because he let me be part of his coalition. In fact, he even trusted the bond between the two of us to be stronger than my bond with Melsbach, who had facilitated the internship in the first place. Hence instead of hiding the little trick store leaders used to master Melsbach's and others' control visits from me, Holzhammer *included* me in it.

Velitchkov and Solberg, on the other hand, were less trusting and transparent towards their employees. Although I did not observe any direct signs of distrust, I neither observed direct signs of trust. The female leaders were less approachable to employees and tended to withdraw into their offices when they were not needed in the staff area. With respect to me, the female leaders were considerably less trusting than their male colleagues. Both of them avoided me. Solberg explicitly told Melsbach that she feared I could be some type of snitch (3.194) and, as a result, avoided me physically by scheduling her shifts and free days in a way that our work schedules often did not overlap. Velitchkov avoided me more subtly, e.g., by casually ending our conversations with replies that lacked content. When I tried to trigger conversations by asking questions about the store, she gave me unspecific responses and evaded me. One day, she was thrilled because the previous day, store revenue had been unexpectedly high. In opposition to her usual behavior, she started a conversation with me by telling me about the store's outstanding performance:

In the morning, Mrs. Velitchkov had told me that the day before, the branch had made 32% more turnover than in the previous year. She also said that we had been too few people for this amount of sales because the number of people depends on the planning, and she always calculated an increase of [merely] 5-10%. She seemed very pleased with the 32%, ... [but] when I asked what she thought had caused that increase, she replied relatively unenthusiastically that it was not possible to tell. (2.133)

When I tried to extend our conversation about the store performance and find out more about strategic planning at GOFFCO, she shut down and refused to speculate with me about possible reasons for the surprising increase in sales. Another time, I asked her about a store of one of GOFFCO's major competitors that was just a few blocks away and looked closed from the outside. After she mentioned the store, I had asked her whether the store had been closed permanently or just due to renovations. She shortly replied that she did not know without making any effort to expand on the topic (2.206).

Affiliating outgroup members. One of the most conspicuous sex differences concerned leaders' affiliation of outgroup members. Male leaders, irrespective of their subculture, affiliated outgroup members more and used deliberate strategies to do so. Female leaders, on the other hand, avoided

dealing with outgroup members and liked to transfer the responsibility for outgroup members to subordinate leaders. This pattern was irrespective of the type of outside group member. Male leaders affiliated customers, service providers, and suppliers, as well as me, the store intern and potential GOFFCO new hire, more than their female colleagues.

Both male store leaders affiliated regular customers – even Holzhammer despite his general attitude allegedly being that “you cannot satisfy every guest” (4.100). Whenever he noticed that customers had problems, he personally attended to their needs. One time, for example, a customer approached me because he was unable to log into the store’s free wireless internet access. When I asked Holzhammer how the wireless internet connection in the store worked, he immediately presumed that my question had been triggered by a guest request. He took me to seek out the customer and explained to him how to use the wireless internet access (4.61). Holzhammer further enjoyed interacting cordially with customers via headset when they were placing their orders at the drive-through and successfully soothed when they had complaints (4.60). When on the edge of losing one of his regulars, Holzhammer even mobilized one employee’s personal contacts in order to get in touch and reaffiliate that customer:

The employee then got up and was just about to leave when she remembered to ask Mr. Holzhammer whether he had heard that one of their regular customers was no longer coming. They started talking about that, and I wanted to understand what it was all about and asked what had happened. Mr. Holzhammer interrupted the conversation with her and briefly explained to me - and also to the employee - what he had heard about what had happened. Apparently, there was a regular customer who ... had been ordering seven large coffees ... every day [for each of which he received vouchers to collect]. At some point, the store had been out of vouchers..., so that instead they had given him receipts for the purchases, which he was supposed to exchange for vouchers the next time he came to buy coffees. Monday's shift supervisor, Ms. S., had been serving at the counter when the customer wanted to redeem his vouchers. She had then given him three vouchers less than he thought he was entitled to, which made him so angry that he no longer came for his coffees. I do not know whether he had announced this in advance or whether he had just stopped showing up. One could feel during their conversation that the employee felt really sorry about losing this customer, and Mr. Holzhammer was also displeased with the outcome of the situation. When the employee mentioned that she knew that customer’s best friend, Mr. Holzhammer picked up on it. He said that the employee should give this best friend one of his business cards with the request to pass it on to the lost customer so that he could get in touch with Mr. Holzhammer. (4.72)

Kovac, too, wanted to make a good impression on customers and affiliate them with the Flagship Store. He invited them to gratuitous drinks and food and was keen on being seen by them. For instance, he explicitly stated that customers liked it when they saw management staff “show themselves” and “muck in”, while he was in the lobby ostentatiously clearing away some trays into the wrong tray cart (1.313). By putting the tray in the wrong tray cart, he substantiated that his action was not intended as an act of cooperation but served as a symbolic gesture toward guests. Women leaders, on the other hand, found it difficult to engage with customers. Solberg had even quit working as a store leader in another store before she started working in the City Center Store because she had disliked the clientele there (3.187). Velitchkov avoided guests, too, but was sometimes forced to interact with guests due to the high number of complaints in the store and her presence in the service area during rush hours. However, she failed to take advantage of those situations and to affiliate customers through appropriate interactions, as illustrated by the following excerpt:

Once a customer came complaining that she had got a [*] instead of a [**], and I passed this on to Mrs. Velitchkov, who had approached the scene with interest. Velitchkov spoke in her hectic, loud way [while taking the product back to exchange it for the correct one] ... [The] woman was about to say that she would sit over there [while waiting], but Mrs. Velitchkov had already turned around and told her to stay there, and that she would get her the [**] immediately. [She used] a [very authoritarian, almost unfriendly,] tone of voice so that the customer looked at me and raised her eyebrows and smiled in a mock-intimidated way ... (2.141)

Velitchkov’s hectic way irritated the customer and evoked an awkward situation. Although essentially the idea to replace the wrong product quickly and without ado was certainly good, its implementation lacked awareness of the customer’s perceptions and reactions. Velitchkov did not interconnect with the customer and hence missed both the effect of her tone on the customer and the opportunity to affiliate the customer through her quick response to the problem.

Male store leaders consciously worked on good relationships with suppliers and service providers. Both male leaders concurred in their jovial and personal way of interacting with them. They both preferred the more personal communication over the phone to electronic communication and filled the interactions with small talk and jokes. During the following incident, Kovac made a factually unnecessary phone call to cultivate his relationship with his accountant:

Then he explained ... the billing system and that he had to activate each invoice online for the headquarters. He wanted to refuse a particular invoice, which he had found in his e-mails. He entered a reason for the refusal in the program and then called his accountant Mr. G., whom he finally reached after a noticeable time in the waiting loop. Meanwhile, he explained to me that it was actually not necessary to call Mr. G. because Mr. G. would be informed about this step online anyway, but that he always liked to clarify such things personally. Mr. Kovac made the telephone call using the speakerphone function so that I could hear both men speak. The conversation was just like ... Mr. Kovac: formal, but at the same time, a little mischievous and joking. There was much laughter during the telephone conversation, without the jokes being particularly funny or personal. After he had hung up, Kovac explained to me that he got along very well with Mr. G., and that Mr. G. was a great accountant and that he had worked with others before, with whom communication had not worked, and that a lot had gone wrong then. But he was very satisfied with Mr. G., and happy that they communicated so well with each other. He also explained that communication was, in general, very important to move forward. (1.328)

The female leaders, on the other hand, avoided interactions with suppliers. Velitchkov liked to order shift supervisors to deal with people for her. When a mechanic came to the store once to fix some broken technical elements, Velitchkov showed no interest in him and did not attend to him personally (2.227). Another day, a woman came into the staff area searching for Velitchkov. She was supposed to conduct an audit in the store. Velitchkov started her standard protocol for dealing with outsiders by talking to the woman in a conspicuously friendly manner and smiling a lot. After a few minutes, however, she called shift supervisor C. and told him to take care of the auditor for the rest of her stay (2.157).

Solberg did not interact at all with suppliers in my presence. This might have been no coincidence. I had been told that store leaders usually assigned themselves day shifts because that was the time when they could reach important contacts like employees from the headquarters or suppliers and service providers. Solberg, however, was the only store leader who worked late shifts or night shifts and hence prevented contact with suppliers and other stakeholders (3.77). Her reluctance to deal with service providers became further visible after one of the machines broke so that certain products could not be sold for several days. Instead of actively taking the necessary steps to have the machine repaired, Solberg casually asked her shift supervisor about the machine's status one day without giving the impression that she intended to intervene or manage the situation herself (3.263).

All four store leaders regarded me for the most part as an outgroup member since they knew that I would work in the store for a short period only and because due to my academic background, I was not likely to end up as one of their employees. Accordingly, the restaurant managers' behavior towards me was very informative in terms of outgroup member affiliation. As with customers and suppliers, male managers made some efforts to affiliate me, while the female managers did not.

First, it was very conspicuous how the male leaders, as opposed to the female leaders, complied with my request to learn about GOFFCO operations. All store leaders had been presented with the same cover story that entailed that I was doing a voluntary internship in their store because I was thinking about a career at GOFFCO. The story comprised the indirect request for the store leaders to ensure that I would be deployed in a way that I would learn about the GOFFCO culture and the entirety of store processes and their interdependencies, as well as the job of a restaurant leader. The latter would have been of particular importance to me because people with college degrees commonly do not work in positions lower than that of the restaurant leader at GOFFCO and even more likely in positions that supervised store leaders, e.g., district managers or consultants.

Both male leaders deliberately acted according to that implicit request. They ensured that I was taught different positions and obtained information that was particularly relevant for someone who would work in a leading position one day. As indicated above, Kovac deployed me to a multitude of positions. He sent me to do backup, to take control over the frying station, to prepare food in the kitchen and made some attempts to have me work at the coffee station and the cash register, although in the end, he never followed through with it. Furthermore, he allowed me to attend processes beyond daily store operations. For instance, he decided that I should see how goods were delivered at night (1.259), what tasks the job of shift supervisors entailed (1.145) and how a store leader's day was spent (1.259). For the latter, he invested several hours during which he had me shadow him and learn about the job of a store leader. Holzhammer, just like Kovac, wanted me to learn about the store leader position and focused on GOFFCO principles and general processes. He made sure I understood the historical development of certain artifacts and gave me plenty of freedom to ask questions. The female leaders, on the other hand, offered me considerably fewer insights into the workings of GOFFCO. Solberg, for instance, did not teach me about store operations herself but instructed shift supervisors and other employees to do so. Velitchkov did not take the time to teach me about store operations, either. When I actively asked for introductions to their jobs as store leaders, both women reacted in the same way. They both were very willing to comply with my request and offered to do so a few days later at a set appointment. During the appointment, both women sat in front of their computers for one hour and illustrated their jobs with help from the GOFFCO internal accounting software. Both female leaders ended the respective meeting after exactly one hour and sent me back to work, although I indicated that I still had open questions. They made no effort to answer my open questions after that. Women's reluctance to offer me deeper insights into GOFFCO operations indicated that they were not interested in promoting my career and helping GOFFCO to affiliate me as a potential future employee.

Both male store leaders, on the other hand, were interested in and even promoted my career at GOFFCO. Kovac was looking for suitable positions for me and informed me about them. He forwarded an unrequested positive evaluation of my work to the headquarters in order to increase my chances of pursuing a career at GOFFCO (2.6; 2.7). Holzhammer used a different approach to help me with my GOFFCO career by giving me very detailed information about the store leader's job, including practical information on what courses and classes I would have to accomplish and positively illustrating my prospects at GOFFCO based on my academic degree (4.56). The female leaders made no effort whatsoever to facilitate or encourage my entry into the company.

When I left the stores at the end of the respective observation periods, it was again conspicuous how similarly the male leaders and the female leaders, respectively, behaved. Both male leaders tried to ensure that we parted on friendly terms by promising me a gift. My last two shifts in the Flagship Store were night shifts, which lasted from 11:30 pm until 8 am. Since Kovac used to work during the day, I had not seen him for two days when I left the store for the last time. A few days later, Kovac sent me a text message via mobile phone, which said that he had a parting gift for me in the store, which he had forgotten to give to me the last time he saw me. He invited me to come to the store in order to get it (2.9). Similarly, Holzhammer invited me for a farewell talk after my last shift in the Highway Store ended. He started the talk by apologizing that due to the high amount of traffic in the store during the preceding days, he had not managed to buy a parting gift for me. He promised that he would get me one and forward it to my home address (4.202). The female leaders, on the other hand, hardly took cognizance of my leaving. Velitchkov was not present during my last shift, and Solberg shook hands

with me shortly on her way out of the store (3.298). None of the female store leaders ever made any comment about my future at GOFFCO.

Table 12
Men and Women Leaders' Behaviors Serving Male Strategies

		Male leaders	Female leaders
Dominance behavior	Emphasizing rank	<ul style="list-style-type: none"> Acknowledge shift supervisors' authority Ensure shift supervisors' authority over regular employees Acknowledge (through direct or indirect verbal comments) their position in the larger GOFFCO hierarchy Performance and achievement are topics of interest in conversations and deserve their admiration 	<ul style="list-style-type: none"> Opposite behaviors: <ul style="list-style-type: none"> Velitchkov: leaves no room for other authority next to hers, undermines her shift supervisors' authority; focuses on her own achievements Solberg: does not make the store hierarchy salient to the staff Hardly any reference to larger hierarchical structure
	Exercising control	<ul style="list-style-type: none"> Demonstrate omnipresence by taking very central positions when they help out during rush hours In line with subcultures: <ul style="list-style-type: none"> Kovac: clear directives; no discussions Holzhammer: more indirect, e.g., by framing orders as jokes 	<ul style="list-style-type: none"> Opposite behaviors: <ul style="list-style-type: none"> Velitchkov: Gives clear directives to everyone irrespective of rank; undermines her shift supervisors' authority Solberg: does not exercise control; little presence in operative areas and tasks
	Prestige-related behaviors	<ul style="list-style-type: none"> Enjoy teaching general GOFFCO norms and principals illustrated by graphic examples 	<ul style="list-style-type: none"> Do not enjoy teaching employees general or specific norms and principles about the GOFFCO world
	Aggression	<ul style="list-style-type: none"> Kovac: in dyadic encounters; composed himself quickly → more intentional 	<ul style="list-style-type: none"> Velitchkov: in front of everyone; reactionary → impulsive, uncontrolled
Coalition-building	Reinforcing group cohesion	<ul style="list-style-type: none"> Treat all employees (including the researcher) equally Kovac: explicit hiring standards and mental picture of desired profile in new-hires Awareness of subordinate groups/coalitions they belong to 	<ul style="list-style-type: none"> Consider personal preferences and individual situations more Enable subgroupings by treating individuals or groups of individuals differently No enforcement of rotation in the stores contributes to impaired group cohesion
	Trust	<ul style="list-style-type: none"> Very trusting Share information, including sensitive information, with the researcher and in front of others Open door policies, very approachable 	<ul style="list-style-type: none"> Neither observable signs of trust nor of distrust Considerable more distrust towards the researcher; avoided her
	Affiliating outgroup members	<ul style="list-style-type: none"> Put visible effort into affiliation of outgroup members Use deliberate strategies to do so Continuously work on maintaining bonds between the store and outgroup members Behavior towards the researcher: <ul style="list-style-type: none"> design internship in a way for researcher to reach her goal to get insight into GOFFCO operations promote researcher's career at GOFFCO 	<ul style="list-style-type: none"> Avoided contact with outgroup members Do not take up on opportunities to affiliate outgroup members when interacting with them Behavior towards the researcher: <ul style="list-style-type: none"> reluctant to provide researcher with deep insights into GOFF operations no observable attempts to facilitate the researcher's career at GOFFCO

5.2.2.2 Leader Sex Differences in the Application of Female Strategies

Both intimacy and nurturing take place in dyadic interactions more than in group settings. Accordingly, both were difficult to observe in the given research design, and a lack of observations was

not necessarily an indication for intimate or nurturing behaviors not having taken place. Overall, female strategies played an inferior role in leader behavior at GOFFCO and were subtler in their specifications as compared to the male strategies. Nevertheless, female leaders tended to engage in intimate and nurturing behaviors more than their male counterparts. Male leaders did not act in ways that would have reduced their distance in rank to subordinates. Neither did they engage in *private* information exchange, i.e., they shared work-related information exclusively. Female leaders, however, actively reduced the hierarchical distance between themselves and their subordinates through various actions. Furthermore, they surprisingly shared more intimate information with me than the male leaders – despite distrusting me considerably more than their male colleagues. Male leaders were further not nurturing towards others except when it served their own goals. Although nurturing behaviors were also rare in female leaders, the few observations made indicate that nurturing others was more authentic and not motivated by egoistic goals in women leaders. Male leaders, on the other hand, helped others for opportunistic reasons that prevent those helping actions from being classified as nurturing. Furthermore, female leaders were nurturing on a group level by providing welcoming and employee-oriented facilities, while male leaders demonstrated no such behavior. Men and women leader's applications of the female strategies of intimacy-building and nurturing behavior are illustrated in Table 13.

5.2.2.2.1 Leader Sex Differences in Intimacy-Building

Emphasizing equality across ranks. Male leaders made no effort to narrow the gap between them and their subordinates. Both had employees address them formally, and their demeanor usually emphasized their superiority in rank. The female leaders were more ambiguous in their behavior than male leaders. Velitchkov's behavior was surprising because, despite her very controlling and authoritarian behavior, she was the only store leader who was on a first-name basis with all store members and even her superiors. Solberg, who was the least dominant of all restaurant managers, on the other hand, was addressed on a formal basis. Nevertheless, she nonverbally reduced the distance in hierarchical position between herself and her subordinates by engaging in a great variety of tasks that were typically not done by store leaders. For instance, she did backup for employees working at the cash desk and worked night shifts. Although I suspected that some of this behavior was motivated by Solberg's tendency to avoid outgroup members (e.g., by doing backup, one does not have to interact with customers), Solberg's humble demeanor when engaging in those tasks made her appear as one of the regular workers rather than as store leader. In fact, the day I met her, I was insecure for a prolonged time whether she actually was the store leader due to her casual way of clothing and her restrained demeanor.

Intimate information exchange. At first sight, the two male leaders were very dissimilar in their facilitation of intimate information exchange. In the Flagship Store, Kovac prevented intimate information exchange between him and his subordinates as well as among employees in general; Holzhammer enjoyed talking to individuals and was well-informed about other people at Team Melsbach. On closer inspection, the male leaders shared a commonality after all – they revealed no personal information that was not work-related. Since Kovac did not share any personal information at all, this was not surprising. It was, however, surprising when looking at Holzhammer. The Highway Store leader spent much time talking to and about other members of the store as well as affiliating outgroup members. Nevertheless, he never revealed anything about his private life. His anecdotes circled around his experiences at Team Melsbach (4.66a), his apprenticeship (4.39a), and his education (4.8). In the following quotation, he summarized his personal career path:

More or less unsolicited, he told me about his career path: He had graduated from high school but had then been "quite lazy" until [the age of approximately] 23 ..., and going to college had not worked out for him. He

had not felt like waiting for another semester, and so he had started an apprenticeship at GOFFCO. He had completed the training and worked as a shift supervisor [afterward], and after two years as a shift supervisor, he had been offered the position of restaurant manager. (4.14)

Although his account was very honest and included personal details, it was purely work-related, like all of his anecdotes. He never talked about, e.g., how he spent his free time or mentioned his relationship status. Kovac, on the other hand, did not even share personal information that was work-related, e.g., about his education or his future career plans. In addition, he also actively discouraged employees from talking to each other and hence sharing personal information and building intimate relationships. He expected his shift supervisors to reprimand individuals for any forms of verbal interaction that might take their focus off of work. For example, while being deployed in the lobby, I worked with a very talkative employee. Although the employee was very experienced and never neglected his work while talking to me in the storage room, where we were cleaning trays and sorting waste, Kovac and the shift supervisors were irritated by the employee's behavior. They kept interrupting us and sent him away, demonstrating that they did not approve of his chattiness (1.298).

Female leaders, on the other hand, concurred more in their intimate information exchange. They talked to their subordinates during work in intimate constellations that seemed to be confidential and could not be overheard by third parties. Furthermore, both female leaders surprised me by sharing intimate information with me that were more personal than any of the information the male leaders had revealed about themselves. Given the fact that the female leaders distrusted me considerably more than their respective male counterparts and avoided talking to me, this was unexpected. For instance, both female leaders shared personal fears with me. Solberg told me about her fear of flying and indicated that she was worried about getting older (3.179; 3.208). Velitchkov talked about the fear of neglecting her family by staying in the store too late at night and working too much. Furthermore, she shared her fear of mentioning to the headquarters that she was interested in working in a different GOFFCO position outside her store because she might give them the impression that she was unsatisfied with her position in the Family Store:

She said that she was interested in working in the field of innovation. But she also said that she would not dare to raise this issue with the administration. I asked her for a reason ... She ... said that it was because she did not want to give the impression that she did not like working in this store. She also mentioned that giving training [at GOFFCO] was also an option for her future career, but that she did not feel confident enough to do this job because of her [poor] German language skills. I also learned that Mrs. Velitchkov is married and has a child in fifth grade. I asked whether her husband would stay home [with the kid]. She said that he was working but returned back home early in the afternoon. However, she said that she [felt she] was neglecting her family because she often stayed late (from 8:00 in the morning to 8:00 in the evening) as she was a perfectionist, and it was difficult to get away from work and leave things unfinished. (2.208)

Furthermore, as indicated in the excerpt, both Velitchkov and Solberg gave some insights into their personal lives. Velitchkov told me she was married and had a child and that her husband took care of the child in the afternoons. Solberg mentioned that her parents were spending their holidays in Thailand on a regular basis (3.208). The information that the female leaders shared with me was more personal than those the male leaders shared because it either was not work-related at all or because it increased their vulnerability. Although female leaders actively avoided me, they shared intimate information and exposed themselves to me more than their male colleagues.

One might argue that Holzhammer, too, made himself vulnerable by talking about having been "quite lazy" (4.14, see above) after graduating and not having been accepted to college. However, Holzhammer talked about potentially depreciating incidents only if they had occurred in the distant past and as if he felt that he had outlived them. Hence, he presented himself as someone who had learned from his mistakes and become a better person. In fact, talking about one's weaknesses and failures in the past can indicate high levels of self-reflexiveness and imply that a person is now exactly the opposite of what they claimed they had been like in the past. Hence, when Holzhammer called himself "lazy" after

graduating from school, he highlighted that he was currently *not* lazy. When he implied that he used to be arrogant and a know-it-all shortly after becoming a restaurant manager (4.101), he actually emphasized that he was humble now and had accepted that he still had a lot to learn in contrast to more experienced store leaders. Hence, other than the female leaders, who talked about current issues that made them vulnerable, Holzhammer did not make himself vulnerable by talking about past issues.

In sum, neither of the male store leaders emphasized equality between them and their subordinates, and *if* they shared personal information, the information was always work-related. Female leaders, on the other hand, showed more willingness to place themselves on the same level as their subordinates. At the same time, they more often talked to employees and shift supervisors during dyadic interactions or small group settings that allowed for intimate information exchange. The information they shared was more intimate in nature, which was derived from the degree of vulnerability associated with the information's content.

5.2.2.2.2 Leader Sex Differences in Nurturing Behavior

Caring for other's well-being. Male leaders showed no effort to care for their employees' well-being. When caring for employees' health was called for, e.g., when workers turned up at work sick, Kovac would send them home only if it did not endanger store performance. If sending employees home meant jeopardizing sufficient store staffing, he kept the workers in the store and, at the most, reallocated them to a position where they would have limited customer contact as well as limited possibilities to interact with coworkers. During my stay, Holzhammer did not deal with situations like these in front of me, but similarly to Kovac, he did not care proactively for his staff's well-being.

The female leaders handled sick employees similarly to Kovac, indicating that it was part of the GOFFCO culture to insist on sick people coming to work instead of finding other solutions. Like the male leaders, the female leaders did not care for employees' well-being individually. Nevertheless, female leaders showed efforts to care for their employees' well-being *on the group level*. Female leaders tried to design an environment that was welcoming and supporting employee well-being. For instance, they took care of people's work clothes and facilities being comfortable or supportive. Both female leaders wanted employees to have work uniforms that fit properly. In the City Center Store, Solberg herself made sure that employees were provided with garments that had the appropriate size for them and, when having a choice, gave out garments that were supposedly more comfortable or popular. On my first day in her store, for example, Solberg personally took care that I had the best possible clothes for my time at the Melsbach Stores:

She led me through a corridor to a room with boxes of clothes in it. She asked about my clothing size and also said that she had heard something about me having size 36/38 ... I said yes, and she handed me a pair of trousers in size 38, then she asked me the size for the top, and I said that I would need something like [size] S. She said not to be alarmed, which was meant partly in jest, but that the tops were very small. Then she handed me a top and said that this was S. It actually didn't look very big, and I was surprised. She also looked into a second box but found no top of a different size and handed me a size L top, wrapped in foil. She walked ahead of me back into the corridor and instructed me to get changed first. She pointed to a door, which was clearly marked "ladies' locker room". She also handed me a belt and a cap, to which I reacted a little surprised. She said it was much more comfortable to wear than the paper hats. (3.4)

Solberg's way of handling the clothing situation with me demonstrates that she had concerned herself with her subordinates' work uniforms and her options to have her employees feel as good as possible. Solberg had dealt with clothes sizes and knew what sizes would fit what physique. Not only did she know, but she also used that knowledge to provide her employees with clothes that would fit them correctly and make them feel more comfortable. Additionally, she automatically gave me a cap instead of a paper hat because, in the past, she had experienced that caps were more comfortable and hence preferred by the workers.

In Velitchkov's store, there even was an all-encompassing laundry service. Employees did not have to take care of cleaning their designated sets of work clothes but could just leave the dirty garments there at the end of the workday and take a new set at the beginning of the next one. Furthermore, it was conspicuous how the facilities under the female leaders' responsibility were more inviting and better equipped than those of their male colleagues. The break room in the Family Store, for example, was designed in a light and friendly way. Paintings on the wall and a bookshelf, in addition to a large window, created a cozy atmosphere. One large table dominated the room and invited employees to sit together and communicate. The locker room was clean and well-equipped with large mirrors as well as care cosmetics so that employees felt comfortable while changing into their work clothes and changing back into their everyday clothes at the end of their shifts. In the City Center Store, particularly, the break room was welcoming due to a microwave that invited workers to bring their own food if they did not want to consume GOFFCO products. On many days, there was a basket with fruit and candy in the middle of the table so that employees could have gratuitous snacks during work. In the male stores, on the other hand, facilities and people's work uniforms played no role in store leaders' thinking and actions. Especially in the Flagship Store, the facilities were uninviting and impractical. The locker room was in the basement and in need of repairs. Not even soap or towels were provided next to the small sink in the room. The break room was no actual room but a sort of anteroom in front of the store leader's office. It was crammed with tables and seats, some of them discarded, and people were passing through to get the store leader's office or the little storage room that was adjacent to the break room. The facilities in the Highway store were less uninviting but missed any feature that would have made them friendly and comfortable.

Emotional support. There was some indication that female leaders were more supportive than male leaders on an emotional level. A worker praised Solberg for having "an open ear for employees" (3.19). The statement implied that Solberg listened to employees' problems when they came to her and provided them with the feeling that she had understood their situation and was doing what she could to improve it. A reaction like this is interpreted as emotional support since it is mainly verbal and reactive. Velitchkov came across as nurturing when one of her employees was in the hospital for a tumor resection. She and an employee were nervously talking about the sick employee while that employee was exchanging messages over Velitchkov's phone with someone about the sick employee's health state. Unfortunately, the situation was not transparent enough for more reliable interpretations.

Both female leaders supported me emotionally several times. For example, when I was tired at the end of a workday, Velitchkov told me that I had "almost made it!" (2.288). Solberg expressed sympathy when she heard that I had had a migraine on my day off:

When I later went to Ms. Solberg's office, she told me to get myself a beverage. I had brought my coffee, and I also told her that I was drinking coffee because I had a migraine, and this sometimes helped. Ms. Solberg seemed compassionate because she made a face as if she had already had experience with migraines. I ... said that I had had it since Saturday, and she said again compassionately that I must have gotten it right after work and seemed to be sorry for me having migraines on my days off ... (3.191)

Those incidents were difficult to interpret because I was an outgroup member, and behavior towards me was generally classified as an attempt to affiliate outgroup members. However, it was conspicuous that the male leaders – who were considerably more interested in affiliating outgroup members than their female colleagues – did not once provide me with emotional support, while the female leaders did. Male leaders neither supported me nor any other member of their staff emotionally.

Doing favors. Just like emotional supportiveness, doing favors was difficult to observe. Especially the male leaders might have done favors to individual employees only when it was not seen by others because of their efforts to treat all employees the same. However, I did not see female leaders doing staff members favors either. Even when including favors that leaders did *me*, no clear pattern emerged.

Kovac did not do me or anyone else any favors. His behavior made clear that when he helped others, it was merely to improve his own position, but not to improve others' situations:

In between, Mr. Kovac suddenly exclaimed in a startled manner, "I haven't thanked them yet!". With this, he alluded to the fact that he had recently borrowed some employees [from another restaurant manager] ... and he had not said thank you [for it] yet. So he opened an e-mail from the restaurant manager, who had lent him the employee, and wrote a thank-you e-mail ... He emphasized that it is important to maintain personal contacts and always to show gratitude, because only then one can expect help in case of need ... I almost had the feeling that he had had to learn his lesson rather laboriously and that he is a little proud about his realization ... (1.333)

Kovac had communicated with fellow restaurant leaders and the district manager about lending and borrowing staff members. He was annoyed that he had to waste time thanking people and organizing the details of matters that did not "get ... [him] forward". His entire demeanor indicated that helping others or doing favors was not his heartfelt desire but an instrumental measure to benefit his career.

During one incident, Velitchkov helped out a fellow restaurant leader. Her way of helping stood in stark contrast to Kovac's behavior. Velitchkov was called by another restaurant manager with whom she seemed to have regular personal contact. She quickly and efficiently answered the other's questions in an intimate way before ending the phone call very casually and returning to her work. The interaction appeared to be very authentic and a matter of routine. Velitchkov's behavior indicated that helping peers went without saying and was a natural part of work instead of being an annoyance like in Kovac's case. However, these incidents in the GOFFCO Stores were not directed at subordinates but at organizational members of similar rank. Most observations made at the Melsbach Stores concerning store leaders doing favors concerned me and hence did not have sufficient explanatory power due to my special position as store intern. Nevertheless, the differences between Kovac and Velitchkov give reason to assume that helping others without having one's own benefit in mind is more likely to occur in female leaders.

In sum, female leaders were more nurturing than male leaders. However, nurturing behaviors were overall rare to observe as a part of leader behavior. Female leaders' nurturing was rather subtle and could only be identified as such when carefully analyzing and comparing each case. The data was hence

Table 13
Men and Women Leaders' Behaviors Serving Female Strategies

		Male leaders	Female leaders
Intimacy-building	Emphasizing equality across rank	<ul style="list-style-type: none"> Have employees address them formally 	<ul style="list-style-type: none"> Velitchkov: addressed on first-name basis Solberg: creates closeness by pursuing tasks similar to those of subordinates
	Intimate information exchange	<ul style="list-style-type: none"> Disclose only work-related information Kovac: even discourages employees to communicate verbally in any form 	<ul style="list-style-type: none"> Interact with employees in dyadic interactions often Share private information with the researcher despite distrusting her more than male leaders
Nurturing behavior	Caring for others' well-being	<ul style="list-style-type: none"> Neither care for employees on individual nor group level 	<ul style="list-style-type: none"> Care for their employees' well-being on the group level Are concerned with employees' work-attire being clean and fitting properly Provide welcoming and well-equipped facilities Solberg: brings snacks and fruits for employees to consume
	Emotional support	<ul style="list-style-type: none"> Do not provide emotional support 	<ul style="list-style-type: none"> Solberg: praised for having an open ear for her employees Provide the researcher with emotional support
	Doing favors	<ul style="list-style-type: none"> Kovac: does favors only to be granted favors in return in the future 	<ul style="list-style-type: none"> Velitchkov: casually helps out fellow restaurant leaders as a matter of routine

far from illustrating stereotypically nurturing women leaders but displayed business leaders who, although creating an inviting environment for their employees, only cautiously supported or nurtured others as a part of their leadership role.

5.3 THE SOCIAL STRUCTURES OF MALE AND FEMALE STORES

The four stores had developed unique structures. Accordingly, each store is described in detail regarding its structures representing dominance hierarchies and its structures representing egalitarian communities. The behaviors of each store's shift supervisors and employees are summarized concerning the behavioral framework as well. The goal was to uncover whether the two male leaders and the two female leaders had enforced structural similarities, despite their many differences in behavior and the different subcultures of their stores. At the ends of the following two sections 5.3.1 and 5.3.2 hence commonalities between the respective structures in the two male stores and the two female stores are highlighted. These commonalities are also illustrated at the end of this section in Table 14.

Kovac's Flagship Store represented a highly consistent dominance hierarchy and cohesive coalition. Surprisingly, it also exhibited some noticeable egalitarian communal structures. Holzhammer's Highway Store was characterized by an uncontested formal dominance hierarchy that was nevertheless considerably less preeminent than the hierarchy in the Flagship Store. There were signs of coalition-building, although individuality was strong. For instance, cooperation was efficient due to people *not* working jointly on the same orders. Egalitarian structures were overall visible but less pronounced than in the Flagship Store. Nurturing played a more important role as compared to intimacy-building behaviors. In Velitchkov's Family Store, I encountered an inconsistent dominance hierarchy characterized by high levels of counter dominance and low levels of coalitional thinking. The levels of either female strategy were very low. Finally, Solberg's City Center Store had a loose formal dominance hierarchy that was not always adhered to by subordinates. Coalitional thinking was low. Both intimacy-building and nurturing behaviors, however, were higher than in any other store. The City Center Store was the store with the most egalitarian communal structures of all stores.

In congruence with evolutionary psychology, the data revealed that the social structure in the store that was led by the male leader Victor Kovac was the most cohesive and predominant dominance hierarchy. Kovac most consistently pursued male strategies and did not engage in female strategies as part of his leadership style. Marta Solberg, on the other hand, displayed no male strategies but some nurturing and intimacy-building behaviors. Furthermore, she worked in a subculture that celebrated people-orientation and suppressed dominance. Her stores showed the most egalitarian communal structures of all stores. Overall, however, egalitarian communal structures were difficult to detect.

5.3.1 DOMINANCE HIERARCHIES IN THE FOUR GOFFCO STORES

5.3.1.1 Dominance Hierarchy at the Flagship Store

The dominance hierarchy at the Flagship store was the most pronounced and exceeded the formal GOFFCO hierarchy. Staff members on all levels (including the store leader) assessed and compared their own and others' performance levels to derive differences in rank within the informal hierarchy. A kitchen employee, for example, showed me how to use the tomato cutter. He stated that "there were people who have worked in the store for years and still were not good at operating the machine compared to him" (1.176). A shift supervisor compared his ordering skills to that of his colleagues. He concluded that "there were shift supervisors, who were not capable of placing orders" (1.176). Furthermore, when

explaining their tasks or positions, many employees enjoyed their superiority and demonstrating their experience (1.173).

The informal hierarchy in the Flagship Store became visible in regular employees giving directives. Due to the informal hierarchy based on experience and, more importantly, performance, some employees were entitled to execute control over other employees and take over when there was no shift supervisor around. The great importance of the hierarchies became even more visible when staff members disregarded them. On my first day in the Flagship Store, a shift supervisor gave me my work clothes, showed me where to change, and directed me not to leave any valuables in the locker room. When I inquired about the reason for his instruction, he felt challenged and responded: "Because I say so". (1.4). This was a clear power demonstration that emphasized his superiority over me. Even regular employees with no leading position defended superiors' authority. One time, an employee reprimanded me for disregarding the store hierarchy by not asking the shift supervisor for permission before taking a short break.

I was just returning from my first break when Sh. came to stand in my way and looked at me aggressively. I walked towards him with raised eyebrows and waited for what was about to happen. He asked, "what are you doing?". I said, "working", without understanding. Thereupon he asked, "where were you?". I told him I went out for a smoke, and he asked whom I had asked for permission. I pointed at J., which Shaban commented, saying that J. was "a nobody" and that I always had to ask the person in charge in the respective work area or the shift supervisor. He said that K. was responsible at the moment and that I should have asked him. (1.180)

This very emotional reaction to my disregard of the formal hierarchy demonstrated the salience and importance of the dominance hierarchy for the store. Although Sh. had not been directly affected by my erroneous behavior, he reprimanded me for my ignorance so that the integrity of the dominance hierarchy would be restored.

Kovac's Flagship Store was the only store that qualified as a cohesive coalition because employees' interactions and cooperation were based solely on group membership. Their openness towards new members like a female new-hire and me was not contingent on personal information or intimacy, but only on our official store membership. More than in any other store, employees accepted and integrated new members right from the beginning irrespective of personal characteristics or background information. Even I, who as an allegedly privileged German student stood out among mostly southeast European immigrants or temporary workers, was not met with prejudice or objection. Instead, people saw my background and skills as an asset and tried to utilize them to their advantage, e.g., when asking me to tutor their children (1.132; 1.185) or relying on my German language skills to translate official documents (1.141). In doing so, employees demonstrated that their sense of coalition even exceeded the GOFFCO setting and extended to more personal areas of life.

In the Flagship Store, staff members' interactions indicated that a cohesive coalition had developed. Employees cooperated on the common goal of the store to maintain its excellence. When employees were done serving their customers and found no other customer waiting for them, they immediately joined in one of their coworkers' ongoing orders. Employees openly expected each other to keep an eye out for where one's help was needed and to have an overview of the degree of capacity utilization in different areas. When I had not been accustomed to the store culture yet, I used a short customer-free period to take a deep breath and relax. A coworker immediately reprimanded me for not using my break to help him (1.207).

The space behind the service counter was sometimes too narrow for the number of people working there. Employees bumped into each other, stood in each other's way, and snatched products away from each other. Nevertheless, the atmosphere behind the counter was peaceful and friendly. People joked around, helped each other smilingly, and, despite the many collisions between people, were not annoyed

or expecting an apology (1.16). People acted as a collective, which had one distinct goal: excellent store performance.

In no other store did employees interfere as much with others when they made mistakes or threatened store reputation. Employees corrected each other's work or gave each other advice on how to execute a task the "best" way (e.g., 1.51; 1.99; 1.176; 1.200). Interestingly, people also took an interest in their coworkers being successful at life more generally. For instance, employees asked each other for their relationship status and sometimes even discussed their romantic partnerships with their colleagues (1.154; 1.175; 1.229). I, too, was asked by coworkers whether I was married or had a boyfriend. When they heard that I was single at the time, they pressed me to find a partner as quickly as possible (1.61; 1.229).

Employees exhibited solidarity when encountering hostile outgroup members, e.g., rude customers. In that case, employees felt safe enough to stand up to them and demonstrate that they would not tolerate that customer's rudeness. They relied on their superiors and colleagues to back them up or at least not to punish them for affronting guests (1.138). An incident I was directly involved in confirmed this impression. During my first night shift, I ended up in a conflict with a dissatisfied customer who criticized me angrily for not working fast enough (1.216). Not being used to working at night, I was tired and took the customer's criticism badly. My reaction, which was overheard by the shift supervisor and another employee, was impolite and rude. Nevertheless, none of the bystanders reprimanded me for my emotional reaction. Even when I kept being resistant to the shift supervisor's prolonged attempts to soothe me after the customer had left, the shift supervisor did not lose his patience or rebuke me.

Although witnesses of these incidents did not reprimand the employee fighting with the outgroup members, reprimanding others was not uncommon in the Flagship Stores. It usually occurred when workers made mistakes and hence imperiled store performance. To avoid long-term conflicts, a reprimander usually apologized or at least explained the reasons for the scolding to the reprimanded. In an example from above, an employee had scolded me for not asking the right person's permission to take a break. Later, he approached me and apologized for being too hard on me before and explained that his high stress-levels had caused his reaction at the time (1.202). During another incident, an employee had reprimanded me for not wearing gloves while restocking supplies. My miffed reaction caused him to ask me whether I was "mad". Then he tried to account for the reproof in order to restore our relationship (1.96).

Cohesiveness and conflict avoidance also became very visible when I openly criticized a shift supervisor, who treated all employees in an unfriendly and sometimes unfair manner. Trying to understand her position in the store, I mentioned to people from all hierarchical levels that I felt P.'s behavior was unpleasant. Irrespective of rank, they disagreed and defended her by emphasizing her excellent performance and her value to the store (1.68; 1.93; 1.282).

5.3.1.2 Dominance Hierarchy at the Highway Store

The dominance hierarchy in the Highway Store was less distinct than in the Flagship Store. For one, dominance behaviors in the Highway Store were subtler and often disguised by humor. Just like Holzhammer, shift supervisors attenuated their authority verbally. For instance, the first time I met shift supervisor C., he emphasized his authority:

I went over, and a young man with a foreign background greeted me euphorically with a handshake and the words, "you must be the intern!". We shook hands, and I asked for my assignment that day. He asked me what I would like to do and said this was his "nice" day. However, the way he smiled, it seemed like it was more of a joke, and like he had asked me anyway. (4.132; 4.133)

C. emphasized our difference in rank by greeting me as “intern” and highlighted that asking me for my work preferences was a courtesy since he had the power to assign me to any task he wanted. His smile and friendly face, however, dampened the authoritarian message he conveyed.

Shift supervisors in the Highway Store, just like Holzhammer and Kovac, enforced the store hierarchy by ensuring they respected their fellow shift supervisors’ authority. For example, when I asked shift supervisor K. one day upon my arrival about my work assignment, he made sure not to overrule his fellow shift supervisor’s authority:

I arrived at the store [right before my shift] at one minute to one o'clock sharp. ... I went to the front and asked K., ... which cash register I should take, as there was quite a lot to do at that moment. However, K. said that I had to ask Ms. S. because she was in charge at the moment. So I asked her, and she assigned me a cash register. (4.192)

K. should have been tempted to assign me to a cash register quickly to help the service staff, who were struggling with their workload. Nevertheless, he resisted the temptation and made sure he did not interfere with Ms. S.’s responsibility. He thereby demonstrated that he respected her authority and wanted the employees to respect it as well.

Informal hierarchies, however, played no role in the Highway Store. Employees of the same rank never gave each other directives. Even when I was working in a new position and felt insecure, the experienced employee I was working with only started to direct me after I explicitly told him that I depended on it (4.109). Other than in the Flagship Store, performance evaluations to emphasize informal dominance hierarchy were rare. None of the staff members in the store commented on their satisfaction with Holzhammer or other superiors. People only talked about employees’ performance if it was below average and impeded others’ work. For example, one young employee stood out for being clumsy and making many mistakes (4.127). Shift supervisors were aware of his weaknesses and tried to sensitize other employees by pointing them out (4.208). A shift supervisor told an anecdote to highlight the employee’s simple-mindedness:

He started with, "you know the story about the FR [freezer room] window, don't you?". I said no and asked, "what is an FR window?". B. said, "well, that's the right question" and told me that one time he had been talking to ... Ms. S. ... about their to-dos. The employee stood by, listened, but apparently did not feel called to any of the activities they mentioned ... Thereupon Ms. S. said to him [as a joke] that it would definitely help if he closed the FR window. It is quite obvious that a freezer room with a temperature of minus 20 degrees Celsius has no window ... However, the employee actually went into the room and returned after ten minutes, frustrated, and said that he had not found the window ... B. grinned and said that the employee tended to be a little naive. (4.186)

Shift supervisors were making mental notes about employees’ skills and performance. Sharing anecdotes and their negative evaluations of less-skilled employees, shift supervisors emphasized those employees’ low-status rank. Due to the Melsbach Store culture, however, achieving outstanding performance was less desirable in the Highway Store. Still, people’s performance was evaluated and discussed by staff members. Other than in the Flagship Store, performance evaluations focused on employees’ weaknesses and mistakes. However, store leaders took those evaluations less seriously and discussed them rather benevolently. Still, the male store cultures had in common that people’s performance was an issue, while in the female stores, employees’ performance and skills played hardly any role.

In the Highway Store, the integration of new members was more reluctant and not based on group membership only. Nevertheless, coalition-building took place in the Highway Store as well. People cooperated quite efficiently, and the account of one shift supervisor highlighted how employees in the Highway Store stuck together when the situation in the store became tense:

... B. explained that, of course, some employees in ... [the Highway Store] quarreled with each other or did not get along so well. However, when it came down to it, everyone would pull together and act as a team. By

comparison, in ... [the other store], if someone "was going down", not only were they not helped, but people were enjoying it and made fun of the fact that one of the employees was just not able to keep up. (4.161)

Staff members in both male stores cooperated efficiently so that working together did not lead to frustration. Other than in the Flagship Store, however, good cooperation was characterized by people not getting in each other's way, so that actual cooperation on the same order was uncommon. Employees even punished each other for interference. During one incident, an employee accused me of taking a beverage she had prepared for her customer:

One time, the ... [employee] became quite frantic, because she had prepared a ... [soft drink] and insinuated that I had taken it. I then took the cup that was already on the tray of one of the guests ... and brought it back to the soda fountain. I opened the lid and showed ... [her] the contents. One could see that it was ... not the ... [soda she had prepared]. (4.183)

The employee's resentful reaction to my alleged interference with her work demonstrated that it was not common to take products one had not prepared oneself. Every employee being responsible for their respective customers minimized interferences. Cooperation in the Highway Store hence rarely led to confusion and redundancies. People worked autonomously next to each other without interference. Nevertheless, it was common in the Highway Store, too, to occasionally get products for one's coworker. As in the Flagship Store, people mostly helped out casually, without expecting thanks (4.21; 4.172).

As in the Flagship Store, employees cooperated for the overall goal to maintain or improve store performance. One incident illustrated this kind of coalitional thinking well. Employee A., who was working at the assembly platform that day, wanted to finish his shift early and approached the shift supervisor:

... I overheard ... [A.] talking to K., asking whether he could leave earlier [that day]. I joined in and asked him what was going on, and he told me that he actually had to work until 9 pm, but that he would like to leave at 6 pm already. K. said that he couldn't estimate yet how much would be going on at 6 pm, and so he couldn't promise him now that he would be able to leave earlier. Later, A. worked at the assembly platform. I asked him whether he would be leaving earlier. He explained to me that at 6 pm, there would be much traffic [in the store] so that he would have to stay. (4.87)

When the shift supervisor barred A. from leaving early, A.'s reaction was remarkable. Instead of complaining about the shift supervisor, he took his superior's perspective and explained that it was just not possible for him to leave early because his help was needed. He hence demonstrated coalitional thinking by adopting his leader's perspective and adopting it as his own.

In the Highway Store, it hardly ever occurred that employees reprimanded each other. Apologies were hence rarely necessary. Instead, staff members in the Highway Store avoided conflicts altogether. When they uttered harsh words, the recipient usually did not react verbally but implemented whatever behavior change had been requested.

5.3.1.3 Dominance Hierarchy at the Family Store

The hierarchy in the Family Store was less stable and consistent than the hierarchy in the Flagship Store. Employees and supervisors demonstrated acts of counter dominance and challenged their superiors' authority. Dominance interactions, including counter dominance, were, in fact, more frequent in the Family Store than in any of the other stores.

One employee explicitly reported that staff members were deliberately ignoring some of Velitchkov's orders. She had openly criticized an aspiring shift supervisor for not operating the frying station properly (2.136). Afterward, he complained to me about Velitchkov:

Not long after Mrs. Velitchkov had spoken so rudely to D., D. ... told me that Mrs. Velitchkov was "in a very good mood" ... He said this ironically. I replied, "this morning, Mrs. Velitchkov really *had* been in a pretty good mood". To which he said, "she is always in a good mood in the mornings. Nothing is going on yet at that time". To which I asked, "she is not very stress-resistant, is she?". D. replied, "no wonder when you have 15 people walk all over you". I asked for more details, and D. explained that ... employees did not carry out Mrs.

Velitchkov's instructions. He pointed out that she had just given the instruction that empty drawers should not be left in their place but put away. Apparently, this had not been done. It was the same with Mrs. Velitchkov's instruction to produce according to the screen. (2.138)

D. described how people in the store deliberately ignored Velitchkov's instructions as acts of counter dominance. Although D.'s statements might have been biased by his unpleasant encounter with Velitchkov earlier, Velitchkov's own account of employee behavior, which she gave me several days later, concurred with D.'s assessment (2.249). Velitchkov described that employees in the store were not following her directives. Other than D., she interpreted employees' behavior as incompetence rather than counter dominance. However, in informal conversations during food and cigarette breaks, employees' accounts implied that they were dissatisfied with Velitchkov as their store leader, supporting D.'s account of employees being counter dominant.

I also wanted to ask about Mrs. Velitchkov. I started this by asking about her predecessor ... When Me. mentioned him, she looked a little longingly into the distance and praised him ... as a good boss. I tried to ask as casually as possible whether she considered Mrs. Velitchkov a good boss, too. Me. said "yes", but her voice lacked conviction as if she felt forced to say it. She glanced at Mi. with a slight smile, who then laughed briefly. Then she said something like, "well, what am I supposed to say?". (2.49)

Other than in the Flagship Store, workers in the Family Store questioned the authority and qualification of their store leader. Another employee described Velitchkov more sincerely as a "good boss" but highlighted that Velitchkov had been systematically understaffing the store. Hence, workers had been dealing with higher workloads and more stress since she had become the store leader (2.255). Other than Kovac, who experienced his employees' wholehearted support, Velitchkov was impugned by her employees.

The lacking emphasis on ranks debilitated the hierarchy in the Family Store. The missing guidance led to insecurity and confusion at times. For example, M., a very experienced worker, became frustrated because she felt a shift supervisor was not providing the necessary guidance for the workers to do their job (2.228). Once, she told him directly that he needed to say and decide certain things "because he was the boss" (2.68). M.'s requests for more leadership and authority were illustrative of a staff that showed low levels of autonomy and seemed to depend on clear directives and control. Regular employees showed almost no direct forms of dominance behavior, such as exercising control and giving directives. Shift supervisors, on the other hand, were dominant most of the time, mostly by providing directives to the employees and exercising high levels of control when Velitchkov was not around. They controlled people's work (2.105; 2.190; 2.314; 2.313) and assigned tasks and breaks (2.150; 2.194; 2.243; 2.244; 2.304). Some shift supervisors imitated Velitchkov's coordinating, all-powerful position during rush hours (2.69). As a consequence, they, too, sometimes experienced counter dominance (2.73).

The Family Store did not come across as a cohesive coalition, but rather as a congeries of individuals who were barely interested in one another. Additionally, some employees had formed into subgroups. There was the subgroup of Bulgarian and non-Bulgarian workers reinforced by Velitchkov, the kitchen workers, who separated themselves from non-kitchen workers, and one employee complained that store leaders discriminated between young and old workers. The chasm between service area workers and the kitchen crew, for example, became salient to me on my fourth day in the store:

I have not really warmed up with the men from the kitchen yet. The fact is that ... there is relatively little job rotation in this store compared to the first store, which causes you to have less contact with some of the employees. As a result, subcultures tend to develop in the kitchen area and the service area. Then sometimes, I also had the feeling that the men in the kitchen were making fun of me. One time, when I went into the kitchen with a product, a customer had complained about ... I initiated my request saying, "Boys ...". Someone repeated it, and there was laughter in the kitchen. It did not really sound malicious but amused, and I still do not feel taken seriously by the kitchen workers. (2.188)

The kitchen workers had developed their own subculture and distanced themselves from the workers in the service area. Communication hardly existed and proved to be difficult, especially for new

members like me. The following example demonstrates the distance between kitchen workers and non-kitchen workers.

At 2:00 pm sharp, Mrs. Velitchkov sent me off for my break. I ordered a [*] from a young employee in the kitchen. He did not seem to understand me ... and had me confirm the order three times before he pretended to understand. Five minutes later, the other young kitchen employee ... asked me again what I wanted. I explained five times that I wanted a [*] and tried to paraphrase it, but that did not seem to work either ... Five to ten minutes later, I saw that still no one in the kitchen was preparing a [*]. I started to feel stupid ... and I was somewhat annoyed because, in the ... [Flagship Store], I had gotten used to kitchen workers dropping everything for colleagues when asked to prepare beverages, food, etc. for them. (2.86)

The kitchen workers did not understand me or pretended not to understand me. Instead of solving the situation, they went back to work and had me wait. In the end, it needed Mrs. Velitchkov to notice the problem and place the order for me. Although later it became easier to obtain food from the kitchen workers, communication with them remained difficult. It never became as natural and easy as it had been in the Flagship Store from the beginning.

In the Family Store, workers often cooperated in preparing products and filling in at another position when there was a bottleneck in production. However, cooperation in the Family Store lacked communication. It was frequently hurtful rather than helpful, e.g., because employees prepared orders twice, and customers waited for longer than necessary. The following extract from the observation diary describes my experiences with cooperation in the Family Store:

All the time, employees started to support each other ... and suddenly barged in on someone's task. In doing so, however, employees did not communicate with each other. Instead, they suddenly just got into another person's order and fetched something without telling the other person about it. Of course, this resulted in situations where someone got a batch of fries only to realize that another batch of fries was already lying on the tray or had already been given out to the customer so that they had got the fries for nothing. (2.122)

The employees' inability to be of help when they interfered in each other's orders demonstrated the low level of connectedness between employees. While workers in the Flagship Store seemed to act as one body, workers in the Family Store were paying less attention to one another.

As opposed to the Flagship Store, Family Store members did not always avoid conflict for the benefit of better cooperation (e.g., 2.63). Although open conflicts were still rare, the general situation in the store, with its frequent acts of counter dominance and encapsulated subgroupings, always felt like being on the edge of open conflict.

Trust was in issue in the Family Store. Shift supervisors' suspicion became manifest in inquiring questions. They found it suspicious that I knew people from the headquarters' office (2.82), and they became alert when they saw me writing into my notebook (2.240). When I inquired about the missing rotation in the Family Store, shift supervisors evaded my questions (2.303). In another instance, the lack of trust manifested itself in their reluctance to provide sensitive work-related information (e.g., 2.153).

5.3.1.4 Dominance Hierarchy at the City Center Store

In the City Center Store, employees demonstrated a fair amount of dominance behavior, but, at the same time, they were very autonomous, and the dominance hierarchy in the store was overall less predominant than in the Company Stores. Status rank, for example, was considerably less visible than in the Company stores. The low visibility of ranks caused dissatisfaction among shift supervisors. Shift supervisor P., for example, complained to me that the differences in rank between them were so subtle that being shift supervisor did not pay off:

Then he told me that his salary did not meet his job description. (He also mentioned that he was currently negotiating his salary with [the administrations' office] ... and that he might apply [for another job outside Team Melsbach] if his salary expectations were not met). He was upset that shift supervisors used to have the job of monitoring and delegating work, but now their job was to act as regular employees for eight hours. He

said that, at the same time, however, he bore full responsibility without his salary reflecting it, and that he got nothing in return. (3.292)

Another employee confirmed that working as a shift supervisor did not pay off. Other than P., he had already taken drastic measures: he had quit working as a shift supervisor and gone back to working as a regular employee. He described how he had experienced his position:

At first, he briefly said that it was too much stress and no fun. Later on, he told us that you would not get anything out of it financially. He said a shift supervisor had a net income of about 1,200 Euros. In contrast, as a regular employee, you got about 1,050 Euros per month ... The employee added that he did not recommend ... [working as shift supervisor] ... He emphasized several times that you had so much trouble with the employees. If something did not work out, then it was all your responsibility. On the other hand, as a regular employee, he could just do his thing and go home at the end of the workday. (3.216, 3.217)

Shift supervisors in the City Center Store were the only ones who described their position as shift supervisors as unrewarding. However, shift supervisors in all stores were paid comparable salaries due to wage agreements. Hence their relatively high dissatisfaction was probably not caused by the amount of financial compensation, but by a lack of intangible benefits, such as status and power. The shift supervisor's dissatisfaction is hence an indication of the insignificance of the dominance hierarchy in the City Center Store compared to other stores.

Shift supervisors' low levels of authority led to acts of counter dominance. In a private conversation, one employee told me that he felt that some of the store's employees did not accomplish the tasks they had been assigned (3.288). Ignoring superiors' directives is a form of counter dominance. Although I never witnessed that an employee openly refused to do a specific task, several incidents indicated people's unwillingness to adapt to store norms and superiors' orders. Employee S., for instance, was unsatisfied with her situation in the store because she had expected to receive training and learn different skills that would have been useful for her future career. Instead, she felt that she had to do the same task all the time and had no opportunity to rotate positions (3.130). She did not speak about dismissing the tasks she was assigned to; however, her overt dissatisfaction appeared to be an antecedent of counter dominance. Another employee had already reached this point and started choosing his work position without consulting his superiors:

..[he said that] ... [i]n general, one was not trained much at GOFFCO. He told me that in the beginning, he had simply been placed in front of the grill [every day]. Then, one day, he just went to the assembly platform and taught himself how to do it. Then he bragged a little bit and said that he also had learned [to work] the cash register just like this one day... In any case, the essence of his story was that you have to figure out the work stations for yourself. (3.148)

After first complying with the tasks he was assigned to, the employee autonomously started to expand his expertise. Neither did leaders support him nor hinder him in his ambitions. The employee even derived the general rule that individuals desiring to learn more about store tasks should do so on their own. The employee hence did not submit to the orders he received by store leaders or shift supervisors but acted counter dominantly in taking on different tasks than the ones assigned to him. The vignettes above confirm H.'s observation that some employees "don't do their jobs". In contrast to the Family Store, however, those acts of counter dominance were less rebellious but resulted from the low levels of control in the store. People were neither reprimanded nor punished for their autonomous decision making and their non-compliance with intangible store rules.

Not relying on authorities but handling problems autonomously was sometimes actively encouraged by shift supervisors. An employee told a shift supervisor that he planned to approach Solberg to resolve a conflict with a coworker. In doing so, the employee was asking his superiors to take control of the situation and prevent it from escalating. The shift supervisor, however, advised the employee not to handle the conflict by bringing in superiors but by taking care of it himself (3.224). During another incident, a shift supervisor wanted to send an employee home early due to the unexpectedly low traffic

in the store. Instead of determining who was to go home, he had an employee decide whether she or one of her coworkers should go home early (3.259).

In congruence with the small emphasis on status and power within the store, both shift supervisors and employees gave directives. Furthermore, shift supervisors were careful to give directives in a rather nondirective manner. For example, they applied humor as a strategy to extenuate directives that contained criticism (3.41; 3.162). For example, employee L. asked shift supervisor M. whether she might take a cigarette break. His reaction humorously conveyed criticism:

At some point, L. asked M. whether she could go for a smoke. M. looked at her with a mock stern impression and asked, "again?". L. indignantly said that last time she had been eating, not smoking. M. continued his mock angry gaze and said, "but this time it better not take half an hour", after which L. energetically assured that it would only take two minutes. He said, "ok", in the end, but never wholly dissolved the playful seriousness. (3.41)

The shift supervisor hence exercised control without giving direct orders and enforcing the dominance hierarchy. Their behavior resembled the behavior of Holzhammer and shift supervisors in the Highway Store, indicating that the Melsbach culture of non-dominance influenced the behavior.

5.3.1.5 Commonalities Between Male and Female Stores Concerning Dominance Hierarchies

The social structures in the male stores qualified as dominance hierarchies. Shift supervisors and employees in the male stores emphasized the formal hierarchical structure and gave directives to others according to the official chain of command. Employees did not question the male store leaders and shift supervisors in their authority or legitimization; they adhered willingly to the rules implemented by their superiors. Due to the familiar culture in the Melsbach Stores, however, which frowned upon overt dominance, the dominance hierarchy at the Highway Store was considerably flatter than at the Flagship Store. Dominance behaviors there were subtler and often disguised by humor. In the Flagship Store, on the other hand, the dominance hierarchy was ubiquitous and went beyond the formal hierarchy. GOFFCO staff members on all levels (including the store leader) assessed and compared their own and others' levels of performance to derive differences in rank within the informal hierarchy. Due to the informal hierarchy based on experience and, more importantly, performance, some employees were entitled to execute control over other employees and take over when there was no shift supervisor around to direct store operations. In the Melsbach Store culture, achieving outstanding performance was less important than in the Flagship Store. Still, people's performance was evaluated and discussed by staff members. Other than in the Flagship Store, performance evaluations focused on employees' weaknesses and mistakes and played a subordinate role. Still, the male store cultures had in common that people's performances were an issue, whereas, in the female stores, members' performance and skills were irrelevant.

The staff in both male stores demonstrated coalition-related behaviors. Kovac's Flagship Store was the only store that qualified as a cohesive coalition, though, because group membership alone determined new employees' integration into the store. In the Highway Store, the integration of new members was more reluctant and was not only based on group membership. Nevertheless, there was a tendency for coalition-building in the Highway Store as well. People cooperated quite efficiently, and a shift supervisor's account highlighted how employees in the Highway Store stuck together when the situation in the store became tense. Hence staff members in both male stores cooperated efficiently, and working on the same tasks did not lead to frustration. The higher levels of coalition-building in the male stores as compared to the female stores became further visible in employees' dealing with conflict. Employees at the Flagship Store and the Highway Store avoided conflict. Whenever conflict was inevitable, employees ensured that the relationship with their counterpart would not deteriorate in the

long run. Trust issues hardly occurred. Shift supervisors were very open about sharing store information with me and made efforts to treat me like a regular staff member.

In the female stores, the dominance hierarchies were less consistent. There were signs of counter dominance and deliberate violations of the store hierarchy. Velitchkov enforced a hierarchical structure where she was the only authority. Shift supervisors were only allowed to execute their authority when she was not present. In the City Center Store, the opposite situation prevailed. Solberg hardly ever emphasized her authority and transferred most of the visible authority to the shift supervisors. Those felt overburdened with responsibility in a store culture where they could only execute their authority subtly. They felt they were not adequately reimbursed for the responsibility they bore with power and employees' submissiveness. Velitchkov's excessive dominance behavior led to a staff of non-autonomous workers, who asked for better guidance. The hierarchies in the female store were unbalanced, and workers in the stores were dissatisfied with the distribution of power.

In the female stores efficient cooperation was an issue. Cooperation was either rare or defective and frustrating. In the Family Store, conflicts were common, and many of them concerned persistent issues. Staff members reprimanded each other harshly without apologizing or making up for it later. In the City Center Store, open conflicts were rarer, but they were still common. Reconciliations did not occur. When being reprimanded, employees sometimes displayed acts of counter dominance. Female leaders' behavior more than male leaders' behavior facilitated the building of subgroupings and jeopardized group cohesiveness. Nevertheless, actual subgroupings only developed in the Family Store, probably due to the influence of the Melsbach Store culture. Trust was a considerably larger issue in both female stores as compared to their respective male equivalent. Particularly the shift supervisors in the female stores distrusted me and demonstrated it by refusing to share certain information with me or by keeping their distance from me.

5.3.2 EGALITARIAN COMMUNITIES IN THE FOUR GOFFCO STORES

5.3.2.1 Egalitarian Community at the Flagship Store

Although the Flagship Store structure represented a clear dominance hierarchy and a cohesive coalition, it also showed signs of intimacy-building and nurturing behaviors. The finding is surprising because Kovac demonstrated the least levels of intimacy and nurturing behaviors of all store leaders.

Physical contact was commonly accepted during work because the space behind the counter was limited. The high number of workers scurrying there touched on each other frequently. During my stay in the store, I observed that in addition to the frequent unintentional physical contact, workers deliberately massaged each other's backs for a few seconds to comfort and motivate each other in stressful times. The phenomenon resembled primates' grooming behavior (see section 3.2.2.1.1). The practice caught my attention when on my first day at the store, a girl touched my back because she mistook me for someone else:

... I suddenly felt how a hand rested on my back ... and started fondling me. It happened just while I tried to squeeze myself through a group of employees to get to the frying station. When I turned around to see the owner of that hand (at first ... I actually thought that it was meant as an encouraging gesture), I noted that it belonged to a young woman, whom I had hardly spoken to yet. Realizing upon my gaze that she had placed her hand on *my* back, she quickly apologized before turning red and clasping her hand over her mouth. Obviously, she had mistaken me for someone else and intended this gesture and whatever its meaning was for a different employee. (1.15)

The previous incident happened on my first day at the store. The following day already, one of the employees bestowed that same gesture on me on purpose (1.37), and I learned that it was a common

gesture among the Flagship Store's employees. However, it was only observed in the Flagship Store and hence interpreted as a behavioral phenomenon that resulted from the unique social structure there.

Information exchange mostly concerned demographics or very pragmatic questions about one's current shift. Besides asking where people came from, employees were interested in one's relationship status. In initial conversations, they asked others whether they were in a relationship or married and also talked about their own romantic partners (e.g., 1.154; 1.241). Many employees readily revealed personal information about themselves on request and sometimes even without being asked. Nevertheless, conversations were never too intimate. The information exchange between employees was mostly superficial but friendly and relied on the small talk they constantly exchanged in passing. Superiors in the Flagship Store actively discouraged employees from talking to each other. Hence, those small exchanges might have been employees' strategy to work around superiors' orders. Even employees who did not know each other, or were not in the mood to talk, still made an effort to exchange short personal information. Those short dialogues were irrespective of one's knowledge about the other person and seemed to follow a protocol, which comprised a specific set of questions, e.g., "when did your shift start?" or "have you already had your break today?" (1.86).

Nurturing behaviors in the Flagship Store occurred predominantly in the forms of caring for other's well-being and emotional support, whereas doing favors was relatively rare. Employees seemed to genuinely care about others' well-being and frequently offered emotional support to comfort and motivate each other. For example, shift supervisors and employees offered their coworkers beverages or handed them a cup of water without being asked (e.g., 1.130; 1.193; 1.225). In most situations, the offer seemed fueled by the individual's desire to make sure that the other person was hydrated and feeling well. Similarly, employees sent each other into breaks when they felt that they deserved or needed it. They also ensured that others did not hurt themselves during work (e.g., by cutting themselves when cleaning knives or burning themselves when cleaning the grill; 1.177).

Emotional support was common in the Flagship Store. For example, I, the new-hire, received much emotional support from both shift supervisors and employees from the beginning. The supportive actions ranged from friendly smiles (e.g., 1.14; 1.23; 1.45; 1.57) and verbal encouragements to coworkers sharing my frustration about being assigned to the lobby for many consecutive shifts (1.136; 1.166). Furthermore, both shift supervisors and employees kept asking me in passing by whether I was okay and how I was coping with the new job (1.36). That way, they provided me with the feeling that they cared about me and that they would be there for me in case of problems, which felt comforting during the exciting and stressful first days in the store. In other instances, employees offered emotional support when there were acute situations that required encouragement. For example, upon watching how I was being lectured for disregarding the store hierarchy, an employee tried to console me: "J. smiled at me and said something like, 'don't worry about it'. I said, 'I know' and grinned back." (1.184). Situations like this happened frequently and reinforced the Flagship Store's communal structures.

5.3.2.2 Egalitarian Community at the Highway Store

In the Highway Store, intimacy became visible and was reinforced by employees playfully teasing each other irrespective of rank and status. Jokes and funny anecdotes were initiated and shared by individuals of all ranks (4.23; 4.24; 4.106; 4.131; 4.141; 4.180). For example, a regular employee played a trick on Holzhammer by locking a door from the inside so that he could not enter the garage:

I went outside and followed Holzhammer, who took the outside route to go to the garage, where the trash cans were standing ... Holzhammer ... jiggled the door, but it did not open. With his hand on the doorknob, he waited until the door was suddenly unlocked from the inside. There stood W., grinning, so I suspected that W. had locked the door from the inside as a joke. He said, "I have nothing to do". Holzhammer replied, "I can see that". He seemed amused, although he pretended to be annoyed. (4.39; 4.40)

Locking the door from the inside in this instance cost the store leader time, which he spent standing outside with a heavy garbage bag instead of taking care of the store. Furthermore, the employee's comment "I have nothing to do" bordered on impertinence since it implied that his job was redundant. Acting like this, the employee demonstrated that he trusted Holzhammer not to misinterpret his comments and actions as acts of impertinence or counter dominance. Instead, he expected the leader to know him well enough to assess this incidence as an attempt to bring some fun into the work routine and lighten the mood in the store. Since the store leader acted according to W.'s expectations, the situation demonstrated intimacy between them.

Compared to the other stores, only very few people inquired about my background or revealed intimate information. Instead, employees often worked in silence (4.46; 4.130; 4.171) despite the moderate amounts of traffic that would have allowed for people to talk to each other. I experienced several incidents during which I would have expected people to introduce themselves or make polite small talk. However, they did not attempt to exchange information (4.46; 4.194; 4.108; 4.121). Many times, employees neither asked for my name nor posed typical small talk questions. Due to the lack of superficial interactions, which often build a gateway to more personal talk, more intimate interactions were difficult to initiate.

Some incidents indicated that the lack of intimate information exchange I experienced did not reflect the intimate information exchange of people in the store. Instead, the information exchange could have occurred between employees in dyadic encounters that took place invisibly for others. For instance, when F. arrived at the store one day, his coworkers congratulated him on his recent birthday (4.125), indicating that they had talked about it before. Another time, a shift supervisor surprised me with the detailed information he had about an employee's background (4.140). Intimate information exchange was hence probably more extensive than it appeared to be.

Both shift supervisors and employees sometimes behaved in a nurturing way towards me. Shift supervisors and employees occasionally cared for my well-being or provided me with emotional support. Once a shift supervisor demonstrated interest in my work-related well-being when ensuring that I had appropriate work clothes (4.5). On my arrival in the store, people made sure that I knew where to go (4.5). During the first couple of days, people asked me whether I knew what to do and how things worked (4.17; 4.55). On a few occasions, employees offered me beverages (4.112) and inquired about my satiation when I returned from a short food break (4.79). Furthermore, staff members ensured that I could manage my tasks during my first days in the store (4.55; 4.81). A shift supervisor further reassured me that the other workers at the service counter would help me if I faced problems (4.81).

Shift supervisors did me favors by ensuring I worked at the assembly platform because they figured it was my preferred position (4.155). The first time I worked at the assembly platform, shift supervisor C. kept an eye on me and actively helped me managing the incoming orders, which would otherwise have overburdened me (4.136). The shift supervisors sent me to have food breaks without me asking them (4.146; 4.193), they would not let me pay for food, even outside my shift (4.153), and ended my shift a few minutes early if possible (4.173).

Employees, too, did me favors. Sometimes, for example, employees offered to do me small favors, like preparing a product for me (4.85) or relieving me of some work I was about to do (4.165, 4.166). One incident, however, demonstrated that doing favors was conditional on the circumstances. An employee asked the shift supervisor one day, whether he could leave early that day. He was working at the assembly platform, which I had not learned to operate at that time. To help him, I offered to work at the grill so that one of the workers from the kitchen could substitute for him as soon as he left. For a moment, the employee seemed hopeful and contemplated the idea. Then he concluded in a resigned tone that none of the workers from the grill would be willing to work at the assembly platform (4.90). Even

without asking, he was convinced that none of his coworkers from the kitchen would substitute for him. This incident indicates that doing favors in the Highway Store at least depended on the favor's specifics.

5.3.2.3 Egalitarian Community at the Family Store

Observable intimacy and intimate relationships were rare in the Family Store. Nevertheless, there were subtle signs of egalitarian community-building. For one, although employees did not massage each others' backs, like in the Flagship Store, employees expressed intimacy through gestures based on physical contact, e.g., a friendly jab in the ribs or putting one's hand on someone's arm for a moment (2.312; 2.63). However, many employees showed signs of intimacy towards me only at the end of my time in the restaurant, whereas they had ignored me in the beginning (2.292). The change in behavior over time implies that people did not view me as part of their group from the beginning as it had been in the Flagship Store. Instead, they had to get to know me for several days before, little by little, they started integrating me. The same pattern emerged concerning intimate information exchange. In the beginning, employees hardly ever engaged in personal information exchange with me (2.39; 2.46; 2.83; 2.109; 2.172); however, they started to reveal demographic information and personal opinions and thoughts after getting used to me. For example, G. had shown no interest in me in the beginning and prevented any interaction between us by avoiding eye contact:

Outside there was a staff member with dark hair, who apparently was just enjoying the end of her break and was smoking sitting on a step in the sun. C. and I joined her ... I noticed that ... [my lighter] did not [work] ... and so I asked the girl ... if she had a light for me. She neutrally gave me a lighter, which I used and then gave back to her. C. and she were talking about the weather While I was standing outside with them, they did not speak a word to me, and there was only little eye contact. When C. went back inside so that only the girl and I were left standing outside, it made no difference. (2.17)

On my eighth day in the store, I meet G. for a second time sitting outside. By now, we had worked together several times:

Outside also sat G., who was talking on her mobile phone. I inquired nonverbally whether it was ok if I sat down next to her, and she made a hand movement saying that it was fine. I typed some notes on my mobile phone until she was done. Then I asked her a little bit about her background. I asked if she liked working at GOFFCO. She told me that it was very exhausting and that you have no life outside of GOFFCO. It was just sleeping and working. She has been working in this store for seven years and, before that, she had been [working] in another branch. She also talked about the unlimited work permit that she had obtained ... She told me that she was not married and said, "fortunately" and laughed. I asked why 'fortunately', and she replied that there was no time for a man next to work. I joked that I felt, too, that there was very little free time and said that I had hoped that this would improve with time. She said half-jokingly, laughing, that it would not get better but rather worse. She said that it was a good job for young people until the age of 20 to 25 ... but it was not suited for older people. I asked her whether she contemplated going back to ... [her home country] and she said "sometimes" ... (2.253)

G. told me very openly and honestly about her life and her everyday problems. She gave me her opinion on working at GOFFCO and on returning to her home country. The two vignettes vividly demonstrate how intimacy developed over time between people in the Family Store.

The Family Store was the store with the least amount of observed nurturing behaviors. Employees in the Family Store did not take notice of each other and did not seem to care whether individual workers were struggling with their work. Employees further did not care for others' well-being – only shift supervisors made some effort to improve other's well-being. Most of the instances I observed were nurturing behaviors towards *me*. Since Velitchkov and her shift supervisors regarded me as an outgroup member, those seemingly nurturing behaviors may have been strategic attempts of outgroup member affiliation instead of empathetic concern for others. This interpretation was reinforced when shift supervisor D., who had been more nurturing towards me than any other staff member, did not provide emotional support to one of his peers when he needed it:

Mrs. Velitchkov was helping out during the midday rush when I suddenly overheard her snarling at W. that he should do something and that "this is an order so that we can both do our work" ... D. was standing there too, waiting for orders. When I looked at him, he gave me a look and waved his mouth to a little [gleeful] grin, which seemed to imply the thought, "oops! He has really been hauled over the coals". (2.75)

When D. observed that his colleague was being reprimanded harshly by the store leader, he seemed to find joy in his misfortune instead of offering him emotional support. This incident represented a rivalry between two individuals of similar rank and lacked any sign of what would be typical of an egalitarian community.

5.3.2.4 Egalitarian Community at the City Center Store

In the City Center Store, the intimacy in the relationship between shift supervisors and employees often manifested itself in friendly and sometimes ribald jokes and funny nicknames. Shift supervisors and employees likewise initiated jokes:

The further the day progressed, the more exuberant the mood became. This was strongly driven by B., who turned out to be a real joker. Once I walked behind him with an empty pallet and asked him where it went ... he turned around and held out his hand for me to hand him the pallet. When I handed it to him, he pretended to drop it and actually let it drop for about 20 centimeters before he caught it ... He also allowed himself other jokes. For example, he grabbed L. from behind and lifted her high up in the air, which caused her to squeak and laugh out loud. Another time he put a box behind her, which contained packaging material. He grabbed her and made her fall backward so that she fell halfway into the box. She laughed again and did not seem upset that he had interrupted her work ... Also, jokes were made all day long, consisting of her saying that he was her husband and that he would not be allowed to sleep in her bed that night because he was practically betraying her by spending so much time training me. L. picked up on that joke several times. There were also some rude jokes. For example, I heard L. and [shift supervisor] M. talk to each other across the separation between the kitchen and the assembly platform ... about eggs. The whole time, they spoke ambiguously about the term "egg" [which in German is a colloquial expression for testicles]. M. said that L. did not have any, and L. said that he should have at least two ... (3.33)

As illustrated vividly in this vignette, physical contact was also common as part of jokes. I further observed people hugging each other (3.170) and employees touching their coworkers' shoulders or backs during work (3.168).

Many of the employees were addressed by funny nicknames that were malapropisms of their last names or served as reminders of humorous anecdotes. For example, one employee was called "Disaster Woman" because she was dreamy and tended to make mistakes (3.114). Another one was called "Lunatic" because it both sounded similar to her last name and allegedly reflected her character well (3.107). One employee was called "Sexy Socks" due to a past incident when he had not been able to remember the word for women's suspenders and called them "sexy socks" instead (3.36).

In congruence with the climate in the store, many intimate relationships had developed. An employee indicated that most of the intimate relationships had formed in the recent past. Since Solberg had taken over as store leader relatively recently, she might have helped create the store structures that led to this development (3.177). Consequently, it was even more surprising that employees' relationship with Solberg seemed to be troubled, as indicated by people's reaction to Solberg's upcoming birthday:

... I was alone until L. entered with a GOFFCO cup. She emptied it, and there were a lot of coins and a few bills in it. I asked her whether she was collecting money, and she told me that Ms. Solberg would turn 30 ... [in two weeks and that she was collecting money for her birthday present] ... L. had a list of who exactly had donated how much [money] ... I gave her [5 Euros]. Now L. had a total of 53 Euros and was apparently very happy about it and thanked me several times for my addition and told everyone who came in ... that I had added 5 Euro. N. also heard about it and said, "but you're only here for a short time!". I received the birthday card from L. and was supposed to sign it. I wrote my name extra small because I expected the whole store to sign it. However, then I heard that L. wanted to buy the ... birthday present that same day and that the list was complete. But the list contained only about 15 to 18 people (... although the store had about 40 employees)! I was astonished, and ... she told me that some people had not wanted to contribute. Some said they had no money, whereas others had [openly] claimed not to like Ms. Solberg ... (3.125)

Employees' reluctance to contribute to Solberg's birthday present and their open dislike were surprising. It demonstrated that Solberg had not built an intimacy-based relationship with many of her staff members. N.'s comment and L.'s enthusiastic reaction to me contributing demonstrated that donations were no obligation but a deliberate act of affection.

In general, communication in the store was intimate and open. People were responsive to the intimate information they obtained and took it up in subsequent interactions. For example, some of the employees had heard that I had a long commute to the store and struggled with traffic jams. Accordingly, I was asked several times on arriving in the store what traffic had been like (3.46; 3.99). Other small interactions also revealed that people remembered information: a shift supervisor remembered to say farewell to me when he left because he knew that this would be the last time we would see each other (3.281). Another coworker remembered to wish me a "good day off" (3.165) when I left the store one day because he remembered I had told him that the next day would be my day off. Information spread fast, indicating a high level of information exchange. The day after the incident where I took a 30-minute-break, leading to a conflict with two coworkers, I went for another food break. When I passed an employee on my way to the break room, he grinned at me, saying, "don't make it too long, alright?" (3.258). Although he had not witnessed the conflict the day before, he had apparently heard about it.

The staff in the City Center Store was openly sharing intimate information and opinions. They did not hold back with criticism and negative feelings. Some of the employees told me about their personal, and sometimes tragic, life situations in detail. One employee, for instance, told me that she was disabled and how she was coping with her disability in her studies and her job at GOFFCO (3.280). Another one told me about growing up as an orphan and managing her life despite the tragic life events she had suffered through (3.167). A third employee told me about the difficulties she experienced working as a single mother (3.168). In addition to highly personal information, people also revealed their current thoughts and little pieces of their lives in passing. They shared with their coworkers how they were feeling (e.g., bored; 3.271; nauseous; 3.2480) or, for instance, that they tried to work extra hours to buy their spouse a nice Christmas present (3.260). The quality and depth of the information shared by employees and shift supervisors in the City Center Store were on average higher than in the other stores.

Employees and shift supervisors in the City Center Store exhibited nurturing acts frequently. Shift supervisors displayed nurturing behaviors toward regular employees. For instance, shift supervisors sent smokers to take short cigarette breaks without being asked (3.169) or waived the charges for orders employees placed outside working hours (3.295). The regular employees in the City Center Store were also nurturing, especially concerning doing favors and offering emotional support. They asked each other how they were and would look for solutions if other people were not feeling well. Those problems could be personal, like headaches (3.144), a bad mood (3.238), or plain hunger (3.282), but they could also be work-related (3.279).

It was conspicuous that many nurturing incidents resulted from individuals interfering with others' interactions. For example, when a customer returned a faulty product, an employee came to help me and handled the customer complaint (3.198). During another incident, I asked a coworker about food breaks. An uninvolved third employee overheard my question and joined in to answer it (3.145). Another time a shift supervisor misspoke while giving me a directive without noticing and one of the present employees took the initiative to clarify (3.40). These interferences implied that people were not focused on themselves only but paid attention to their coworkers and their problems. Interference usually occurred in order to help a fellow employee and was hence considered nurturing.

5.3.2.5 Commonalities Between Male and Female Stores Concerning Egalitarian Communities

Egalitarian communal structures were, in general, not more extensive in the female stores as compared to the male stores. The female store in the GOFFCO culture, led by Velitchkov, had the least egalitarian communal structures. In contrast, the female store in the Melsbach culture led by Solberg had the most egalitarian communal structures. Both male stores, on the other hand, displayed egalitarian communal structures such as nurturing and intimacy-building, which did not interfere with their hierarchical structures.

The female Family Store was low on all indicators for intimate as well as nurturing behaviors. However, it was also the most dynamic store regarding intimacy-building, i.e., the level of intimacy-building grew with time. In the female City Center Store, on the other hand, intimacy-related and nurturing behaviors were more conspicuous from the beginning. Staff members joked around more with each other than in the other stores. Information exchange in the City Center Store was more intimate and continuous, as people remembered information about each other and referred to them in later conversations. Intimate even served as the basis for employees' playful teasing, and benign nicknames highlighted the uniqueness and intimacy between store members. The City Center Store further stood out for the high number of romantic relationships that had evolved among employees.

Despite their highly diverging specifications concerning their egalitarian structures, the two female stores had two commonalities. First, intimate information exchange in the female stores comprised more critique and complaints. The criticism concerned the GOFFCO system in general and the situation in their stores. In the Family Store, critique concerned the loss of humane values and the growing stress levels to which workers were exposed. On the store-level, employees complained about the constant understaffing, discrimination, and Velitchkov's stress-inducing way of leadership. In the City Center Store, on the other hand, staff members complained about GOFFCO's pitiless dealing with sick employees. The shift supervisor further criticized that they received inadequate compensation for the large amount of responsibility they bore. Finally, some of the staff members explicitly stated their antipathy towards Solberg. The contents of employees' complaints hence varied across the female stores. Nevertheless, the stores had in common that their employees were willing to talk about problems and negative emotions. They even shared those complaints with me, a new member, or outgroup member, respectively. They did not try to hide their opinions and problems, even if they might have hurt their positions in the store. In the male stores, staff members never talked negatively about GOFFCO, the store leader, or their situation. The employees aimed for group cohesiveness and flexible cooperation. Conflict and criticism of store-related subjects would have impeded both goals. In the Flagship Store, people actively suppressed conflict by defending those who were being criticized.

In the male stores, on the other hand, the employees did not criticize their superiors. His subordinates in the Flagship Store even praised Kovac enthusiastically. When he behaved in ways that employees might have interpreted negatively, e.g., when he repeatedly acted aggressively towards the assistant manager or let employees feel his anger about a failed MSV, employees did not act upon the opportunity to criticize him. In the Highway Store, an employee was not disappointed by a superior when the latter decided not to comply with his request to end his shift early. Instead, the employee was understanding and blamed the circumstances. The lack of criticism in the male stores was hence not the result of missing opportunities or unpleasant leader behaviors. Male leaders insisted on sick people coming to work or staying at work in both of the GOFFCO Stores, too. However, only in the case of Solberg, the behavior led to employee dissatisfaction and criticism.

The second subtle difference in egalitarian community building between the structures in the male stores and the female stores concerned nurturing behaviors. The behavior of caring for other’s well-being occurred almost exclusively in the male stores. In the Flagship Store, caring for other’s well-being was evolved the most strongly. People made sure that their coworkers were hydrated, took breaks in order to rest, eat, or smoke. When people worked hard, others pointed it out to superiors and even demanded from them to reward the hard work. Furthermore, employees actively encouraged coworkers to try out new positions or tasks they were not familiar with yet. Although less pronounced, the same kind of behaviors also occurred in the Highway Store. In the female stores, however, offering beverages to others or introducing them to new tasks was not customary.

Table 14
Commonalities in the Social Structure of Male and Female Stores

		Male Stores	Female Stores
Structures of dominance hierarchies	Dominance behaviors	<ul style="list-style-type: none"> • Shift supervisors and employees emphasize formal hierarchies • Directives are given in congruence with the official chain of command • No acts of counter dominance • Moderated by subculture <ul style="list-style-type: none"> • Flagship Store: hierarchy exceeds formal hierarchy • Highway Store: dominance disguised with humor • Performance evaluations common 	<ul style="list-style-type: none"> • Counter dominance and deliberate violation of store hierarchy • Moderated by subculture: <ul style="list-style-type: none"> • Family Store: inconsistent hierarchy, because shift supervisors are not granted sufficient authority in Velitchkov’s presence • City Center Store: inconsistent hierarchy, because shift supervisors have too much responsibility
	Coalition-building	<ul style="list-style-type: none"> • Cohesive structure • Efficient cooperation • Conflict avoidance or quick reconciliation common • No trust issues 	<ul style="list-style-type: none"> • Family Store: subgroupings occur • Inefficient cooperation • Open conflict • No reconciliation after conflict
Structures of egalitarian communities	Intimacy-building	<ul style="list-style-type: none"> • Employees praise restaurant leader, criticism is actively suppressed 	<ul style="list-style-type: none"> • Intimate information exchange comprised more critique and complaints • Employees are willing to address problems and negative emotions • City Center Store: romantic partnerships, benign nicknames, highest level of intimacy in personal information exchange
	Nurturing behaviors	<ul style="list-style-type: none"> • Caring for others’ well-being: offering beverages, make sure that new employee it settling in, ensure that others are not bored and can try new tasks or tasks they are particularly fond of 	<ul style="list-style-type: none"> • Nurturing behaviors are rare among employees

5.4 DISCUSSION OF FINDINGS

Sections 5.1 to 5.3 addressed the research question of *(RQ1b) which sex differences in leadership behavior exist from an evolutionary psychology perspective in organizational contexts?* The theoretical approach focused on existing sex differences from an evolutionary psychology perspective that occurred in quantitative assessments and experimental designs mostly exempt from social influences. The qualitative assessment conducted through ethnographic field research and presented in the preceding subsections tried to capture sex differences in leadership from an evolutionary perspective within the specific context of gendered organizations. The three subsections addressed three questions:

- (1) What behaviors can be observed that leaders and subordinates apply in order to follow their evolutionary strategies for social structure manipulation?
- (2) In which behaviors did male leaders and female leaders, respectively, concur and which behaviors reflected strong social influences?
- (3) What social structures developed in stores led by male leaders as opposed to stores led by female leaders?

In the following, the findings on those three questions are discussed in detail.

5.4.1 BEHAVIORS SERVING STRATEGIES TO CREATE EVOLUTIONARY ADAPTIVE STRUCTURES

The theoretical concepts of evolutionary strategies to manipulate social structures, such as coalition-building or intimacy-building, were linked to more specific behaviors during data analysis. While behavioral strategies are assumed to be universal across settings and stable over time, specific behaviors may vary with respect to cultural norms and scope of action. The current research makes the first effort to assign specific behaviors appropriate in an organizational setting to evolutionarily adaptive strategies for social structure manipulation.

For dominance, the corresponding behaviors were emphasizing rank, exercising control, counter dominance, prestige-related behavior, and indirect aggression. The corresponding behaviors for coalition-building were reinforcing group cohesion, cooperation, trust, and conflict avoidance. The strategy of intimacy-building was enforced by emphasizing equality across ranks, playful teasing, exchange of intimate information, and physical contact. Finally, nurturing behaviors were caring for other's well-being, offering emotional support, and doing personal favors. The majority of behaviors identified have been broached in the framework development process, and their emergence from the data was not surprising but confirmed prior theoretical and empirical approaches to the respective strategy. Some of the behaviors, however, have not yet been considered in the scientific literature.

Exercising control and counter dominance are behaviors that represent dominance in a narrower sense and have been included in many definitions and conceptualizations of dominance behavior (e.g., Buss, 1961; Mehta & Josephs, 2010; Savin-Williams, 1987). Prestige-related behaviors have been described as an alternative route to status and power by the literature. Prestige-related behaviors were less manifold in the field than behaviors related to dominance in a narrower sense. They were limited to individuals openly demonstrating and sharing their knowledge and skills with others. As predicted in the literature (Henrich & Gil-White, 2001; Snyder, Kirkpatrick, & Barrett, 2008), the effect of those behaviors differed from that of dominance behaviors. They predominantly evoked respect and warmth towards the individuals displaying them, while dominance behaviors were related more to feelings of fear and precaution.

Acts of direct aggression could be observed at GOFFCO, while acts of indirect aggression were rare, which confirms previous findings on aggressiveness at the workplace (Baron & Neuman, 1996). The researcher, however, felt that the deliberateness that predefines aggressiveness was difficult to observe so that indirect aggression was excluded from the analysis altogether. Direct aggressiveness, on the other hand, was included as a form of dominance behavior in a wider sense. There was only one specification of direct aggression observed, which was a verbal, active form (cf. Baron & Neuman, 1996). Other forms could have occurred as well but may just not have been displayed in front of bystanders and were hence out of reach for the researcher. The relatedness of the concepts of aggressiveness and dominance was reflected by leaders who were high in dominance being high in aggression as well, and by leaders who were low in dominance not being aggressive either.

Emphasizing rank was the only behavior extracted from the data serving dominance behavior that has not been covered in the scientific literature yet. There were two variants to emphasize rank:

emphasizing one's own rank and emphasizing the rank of other individuals irrespective of whether they were inferior or superior to the actor. Emphasizing one's own rank verbally, e.g., by saying "I am your boss", as a distinct form of dominance behavior might have been neglected by the literature due to its triviality. Furthermore, it is related to *enforcing* or maintaining an already existing hierarchical structure, which has, in general, not been covered as extensively by the literature as the *establishment* of dominance hierarchies.

However, acknowledging others' position and power is not dominance behavior but submissiveness, which is the opposite of dominance behavior. Savin-Williams (1987, p. 41) highlighted the importance of the opponent's submission for the establishment of dominance hierarchies. Dominance *behavior* is independent of the counterpart's reaction. When dominant individuals encounter counter dominance by their opponent, their behavior is assessed as dominance just as much as if the opponent had reacted submissively. For the establishment of a dominance *hierarchy*, on the other hand, the ability of a dominant individual to evoke a submissive response from another individual is crucial (Chapple & Arensberg, 1940; Savin-Williams, 1987, p. 41). It is hence dominance *and* submissiveness that create dominance hierarchies.

The observations at GOFFCO suggested that overt acknowledgment of others' superiority not only defines dominance hierarchies but can be a form of dominance behavior. In openly submitting to individuals who were superior in rank, the GOFFCO members strengthened the overall dominance hierarchy in the store and *their own position within it*. They highlighted the importance and power of formal rank and signaled their subordinates that they expected them to be just as obedient and submissive as they were. Hence submissive behaviors signal, on the one hand, one's acceptance of the hierarchical status quo to superiors and, on the other hand, one's own status to subordinates. While the literature on dominance and submission implicitly assumes that the two concepts are exclusive and represent two opposing ends of a continuous range of behavioral choices (e.g., Cooper & Bernstein, 2002; Missakian, 1980; Savin-Williams, 1987), the findings propose that openly acknowledging another individual's superiority may also be an attempt to increase one's own power and hence be an indirect form of dominance.

The strategy of coalition-building has, to the researcher's knowledge, has not yet been considered in the SDL research field. Outside that field, research broaching on the details of coalition-building is also rare. Hence taking an evolutionary psychology perspective has shifted attention to a set of behaviors that research has as yet neglected. Although some research has included coalitions in a narrower sense, it usually looked at (dominant) coalitions that form on purpose, i.e., members form them deliberately, because they pursue the same goals as other members of that coalition (e.g., Cyert & March, 1963; Zhang & Greve, 2019). In the GOFFCO stores, however, the researcher focused on whether and to what extent members of a predefined group *grew to be* a coalition. Did staff members adapt to the store goals of being efficient, economically successful, and satisfying their customers? Did they cooperate in a goal-oriented way to pursue their common goal? How could store leaders promote those behaviors among employees? This is the first time research addresses those questions.

Behaviors identified to serve coalition-building or represent a coalitional way of thinking were the reinforcement of group cohesion, affiliating outgroup members, cooperation, demonstrating trust, and reconciliation or conflict avoidance. Cooperation, trust, and reconciliation have been theoretically linked to coalition-building. Reinforcing group cohesion and affiliating outgroup members, on the other hand, were behaviors that had no conceptual correlates yet.

Group cohesion has been broached by the SDL literature (e.g., Post, 2015; Rovira-Asenjo et al., 2017); however, the behaviors linked to its development and maintenance are unknown. In the Company Stores, one behavior identified to enforce group cohesion was to refer to the group verbally during

conversations. Talking about the group or coalition demonstrated an individual's awareness of the group or of being part of the group. Hence it was inferred that individuals who mentioned the group, e.g., by talking about other group members, store success, or GOFFCO in general, were reinforcing group cohesion by increasing their listeners' salience of the group. On the other hand, individuals who did not make any group-related comments were believed to feel less as part of a cohesive group and more as one individual among many unconnected others.

Another measure for superiors to reinforce group cohesion was to treat their followers equally. By treating followers equally, superiors avoided conflict among employees and enabled a sense of oneness in them. This effect became particularly visible when employees were *not* treated the same and started complaining about it. Hence, treating employees equally was, at the same time, a measure for superiors to avoid conflicts.

Affiliating outgroup members was a behavior only observed in leaders. Nevertheless, it is possible that in other settings, non-leaders engage in the affiliation of outgroup members as well. Coalitions only exist if there is an outgroup with whom to compete because their interaction with outgroup members is what defines them. Still, no research on coalitions has as yet looked at when and how interaction with outgroup members or outgroups is facilitated on a microlevel. In terms of sex differences in leader behavior, for example, this behavior in building dominance hierarchies was the most conspicuous. Again, identifying behaviors serving the strategies to form dominance hierarchies or egalitarian communities led to the uncovering of an as yet neglected sex difference in leaders.

Once the strategy of coalition-building was made more explicit by assigning specific behaviors to it, it became clear that distinguishing coalition-building behaviors from intimacy-building behaviors was difficult. One example refers to the equal treatment of employees (coalition-building) and the emphasis on equality across rank (intimacy-building). In fact, during data analysis, both were treated as representing the same type of higher-level behavior at first. Over the course of data analysis, however, it became clear that treating everybody else (i.e., all subordinates) the same was not equal to emphasizing one's own sameness to others. It crystallized that the two behaviors even served different social structures. In emphasizing equality across ranks, individuals enabled intimacy-development not only among employees of the same rank but also among employees across rank. Superiors who reduced the hierarchical distance between themselves and lower-rank employees, enabled those employees to feel more comfortable and to behave more authentically, while at the same time, dependence on the superior decreased. The two behaviors, equal treatment of employees to reinforce group-cohesion and emphasizing the equality of rank emphasize equality between people, hence represented different social motives. The distinguishing feature between coalition-building-related behavior and egalitarian community-building behavior was ultimately the direct, underlying motive, i.e., serving the coalition vs. serving the individual.

A similar problem was related to another behavior that was finally assigned to intimacy building: playful teasing. Carving out playful teasing from the data as specific behavior was difficult because it was related to humor. At first, all humorous acts had been aggregated to represent the same type of behavior until the different purposes of humor surfaced. Many times, humor was utilized to attenuate acts of dominance in order to enable coalition-building. In the end, playful teasing was the only type of humorous behavior that remained a distinct category, while the rest merged into other specific behaviors. Although humorous behaviors differed strongly between the sexes, they did less so in leaders and, furthermore, they did not seem to serve a social motive except for playful teasing, which demonstrated intimacy between individuals.

In line with the literature, intimate information exchange, which entailed self-disclosure and interest in others, was the most important behavior serving intimacy-building (Harvey & Omarzu, 1997; Prager,

Fuller, & Gonzalez, 1989; Reis & Shaver, 1988). Physical contact has also been acknowledged as intimacy-building by the literature (Monsour, 1992); nevertheless, the amount of physical contact found within the professional context of GOFFCO was surprising. One general challenge that concerned all behaviors subsumed under serving egalitarian community-building was observability. While individuals demonstrate behaviors related to the establishment of dominance hierarchies openly, they are more restrained concerning behaviors for egalitarian community-building. In fact, high visibility of behaviors such as dominance in a narrower sense or prestige-related behaviors is desirable because it informs many group members simultaneously about status rank and power. To the rather intimate, dyadic relationships that prevail in egalitarian communities, however, open display of related behaviors is often inappropriate. For example, an individual disclosing intimate information will not do so in front of a large audience, but rather privately towards a carefully chosen individual. Hence the researcher may have missed out on many intimacy-building or nurturing interactions that took place in intimate settings that she could not access.

Nurturing behaviors observed in the field largely concurred with prior studies. Caring for others' well-being, offering emotional support, and doing personal favors have all been included in the scientific literature on prosocial behavior (Eagly, 2009; Eisenberg & Miller, 1987). As indicated above, distinguishing between nurturing behaviors and coalition-building behaviors was demanding at times. Cooperation, for instance, often resembled nurturing behaviors. When an employee started helping another person with their order, it could represent either cooperation or doing favors. Whether it was the one or the other was determined by whether the behavior was motivated by an altruistic desire to support the other individual or the goal-oriented motivation to serve the customer as quickly as possible and improve store performance. In most instances, the researcher's increasing knowledge about employees and their relationships with others enabled her to feel certain about the majority of classifications. Nonverbal communication and body language further helped to assess the helper's underlying motives. Employees who started helping out others with a stern, slightly annoyed look on their faces, for example, were classified as helping to serve the coalition. In letting the individuals they helped out know about their annoyance, they prompted them to improve their performance. Employees, who helped out a close coworker, however, usually did so with a smile or supportive comment.

5.4.2 DISCUSSION OF SEX DIFFERENCES IN LEADER BEHAVIOR

Data analysis revealed that despite the high levels of standardization at GOFFCO, consistent subcultures had emerged that affected leader behavior. The performance-oriented subculture at the Company Stores was associated with more dominant and aggressive leaders as compared to the Melsbach Stores. "Team Melsbach", on the other hand, was characterized by flat hierarchies and cooperation across stores and only subtle forms of dominance and coalition-building. Comparing differences in behavior within and across leader sex while accounting for organizational subcultures provided some interesting insights. Regarding male strategies, the most conspicuous sex differences concerned a behavioral strategy usually neglected by gender researchers: coalition-building. The stereotypical leader behaviors of dominance and assertiveness, however, did not differ systematically between the sexes. The observations further confirmed that female leaders pursued more female strategies than male leaders. However, the sex difference in leader behavior concerning female strategies was subtle and concerned only some of the underlying behaviors.

5.4.2.1 Discussion of Subculture Influence on Sex Differences in Leader Behavior

The influence of organizational subcultures on leader behavior was more evident than that of leader sex. Performance-orientation was preeminent in the GOFFCO Stores, whereas it was considerably less

pronounced in the Melsbach Stores. While the store leaders at the Company Stores were high in dominance and low in female strategies, the Melsbach Stores had developed a familiar culture that limited dominance displays and enforced equality across ranks. These deviances in norms and values at the four GOFFCO stores were surprising. GOFFCO was chosen as research site due to its high standardization levels, which GOFFCO ensured through thorough and extensive socialization processes concerning franchisees and other leaders. Despite those efforts, distinct subcultures had emerged.

As concluded in section 2.1, for understanding leader behavior, influences from organizational (sub)cultures might be more influential than overall societal gender roles. Results from the GLOBE project support this notion. The large-scale international study comparing leadership worldwide concluded that organizational cultural differences are stronger predictors of leadership than societal differences (Brodbeck et al., 2004). Organizational cultures often do not represent a homogenous set of shared beliefs but entail subcultures. These subcultures often form due to the existence of organizational subunits, such as departments, hierarchical levels, or functional divisions, but can also be triggered by shared demographic factors such as sex, age, ethnicity, education, and social class (Daymon, 2000; Hofstede, 1990, 1998; Jermier et al., 1991; Sackmann, 1992; Young, 1989). Because leaders interpret and act out organizational cultures differently, they can be another source of subculture formation (Daymon, 2000). The ethnographic account in chapter 5 depicts vividly how the franchisee Melsbach interpreted GOFFCO's organizational culture in his own way and created a subculture that varied from that of GOFFCO owned stores in significant ways.

The different subcultures might, however, also be explained by the leaders differing national backgrounds. As demonstrated in section 4.3.1, South Slavs are assumed to value hierarchical structures more than Germans. Hence, the more intense dominance behavior of Kovac and Velitchkov might not reflect a GOFFCO subculture, but national culture influences. Because no Company Store in the sample had a non-South-Slavic leader, this specific GOFFCO subculture's antecedents cannot be identified in detail. However, knowing the antecedents is irrelevant to the interpretations of sex differences in leaders across subcultures and is hence subject to future research.

5.4.2.2 Discussion of Leader Sex Differences in Dominance Behavior

Despite the considerable influence of organizational subcultures on leader behavior, some differences in leader behavior emerged from the data, particularly concerning male strategies. Dominance behavior did not necessarily differ between male and female leaders concerning its frequency or intensity, but concerning its quality. At first sight, the cases do not seem to support the gender stereotype of men being more dominant than women (Bem, 1974; Block, 1974; Werner & LaRussa, 1985; Williams & Bennett, 1975) or biological studies reporting males of human and non-human animals to be more dominant (see sections 3.2.1.1.1-3.2.1.1.3), especially concerning the obvious behavior of exercising control over others. Velitchkov was no less controlling than her very dominant male colleague Kovac, and she was considerably more controlling than the Melsbach Store leaders. However, her *quality* of exercising control differed strongly from that of the male leaders in that it hurt the overall dominance hierarchy. Velitchkov exaggerated her influence so that no other authority could exist next to her. Solberg, on the other hand, took no noticeable interest in her store's dominance hierarchy and provided very little guidance concerning the store's hierarchical structure. She hence concurred with Velitchkov in not enforcing the overall dominance hierarchy in her store. Accordingly, the sex difference that emerged during the analysis of male and female leader behaviors did not concern the magnitude of dominance behavior, but the quality of dominance behavior and, more importantly, its effect on the dominance hierarchy. Male leaders were able to exercise control and emphasize their position in the store while at the same time acknowledging and promoting the authorities of both

subordinate leaders as well as superior leaders. The latter was particularly interesting as one might expect individuals who bow to others' authority to be submissive. In the GOFFCO Stores, however, the submission did not interfere with leaders' dominance but enforced it instead. In highlighting the overall structure of the store, the male leaders reinforced the power that went with their formal rank and thereby grew in status rank. The female leaders, however, did not balance their authority in relation to that of others. Their lack of success at establishing dominance hierarchies implied that they were adopting the male *behaviors*, but not the *underlying goal* of building a male form of social structure/ dominance hierarchy.

Research on sex differences often focuses on dominant behaviors, such as exercising control and assertiveness (Maner & Case, 2016). For example, Stogdill's leadership dimension *initiation of structure* represents a leader's controlling behavior (1963). *Transactional* leadership contains the subscale of being corrective and controlling (Bass & Bass, 2008). Four out of the five meta-analyses discussed in chapter 3.1.3.1 found no sex differences in these dimensions (Dobbins & Platz, 1986; Eagly & Johnson, 1990; Van Engen & Willemsen, 2004). The fifth one even reported females to score higher on initiating structure than males (Van Engen & Willemsen, 2004). The findings, however, indicate that dominance behaviors in the narrower sense of assertiveness and control were mostly determined by organizational subcultures. While both the male and the female leader at the Company Stores were very controlling and assertive, the leaders in the Melsbach Stores were much more restrained concerning control and assertiveness. Both female leaders were more extreme than the male leaders in their dominance behaviors, taking into account their respective subcultures. Velitchkov was dominant to a point where she undermined all inferior leaders' authority, whereas Solberg demonstrated so little dominance that her inferior leaders felt overburdened with their responsibilities. Hence, women seemed to *adapt more to their cultural environment* than male leaders. The scientific literature substantiates that women are more susceptible and reactive to social influences (Roberts & Pennebaker, 1995; Udry, 2000). Hence, women leaders' non-concurrence concerning dominance may have resulted from their desire to fit into their respective environments. Men, on the other hand, were more moderate in their specifications of assertiveness. Kovac took care not to suffocate his shift supervisors' authority, and Holzhammer managed to exercise controlling behaviors by masking them with humor and modesty.

In quantitative analyses, taking the mean of males' moderate scores and females' more extreme scores may lead to mean scores that do not deviate significantly – as reported in many hitherto reported research results. However, those quantitative findings may have missed that there is a significantly different pattern in females as compared to males. Interestingly and in congruence with that proposition, the one meta-analysis that reported a sex difference favoring females in initiating structure was the one that controlled for the leaders' cultural environment. Eagly, Karau, and Johnson (1992) included studies from educational settings only. Hence their finding could have been the result of high levels of assertiveness in educational settings that females adapted more strongly to than their male counterparts.

Sex differences in leader aggression corresponded strongly with dominance in a narrower sense. Just as dominance in a narrower sense, leader aggression occurred only in the dominance-oriented Company Stores and was even more strongly predicted by organization subcultures than narrow-sense dominance. The findings hence agree with the literature where the two concepts are strongly linked, and aggression is identified as an important means of dominance (Francis, 1988). The findings also support that the expression of aggression varies widely across cultures (Severance et al., 2013). In the Melsbach Stores, aggression, i.e., deliberately hurting others, was not compatible with the familiar store culture. When aggression occurred, it was probably indirect and hidden and hence not observable for the researcher.

The findings do not confirm that men engage more in direct aggression, while women engage more in indirect aggression (Archer, 2004; Card et al., 2008). The quality of aggressive behaviors, however,

differed between the sexes. Kovac's acts of aggression appeared to be more intentional and planned. Velitchkov's aggressions, on the other hand, were mostly reactionary and resulting from stressful situations. Indirect aggression was difficult to observe so that no deductions for sex differences in indirect aggression can be made based on the data.

Research as yet has not investigated sex differences in aggressiveness in leaders. However, the strong congruence in aggressiveness, as well as the overall low levels of aggressiveness demonstrated by all leaders, imply that sex differences, if there are any, are rather small. Research on the biological mechanism underlying aggression indicates that the inhibition of aggression is steered by the prefrontal cortex. The influence of the prefrontal cortex, on the other hand, correlates positively with intelligence (Cole et al., 2012). The ability to deliberately control aggressive impulses is hence stronger in people with higher levels of intelligence and education. Assuming that leader emergence is related to intelligence and higher levels of education, sex differences in aggression that may exist in people with lower socioeconomic status, are less likely to appear in leaders.

The situations in which aggressiveness occurred further give reason to reconsider whether aggression was actually a means to increase one's status, i.e., dominance in a narrower sense. It could also be an expression of coalition-building. Leader aggressiveness was exclusively directed at individuals who threatened store success through their mediocre performance. It hence served as a means of punishment to promote better performance in the future. On the other hand, in the Melsbach Stores, where performance was less central, aggressiveness accordingly did not occur. One could argue that aggressiveness was hence related more strongly to coalition-building. By reprimanding subordinates for undesired behavior, leaders set standards and norms for desired behavior and contributed to group homogeneity and cohesiveness. Kovac, for example, once explicitly claimed that he was dissatisfied with his substitute's behavior, whom he wanted to be his "best man" at the store, but who had repeatedly disappointed him instead. Kovac conveyed the impression that he considered replacing the substitute manager. Hence the aggressiveness towards the substitute manager could be interpreted as a means to drive an undesired member out of the coalition to benefit the coalition as a whole.

Women leaders' adaptation of their organizational cultural environment only occurred concerning narrow-sensed dominance behavior and aggression. However, putting emphasis on rank was identified as an additional measure to exert dominance. Emphasizing rank was one of the behaviors that showed considerable sex differences because it captured leaders' general awareness of hierarchical structures. Both female leaders concurred in their reluctance to emphasize others' ranks and power. Neither did they explicitly acknowledge their inferior leaders' authority, nor did they refer to their own inferiority to superordinate structures like district managers and the franchisee or the headquarters, respectively. They did not seem to be aware of the hierarchy as a consistent social structure and hence did not establish hierarchies as stable as those in the male stores. To the male leaders, on the other hand, the overall dominance hierarchy was seemingly much more salient. Male leaders mentioned other stores, the headquarters, and GOFFCO regularly and expressed submissiveness and modesty regarding their superiors and their own position in the company hierarchy. This sex difference in behavior seemed to reflect an overall preference in male leaders for hierarchical structure. The women, on the other hand, seemed much less aware of the hierarchical structure. This lack of awareness of hierarchical structures (or maybe a deliberate ignorance of hierarchical structures) in the still mostly hierarchically organized companies may be linked to women's struggle on their way to reach top management positions.

There was also a clear sex-difference in prestige-related behaviors. As predicted by the literature, male leaders engaged more in prestige-related behaviors than their female counterparts. This is interesting because dominance and prestige are considered two different routes to gain status rank in dominance hierarchies. While men and women did not differ in the predicted way in dominance-related

behaviors, they did so in the less stereotypic behavioral dimension of prestige. In Schein's (1973) study on gender stereotypes that relate to manager characteristics, intelligence and competence, for example, were *male* stereotypes, but not *manager* stereotypes. Being aggressive and vigorous, however, were stereotypes that applied to both men *and* managers. Women hence concurred with men in behaviors that society expects of leaders but did not concur in behaviors that society does not expect of them. This may be a sign of social pressures distorting the evolutionarily adaptive behavior in women. There are less consistent social pressures and expectations for prestige-related behavior, so that women might make fewer efforts to adapt to a behavior style that has not been adaptive to their ancestors. Women not demonstrating as many prestige-related behaviors as their male counterparts is no indication of women being less intelligent or less capable (cf. Xie & White, 1997). However, it might be an indication of women being modest and careful not to depreciate others by flaunting their knowledge in order to promote equality between them and other group members (cf. Gould & Slone).

Another explanation for the sex difference in prestige-related behavior could be that it did not reflect an effort to gain status but an interest in systems. Simon Baron-Cohen formulated the extreme male brain theory according to which male brains *systemize*, while women's brains *empathize* (Baron-Cohen, 2002, p. 248). Systemizing is reflected by men's greater fascination with systems, while women's empathizing results in higher interest in people. This difference in interest is considered one of the largest and most stable sex differences over time and cultures (Lubinski, 2000; Thorndike, 1911). A system is "anything which is governed by rules specifying input-operation-output relationships" (Baron-Cohen, 2003, p. 63). A large organization like GOFFCO or one of its stores and their micro and macro processes are hence systems. Male leaders engaging more in introducing me to the workings of GOFFCO and their stores could have reflected their fascination with those systems.

A third explanation for the sex difference in prestige-related behavior could be women's and men's different perceptions of me. Prestige-related behaviors observed were all directed at the researcher. They predominantly comprised of male leaders explaining and discussing the GOFFCO system. Both male leaders signaled that they expected me to become part of the GOFFCO corporation. They made comments about my future career prospects and even pointed out vacant positions to me. Female leaders, on the other hand, regarded me as an outgroup member. Outgroup members of low status cannot advance leaders' careers or legitimize their position (like low-status ingroup members). Hence, from the female leaders' perspective, directing prestige-related behavior towards me might not have seemed worthwhile. If the sex difference in prestige-related behavior was based on leaders' differing perceptions of me, it would be no actual sex difference since the important factor of interaction partner characteristics was not identical from the leaders' subjective points of view.

5.4.2.3 Discussion of Leader Sex Differences in Coalition-Building

Overall, the SDL literature provides ambiguous information on whether there exists a sex difference in coalition-building behaviors. Using the evolutionary psychology paradigm, however, revealed a considerably clearer picture. Coalition-building was the strategy, which differed the most between male and female leaders. Male leaders and female leaders showed differences in all specific behaviors identified based on the literature and the data, with the affiliation of outgroup members displaying the most conspicuous sex difference.

The literature on group cohesion indicates that men's groups are more cohesive than women's groups (Benenson, Apostoleris, & Parnass, 1998), which concurs with men's preferences for group activities and inter-group competition. However, a study on group cohesion of teams led by male leaders compared to teams led by female leaders found a tendency for women's teams to be more cohesive when they were more diverse or larger than men's teams (Post, 2015; Rovira-Asenjo et al., 2017).

Unfortunately, the existing research has as yet not specified what leader behaviors facilitate group cohesion in particular. The ethnographic observations, however, identified two behaviors that were related to the promotion of group cohesion. Leaders facilitated group cohesion by treating employees (of the same rank) equally. Treating them differently, e.g., by considering their individual backgrounds and situations, on the other hand, led to the building of subgroupings and a lack of cohesiveness. Secondly, drawing employees' attention to the coalition by talking about it served as a measure for leaders to increase group cohesion.

Male leaders were more careful to treat employees equally than their female counterparts, which translated into more cohesive group structures in the male stores. The female leaders, on the other hand, behaved in a way that enabled subgroup development. Both female leaders prevented employee rotation in their stores, which led to dissatisfaction and a lack of interaction between employees. Velitchkov even enforced subgroup development by treating employees differently based on personal characteristics such as nationality and age. The findings hence concur with evolutionary psychology predictions about behavior and less so with findings from the SDL literature.

Male leaders further raised more awareness of the coalition and group cohesiveness by talking about it. Female leaders, on the other hand, hardly ever referred to the coalitional group. By having the superordinate coalition in mind and talking about it directly or indirectly, store leaders may increase other staff members' salience for the coalition and the common goals that guide their members. When, however, coalitional groupings are not referred to, they may lose their importance to the members and provoke employees to detach from the coalition and augment their individuality. Just like female leaders seemed to be unaware of hierarchical structures, they seemed to be less aware of the superordinate coalition and the inter-coalitional competition in which they participated. Male leaders' accounts of GOFFCO and Team Melsbach, respectively, had a proud and warm tone. They felt interconnected with the group of GOFFCO workers that they had joined, and the group appeared to be important to them. This effect did not become evident in female leaders.

This finding concurs with the predictions of evolutionary psychology. Men have evolved to appreciate the value of coalition-building and developed an awareness of coalitional dynamics. Women, on the other hand, have not developed an innate sensitivity for coalition-building and do not prepare for inter-coalitional conflicts. Although evolutionary psychology and social role theory often make congruent predictions about men and women's behavior, in this case, social structure theory is incongruent with the finding.

Cross and Madson (1997a, p. 8) argued based on social roles that women tend to have an *interdependent* self-construal, while men tend to have an *independent* self-construal. Men derive their self-construals from internal traits, skills, and attributes, and their goal is to remain autonomous. Although relationships with others and a sense of belonging are equally crucial to their existence as they are to women's, in men, they serve individualistic goals. Women's interdependent self-construals, on the other hand, depend on close others and social contexts (Markus & Kitayama, 1991). Relationships with others are essential to their being, and others' goals may become equally important to them as their own (Baumeister & Sommer, 1997; Cross & Madson, 1997a; 1997b). In other words – which Cross and Madson (1997a) formulate at the end of their first paper – they state that men are agentic, and women are communal in the very sense that Bakan (1966) introduced in his groundbreaking essay. The findings here demonstrate that women's interdependent self-construals did not extend to the organizational setting, in which they had assumed a leadership role. Instead, male leaders' self-construals built on other GOFFCO members and their relations with them. To women leaders, however, other GOFFCO members seemed to be irrelevant. Women leaders' behavior contradicted findings from non-

organizational settings, where females more often than males described themselves in terms of other people (Clancy & Dollinger, 1993; Lyons, 1983; McGuire & McGuire, 1982).

The findings demonstrate that organizational group contexts cannot substitute for the close relationships that women use to define their selves. Women leaders' embeddedness in group structures like their stores, the group of GOFFCO leaders, or the entirety of GOFFCO staff is less important to them than to their male counterparts. Male leaders appreciated the groups and coalitions that they were a part of and acknowledged them frequently by referring to them during conversations and in their planning. Their independent self-construals included the power and possibilities they gained from their membership and status rank within the various organizational groups. Holzhammer, for instance, narrated how his reputation benefitted at GOFFCO events as a member of the group of Melsbach leaders. He was proud that members of outgroups, i.e., other franchisee leaders, approached them to ask for alcoholic drinks. Word had spread that Team Melsbach members attended official GOFFCO events well prepared, bringing private alcoholic beverages to drink at the events before the bar there would officially open. This habit had translated into reputation and power over those who were asking them for favors (cf. Blau, 1964). Like in this example, it was not specific individuals that contributed to male leaders' self-construals, but their autonomous position and power over them. In women, on the other hand, relationships that would have qualified as relevant for self-construal did not result from group membership at GOFFCO. The findings hence substantiate men's stronger preference for groups as compared to women as described in the theoretical framework (David-Barrett et al., 2015).

Evolutionary psychology theorizes that women are less trusting towards strangers because they are more vulnerable than men and their relationships are costlier to maintain than those of men (Derlega & Chaikin, 1975; Prager, 1997). Women hence build trust in a time consuming and fragile process that builds on reciprocal information disclosure and support. Men, on the other hand, are more likely to take a leap of faith when interacting with strangers. The benefits they historically gained from building coalitions with strangers outweighed the costs of trusting the wrong person.

In congruence with predictions made by evolutionary psychology, male leaders demonstrated more trust in both ingroup members and *potential* new ingroup members than female leaders. Amongst others, they were remarkably open about sensitive information. In an early study, Donnell and Hall (1980) found mostly no sex differences between men and women in management. They, however, emphasized one difference that referred to "females' lower willingness to share relevant data with their colleagues" (Donnell & Hall, 1980, p. 74). At the same time, they described male managers as being "more open and candid with their colleagues than ... females" (Donnell & Hall, 1980, p. 76). The ethnographic data here confirms their findings and highlights how the male preference for coalition-building leads to higher levels of trust and information sharing. It further presents an indication for men's higher levels of cooperativeness and trust *beyond* the predominant economic-game-paradigm that most results as yet stem from (e.g., Buchan et al., 2008; Dittrich, 2015).

Researcher sex may have been another factor that led to lower trust in female leaders. Bevelander and Page (2011) found that when it came to networking, women particularly distrusted other women and trusted men more. The queen bee phenomenon (Derks, Van Laar, & Ellemers, 2016) and the underlying stereotype threat (Roberson & Kulik, 2007) could have also caused women leaders' more distant behavior towards the researcher. Although, in this case, women leaders distrusting the researcher was not hurtful to their career progression, it could have been in other instances. Researchers found that women in leadership positions are usually more risk-taking than women overall in the population. Although this finding has been interpreted with respect to the glass cliff phenomenon (Ryan et al., 2016) and assigned to selection processes, it could also indicate that taking risks in building relationships with other people is vital to one's career progression. Those women who took risks by trusting others in

business contexts, gained more power and higher leadership positions than those women who followed their innate desire to only trust in a carefully selected few.

The more trusting behavior of male leaders did not only extend to (potential) ingroup members but also outgroup members. As indicated by the findings on dominance behavior concerning emphasizing rank, male leaders seemed to be more aware of their coalition being part of a larger system. Within that system, they could compete against or fraternize with other coalitions or individuals. One way to improve the situation of the coalition was to affiliate important outgroup members to the store. Those could be competent service providers or solvent regular customers. Male leaders were hence eager to build good relationships with stakeholders outside the coalition. To do so, they invested resources like time and goods in order to bind outgroup members to the store. They affiliated service providers, guests, and other stakeholders through various measures. Women, on the other hand, avoided contact with outgroup members when possible or transferred the responsibility to deal with outgroup members to subordinate leaders, i.e., the shift supervisors. They did not seem to assess the affiliation of outgroup members as an important means to improve store success. The two male and the two female leaders were so consistent in their behavior within sex that the difference was unlikely to be accidental. Particularly given the fact that the two male leaders and the two female leaders, respectively, differed in their regional customs, their national descent, and the subcultures of their stores, the congruences were remarkable.

The scientific literature as yet has not focused on male leaders' and female leaders' behavior towards individuals that are not part of their organization. Leader-member-exchange theory, for example, focuses on leaders' interactions with organizational members (Gerstner & Day, 1997). Both the paradigmatic framework and the observation data, however, indicate that findings from leader interactions with subordinates cannot be generalized to leader interactions with non-members. The male strategy of coalition-building prescribes a different treatment of members from within the coalition, i.e., subordinates, as compared to outside the coalition, i.e., customers, service providers, and other stakeholders. Qualitative research on SDL has also reported that male leaders clearly distinguished between ingroup and outgroup members, whereas women did not (Sparrow & Rigg, 1993). The male leaders at GOFFCO invested time and other resources in building a relationship with extra-coalitional members. However, they did not build relationships with intra-coalitional members. Female leaders, on the other hand, made no effort to build relationships with extra-coalitional members but spent more time talking to intra-coalitional members in dyadic interactions and invested more in providing employee-friendly facilities than the male leaders.

In the literature, the distinction between intra-organizational and extra-organizational members is usually missing. Instead, individuals' "networking" is regarded as irrespective of the counterpart's position concerning both organizational membership and hierarchical rank (e.g., Benschop, 2009). DuBrin, for example, conducted several studies on sex differences in influence tactics and impression management (DuBrin, 1989, 1991, 1994). Those behavior patterns comprise actions that aim at manipulating others in a way that they will act in one's favor. Impression management, in particular, is a way of behavior that aims at affiliating outgroup members. Unfortunately, DuBrin did not distinguish between the status of people to impress but prompted participants to refer their answers to actions directed towards "people you work with and customers" (DuBrin, 1994, p. 534). Maybe for that reason, he found very few sex differences, which were furthermore inconsistent across studies. The existing literature on men's and women's networking, too, rarely distinguishes between network partners from within and outside the leader's current organization.

In sum, men actively supported coalition-building and enforced group cohesiveness by their actions. Women leaders, on the other hand, did not invest in coalition-building. Their lack of coalitional thinking

may contribute to the research findings that indicate women leaders' difficulty in building and utilizing networks when compared to men (e.g., Brass, 1985).

5.4.2.4 Discussion of Leader Sex Differences in Intimacy-Building

While sex differences in male strategies were relatively easy to observe, sex differences regarding female strategies were more challenging to carve out based on the data. Nevertheless, the sex differences found concerning intimacy and nurturing were congruent with the predictions made by the literature. However, they were not unambiguous and required careful evaluation of the individual cases.

On the behavioral level, women leaders were more inconsistent than male leaders. For instance, Velitchkov was the only store leader who had her inferiors address her on a first-name basis, which is a behavior decreasing distance across rank and hence facilitates intimacy-building as a part of egalitarian community-building. At the same time, however, she displayed many instances of dominance and control. She further emphasized her rank as the store leader, which, too, increased distance across rank. Solberg was the most nurturing of all leaders, but at the same time, affronted her employees by demanding from them to work when they were sick. Those inconsistencies in behavior may be the result of the competing forces to which women leaders are exposed. Manager stereotypes, socialization processes in male organizational cultures, and male role models lead women to adopt male strategies.

The inconsistent behaviors of women leaders could be reinterpreted to represent androgynous behavior because women demonstrated behaviors related to both male and female strategies. The concept of androgynousness resulted from Bem's research on gender identity (Bem, 1974) and states that people can be both masculine and feminine at the same time. Some even suggested that this combination is desirable in managerial contexts, although evidence supporting this suggestion is mixed (Powell & Butterfield, 1979, 1989; Powell, Butterfield, & Parent, 2002). The findings here do not support that notion. Instead, the inconsistent behaviors of female leaders prevented the development of a consistent social structure.

The backlash effect which states that people who act not in congruence with their group's stereotypes are disliked (Heilman et al., 2004). In congruence with the backlash effect, employees complained about the female store leaders' behaviors and were more dissatisfied with their overall work situation than the employees at the male stores. Although pressuring sick employees into work was common in all GOFFCO stores, only employees in the City Center Store complained about it. Because Solberg was more nurturing than the other leaders, the discrepancy between her nurturing behaviors and the practice not to treat sick employees with care was more conspicuous to her employees. The findings hence suggest that being androgynous is not advantageous but hurtful to leaders. The social dynamics that result from applying both male and female strategies lead to resistance in employees and inconsistent and hard-to-define group structures.

Regarding intimate information exchange, the researcher distinguished between personal and work-related content when classifying and assigning codings. The literature on self-disclosure refers to "self-relevant" information when sketching the type of information involved in building intimate relationships (Miller & Kenny, 1986; Laurenceau, Barrett, & Pietromonaco, 1998; Reis & Shaver, 1988). Self-relevant information was classified as personal, and contents that were non-personal were labeled work-related. However, throughout the process of comparing and contrasting the sex differences within and across cases, it became clear that this simple dichotomy did not suffice to understand sex differences in intimate information exchange.

Very little research has as yet concerned itself with the contents of verbal communication at work. Callan (1993), for example, utilized a rather unsystematic list of eight different topics that male leaders and female leaders talk about with their male subordinates and female subordinates:

- (1) Work
- (2) Pay
- (3) The employee's opportunities for promotion
- (4) The supervision of the manager
- (5) Employee's relations with coworkers
- (6) Employee's health and well-being
- (7) Employee's interests outside work
- (8) Discussion about developments within the organization

Although he substantiated that point of view and the dyad's sex constellation significantly influenced the perceived communication, he, unfortunately, did not distinguish between work-related and non-work-related contents (Callan, 2013). Hatfield and Huseman (1982) distinguished between three factors representing the contents of interactions: coordination, participation, and expression. Only one of the underlying 14 items represented non-task-related contents: "My supervisor expresses sympathy to me when something unfortunate happens in my personal life" (p. 352). This item, however, does not reflect information disclosure, but the content of a verbal reaction – according to the framework here, it reflects emotional support. Others that concerned themselves with sex-specific leader communication did not distinguish based on content at all (Sueda, 2018). More closely related to the topics of interest here was a study that distinguished between *task-related* and *private* interactions at work (Tschan, Semmer, & Inversin, 2004). Private topics were further loosely divided into intimate and public (i.e., weather forecast, sports teams' latest performance) topics. Although leadership and gender played no role in the study, it offered a first rationale for distinguishing between verbal communication contents that are work-related and those that may lead to the development of intimate relationships.

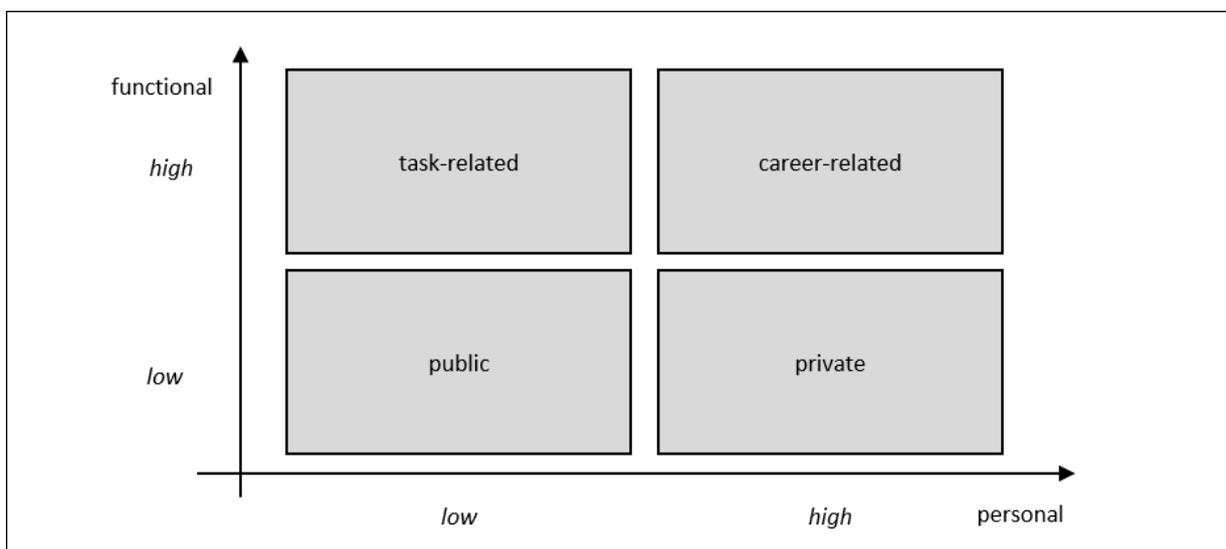
Data analysis, however, revealed that the distinction between task-related and private interactions was not sufficient to capture qualitative differences in men's and women's intimate information exchange. The two male leaders, Kovac and Holzhammer, differed in the contents of information they disclosed towards employees. Kovac predominantly shared task-related information. Holzhammer, on the other hand, shared personal information. It concerned his education, apprenticeship, and episodes he had personally experienced on the job. At first, the researcher thought Holzhammer was disclosing personal information and hence building intimate relationships. By comparison with the female leaders, however, it became clear that the *personal* information shared by Holzhammer was not *private* but work-related. The information shared by the leaders observed at GOFFCO could be classified based on two dimensions: whether it was *functional* and whether it was *personal*. Information could be high or low on either dimension, which resulted in four different classes of information as depicted in Figure 9.

Kovac and Holzhammer exclusively shared information that was work-related or functional. Functional information shared by Kovac was impersonal and hence classified as *task-related*. Holzhammer, on the other hand, additionally shared information that was functional and, at the same time, personal, i.e., *career-related*. Talking about his education and apprenticeship was functional in terms of his work at GOFFCO. He shared examples from prior experiences with employees to illustrate and explain current processes. Consequently, he highlighted his career-path and legitimized his management position. When the female leaders, on the other hand, shared personal information, it was not functional. Information that was personal and non-functional was classified as *private*. Private information is assumed to be best suited to build intimate relationships because sharing it signals trust and actual disclosure the most. Research on the contents of information women and men disclose in

friendships concurs with the sex difference found here. Even with close friends, men shared less personal information than women (Aries & Johnson, 1983; Caldwell & Peplau, 1982; Davidson & Duberman, 1982; Johnson & Aries, 1983). Public contents were those that were neither functional nor personal. They contain small-talk topics such as the weather or other publicly available information. Public topics were rarely part of the communication between leaders and employees in any of the four stores.

In addition to not sharing non-functional information, Kovac even explicitly discouraged his employees from talking to each other during work and hence from disclosing personal information and building intimacy. Case and Maner (2014) offer an interesting rationale for Kovac’s depreciation of personal bonds between employees. They found that leaders might prevent those social bonds in order to protect their power. As depicted in the framework section 3.2, coalitional bonds between group members change the distribution of power within the group. The authors acknowledge that “group leaders usually work to enhance the positive social bonds among group members to facilitate cooperation and group cohesion” (Case & Maner, 2014, p. 1033). Given certain circumstances, however, leaders promote division instead of cooperation among employees to prevent new power dynamics from endangering their position in the store. Conducting four different studies, the authors reported that this behavior holds particularly for dominance-motivated leaders. Since dominance was a characteristic of the Company Stores and frowned upon in the Franchisee Stores, the subcultures may explain why Kovac promoted division among employees, and Holzhammer did not. Furthermore, when Kovac or shift supervisors suppressed communication among employees, they addressed highly experienced employees, like the talkative coworker the researcher worked with once. According to Case and Maner (2014), leaders feel more threatened by highly skilled employees and are hence more likely to prevent them from building social bonds with other members than less-skilled workers.

Figure 9
Types of Information Based on Dimensions of Functionality and Personality



The female leaders were more open about sharing private information. More often than male leaders, female leaders spent time with employees in dyads talking to them privately. Due to her non-participation in those interactions, the researcher could merely speculate about the contents of their conversations. However, to the researcher’s surprise, the female leaders also disclosed more private information to the researcher than the male leaders. This was surprising because both female leaders treated the researcher as an unrelated outgroup member and made no efforts to affiliate her. In some instances, they even physically avoided prolonged interactions with her, which made their sharing of

private information seem paradoxical. One possible explanation for that seemingly inconsistent behavior is that their information sharing was reflexive rather than an attempt to build an intimate relationship with the researcher. The discrepancy in behaviors could be the result of the incompatibility of the female nature and the stereotypes of the leader role. If it had been adaptive throughout evolution for women to build intimate relationships, and if the stereotype of professional managers prohibits intimate relationships, women leaders will face a dilemma similar to the double-bind phenomenon (Jamieson & Hall, 1995). On the one hand, they have inherited biological mechanisms that make them instinctively pursue intimate relationships, and, on the other hand, they have adopted a social role that is stereotypically incompatible with intimacy. While the double-bind phenomenon refers to the conflicting social roles of women and managers, the dilemma here comprises an instinctive, unconscious way of acting and a (more) conscious decision to adapt to a predefined social role.

Loden (1985, p. 150) found in her interview study that, in contrast to male leaders, women leaders were striving to build “quality” relationships. They reported trying to get to know people as people instead of as employees. However, Loden (1985) also reported that “the value of intimacy in the workplace is something most feminine leaders do not talk about”, because “they recognize that the subject would be deemed inappropriate by many of their colleagues” (Loden, 1985, p. 150). From the outside, the findings above, however, do not substantiate Loden’s (1985) report. Although women leaders showed some very subtle tendencies to engage in intimacy-building behaviors (while male managers lacked those tendencies), the overall level of intimacy-building in women leaders was surprisingly low. Some findings in the management literature have already cast doubt on whether women leaders build more intimate relationships than male leaders. According to these findings, women leaders separated more strongly between their professional lives and their personal lives and showed a tendency to actively prevent the development of intimacy between them and others (c.f., Benschop, 2009; Ibarra, 1992; Waldstrøm & Madsen, 2007). The findings presented here substantiate those preliminary conclusions in the literature. The very subtle tendencies in women to be somewhat more engaged in intimacy-building, as well as nurturing behaviors, were only detectable because of the direct comparison with male leaders. The overall intensity and quality of their intimacy-building behaviors were so low, however, that it would not have become evident without the comparison. A reason for the women leaders’ lack of efforts to build intimate relationships might be that those relationships are believed not to be fruitful in professional settings and even dangerous to one’s career, and hence only be considered useful in one’s private life.

Another reason could be that leadership positions currently do not allow long-term relationships between leaders and their subordinates. The dynamics in organizational life that occur on all organizational levels discourage women leaders from building intimate relationships. For instance, organizations go bankrupt, internal reorganizations split up company divisions or teams, and individuals enter, leave, and reenter organizations constantly. Many of those dynamics are beyond control for the individual woman leader, making any relationship seem temporary. According to the evolutionary perspective, however, for women, intimate relationships serve the purpose of getting access to resources and social support in times of crisis or when a woman lacks the means to provide for herself (Buss, 2004). To ensure the adaptive benefit of a relationship like this, it needs to be long-term. That way, both partners have the opportunity to reciprocate the support they have received.

Furthermore, an intimate relationship with an inferior requires the leader to support the subordinate in times of crisis. In the corporate realm, this behavior would entail picking favorites and treating employees differently, which the latter usually punish. Interestingly, a manager from the headquarters reported exactly this difference as the one difference he had detected between male and female leaders: women leaders picked favorites among their employees, which many staff members disliked. Although

the researcher did not observe the two women leaders included in the study “pick favorites” among employees, the manager’s statement indicates that intimate relationships between women leaders and their subordinates do exist after all.

The lack of intimacy-building observed in female leaders against predictions might, however, result from cultural influences. Ouchi (1981) already documented that the amount of intimacy appropriate for business settings can differ considerably across countries:

... there is apparently the idea that intimacy should only be supplied from certain sources. The church, the family, and other traditional institutions are the only legitimate sources of intimacy. We resist the idea that there can or should be a close familiarity with people in the workplace. ‘Personal feelings have no place at work’, is the common feeling. Yet we are faced with an anomaly ... The Japanese example forces us to reconsider our deeply held beliefs about the proper sources of intimacy in society. (Ouchi, 1981, p. 9)

Like Loden (1985), Ouchi (1981) found, that in Western cultures, workplaces were not considered appropriate settings for intimacy-building and close relationships. He also found that in other cultures, such as Japan, however, intimacy is a natural part of workplace relationships. Hence, women leaders’ low effort in intimacy-building is likely to be moderated by German culture and may not represent a global phenomenon.

5.4.2.5 Discussion of Leader Sex Differences in Nurturing Behavior

Nurturing is a type of prosocial behavior that is associated more strongly with females as compared to males. The male leaders at GOFFCO showed hardly any signs of nurturing, i.e., of caring for others’ well-being, providing emotional support, or doing favors. Female leaders, however, also did not behave in a nurturing manner. Three out of the four leaders assessed store performance as more important than employee health, and they pressured sick employees to work even despite having a fever or a doctor’s note. Nevertheless, two patterns emerged that indicated sex differences between male leaders and female leaders. Although the female leaders were not nurturing towards individual employees and not considerate concerning their situations, they were, however, nurturing towards employees on a group level. By providing facilities that were appealing and attending to employees’ needs, they demonstrated concern for the situation of the *group* of employees. Taking care of work clothes and laundry or providing snacks and the opportunity to prepare food other than GOFFCO products indicated that female leaders were aware and acted upon the common issues GOFFCO employees dealt with during their daily routine. The male leaders, on the other hand, showed no concern for their employee’s well-being, neither on the group nor the individual level.

Although a manager from the headquarters accused female leaders of picking favorites, female leaders were most likely aware that overtly nurturing *individual* employees would cause envy and conflict among employees. If they had nurtured one employee, they would have had to nurture the others, too. For example, if they had allowed an employee to leave work early, they would have had to allow other employees to do the same. Hence women’s nurturing behavior on the group level might represent a strategy to nurture employees without favoring individual employees to prevent jealousy and conflict. By attending to the needs of the entire group of employees, women could act out the innate strategy of nurturing and, at the same time, preserve equal treatment of staff members. It is interesting, though, that the researcher nevertheless encountered the accusation of favoritism in women leaders. It may be a sign that despite deliberate resolutions, the influence of evolutionarily adaptive strategies on leader behavior is more substantial than indicated by (some) gender researchers.

Data analysis revealed a conflict in coalition-building and nurturing. As elaborated above, coalition-building requires equal treatment of employees. Rewards and punishments are equity-based, i.e., they depend on the employees’ performances (Dobbins, 1985, 1986). That way, employees comprehend why some coworkers enjoy benefits that they do not get or why other coworkers lose privileges that they still

possess. Bonuses or other compensations for acquiring a new key account or closing a sale are examples of equity-based resource distribution. At GOFFCO, they punished employees who were perceived as responsible for failed MSVs and rewarded employees who worked hard with additional breaks or a say in their work schedules. Employees in equity-based reward systems tend to perceive their treatment as transparent and fair.

A nurturing treatment in group settings, on the other hand, is more difficult to frame as fair. This way of distributing resources is *equality-based* because it aims at evening out social inequalities (Dobbins & Platz, 1985, 1986). Non-work-related issues become relevant, and those are often subjective to assess and compare. A leader might, for example, grant more benefits to an employee who cares for a disabled child than to another employee who takes care of both of their elderly parents. The reasons for the different treatments can be manifold. The leader may assess one of the situations as more challenging, have more information about one of the employees, or be more aware of one employee's situation. The leader might hence treat one of the employees favorably, e.g., when deciding on who may leave work early or assessing their quality of work.

The data revealed that employees often perceived equality-based treatments as unfair, which led to resistance and discontent. Women leaders' attempts to nurture employees on a group level were hence a reasonable compromise between caring for employees' well-being and treating employees in a transparent and non-favoring fashion. Loden (1985) cited a female leader who described her leadership approach in an interview: "When I was managing 650 people, I was very unorthodox. I baked cookies for people and hugged them when they did well. People need to feel valued and cared about" (Davis, 1983, p. 172, as cited in Loden, 1985, p. 151). Just like this exemplary leader, Solberg and Velitchkov demonstrated that they cared about their employees by acknowledging and feeding their basic needs on the group level.

Nevertheless, nurturing on the group level does not satisfy individuals' specific needs, but only those needs shared by the entire group. The leader can neither consider the importance of that need to the individual nor the current necessity for that need to be fulfilled. At least some of the leader's efforts in nurturing employees on the group level are likely to remain without effect. Simultaneously, the individual needs that distinguish the individuals of a group stay unfulfilled. To what extent nurturing employees on the group level can compensate for nurturing employees on an individual level remains to be answered.

Of the leadership styles assessed in the SDL literature, transformational leadership and consideration contain nurturing behaviors. In addition to being charismatic and intellectually stimulating, transformational leaders are considerate towards individuals' needs. The Leader Behavior Description Questionnaire (LBDQ) of the Ohio State Leadership Center measures the dimensions of consideration and initiating structure. It contains items that measure leaders' concern for their employees. While for transformational leadership, studies report a more or less consistent sex difference favoring females (Eagly et al., 2003; Van Engen & Willemsen, 2004), they equally consistently find no sex difference in consideration (Dobbins & Platz, 1986; Eagly, Karau, & Johnson, 1992; Van Engen & Willemsen, 2004). The items referring to nurturing behaviors are merely one subset in the questionnaire, but their nature may be responsible for the different findings concerning the two leadership styles. In the LBDQ, questions regarding leaders' nurturing behaviors ask about particular behaviors that respondents are likely to transfer to the individual level. Leaders who "demonstrate concern for employees" or "encourage employees to talk to him/her about personal problems" (Szilagyi & Keller, 1976) usually interact on an individual level with their subordinates. The Multifactor Leadership Questionnaire (MLQ; Bass et al., 2003), on the other hand, presents the questions in a way that refers to the group level more than the LBDQ. A leader who goes "beyond self-interest for the good of the group" may score high

when they are nurturing on the group level. Women's nurturing behaviors, which took place predominantly on the group level, hence may have been captured by studies measuring transformational leadership, but not by studies measuring consideration.

Although none of the leaders in this study nurtured their subordinates on the individual level, the Company Store leaders "nurtured" individuals of the *same* rank on a few occasions. In those instances, leaders behaved according to the concurring predictions of social role theory and evolutionary psychology. Kovac helped out fellow restaurant leaders but did so for opportunistic purposes only. While investing time in helping them, he already complained about the time he was losing that he could have invested in his career and store's performance. Velitchkov, on the other hand, helped out a fellow restaurant leader as a matter of course, without regarding the time she invested as lost or wasted. She hence demonstrated behavior that met the definition of nurturing since it aimed at improving the other person's situation and was motivated by empathy. Kovac's helping behavior did not turn out to be nurturing since his counterpart's needs were secondary to him in the end.

That nurturing or helping occurred only within hierarchical rank substantiates the argument above. Women leaders may refrain from nurturing behaviors on an individual level in order to prevent conflicts among staff members. However, their innate tendency to empathize with others is still present and seeks other outlets. Both women leaders found their own measures to care for their employees' well-being without picking favorites on the individual level. On the other hand, male leaders may have been particularly careful at hiding nurturing behaviors because they would have interfered with the male stereotype. The resulting role incongruity may lead to backlash effects similar to those faced by female leaders whose behavior concurs with male/leader stereotypes.

Research suggests that women empathize more than men, which in return leads to women being more nurturing than men. Some research, however, highlights that women discriminate between close others and strangers when empathizing with others (e.g., Maner & Gailliot, 2007; Roberts & Strayer, 1996, p. 461). Unfortunately, no research has yet tried to assess or define the relationship between leaders and subordinates in terms of closeness. If women leaders distance themselves from inferiors in the same way as they do from the group (see coalition-building), they will not build close relationships with them. Inferiors will then be of a similar status as strangers, and women leaders' empathetic concern towards them will not be more substantial than that of male leaders. On the other hand, leaders and inferiors spend much time together, and modern leadership builds on leaders taking responsibility for employee development and employee satisfaction. Whether the kind of relationship that develops between (women) leaders and their inferiors qualifies for higher levels of empathetic concern towards them than towards strangers is not clear. After all, women's nurturing behaviors on the group level might also represent women's efforts to abide by the requirements of the female stereotype.

5.4.3 LEADERSHIP DIFFERENCES AND FOUR DISTINCT SOCIAL STRUCTURES

The third question that guided empirical analysis asked for the relationship between sex-specific leadership styles and social structures in the workplace. The findings uncovered four leaders who demonstrated unique leadership styles influenced by both sex and subculture and two distinct subcultures in the Company Stores and the Melsbach Stores. Those findings indicated that the link between leader sex and store structure would not be straightforward.

Like the vast majority of companies, GOFFCO was organized according to hierarchical principles resembling those of male dominance hierarchies (Mousnier, 1973; Sidanius & Pratto, 1999). All GOFFCO stores included in the study represented dominance hierarchies rather than egalitarian communities. There were, however, differences in the cohesiveness and importance of the hierarchical

structures across stores. At the same time, the stores varied concerning the visibility of egalitarian structures. Whereas intimacy and nurturing merely played a subordinate role in one store, they were considerably more pronounced in another one. The characteristics of each store were related to the respective subculture and the degree to which its leader displayed sex-specific leader behavior.

The subculture in the Company Stores concurred more with the male than the female strategies since it embraced performance and dominance behavior. The subculture in the Melsbach Stores, on the other hand, concurred more with the female strategies than the Company Store subculture since it frowned upon dominance behavior in a narrow sense and valued people more. In congruence with the subculture, the male leader from the Company Stores, Kovac, invested the most in male strategies and did not engage in female strategies. Similarly, the female leader at the Melsbach Stores, Solberg, invested more in female strategies than the other leaders and did not engage in male strategies. According to the assumptions inherent in the research framework, Kovac's Flagship Store should hence represent a dominance hierarchy, whereas Solberg's City Center Store should represent an egalitarian community. In congruence with the predictions, those two stores had developed the most evident sex-specific social structures.

The Flagship Store was organized as a consistent and stable dominance hierarchy. The hierarchy was even more nuanced than foreseen by GOFFCO norms as there were differences in power and status *within* hierarchical ranks. The Flagship Store was also the only store that had incorporated a cohesive coalition. The high levels of competitiveness and performance-orientation concurred with the strong salience for intergroup competition. The City Center Store, on the other hand, displayed some egalitarian structures despite the formal hierarchical organization GOFFCO stipulated. Information exchange was very personal at times, and individuals valued disclosed information by referring to it and demonstrating interest in it more than in any other store. Intimate behaviors like playful teasing and physical contact occurred across rank and added to other behaviors that emphasized equality across rank. Nurturing behaviors were more personal than in the other stores since they related to more specific situations and problems. Among employees, many intimate relationships had developed, ranging from friendships to romantic partnerships. Nevertheless, the City Center Store essentially still qualified as a dominance hierarchy. However, acts of counter dominance indicated that its hierarchy lacked stability compared to the one in the Flagship Store.

The other two leaders engaged less in their sex-specific strategies. Holzhammer applied only subtle forms of dominance and preferred prestige-related behaviors to demonstrate his status rank. Like Kovac, he hardly engaged in female strategies. Nevertheless, he kept a lower distance from his subordinates, which helped him be more in line with the people-oriented subculture of the Melsbach Stores. Velitchkov, on the other hand, concentrated on the male strategy of dominance in a narrower sense and seemed to only involuntarily engage in female strategies more than her male counterpart Kovac. Holzhammer and Velitchkov hence adapted their dominance strategies to fit their respective subcultures and to deviate from their sex-specific strategies (i.e., male culture high, women culture low). The application of female strategies, however, concurred with leader sex (i.e., men low, women high).

The four resulting store structures differed due to the unique combination of subculture influence and the leader's degree of sex-specificity. Nevertheless, there were commonalities between the male store structures and the female store structures. In the male stores, the hierarchies were more consistent and not questioned by employees. In the female stores, on the other hand, employees and shift supervisors exhibited counter dominance so that the hierarchies appeared to be less consistent and less stable. The only true coalition emerged in the Flagship Store, but the Highway Store staff also showed coalitional patterns, like efficient cooperation and conflict avoidance. The female stores, on the other hand, were characterized by more open conflicts that prevented efficient cooperation. Simultaneously,

individual employees developed strong bonds and subgroups. This pattern may reflect the quality of egalitarian communities of members being able to associate with anyone in the group based on personal preferences. Assuming that leader behavior contributed to the development of those structures, the similarities between the female stores and the male stores substantiate the assumptions from the framework chapter 3.2. Some of the findings, however, were not predicted and hence unexpected.

It was surprising that the members of the Flagship Store, with its cohesive coalition and consistent dominance hierarchy, showed relatively high levels of intimacy-building behavior and nurturing. The store stood out for the store norm of physical contact, which resembled grooming behavior. Nurturing behaviors were also common among employees. At first, the researcher struggled with this finding. Were coalitions and egalitarian communities interchangeable in terms of intimacy-building and nurturing? In that case, intimacy-building and nurturing would not have been distinguishing features of egalitarian communities and hence not *female* strategies to manipulate social structures.

Comparing the intimacy-building and the nurturing behaviors at the Flagship Store and the City Center Store revealed important qualitative differences. The differences between the stores indicated that the definitions of intimacy-building and nurturing behaviors were insufficient to distinguish between evolutionarily adaptive male and female behaviors. Intimacy-building and nurturing behaviors in the Flagship Store met their respective definitions, but they were less specific than in the City Center Store. For instance, the definition of “caring for others’ well-being” does not require the actor to understand their counterpart’s current needs. Caring for others’ well-being was the most frequent nurturing behavior observed in the Flagship Store. Hence it contributed significantly to its perception as incorporating communal structures. Many of the caring behaviors resulted from store norms triggering employees to provide each other with beverages, food, or breaks if possible. In those instances, however, employees often did not respond to their counterparts’ needs. Employees might hand a cup of water to a coworker, who had just returned from their break, or a shift supervisor could send a subordinate to smoke a cigarette although they just had had a cigarette break. Employees directed those behaviors towards any coworker, including new-hires and entirely unknown colleagues, not distinguishing between recipients. In the City Center Store, on the other hand, unspecific nurturing behaviors were rare. Instead, almost all codings referred to employees helping others with specific problems and were reactions to their current needs. Most behaviors coded occurred only once and benefitted one specific individual. The behaviors in the two stores hence served different purposes that are sensible from the evolutionary psychology point of view.

Employees’ behaviors in the coalitional structure and the communal structures both appeared to serve the female strategies of intimacy-building and nurturing. That is, however, not true. The helping behaviors among Flagship Store employees served two purposes. For one, employees bonded with each other and emphasized togetherness. By not discriminating among employees, i.e., by helping both old acquaintances and new-hires, the Flagship Store workers enforced their oneness in the inter-coalitional competition they pursued. Helping and caring for each other demonstrated being on the same team and having each others’ backs. Second, the seemingly nurturing behaviors ensured coalitional strength and success. By making sure that their coworkers were hydrated, well-nourished, and otherwise cared-for, they enabled them to deliver their best performance. Hence the coalition as a whole benefited from the nurturing and intimacy-building behaviors they displayed. In the female City Center Store, however, nurturing and intimacy-building behaviors were based on empathy and usually directed towards carefully preselected individuals. They enabled the development of unique individual relationships among employees. Only those actions were relevant to the development of female social structures.

Coalitions and egalitarian communities might not only be more different than the first look implied. They might even be mutually exclusive to some extent. A study on community-based coalitions

indirectly addressed the antagonism between the two structures in saying that “where there were very few friendships, there appeared paradoxically to be a greater social openness” (Wells et al., 2004). The finding highlighted that a group could either consist of close interpersonal relationships like in female structures or be open towards new members and outgroup members like in male structures. Close interpersonal relationships require honesty and transparency. Those qualities, however, can conflict with the policy of conflict avoidance in coalitions. In the Flagship Store coalition, for example, employees preferred suffering mistreatment to risking to offend or hurt another coalition member.

Female structures, on the other hand, tolerate conflicts. Individuals in egalitarian communities are free to associate with whomever they want. As opposed to coalitions, they are, however, also free *not* to associate with whomever they want. Hence, employees at the female stores addressed problems and grievances openly without fearing to damage the social structure. The behavioral negotiation model of organizational intragroup conflict argues that conflicts are negotiations about dividing resources (McCarter et al., 2020; Walton & McKersie, 1965). In hierarchical structures, resource distribution is organized based on group members’ ranks and performances that provide a transparent guideline and make negotiations obsolete. Egalitarian communities lack this clarity. The model hence supports the finding that conflicts are more common in female social structures. In both female stores, female employees complained more than male employees about interrelational and task-related subjects highlighting the relationship between negotiation and sex. Besides conflict management, other dissociative features between coalitions and communities have already been addressed above. For instance, equality-based resource distribution in communities leads to conflict, which prevents coalition-building. On the other hand, high levels of trust towards strangers are fruitful in coalitions but potentially hurtful in egalitarian communities.

In the framework chapter 3.2, the researcher argued that women strive for harmonious, conflict-free environments for their children’s healthy development (Silk, 2007; Taylor et al., 2000). The finding of female store structures being more open toward conflict than male store structures seems to contradict that assumption. Openly addressing problems can, however, still be argued to be beneficial for communal social structures preferred by women. Hinting at and talking about problems early in their development process can prevent long-term conflicts from coming into existence. It further impedes the formation of conflicting subgroups that disrupt the harmony in the group.

Female leadership should allow and promote open conflicts but also help settle those conflicts once they occur. Van Vugt and Spisak’s (2008) research found that given *intragroup* conflict, people preferred a female leader in charge, whereas they clearly preferred to have a male leader given *intergroup* conflict. Hence, they provide an association between female leadership and intragroup conflict. Furthermore, they found that when there was an intragroup conflict, group members invested more in the group when the leader was female. The finding demonstrates that group members trusted more in the group’s efficacy when there was conflict in the group, and the group leader was a woman. On the other hand, male leadership and intragroup conflict discouraged group members from investing in the group. Male group members, in particular, react to intragroup conflict at work with psychological distress, whereas no such relationship exists for women (Tsuno et al., 2009).

Another unexpected finding was that the coalition in the Highway Store felt less cohesive and weaker than the one in the Flagship Store. The Highway Store environment, though, appeared to promote coalition-building. Holzhammer engaged in the male strategy of coalition-building by reinforcing group cohesion and affiliating outgroup-members. Additionally, the store belonged to the people-oriented Melsbach culture that emphasized team building and appreciated the individual’s contribution to Melsbach’s success. However, employees developed no sense of togetherness as it was characteristic of the Flagship Store. Instead, people rarely interacted during work.

One crucial difference between the two male stores was their differing goals. Coalitions form in order for their members to pursue a shared goal to gain resources (McDonald, Navarrete, & Van Vugt, 2012). In the Flagship Store, employees' every action centered around acing potential MSVs. The staff was aware of the store's excellent position relative to other GOFFCO stores. The goal to maintain or even improve this position motivated employees and gave them purpose. In the Highway Store, on the other hand, MSVs played an inferior role. A failed MSV was annoying but not necessarily a reason to worry. The vague goal of enabling store success was not motivating enough to promote coalition-building. The difference hence highlights the importance of common goals for coalition-building.

Nevertheless, a shared goal was not the only antecedent of cohesive coalition formation. In the Family Store, MSVs were equally important as in the Flagship Store. Employees there, too, focused on identifying mystery shoppers and excellently passing potential MSVs. However, the Family Store failed to establish coalitional structures. This was because, unlike at the Flagship Store, Family Store members were not aware of their participation in an intergroup competition. Velitchkov did not engage in coalition-building and, more particularly, she did not call her subordinates' attention to the GOFFCO universe that included many other stores, as well as competitors, suppliers, service providers, and shareholders. Although employees had picked up on Velitchkov's goal to shine at MSVs, they had done so in a vacuum that Velitchkov did not fill with purpose. The employees hence failed to perceive themselves as being part of a greater system in which they could win or lose resources through competitive interactions. The awareness of intergroup competition was hence just as crucial for coalition-building as a clearly shared goal.

In addition to not building a coalition, the Family Store also did not form a stable dominance hierarchy. That was surprising because Velitchkov's demeanor was very dominant. This finding matches the one from the summer-camp studies. Young females' cabins did not build cohesive groups and formed no consistent hierarchy, despite Savin Williams (1987) recording many instances of dominance behavior. In the male cabin groups and the male stores, however, group members' dominance behavior led to a dominance hierarchy. Nevertheless, the case of the Family Store indicates that dominance behavior does not automatically result in dominance hierarchies. First of all, the relationship between the intensity of dominance behavior and the development of dominance hierarchies may not be linear. The relationship here appeared to be curvilinear, with the curve reaching a maximum at high levels of dominance but declining again with excessive levels of dominance. The effects of testosterone and traits favoring males have been repeatedly described as inverted U-shape in the past (Grimshaw, Sitarenios, & Finegan, 1995; Moffat & Hampson, 1996). It could also be the interaction of dominance behaviors and coalition-building behaviors (which were missing in the Family Store) that facilitated stable dominance hierarchies. Groups aware of their inter-coalitional competition may be intrinsically motivated to keep the hierarchical structure as stable as possible. That way, the group preserves its resources for competition and gains strength for critical situations. The less aware the group of its participation in an *intergroup* competition for resources, the more energy it invests in the *intragroup* competition for status and power.

The findings contradict some of the findings from Loden's influential interview study (Loden, 1985). She found that men applied a masculine leadership style that was characterized by high levels of control as well as by being strategic, unemotional, and analytical. Their goal was to build a hierarchical structure in which members' primary objective was to defeat others. Women, on the other hand, pursued a feminine leadership style built on empathy and collaboration. Their goal was to encourage team building and cooperation in order to generate quality output. The findings presented here agree with Loden (1985) in that male leaders pursue building hierarchies and that their goal is to defeat others. However, the findings demonstrate that the goal of defeating others mostly refers to extra-coalitional members. Within

the hierarchy, male leaders enable coalition-building and effective cooperation in a conflict-free environment. Defeating each other within the hierarchy would be costly and at the expense of competitive efficacy. Team building and cooperation, which Loden attributed to female leaders, were hence also a goal pursued by male leaders. Women leaders, on the other hand, focused on the individual regardless of outcome concerning team building and cooperation. Empathy may have influenced their decisions. The structure they created, however, was loose and tolerated criticism as well as counter dominance.

Loden's (1985) book clearly positions itself as focusing on "women's unique strengths". Although these strengths may be acted out by some of today's female leaders, assessing two random women in medium leadership positions, indicated that, 35 years later, the average women leader may still struggle to act authentically and establish social structures concurring with her innate preferences.

5.5 RQ1B: WHICH SEX DIFFERENCES IN LEADERSHIP EXIST FROM AN EVOLUTIONARY PSYCHOLOGY PERSPECTIVE OF BEHAVIOR IN ORGANIZATIONAL CONTEXTS?

The evolutionary psychology-based framework introduced as an answer to the first research question RQ1a was subsequently applied to guide an ethnographic field study. The empirical investigation ultimately aimed at testing and expanding the sex differences incorporated in the framework for their existence and their qualitative specifications in organizations (RQ1b). Although the research substantiating the framework in many cases consistently supported the existence of sex differences in the two male and the two female strategies, a first juxtaposition to related domains in organizational research had already indicated that selection pressures and/or social-cultural influences distorted those sex differences in organizational settings. Hence, by taking a qualitative research approach, the researcher pursued the goal to understand whether and how the sex differences from the evolutionary psychology framework would present themselves given the specifications of masculinized organizations and the stereotypically male leadership role.

In a first step, the researcher presented specific behaviors that crystallized in the GOFFCO stores as related to the four strategies. Most of the behaviors observed could be linked to behaviors discussed in the scientific literature. Some behaviors, however, had not been considered yet. Coalition-building was a strategy that leadership researchers have mostly neglected in the past and hence many behaviors concerning coalition-building were newly introduced. Emphasizing others' positions within the hierarchy served strengthening the integrity of the overall dominance hierarchy and hence one's own position. Ensuring equal treatment of individuals of the same rank enabled coalition-building and diminished subgroup development and affiliating outgroup members improved the situation of the coalition. A newly identified behavior serving the female strategy of intimacy-building was playful teasing which demonstrated and created intimacy within and across rank. Regarding nurturing behavior no behavior outside the ones discussed by the scientific literature were discovered.

The findings showed that male leaders acted in congruence with the male strategies that help develop dominance hierarchies. Prestige-related behavior and all of the coalition-building behaviors showed the most conspicuous sex differences favoring male leaders, because they occurred in male leaders but were in essence not displayed by the female leaders at all. Affiliation of outgroup members was probably the most conspicuous of those sex differences. Also, in congruence with the predictions made by evolutionary psychology, male leaders did not engage in female strategies which serve egalitarian community-building. Both male stores developed consistent dominance hierarchies, although the one in the Flagship Store was more preeminent and detailed than the one in the Highway Store. Both male stores further showed coalitional structures, although only the Flagship Store developed a cohesive

coalition. The weaker specifications in the Highway Store can be attributed to the different organizational subcultures.

Female leaders, on the other hand, were considerably more inconsistent in their behavior. One of the female leaders invested in the male strategy of dominance, while the other one did not. Neither of the female leaders, however, invested in coalition-building. Both female leaders invested more in female strategies than their respective male counterparts, but these behaviors were subtle and appeared to be unintentional. Women leaders were more nurturing toward their employees than male leaders, but only on the group level. Communal structures in the female stores were hence also subtle and did not replace the hierarchical structures stipulated by GOFFCO. In congruence with their non-investment in coalition-building, none of the female stores developed a coalition. The dominance hierarchies in their stores were unstable and characterized by counter dominance. Again, the organizational subcultures explained deviations within sex.

The findings indicate that sex differences were more pronounced in strategies and behaviors that were less associated with stereotypical males and/or stereotypical leaders. Behavior that is stigmatized as either male or female was more volatile in female leaders than behaviors that are less salient as being desirable or unwanted in organizational leadership. Women leaders adapted more strongly to social cultural influences concerning those behaviors, while men were more consistent in demonstrating those behaviors and were more moderate in adapting them to cultural norms.

The findings also give reason to believe that androgynousness might not be viewed as positively as indicated by some of the scientific literature. Due to their somewhat more nurturing and intimacy-building behaviors, their engagement in male strategies and adaptation to masculine GOFFCO norms (e.g., having employees work sick) appeared to be contradicting. Employees reacted to that incongruent combination of male and female strategies by openly complaining about their store leader and their work situation. The field study hence contradicts the idea that an intermixture of masculine and feminine traits and behaviors is desirable in leaders.

Other than implied by the literature, women leaders were not more people-oriented than men. Coalition-building entailed many positive interactions with both ingroup and outgroup members. In fact, women leaders appeared to be more withdrawn and to discriminate between individuals regarding whether they interacted with them. Male leaders, on the other hand, enjoyed interacting with customers, suppliers, and employees during work. The findings hence indicate that the notion of people-orientation needs to be conceptualized more clearly to distinguish between the different behavioral motives and the depth of the resulting relationship.

The researcher found that the intermixture of male and female strategies in theoretical concepts and stereotypical thinking does not end with leaders' people-orientation. It became clear that coalition-building and nurturing are strategies that can look similar from the outside. Coalition-building and nurturing are distinguished based on the underlying motive guiding the leader in applying them. Coalition-building is more opportunistic in nature and benefits the whole group. Nurturing, on the other hand, is more altruistic in nature and benefits the individual. Most self-assessments and other-assessments of leader behavior in the literature, however, do not distinguish clearly enough between the two, indicating that differences between men and women leaders are unlikely to reveal themselves.

The findings above are more generally discussed in the following final section, particularly concerning their contribution to the SDL research field and their implications for theory, practice, and future research.

6 DISCUSSING CONTRIBUTIONS, IMPLICATIONS, AND LIMITATIONS OF THE EVOLUTIONARY PSYCHOLOGY PERSPECTIVE ON SDL

The research question of which sex differences in leadership exist from an evolutionary psychology perspective was addressed in this research work both theoretically as well as empirically. The framework derived from theory and research on sex differences regarding Tinbergen's four problems postulated that men and women have different, maybe even oppositional, social motives. Accordingly, they should follow very different strategies to pursue their desired social structures. Men were predicted to utilize dominance behavior and coalition-building to build dominance hierarchies. On the other hand, women were predicted to apply intimacy-building and nurturing in order to enforce egalitarian communities.

Most research used to substantiate the framework of sex differences in leader behavior from an evolutionary psychology perspective did not consider social influences that are typically faced by organizational leaders. Hence, the researcher used the framework to guide the data analysis of an ethnographic account of four leaders in the field. That way, social influences and selection pressures inherent in gendered organizations could be observed in their effect on sex-specific strategies. The findings from the field indicated that the interaction of innate strategies and social influences was at the expense of female strategies. Female strategies were considerably less observed than male strategies. When they were observed, they were subtle and hardly pronounced. From an outsider's quantitative perspective, men and women leaders were hence factually more similar than they were different – just as postulated by the SDL research field's shaky consensus. However, the close-up view enabled by the research design chosen allowed for a variety of qualitative sex differences to emerge. For example, dominance behavior was found to be more volatile in women than in men and more aligned with organizational (sub)culture. At the same time, women leaders applied dominance behavior in a way that did not serve hierarchy development or stabilization.

The findings of this research study contribute in several ways to an increased clarity in the SDL research field, which are summarized in section 6.1. Furthermore, they lead to a number of theoretical and practical implications that are elaborated on in sections 6.2 and 6.3. At the same time, the specifics of the research path and implicit assumptions limited the findings presented in several ways as illustrated in section 6.4. Section 6.5 addresses ethical considerations that resulted from the covert nature of the research method. Finally, the findings imply several ideas for future research directions in the SDL field.

6.1 CONTRIBUTIONS TO MORE CLARITY IN THE SDL RESEARCH FIELD

The current research took a new perspective on sex differences in leadership to bring more clarity into the as yet inconclusive findings on the role of leader sex for differences in leader behavior. It addressed this goal in various ways.

First, it was suggested that the meta-theory of social structure theory fails to provide a clear guideline for SDL researchers. The author concluded that social structures and their subordinated theories make no consistent predictions about the quality of sex differences in leader behavior. That lack of clarity is caused by the conflicting roles of sex and leadership. Social role theory does not address the case of multiple roles influencing behavior simultaneously. Hence, women's behavior in leadership positions can always be explained by one of the two stereotypically contradictive roles: woman or leader. In congruence with the double bind, SDL research based on social structure theory produced ambiguous and inconclusive findings. The author argued that the meta-theory of evolutionary psychology might dissolve that dilemma because it makes more consistent predictions about sex differences in behavior. It is assumed that evolved sex differences in behavior also become evident in leaders. Evolutionary

psychology is therefore introduced as an alternative meta-theory to guide SDL research. In congruence with evolutionary psychology, a model of biological influences on behavior is related to sex differences in behavior and, wherever possible, to sex differences in leader behavior.

In a second step, the hitherto prevailing SDL research framework of agency and communion was discussed as another reason for the inconclusiveness of SDL research findings. The agency and communion framework applied in SDL research centers on the individual and its actions irrespective of their effects on others. The impreciseness and inaccuracies of some of the derivations made from this framework were presented as a further reason for the inconclusiveness of SDL research findings. Much of SDL research relies on leadership *styles* like democratic or transactional leadership. Those styles, however, derive from research from back when leadership researchers and leaders were a homogenous male group. The leadership patterns hence reflect male preferences and structures. For example, one could argue that the distinction between transactional and transformational leadership captures the social strategies of dominance and coalition-building, but not female strategies. Accordingly, it would be unsurprising that researchers struggle to identify a “female advantage” when contrasting male and female leaders.

In the following, a new framework in congruence with evolutionary psychology was outlined to identify and explain sex differences in leader behavior. Other than agency and communion, it links sex differences in (leader) behavior to social goals. The framework suggests that sex differences result from deviating social motives between the sexes: men strive for stable and consistent dominance hierarchies, while women pursue egalitarian communities. Both sexes have developed distinct strategies to promote their respective goals. The framework chapter 3.2 identified and outlined four of those strategies. The strategies included stemmed mostly from the literature but were also informed by the ethnographic field research described in chapter 5.

The male strategies identified were dominance behavior (i.e., including prestige-related behavior and aggression) and coalition-building. When classifying leadership as masculine, the current SDL literature focuses on leader behaviors that can best be classified as dominant. By carving out the strategy of coalition-building, this research work hence introduces a new spectrum of “typically” male behaviors. Behaviors associated with coalition-building, such as trust and cooperation, have as yet either played no role in identifying sex-specific leader behaviors or were misclassified as female (e.g., Post, Latur, & Belkin, 2019). Even outside the SDL literature, researchers have rarely taken up the notion of regarding organizational groups as coalitions (for an exception, see Saad, 2011, p. 20).

Following a pragmatic realist paradigm, the researcher immersed herself in the field. Using an ethnographic design, she took a fresh look at sex differences in leader behavior by observing two male and two female leaders in the standardized environment of a globally operating fast-food company. Employing an ethnographic research design, the researcher created more closeness between the rather abstract theoretical terms and the reality of leadership sex differences in the field. Social strategies were linked to detailed behavior descriptions. Particularly strategies that have rarely been discussed in organizational settings such as coalition-building, nurturing, and intimacy-building were illustrated by the detailed and thick descriptions inherent in ethnographic research.

By doing field research, the researcher further collected not only isolated leader behaviors but also social *influences on* as well as direct social *outcomes of* those behaviors. The research design deliberately deviated from the mostly questionnaire-based approaches in SDL research and experimental designs of evolutionary psychology. Using an ethnographic approach, the researcher identified behaviors that systematically differed between leaders and interpreted them based on the evolutionary psychology paradigm. The field research was conducted *before* developing the framework so that the researcher was unbiased by predefined assumptions and implicit hypotheses. The evolutionary psychology-based

framework then resulted as an intermediate outcome from an iterative process oscillating between the data and the relevant literature. In consciously diverging from the predominant research designs in the field, the researcher facilitated a new perspective on the topic of SDL and on previous research results.

The fieldwork uncovered various specific behaviors which serve the strategies outlined of the evolutionary psychology-based framework. Based on these behaviors, the researcher systematically contrasted and compared the behaviors of all four leaders. Additionally, all other store members' behaviors were analyzed to assess the culture and social structures that had emerged in each of the stores. The data analysis revealed that male leaders and female leaders differed in their behaviors in various ways. The differences in behavior concurred, for the most part, with predictions made by evolutionary psychology. Male leaders used primarily male strategies to build stable dominance hierarchies. In contrast, female leaders invested more in female strategies than male leaders.

Although the male leaders built stable dominance hierarchies, the women leaders built no egalitarian communities. Hence the evolutionary psychology paradigm predicted the outcome of male leader behavior and failed to explain the outcome of female leader behavior. Social forces seemingly overruled female mechanisms. The social influences preeminent in organizational settings and inherent in the leadership role guided female leaders' behavior. At times, they even distorted sex-specific female behavior beyond recognition.

Though still more than male leaders, female leaders engaged very little in female strategies. When they did, it appeared to be involuntary and inconsistent with other behaviors they displayed. Instead, female leaders engaged in dominance behavior but failed to apply that strategy in a way that led to consistent dominance hierarchies. The store structures in the female stores were thus hardly more egalitarian communal than in the male stores. The female stores' unique structures could have resulted exclusively from the inconsistent dominance hierarchies in those stores and not reflect egalitarian communal structures altogether. The findings hence substantiated existing SDL research in that the prevailing male structures that characterize organizational cultures and structures represent a massive obstacle for women leaders to unlock their full potential (Carli & Eagly, 2001; Edding et al., 2014; Sinclair, 1998).

The empirical findings help clarify the ambiguity of SDL research in various ways. The findings reveal the importance of research on sex differences in leader behavior from a social role perspective. As stated in the beginning, this research project did not aim at substituting the existing research on SDL but at extending it by taking a new point of view. The different subcultures at GOFFCO and their entanglement with leader behaviors demonstrate the importance of organizational socialization processes and context. In understanding leader behavior, researchers must consider social influences, at least on an organizational level. If anything, the findings highlight that leaders' most immediate organizational environments may have been underestimated in their impact on leader behavior in the past.

The findings further indicate that sex differences in leader behavior are particularly strong in those domains that are less salient in management settings. Dominance and assertiveness concur with leader stereotypes (Schein, 1973, 1975) and, as in this case, are modulated by organizational culture and subculture. Particularly considering organizational subcultures, dominance behavior varied the most in its intensity and specifications across leaders. Nurturing and intimacy-building are, too, salient in management settings, but in a negative way. Being nurturing and intimate with subordinates is considered inappropriate in managerial contexts so that leaders are motivated to suppress related behaviors. Coalition-building, however, is rarely discussed as a part of managerial life. Male leaders are hence not *discouraged* from applying it, and women are not *encouraged* to apply it. Consequently, social influences in that domain are less forceful and allow for sex differences to emerge more clearly. Previous

research on sex differences in leadership, however, focused on those domains that scientific journals, management seminars, or the media frequently discuss. Sex differences in those domains are likely to vanish under the pressures of social desirability.

The findings further highlight that there might be alleged similarities between male and female leaders' behaviors that, in fact, represent different social motives. Fiedler, too, distinguished between leadership styles and leader behaviors. Styles were defined by what leaders *needed* and ensured consistency in leader behavior across situations. Behaviors, however, captured what a leader *did*. Fiedler hence believed leadership styles to be constant over time, while leadership behavior was fluid and depended on social influences (Fiedler, 1967). Although the social contexts led to some similarities among the male and female leaders at GOFFCO, these similarities did not necessarily reflect similar *intentions*. Existing leadership measures do not accommodate this distinction and neglect leader behaviors' underlying motives or needs. The obtained results hence not only shed new light on differences between male and female leader behaviors but also on alleged similarities.

The research also demonstrates how difficult it is to distinguish between the nature of behaviors based on observations alone. For instance, cooperation or the affiliation of outgroup members, behaviors serving coalition-building, may resemble doing favors, a behavior serving nurturing. People assessing leader behaviors and social structures need to consider what triggers a specific behavior, whom that behavior is directed at, and its effects. Without these distinctions, adaptive male behaviors such as trust, reconciliation, or cooperation are easily misclassified as stereotypically female. The missing distinction between behaviors that serve the two different structures may have distorted the results generated by quantitative measures that assess leader behaviors. Hence, a clear distinction between them should lead to more conclusive research results in the future.

Distinguishing between behaviors that serve dominance hierarchies and egalitarian communities was not trivial. Particularly coalition-building and the female strategies to build egalitarian communities shared various similarities from the outside. This problem has already become evident during the few attempts to assess organizational behaviors from an evolutionary psychology paradigm. For instance, Saad (2011) equated the social domain of *forming and maintaining cooperative alliances*, i.e., forming coalitions, with *altruism*, *equality between close associates*, and *friendship*. This research study, however, finds that these factors are characteristics of egalitarian communities instead of coalitions. At the same time, however, Saad (2011) acknowledged the mechanism of inter-coalitional conflict as beneficial in business settings and the importance of equality (within rank). While he assumed that affiliations comprised both strategic alliances and close interpersonal relationships, this research study highlights that these two social structures are distinct. In making this distinction, the current research disentangles various behaviors that were as yet considered to represent the same strategy.

An important theme that ran like a thread through the research project was the ease and straightforwardness of male-related issues in contrast to the complexity and ambiguity of female-related issues. Dominance hierarchies and male strategies were easy to identify both in the literature and the data. Even in the social role realm, masculine stereotypes and male behaviors were more consistently reported than feminine stereotypes and female behaviors. The ease that accompanied male domains may well be the result of men's long-term hegemony. The vast majority of political authorities, economic lobbyists, and leading scientists in every field used to be male. Their high visibility and influence on the modern world may have led to a high familiarity and ease of processing of male domains. Still, it was surprising to find how little knowledge is available of female structures, female intentions, and female behaviors. The little knowledge available is poorly interconnected and requires replication. This research project provided a first attempt to connect findings on female motives and strategies on various levels.

In sum, this research project's implications for the existing SDL literature can be integrated into four major contributions. First, it takes an interdisciplinary perspective based on the evolutionary psychology paradigm and interconnects research findings from various fields to derive new knowledge of female domains and expand our knowledge of male domains. Secondly, the close look taken by the ethnographic field work helps entangle behaviors that were treated interchangeably in the past and be more accurate in what behaviors are classified as male or female. Third, it uncovers the different strategies between male and female leaders and sheds more light on the more complex strategies of female leaders. Those strategies are specified by linking them to specific leader behaviors in the field. Finally, the research findings emphasize the importance of context in leaders' socialization and the development of their specific behaviors.

6.2 THEORETICAL IMPLICATIONS FOR GENDER & MANAGEMENT AND LEADERSHIP RESEARCH

The theoretical framework introduced in section 3.2, the behaviors assigned to the sex-specific strategies in section 5.1, and the sex differences in leader behavior and their discussed outcomes in sections 5.2, 5.3, and 5.4 all entail new theoretical concepts of sex differences in leader behavior. These concepts and their interdisciplinary theoretical implications result from the abductive reasoning inherent in the realist pragmatic paradigm that guided this work. Abductive reasoning focuses on what could explain surprising or inconclusive observations. Hence, all theoretical derivations and statements are preliminary and need future research to become substantiated. Problems of abductive reasoning like deriving "wild hypotheses" or being faced with multiple legitimate explanations to decipher the same phenomenon (Kennedy & Thornberg, 2018, p. 53) were tackled using evolutionary psychology as the guiding meta-theory. In addition, extensive, interdisciplinary literature reviews alternated with episodes of data analysis and ensured proximity to existing theories and prior knowledge.

The researcher used the methodology of theory elaboration (Lee, Mitchell, & Sablynski, 1999) supported by a qualitative research approach based on ethnographic fieldwork. Its main theoretical contribution is the ongoing review, critique, and reassessment of social role theory (Eagly, 1987) and the SDL research field, as well as building new theory through the evolutionary psychology-based framework it introduced to guide research on sex differences in leader behavior.

The research framework was built on Geary's theory of men building dominance hierarchies, and women preferring altruistic, reciprocal relationships (Geary, 2010, p. 251; Hannagan, 2011). Although Geary describes male social structures in some detail, he remains rather vague about the nature of women's preferred social structure. The current work theoretically contributes by introducing the concept of egalitarian communities and transferring it to organizational contexts. In chapter 3.2.2, egalitarian communities are defined and described based on existing research from anthropology and sociology. This research work hence specifies and expands Geary's proposition of a preferred social structure in women.

Geary (2010) argued that men's dominance hierarchies and women's reciprocal and altruistic environments serve the purpose of gaining control over resources. To gain control, men and women have developed behavioral strategies. Geary does not specify those behavioral strategies but focuses on neurological mechanisms that may support men and women in gaining control over social resources. This current research, however, links preferred social structures of men and women to behavioral strategies. Furthermore, those strategies are linked to specific behaviors in the context of organizational leadership and followership.

The research framework introduced has various implications for related research fields. Those concern leadership theories, the theory of the female advantage, organizational commitment, and organizational culture.

Implications for leadership theories. Although this research work does not build on specific leadership theories, it still informs leadership research theoretically. It highlights that leader behavior, like any other form of behavior, cannot be understood without knowing its motivation. What are leaders' intentions? What goals do their behaviors serve? The findings in chapter 5 feed into the importance of *relational leadership theories*. Most of the SDL literature focuses on the leader on an individual level, eliminating social dynamics that could serve a better understanding of the social reality of SDL.

One of the most researched leadership theories focusing on leader-follower interactions and their outcomes is *leader-member exchange theory* (LMX theory; Goertzen & Fritz, 2004; Graen, Dansereau, & Minami, 1972; Graen & Uhl-Bien, 1995). It assumes that leaders treat their employees differently, which, in return, leads to differences in the relationships of leaders to their individual followers (Goertzen & Fritz, 2004; Liden & Maslyn, 1998). LMX studies focusing on the sex composition of the leader-follower-dyad reported that same-sex dyads were positively related to LMX (Pelled & Xin, 2000; Varma & Stroh, 2001), whereas mixed-sex dyads led to lower quality LMX (Green, Anderson, & Shivers, 1996; Vecchio & Brazil, 2007; Vecchio & Bullis, 2001). The evolutionary psychology paradigm assumes that men preferring dominance hierarchies and women preferring egalitarian communities is a universal sex difference independent of position or status rank. Hence, the higher quality same-sex LMX dyads found could result from the higher congruence in both leaders' and followers' underlying motives. Others reported that, on average, female managers provided higher LMX quality than male managers (Murphy & Ensher, 1999). Since females are supposed to reinforce and nurture dyadic interactions more than males, the evolutionary psychology paradigm nicely frames this finding.

Female advantage. Viewing SDL from an evolutionary paradigm also generates theoretical implications about the "female advantage" (Yukl, 2002, p. 412). The findings imply that instead of a "female advantage", women leaders bring a "female *difference*" to the table. From an evolutionary psychology perspective, every behavior linked to evolutionary forces is legitimized by the adaptive benefit it has provided concerning genetic survival. Like the different kinds of environment humans faced throughout evolution, organizations, too, exist in an environment that determines which qualities can lead to its survival or demise (Sackmann, 2017, p. 12). The "female advantage" is built on the assumption that companies face an increasing employee-orientation that requires empathetic and benevolent leaders who care for their followers' individual needs. Evolutionary psychology and the findings of the ethnographic fieldwork agree that female leaders focus somewhat more on individuals' needs than male leaders. The findings also demonstrate that this may not always be considered an advantage. Focusing on the individual implies taking the focus off of the group at the expense of group cohesiveness and cooperation. In the research setting at GOFFCO, male leaders' group-oriented leader behavior led to efficient cooperation and content workers. In contrast, females' non-group-oriented leader behavior resulted in complaining employees and inefficient or lacking team efforts. Operative work at the GOFFCO stores was fast-moving and dynamic, career-paths were straightforward and transparent, performance-orientation was high, and most processes were inflexible, repetitive, and routine. Hence, the environment embraced the qualities that came with the dominance hierarchies empowered through male leadership. Female leaders' lack of group-orientation, on the other hand, was less adaptive in that environment because ongoing conflicts and subgroupings prevented efficient cooperation. However, a different environment may have embraced female leader strategies. When

operative tasks are less routine and require individual input and supervision, women leaders' individual-oriented leadership style should be more beneficial than the male coalition-building strategy.

Some argue that the female advantage relates to the feminine *skill of building and maintaining enduring relationships* instead of men's allegedly more short-term transactional focus. The results imply that this stereotypical feminine skill that is considered to contribute to the female advantage might not exist. The findings demonstrate that men and women both build relationships. Baumeister and Sommer (1997) have also highlighted that although men's and women's social relationships differ in their underlying motives and attention towards the individual, they are not women's prerogative but a basic motive in both sexes. According to the field data, men were even more active than women in building relationships with outgroup members. They were also more present in their stores and interacting with subordinates more. Claiming women or women leaders to have a generally higher relationship-orientation than men is hence an oversimplification, which explains the scarce research findings substantiating that claim.

Organizational commitment. The most consistent sex difference that emerged from the data concerned the male strategy of coalition-building. Conceptually, coalition-building relates to organizational commitment (OC). The findings from this research project contribute to OC theory concerning its antecedents, the role of leader behaviors for follower OC, and sex differences in OC.

Coalition-building and OC are conceptually linked. Three factors characterize an organization member's commitment: (1) the willingness to work hard for the good of the organization, (2) identification with the organizational goals and values, and (3) the strong desire to remain with the organization (Mowday, Steers, & Porter, 1979; Porter et al., 1974, p. 604). Like coalition-building, OC puts the group or the team of coworkers in the middle of attention. It further emphasizes organizational members' common goals, which, according to coalition-building, are the ultimate reason and the most important antecedent for coalitions to come into existence. Organizationally committed members' desire to stay with the organization is captured through group-cohesiveness in coalitions. The willingness to work hard is a consequence of coalition-building and is reflected by effective cooperation and high performance-orientation. However, coalition-building and OC differ in important aspects. Coalition-building refers to the actions members take to increase cooperation and coalitional thinking. OC, on the other hand, focuses on the individual's feeling of belongingness to the organizational group and the work effort he or she invests in it. Coalition-building behavior hence aims at manipulating one's social environment. OC is behavior that represents one's affiliation with the group and does not need to be directed at others. OC is a consequence of coalition-building or, from an OC perspective, coalition-building is an antecedent of OC (cf. Mathieu & Zajac, 1990).

Based on the conceptual link described above, the findings imply that organizational members' OC depends on the leader displaying male strategies like dominance behavior and coalition-building. Coalition-building is particularly interesting from a leader perspective because manipulating social structures is more easily achieved through leaders than through followers, although both scenarios are possible. OC research, too, has repeatedly investigated the influence of leader behavior on follower OC. Leaders who had their employees participate in decision making, treated them with consideration, and treated them fairly increased their followers' OC (Meyer & Allen, 1997). Those variables concur with some of the behaviors reported for coalition-building in leaders, substantiating that coalition-building leaders increase OC. Fair employee treatment is related to the coalition-building behavior of treating subordinates equally or at least transparently. Male leaders at GOFFCO were careful not to favor individual employees by providing everyone with the same privileges and constraints. Having employees participate in decision-making and treating them with consideration relate to emphasizing others' rank and status. The male leaders emphasized their shift supervisors' rank by granting them

autonomy and giving them space to act out their authority over subordinates. Hence the leader behaviors that increased coalitional thinking and actions should also increase followers' OC. On the other hand, having employees participate in decision-making and treating them with consideration can also relate to the female strategies of intimacy-building (emphasizing equality across rank) and nurturing (caring for others' well-being). The female behaviors, however, do not result in coalition-building and should hence be unrelated to follower OC. Like in SDL research, the casual and ill-considered intermixture of male and female behaviors may explain some of the incongruity of OC research findings.

Furthermore, much of the research has sought to detect sex differences in OC (Aven, Parker, & McEvoy, 1993; Marsden & Kalleberg, 1993; Mathieu & Zajac, 1990), but the results were inconclusive (Metcalf & Dick, 2002; Meyer & Allen, 1997). The framework offers a possible variable to explain that inconclusiveness. Teams and other organizational groups vary considerably in coalition-building. As the four cases demonstrate, even within companies, coalitions develop to considerably varying degrees. Because male leaders invest more in coalition-building than female leaders, OC should hence be higher in followers with a male leader than those with a female leader. Future OC research should hence control for leader sex when examining OC in followers. Within the group of male leader followers and female leader followers, OC researchers should get a clearer picture of whether OC also differs based on follower sex.

Organizational culture. Finally, the findings also contribute to the theory of organizational culture. Organizational culture theory has always attributed great importance to leadership and its role in building and influencing organizational culture (Sackmann, 2017, pp. 307; Schein, 1992). The two most direct influences on organizational culture are its leader(s) and members (Daymon, 2000, p. 175). The majority of the organizational culture literature focuses on the interaction of leaders and organizational culture (e.g., Kouzes & Posner, 2002; Martin & Siehl, 1983; Peters & Waterman, 1982; Schein, 1992; Selznick, 1957; Sims & Lorenzi, 1992). The direction of that interaction is usually dependent on the organization's life cycle. During a company's founding stage, the specifications of an organizational culture reflect leader attributes to a considerable extent (Sackmann, 2017, pp. 73; Schein, 1983). Leadership shapes the organization's culture by enforcing and rewarding behavior that is then transferred into basic assumptions (e.g., Fauchart & Gruber, 2011, p. 941). When the company matures, however, the established corporate culture increasingly influences leader behavior in reverse (Bass, Avolio, Jung, & Berson, 2003; Javidan et al., 2010; Schein, 1992). A study found that if the CEO personality deviates from the organizational culture, the company might be even *more* effective in terms of firm performance. The authors argue that this effect results from organizational culture substituting leadership at some point. A new leader's personality then does not merge with the organizational culture but complements it instead (Hartnell et al., 2016, p. 855).

Although organizational culture researchers concur in their assumptions about the interdependence of organizational culture and leadership, empirical evidence on the matter is scarce. The findings in the four GOFFCO stores, however, provide in-depth insights into the interconnectedness of organizational (sub-)cultures with leaders. The GOFFCO culture's maturity implies that the impact of intermediate leaders like the GOFFCO store leaders on organizational culture is limited. In congruence with this implication, leaders in the GOFFCO Store culture and the Franchise Store culture had adapted to their respective subcultures. The researcher hence offers empirical evidence of a basic assumption in organizational culture research. Nevertheless, the data also illustrates how leaders even within a strong, mature subculture still have a noticeable impact on vital elements of the organizational subculture such as social structure and people-orientation (Sackmann, 1991, pp. 143). The cases analyzed add to the scarce empirical evidence that substantiates the leader role in organizational culture theory.

The research at hand offers various practical implications. For one, the theoretical framework proposes that male and female leaders differ systematically in their behavior due to the evolutionary forces that shaped differing psychological mechanisms in the sexes. Hence, leader sex is a variable that should be considered when hiring a person for a specific job instead of presuming that male and female leaders are interchangeable.

According to the framework, female leaders are more nurturing than their male colleagues. However, the empirical analysis revealed that both female leaders evaded violating the male leader stereotype by not being nurturing on an individual level. By being nurturing on the group level instead, they developed an indirect way of caring for their employees and doing them favors. This female leader behavior coincides with current management trends like organizational health and wellness programs. Although those programs correlate positively with job satisfaction and low absenteeism (Goetzel et al., 2014; Parks & Steelman, 2008), participation rates are often low (Lier, Breuer, & Dallmeyer, 2019; Linnan et al., 2001). Research shows that leader encouragement is a significant lever in increasing employee participation in organizational health and wellness programs (Hoert, Herd, & Hambrick, 2018; Passey et al., 2018). Women's intrinsic motivation to nurture and care for employees on a group level may well translate into more active encouragement of employee participation in those programs. Hence, companies investing in employee health and well-being could utilize women's leadership to exploit those interventions' positive effects more fully.

Women leaders' intimacy-building behaviors may also benefit organizations in terms of employee health. The framework proposes that women leaders prefer social structures in which intimacy between coworkers can evolve and stabilize irrespective of rank. Such relationships could be particularly useful in organizational environments where employees are in danger of experiencing burnout syndrome, as is often experienced in medical, educational, or caregiving professions and in sales and marketing (Axel Springer, 2019). Especially when facing stressful events, friendships at work have been claimed to help individuals survive instead of burning out entirely. Regarding the current Covid-19 pandemic, for instance, intimate relationships with work colleagues have been suggested to help counteract the increasing isolation of workers sent into home-office or remote workspaces (Moss, 2020).

The findings further indicate that women leaders were less aware of hierarchical or coalitional structures than their male colleagues. While the latter were at least implicitly participating in intergroup conflicts or outgroup affiliation within and across the GOFFCO universe, women leaders focused more on their stores' micro-environment. Research found that competition status rank is linked to aggression, anxiety, and unethical behavior (Kohn, 1992). Those unethical behaviors on the individual level comprise of sabotaging others' work or lying about one's own work (Charness, Masclet, & Willeval, 2014). Driven by competition, unethical behaviors also occur on the organizational level (Bennett et al., 2013). The diesel emissions scandal which became public in 2014 is a prominent example of competition resulting in self- and other-harming behavior (Cieschinger et al., 2016). Women's lower awareness of hierarchical structures and inter-coalition competition may have a dampening effect on those competition-induced dynamics (cf. Pierce & Thompson, 2018). Women shy away from competitive situations (Lee, Kesebir, & Pillutla, 2016), which makes it less likely for them to invest in costly unethical behavior to succeed in them. Employing female leaders may hence be a useful measure to counteract overly competitive dynamics that are on the edge of escalating and resulting in organizational losses and societal damage.

The research findings illustrate that sex differences resulting from human evolution are muffled by social influences like stereotypes and organizational cultures. Those influences prevent women leaders

from benefitting from their highly evolved mechanisms and skills and motivates them to adapt more or less successfully to male leader stereotypes. The hierarchical structures at GOFFCO, the subcultures in the GOFFCO stores, and the omnipresence of think-manager-think-male stereotypes led to inconsistencies in women leaders' behaviors. Hence, they were more likely to engage in female strategies when the leader role was less salient to them or when the behavior was rather indirect, e.g., by implementing laundry services or appealing facilities. Due to their environment's inhibiting influence, women leaders' target structure in organizational settings did not become visible. They failed to implement stable dominance hierarchies, but there was no consistent structure they encouraged instead. Making predictions about women leaders' influence on organizational structures is hence not possible based on the four cases. The four stores, however, represent a large percentage of companies and organizations that enforce hierarchies and related strategies, both of which steer female leaders' behavior away from female strategies.

To unlock women's full behavioral spectrum shaped by evolutionary forces, organizational cultures need to de-masculinize and detach themselves from male preferences. Equity-based resource accumulation and goal-orientation govern organizational thinking worldwide (Sidanius & Pratto, 1999). The maleness of organizations is embedded in the capitalist and patriarchic structures described in section 2.1.1. Without those structures changing, practitioners remain limited in their influence on changing male organizational structures. Nevertheless, they could enforce more equality-based resource accumulation and process-orientation. In such an organizational environment, women leaders could effectively utilize some of their inherent mechanisms and offer a true female advantage to companies that benefit from egalitarian communal structures. Organizations could also advertise new kinds of positions that require their occupants to be empathetic and nurturing with employees. For instance, some companies have created the position of a chief happiness officer to increase employees' happiness at work, which is believed to induce greater productivity and less malfunctioning (Bertram, 2015; Lange, 2019; Najeh, 2019). Women might fit those positions better because their ability to empathize is on average higher than in men. In sensing and understanding their employees' needs, women may derive more effective measures to increase employee happiness.

Nevertheless, as long as industrial and organizational cultures do not change, women will keep facing the pressure to adjust to male leader stereotypes. The cases showed how their adjustment can be misguided. Neither of the two women leaders applied the male strategies as a means to an end. The author reasoned that although the women leaders adopted some conspicuous male strategies, they missed that the ultimate goal of the related behaviors was to achieve a dominance hierarchy. Consequently, one of the female leaders undermined subordinate leaders' authority, and the other one overburdened her subordinate leaders by not demonstrating sufficient authority herself. As long as women need to adapt to male cultures to achieve and remain in leadership positions (cf. Frankel, 2014; Sandberg, 2013; Wajcman, 1998), training that aims at improving women's leadership skills should address this issue.

Many have emphasized explicit leadership development as a measure to advance women's leadership careers (Bilimoria, Joy, & Liang, 2008; Cheung & Halpern, 2010; Ely et al., 2011; Knipfer et al., 2017; O'Neil, Hopkins, & Bilimoria, 2015). Female leadership seminars and workshops often focus on intra-individual factors that presuppose that the large obstacles to women's career progression are issues such as their motivation, skills, and opportunities (Hüttges & Fay, 2015). Those factors address how women managers' actions affect themselves. Few of them, however, address how their behaviors affect their work environment and followers. Upcoming female leadership seminars should fill that void and ponder the issue of leadership's effect on organizational structures. What are hierarchies and coalitions, how do they build, how do they work, and what role does the leader play in establishing them? That way,

organizations can increase and sharpen women leaders' awareness of the systematics and rules of (dominance) hierarchies, including how to enforce them and how to act as part of them.

The cases of the male leaders, on the other hand, confirmed that male leaders work towards hierarchical structures. Interestingly though, the cases of the two male leaders highlighted that the quality of hierarchies induced by male leadership differs across cases. Hierarchies may differ concerning granularity (e.g., informal hierarchies within the same formal rank) and their importance for organizational members. The social hierarchy can be highly meaningful and guide members' behaviors. It can, however, also be secondary and subtle in its influence on group members. Organizations that need strong hierarchical structures to be efficient, e.g., the military, benefit from male leaders capable of encouraging them. A leader's male sex does not warrant a *strong* hierarchy-orientation. Instead, organizational cultures and subcultures are important levers to manipulate group structure. Male leadership needs to be paired with a matching organizational (sub)culture to achieve a consistent hierarchy that guides behavior.

The framework assumes that male leaders actively develop (dominance) hierarchies among their followers, while women leaders develop egalitarian communities. Those two structures differ in important ways. Hierarchies are consistent group structures that create reliability in both organizations and followers. At the same time, however, they impair adaptability due to their rigor and inflexibility (Bernstein, Bunch, Canner, & Lee, 2016). Regarding adaptability, scholars and practitioners have contrasted hierarchies to self-managed teams and organizations (Bernstein et al., 2016) or agile organizational structures (Harraf, Wanasika, Tate, & Talbott, 2015; Worley & Lawler, 2010). Self-managing structures have become known to practitioners by the concepts of holacracy, the teal organization, and agility. They all have in common that work centers on tasks instead of positions. Authority, knowledge, and accountability are no longer bound to managerial and other positions but shared among the organizational members who work on the same task (Bernstein et al., 2016). The organizational structure no longer consists of vertical positions but of fluid teams that exist just as long as the project does. Agile organizations are more flexible than non-agile organizations and adapt to fast-changing environments more easily (Hallgren & Olhager, 2009; Robertson, 2015). Some companies have demonstrated that implementing agile structures can lead to extraordinary business success (e.g., Hamel, 2011). Can the preferred female structure of egalitarian communities be linked to self-managing teams? If it could, women would be the target employees for organizations that want to change towards agility and self-management.

Egalitarian communities overlap in some regards with the characteristics of self-managed teams. Although hierarchical organizations usually consist of teams (e.g., divisions, business units, project teams), those teams are larger than in self-managing organizations (Bernstein et al., 2016). The smaller size of self-managed teams concurs more with the female preference for intimacy than the larger groups in traditional organizational structures. In self-managed organizations, all members can change existing norms, structures, and processes given that others support the change. Accordingly, self-managed teams are fluid and, in comparison to hierarchies, less formally organized. That way, they can adapt quickly to a changing environment. For example, agile elements are particularly common in the IT industry to adjust to the fast-changing customer needs and technological developments (Dybå & Dingsøyr, 2008). Egalitarian communities are closer to self-managed teams in that respect than dominance hierarchies. In egalitarian communities, members are free to choose whom they want to associate with because there is no dependence on those who have more power and resources. Relationships in egalitarian communities are more fluid than in hierarchies and concur more with the structure of self-managed teams. Nevertheless, central aspects of egalitarian communities like intimacy among members and nurturing others are not explicitly addressed by the concept of self-managed teams.

Deriving that women leaders¹⁰ are better suited than men for organizations that plan to apply agile organizational structures and self-managed teams would be premature. Nevertheless, the augmented equality across ranks in those structures and the smaller workgroups and self-determination concerning whom to work with are in line with female preferences. Additionally, the cases of the two male leaders indicated that male leaders might counteract the development of genuinely agile structures. Even Holzhammer, who was part of an organizational subculture that rejected overt dominance behavior, found ways to apply dominance and enforce the hierarchical structure in his store. Organizations that want to make a genuine effort towards self-management should hence consider the benefits female executives might offer.

GOFFCO stores did not rely on agility and self-management. Its standardized system and routine work processes concurred with the rigor and security inherent in hierarchical structures (cf. Reingold, 2016). Nevertheless, some systematic differences between the store structures of the male and female stores emerged that could be interesting to practitioners. In the female stores, in which (dominance) hierarchies were less valued than in the male stores, there were more open conflict and transparency about employees' needs. As noted above, the GOFFCO system embraced hierarchical structures, making open conflict, acts of counter dominance, and dissatisfaction a liability rather than an asset. However, the qualities of the female store structures can be an asset in different environments. Although conflict can be burdensome to organizational life (cf. Cyert & March, 1963; Thompson, 1960), some researchers focus on conflicts' positive outcomes for organizations (De Dreu & Van de Vliert, 1997). Conflict between individuals or groups motivates actions and change processes (Litterer, 1966, p. 180) and is hence beneficial in environments that call for innovation and adaptation to volatile requirements. More specifically, positive effects of an open conflict culture comprise the mitigation of groupthink (Turner & Pratkanis, 1997), effective minority dissent (De Dreu & Vries, 1997), higher performance in workgroups (Jehn, 1997), and better strategic decision-making (Amason & Schweiger, 1997). The lack of female leaders' hierarchy and coalition enforcement creates space and opportunity for open conflict, which can evoke positive change. Practitioners and companies should be aware of the effect to plan accordingly and avoid the common misinterpretation that all conflict is malicious and harmful.

6.4 LIMITATIONS OF FINDINGS BY ASSUMPTIONS AND RESEARCH DESIGN

Like all research, this research project and its findings have limitations. The most important limitations concern (1) the notion of women's preferred social structure being egalitarian communities, (2) the conceptual distinction between (a) social and biological influences on behavior, (b) behaviors that build and those that characterize social structures, and (c) leader and non-leader behavior, (3) the completeness of the strategies identified, (4) the specifics of the research design, and (5) the process of data analysis.

(1) The evolutionary psychology framework of sex differences in (leader) behavior developed in this thesis claims that human evolution made women pursue egalitarian communities. While a vast amount of research substantiates men's preference for dominance hierarchies, women's preference for egalitarian communities is an assumption that still needs consolidation. The framework chapter deduced that preference by looking at matriarchies and egalitarian tribes, assuming that those societies provide insights into female preferences. However, other than for hierarchies, there is neither evidence nor

¹⁰ It is a common misconception that self-managed organizations are leaderless or devoid of differences in power. Nevertheless, status differences in self-managed organizations are at least mitigated and the accountability of what would be low-status employees in traditional organizational structures is increased (Bernstein et al., 2016).

counter-evidence from phylogeny, endocrinology, or the neurosciences to substantiate the *evolved* nature of this alleged preference.

Some have argued that humans' first social structures were egalitarian, indicating that the skills associated with egalitarian communal structures are innate. Nevertheless, dominance hierarchies have been the prevailing structures for 5,000 years (Boehm, 1999). During that time, egalitarian communities presumably played a minor role and existed unobtrusively amidst the dominance hierarchies that regulated resource distribution. This unobtrusiveness raises the question of what impact egalitarian communities have had on humans' and particularly women's survival. This impact is strongly linked to evolutionary pressures and determines the extent to which psychological mechanisms related to egalitarian communities have been passed down from generation to generation. Several factors linked the close interpersonal relationships in egalitarian communities and women's survival in the framework chapter. However, superordinate communal structures may have been irrelevant to survival after all because, in the end, it was the hierarchical structures that determined resource distribution.

This line of argument raises the question of whether evolved psychological mechanisms that serve the purpose of egalitarian community-building exist. Intimacy-building and nurturing occur mostly in dyadic interactions. Do they also help to build a social structure on the group level? Women in politics and (pro)social areas of life fight for environmental issues and help minorities and the socially deprived, indicating that they want to establish egalitarian structures (e.g., Mohai & Kershner, 2002). However, the dearth of research in fields like ethology, neuroscience, and developmental psychology leads to uncertainty about whether these women rely on an evolutionarily adaptive mechanism. Instead, their activism might be a side-effect of their empathizing skills or desire to build a safe environment for their children.

Further doubt concerning the appropriateness of the egalitarian community as women's preferred social structure is raised by the two female cases. The social structures observed in Velitchkov's and Solberg's stores raise the question of whether egalitarian communities really are females' preferred structure. Do females, and especially female leaders, strive for a certain *group* structure? Female leaders' behavior often lacked awareness for group structures and dynamics altogether. Evolutionary leadership theory (Van Vugt & Ahuja, 2011) proposes that leadership developed from individuals moving in groups. Somebody needed to take control and coordinate group movement. This argument has as yet not been assessed from the sex-differences-perspective.

(2) Several conceptual distinctions or a lack thereof limited the theoretical and research frameworks as well as the process of data analysis. (a) This research project builds on one major distinction, namely the one between social and biological influences on behavior. This distinction was important to highlight the paradigm shift on which the research was built. However, there are interactions between all of the factors influencing behavior both within and across the social and biological realm (Lippa, 2005; Nofal et al., 2018). These interactions were included in data analysis, e.g., when considering the impact of subcultural influences on evolutionarily relevant behaviors. Nevertheless, in both the theoretical framework in section 2 and the research framework in section 3.2, those interactions were excluded for the sake of complexity reduction.

(b) Complexity reduction also motivated the researcher to refrain from distinguishing between several behavior-related concepts. First of all, behaviors that build social structures and those that maintain those structures were treated interchangeably. For instance, displaying dominance can, on the one hand, help a dominance hierarchy come into existence, but it also maintains and enforces the dominance hierarchy once it exists. In the literature, the strategies identified and discussed are assumed to either occur in a given social structure or relationship or to help build the respective structure. For instance, dominance behavior is reported with respect to newly formed dominance hierarchies, whereas

intimacy and nurturing are mostly researched in already existing relationships. Coalition-building has received very little attention from either perspective. Instead, coalitions have been researched on a group level and assessed for their interactions and effects on other groups. The current research cannot answer the question of whether there is a conceptual difference between behaviors that build or maintain a given structure and encourages future research to address that question.

(c) Furthermore, this research project only partially distinguishes between leader behaviors and non-leader behaviors. The evolutionary psychology paradigm predicts sex differences irrespective of social roles. Sex differences that occurred in leaders may hence also occur in followers and are not limited to leadership positions. A few of the behaviors identified during data analysis occurred exclusively in leaders or in followers. For example, only leaders and shift supervisors affiliated outgroup members, and only regular employees cooperated during work. Nevertheless, based on the theoretical paradigm, the researcher cannot conclude that there are sex differences in behavior that occur exclusively in leaders. The lacking display of those behaviors in some positions was believed to result from missing opportunities and contradicting job designs. Future research should include the distinctions missing here to help gain a deeper understanding of sex differences in leader behavior and their impact on organizations' social structures.

(3) The research framework was based on evolved male and female strategies to pursue sex-specific preferences in social structure. However, the framework does not claim to be exhaustive concerning the existing strategies of men and women. The strategies that were included in the research framework resulted from the iterative process of reviewing existing literature and the data. There might be other strategies that, too, serve building dominance hierarchies and egalitarian communities, respectively. During the coding and re-coding processes, the researcher broached many more topics than the ones that finally entered the framework. For instance, differences concerning cognitive skills, interest in systems, cleanliness, and humor were rejected as strategies or specific behaviors serving sex-related strategies. However, they were often not excluded completely but merged into other categories. The researcher realizes that within a different setting, e.g., a different industry, more hours of observation, or a larger number of research sites, additional strategies are likely to emerge. Particularly concerning egalitarian communities, researchers and practitioners will identify more strategies once that social structure is better understood.

(4) The research design, based on the empirical exploration of four real-world management cases, limits the findings in multiple ways. The method of covert participant observation allowed for authentic insights but confined the researcher in some respects. The nature of covert participant observation limited the researcher's options of verbal inquiry and free movement at the research sites. In addition, the researcher could not protocol or record her observations during data collection but had to rely on her memory and jotted notes (cf. Whittle, 2005, p. 1308). Although she was aware of potential memory biases (Bradburn, Rips, & Shevell, 1987) that she tried to counteract, the observation minutes may deviate from reality. At the same time, her role as an intern was still conspicuous enough for her to be treated differently from regular employees, at least by some of the GOFFCO workers. Some leaders, shift supervisors, and employees indicated that they perceived her as different from other employees, limiting all findings derived from interactions between them and the researcher.

Because the researcher interacted with the research subjects in the field, it is possible that she unwillingly influenced their behavior. As a counter-action, she included not only others' behaviors in her data protocol but also her own to uncover potential systematical distortions like those of going native (Kanuha, 2000). Methodology researchers warn ethnographers about feeling too familiar in the field because they could lose their position as an onlooker who can connect the dots that native group members take for granted and are hence unable to see (Delamont, 2004, p. 214). The researcher's self-

observations revealed that during some incidents, she identified with GOFFCO and GOFFCO employees. However, due to the relatively short period of two weeks she spent in each store, going native was prevented and unlikely to have distorted the researcher's view on the observed behaviors.

Many interactions analyzed during data analysis were interactions between the researcher and the research subjects. In dyadic interactions, interaction partners' sex influences the nature of the interaction. For example, men have been found to be more expressive and self-disclosing towards women than men (Aukett et al., 1988; Rose, 1985; Snell, 1989). Hence, the observations could have differed if the researcher had been male. Furthermore, Eagly and Johnson (1990) found in a meta-analysis that researchers' sex correlated with the quality of their findings. Male researchers reported, for instance, that women were more influenceable than men. Female researchers, on the other hand, found women to be better at decoding nonverbal cues than men. In both cases, the researchers portrayed their own sex more favorably (Eagly & Carli, 1981). Simultaneously, many studies report that leaders are rated differently based on follower sex (Eagly, Karau, and Makhijani's 1995; Eagly, Makhijani & Klonsky, 1992; Powell, Butterfield, & Bartol, 2008).

Other than many other ethnographic research accounts, the one presented here built on four research sites instead of one. The resulting comparison of findings across sites allowed for detecting relevant and irrelevant behaviors and account for cultural influences. Furthermore, qualitative research strives for achieving theoretical saturation through depths and consistence within cases, which makes the number of cases irrelevant for the quality of results. Nevertheless, the resulting theory needs verification in future research using large scale samples to substantiate the underlying assumptions and limitations.

The sample consisted of four leaders who were selected by the gatekeepers at GOFFCO. It hence differs from that of most other qualitative studies in SDL research. Interview studies, which are the majority of qualitative SDL studies, often select women (and men) in top management positions as their participants (Cantor & Bernay, 1992; Loden, 1985; Walton, 1997). Most qualitative SDL research is overt, and hence participating women leaders know the research purpose. Their participation builds on self-selection processes and the desire to present themselves as successful role models. Those research participants hence enter the research process with an agenda of their own. The female leaders in this study were unaware of the research purpose and acted in positions of low public visibility. Although they occupied the top leadership position in their store micro-cosmoses, they were of relatively low importance in the GOFFCO macro-cosmos. They were not on public display and hence more removed from the discussion about women leaders' behavior. Besides, the fast-food industry is considered less stereotypically male as other industries (e.g., tech industry), which further reduces social influences on their leader behavior (cf. Chatman & Jehn, 1994; Gordon, 1991; Phillips, 1994). Accordingly, it is unlikely that the participants willingly adapted their behavior to present themselves favorably. The researcher believes that the setting hence provided particularly authentic insights into male and female leader behavior.

Nevertheless, the sample of leaders and stores involves limitations to the research findings. All four stores were located in Germany and run by GOFFCO Germany. Hence, the store (sub)cultures and leader behaviors were influenced by German values and norms. National culture affects responses to strategic issues (Schneider & De Meyer, 1991), organizational culture (de Hilal, 2006), and structural characteristics (Miller & Sharda, 1997). The behaviors and even the entire framework could hence have been biased by national influences, which often work in complex and non-straightforward ways (Nelson & Gopalan, 2003). Although some of the sex differences in the research framework strategies have been demonstrated to be stable across cultures, the research substantiating that stability is fragmentary at best. Accordingly, the leader behavior sex differences claimed by the findings need testing for cross-cultural consistency in future research.

Section 4.3 accounted for systematic differences between the leaders and the four stores regarding leader demographics and store characteristics. Those differences were considered during data analysis and case interpretations and were a vital aspect in contrasting and comparing the individual cases. The consistent subcultures the researcher observed in the GOFFCO Stores and the Franchisee Stores, respectively, may be linked to some of those differences. The leaders' differences in age, national background, or educational background might have contributed to the flatter dominance hierarchies. In the GOFFCO Stores, leaders were older, had higher education levels, and stemmed from countries in which hierarchical structures are more desired and accepted than in the German culture (Hofstede, 1980a). Furthermore, the GOFFCO Store leaders were married and had children, whereas the younger Franchisee Store leaders were single. These differences match the more dominance-based behaviors of the GOFFCO Store leaders. Due to the consistency of leader behavior within subculture, however, the specific antecedent of the store cultures is irrelevant to answering the research question. Furthermore, the heterogeneity of demographic variables within sex makes the commonalities in male leaders and in female leaders, respectively, even more meaningful.

(5) Limitations in data analysis referred mainly to differences in behavior observability and the interpretability of intentions. Some of the behaviors were easier to observe than others because they were more appropriate in group settings. Dominance and coalition-related behaviors benefitted from public display, while intimacy-related and nurturing behaviors occurred more often in dyadic interactions. Accordingly, the quantity of observations is distorted in favor of behaviors related to male strategies. Furthermore, some of the behaviors were distinguished from others based on their underlying intention or motivation. Because those are not directly observable, they resulted from the researcher's interpretations. It cannot be precluded that those interpretations were influenced by the researcher's prior experiences and knowledge. However, by means of awareness of the interpretative nature of the data and a transparent coding process, the researcher sought to minimize potential biases.

Data analysis furthermore did not explicitly include the gender of interaction partners. Behaviors were coded the same irrespective of whether they were directed at a male or female coworker. Some research suggests that interaction partner sex may influence behavior (Suh et al., 2004). Nevertheless, the researcher assumed that social structure building comprised men and women alike and that leader behaviors lead to similar outcomes in both sexes.

In analyzing the four GOFFCO stores' structures, the researcher drew on the same behaviors as during her analysis of leader behavior. For example, a leader's dominance behavior was considered a male strategy to *achieve and maintain* the social structure of a dominance hierarchy. However, when dominance behavior was observed in followers, it was interpreted to *represent* the dominance hierarchy. When leaders and followers both displayed the same strategy-related behaviors, it was considered consistent. The leader was considered to have succeeded in establishing the superordinate structure to that behavior. Hence, an underlying assumption in the analysis of store structures was that a qualitative form of leadership-by-example would take effect (Hermalin, 1998; Potters, Sefton, & Vesterlund, 2007; Yaffe & Kark, 2011). However, other relationships between leader and follower actions are possible. Dominant leaders could promote submissive and meek followers, who do not pass their superiors' dominance behavior on to their subordinates. In the Family Store, for instance, Velitchkov's excessively controlling behavior resulted in regular employees becoming dependent and restrained. On the other hand, being a nurturing leader could result in egoistic and exploitative followers, who do not act altruistically when seeing a close coworker in need. The effect of leader behaviors may further vary based on follower characteristics such as age, sex, or position.

6.5 ETHICAL CONSIDERATIONS

Data collection was achieved through the method of covert participant observation. Only the GOFFCO headquarters and the franchisee's administrative office were informed about the research project and the research purpose. To ensure anonymity, GOFFCO and the researcher signed a contract that obliged the researcher to anonymize all information that could lead to the identification of employees, customers, other stakeholders, and the organization itself. The leaders and the employees at the individual stores were not informed about the research purpose prior to or during data collection. Not informing the research subjects about the research purpose was vital to gain an undistorted insight into the leaders' authentic leader behaviors.

The year of data collection was 2014, which is one year before the university at which the research project was undertaken institutionalized an ethics commission. Nevertheless, the researcher went to great lengths to ensure that none of the research participants could be identified. In addition to anonymizing places, businesses, and individuals, the researcher took great care to exclude any information that could make research subjects identifiable. GOFFCO and the franchisee did not get access to the data collected at any time. The only information shared with them was the unpublished manuscript of the dissertation thesis. They were handed the manuscript in order to ensure that their company and its members could not be identified. At the time that they received the manuscript, three of the four restaurant leaders had either left the company or changed career paths. However, the participant observation took part in a professional setting with the leaders knowing that the researcher was in contact with their superiors, implying that they were careful not to act in compromising ways. GOFFCO agreed to inform the restaurant leaders about the researchers' role after she finished data collection.

6.6 ENCOURAGING FUTURE RESEARCH ON SDL BEYOND THE FEMINIST PARADIGM

The qualitative approach and the abductive reasoning pursued in the current research aimed at theory building instead of theory testing. Accordingly, future research needs to test the assumptions, theoretical relationships, and implications inherent in the framework and derived from the ethnographic fieldwork. This future testing should take place on the social structural, strategic, as well as the behavioral level. Because women's preferences for egalitarian communities could not be fully illustrated in the cases, future research should focus on the characteristics of egalitarian communities and the conditions that enable women to pursue them. Research on that matter should be conducted in settings which are less masculinized and allow more flexibility in leader behavior. Possible research sites are companies that are renowned for their women-friendliness and a high share of females in their workforce. For example, the Great Place to Work® Institute generates annual lists of Best Workplaces for Women™ depending on company size. The companies listed there need to employ a minimum number of women on all levels, and, amongst others, women need to agree that employees at their company reach their full human potential irrespective of status and job title. Such research sites could increase our understanding of the social group structure women and, in particular, women leaders desire. Of course, observing male leaders' behavior in such an environment would also be revealing. Do they adapt to the (egalitarian) structures and help maintain them? Or do they find alternative ways to act out their preference and related strategies?

On the strategic level, more qualitative research is needed to make statements about the entirety of sex-specific strategies to achieve desired social structures. Although we have acquired considerable knowledge about male strategies, female strategies remain somewhat unclear. The specific setting and its cultural and organizational restrictions may have prevented other strategies from rising to the surface.

Again, an environment that emphasizes male structures and strategies less could be revealing because female leaders might feel less pressure to adapt to masculine stereotypes. In such environments, women leaders might display an extended or completely different strategic approach to pursue egalitarian communities.

The use of individual strategies and their specification was related to the organizational subcultures of the Company Stores and the Franchise Stores. Although the influence of organizational culture has been acknowledged (Brodbeck et al., 2004), the impact of the organizational *subculture* was surprising, particularly given the high standardization level at GOFFCO. SDL researchers need to control for those subcultural influences when assessing leader behavior in the future. Comparing leader behaviors across subcultures can be distorting because female leaders react in a particularly sensitive way to (sub)cultural requirements. To master the many possible specifications of organizational cultures, samples need to be large enough or result from a deliberate sampling process that considers organizational subcultures. Cultures are unique and in quantitative questionnaires, they can only be represented in an approximate and simplistic way. Nevertheless, future research should at least consider the leaders' cultural environment concerning its support or rejection of dominance behavior, coalition-building, intimacy-building, and nurturing.

Finally, the behavioral mechanisms underlying the male and female strategies should be systematically investigated to assess their functioning, antecedents, and restrictions. For example, leaders' talking about store members, about GOFFCO, or fellow restaurant managers were believed to increase followers' awareness for the group and hence lead to coalition-building. Relationships like this need further validation through systematic research. Experimental designs would be particularly useful to assess the functioning of behavioral mechanisms because they allow for inferences about causality, effect size, and moderating variables (Podsakoff & Podsakoff, 2019). Once those behaviors and their effects on group structure are better understood, leaders can be adequately educated and trained.

The current research did not aim to depict dominance hierarchies and egalitarian communities as either desirable or disadvantageous. The author believes that neither of the two social structures is superior to the other. Both structures entail benefits and risks for those that are a part of them. In the given research setting, dominance hierarchies resulted in more efficient cooperation and low conflict levels among employees. The male GOFFCO structures rewarded hierarchy building and punished a lack thereof.

Nevertheless, other organizational environments may reward egalitarian communities and malfunction when organized hierarchically. Future research needs to assess the conditions that either call for egalitarian communities or dominance hierarchies. That way, future research results can benefit organizational practice and guide employee selection. By skillfully deploying male leaders and female leaders in positions that require sex-specific abilities and behaviors, human resources managers can contribute to the organization's success. Furthermore, future research should focus on the benefits inherent in each of the sexes' strengths as leaders irrespective of organizational structure. What organizational benefits result from leaders who pursue dominance hierarchies and those who pursue egalitarian communities? Addressing these questions would unite the interests of both feminists and evolutionary psychologists.

It goes without saying that women's preference for egalitarian communities and men's preference for dominance hierarchies represent probabilistic relationships. On *average*, women prefer egalitarian communities, and men prefer dominance hierarchies. Probabilistic relationships are of limited use when faced with an individual. The numerous women leaders who successfully operate within male structures and according to male strategies (e.g., Sandberg, 2013) substantiate that the specification of that female preference varies considerably within the female sex. At the same time, some men reject hierarchical

structures, although there are less prominent examples than of women rejecting egalitarian communities. Hence, being a human resources manager facing a female and a male candidate, there is no guarantee for the female leader being the one less intrigued with hierarchical structures. To better understand how these social structure preferences are represented in the individual, researchers should conduct quantitative analyses in the overall population and on managers.

Beforehand, however, future research needs to achieve conceptual clarity about whether egalitarian communities and dominance hierarchies are exclusive concepts or whether they represent two ends of the same continuum. Alternatively, the two structures could represent independent constructs indicating that dominance hierarchies and egalitarian communities can *coexist*. In the female stores, the dominance hierarchies were unstable, and some characteristics of the store structure concurred with theoretical concepts of egalitarian communities. Did the researcher observe the coexistence of a low-level dominance hierarchy and a low-level egalitarian community? Or, did the low-level dominance hierarchy enable the development of egalitarian communal structures? Or, did the dominance hierarchy observed in the store irrespective of its stability indicate the non-existence of an egalitarian community? These are questions for future research.

The findings from the ethnographic study also have more general implications. One finding was that sex differences were more conspicuous and in line with evolutionary psychology predictions when they concerned behaviors that are not stereotypically linked to leadership. For example, dominance behavior, a stereotypical leader behavior, was strongly modulated by female leaders according to the store's subculture. On the other hand, coalition-building, a behavior that is less stereotypical for men and managers, showed relatively clear sex differences. As noted in the theory section 2, one problem with social role theory as the leading SDL paradigm is that it makes no clear predictions about the effects of contradicting roles on behavior. Leaders face contradicting role expectations concerning their leadership role, on the one hand, and their gender role, on the other hand. The contradicting role profiles make ambiguous predictions about sex differences in leader behavior. By expanding the theoretical framework to comprise biological influences, the researcher introduced a framework that made clearer predictions about sex differences in leader behavior. The framework led to a set of behaviors that differ between male and female leaders that have as yet not received researchers' attention. The author hopes to inspire other researchers to take new, different perspectives when addressing the topic of SDL. As demonstrated here, new perspectives can assist in deciphering unexplored behavioral patterns along with their purposes and understand the equivocality of previous research.

Although researchers have been taking an interest in sex differences in leadership for half a century, they mostly approached the topic from the same paradigmatic angle. The leading paradigm in the field is critical and motivated by a feminist agenda. One goal of this research project was to demonstrate that by changing the theoretical paradigm, our knowledge of SDL can be expanded and reframed, leading to a better understanding of the issue and explaining as yet ambiguous or contradicting results. The researcher aimed at renewing and reviving a mature research field that seemed to have settled on a rather shaky consensus regarding its findings and practical implications.

This attempt to resuscitate the field may at present be more important than it has ever been before due to the increasing political polarization of the topic around the world. The growing awareness of gender discrimination and the increased severity of punishments of those who mistreat women can become an obstacle to research on sex differences in any area and hence also in the field of SDL. Although the growing number of initiatives and task forces to raise awareness about gender equality are laudable, they also charge the issue of sex differences both emotionally and politically (cf. Marks, 2019).

In Germany, for example, the feminist language reform¹¹ has in the last decade led to meticulous compliance with gender-neutral language. Although this initiative yields the desired effect of increasing women's visibility in language, it also leads to insecurities and feelings of resentment due to the intricateness it adds to the German language. This intangible freight that accompanies the issues of sex and gender can discourage researchers from pursuing research in the field of sex differences. Particularly in the managerial and organizational realm, organizational image and employer branding are of increasing importance (Buil et al., 2016; Kissel & Büttgen, 2015). Perceiving the issue of sex differences and particularly sex differences in leadership as threatening, organizations may embark on a strategy of ignorance or neglect. Organizations' and practitioners' lack of interest in the matter further discourages researchers from taking on another than a feminist perspective. Although the latter will persist due to the continuing underrepresentation of women in (top) leadership positions, it has led to the point of saturation and currently lacks momentum.

By changing the theoretical paradigm to evolutionary psychology, the researcher wanted to encourage other researchers to pursue the topic of SDL from different perspectives and paradigms. Thorough and transparent research motivated by cognitive interest is never hurtful. Only the interpretation of results can be misguided. The scientific process, however, relies on principles like revision, debate, and group consensus, which prevent individual researchers from such misguided or false interpretations. Believing in the scientific process, the author prompts researchers to oppose censorship on the topic of sex differences – even if it is self-inflicted – and continue to pursue a better understanding of what distinguishes behaviors of male and female leaders.

In the end, the findings of research on sex differences in leader behavior like the ones above do not explain why individual leaders like Marissa Mayer behave the way they do. However, they can broaden the scope of interpretations possible when assessing leader behaviors, and they can tell us whether individual leaders behave typically or atypically. The inconsistency of reports about Mayer's behavior reflects the conflict women leaders face when occupying leadership roles in a still male-dominated corporate world. Depending on corporate cultures and role requirements, this inconsistency can vary in severity. Mayer leaving Yahoo! and choosing a more intimate work environment in a small-scale startup company that allows for intimate relationships and equality across rank in any case at least theoretically concurs with the predictions made by the evolutionary psychology-based framework introduced here. Whether this is a pattern or a coincidence resulting from the multi-faceted nature of human behavior remains for future research to discover.

¹¹ At the 24th General UNESCO Conference in 1987 it was decided that the female sex needs to be included more in public language.

7 REFERENCES

- Aboitiz, F., Scheibel, A. B., Fisher, R. S., & Zaidel, E. (1992). Fiber composition of the human corpus callosum. *Brain Research*, 598(1), 143-153. [https://doi.org/10.1016/0006-8993\(92\)90178-C](https://doi.org/10.1016/0006-8993(92)90178-C)
- Aburdene, P., & Naisbitt, J. (1992). *Megatrends for Women*. Villard Books.
- Achiron, R., Lipitz, S., & Achiron, A. (2001). Sex-related differences in the development of the human fetal corpus callosum: in utero ultrasonographic study. *Prenatal Diagnosis*, 21(2), 116-120. [https://doi.org/10.1002/1097-0223\(200102\)21:2<116::AID-PD19>3.0.CO;2-M](https://doi.org/10.1002/1097-0223(200102)21:2<116::AID-PD19>3.0.CO;2-M)
- Acker, J. (1990). Hierarchies, jobs, bodies: A theory of gendered organizations. *Gender & Society*, 4(2), 139-158. <https://doi.org/10.1177/089124390004002002>
- Ackerman, J. M., Kenrick, D. T., & Schaller, M. (2007). Is friendship akin to kinship?. *Evolution and Human Behavior*, 28(5), 365-374. <https://doi.org/10.1016/j.evolhumbehav.2007.04.004>
- Adams, N., & Boice, R. (1983). A longitudinal study of dominance in an outdoor colony of domestic rats. *Journal of Comparative Psychology*, 97(1), 24-33. <https://doi.org/10.1037/0735-7036.97.1.24>
- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291-309. <https://doi.org/10.1016/j.jfineco.2008.10.007>
- Adams, R. B., & Funk, P. (2012). Beyond the glass ceiling: Does gender matter?. *Management Science*, 58(2), 219-235. <https://doi.org/10.1287/mnsc.1110.1452>
- Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *The Quarterly Journal of Economics*, 127(1), 137-197. <https://doi.org/10.1093/qje/qjr049>
- Ainsworth, S. E., & Maner, J. K. (2012). Sex begets violence: Mating motives, social dominance, and physical aggression in men. *Journal of Personality and Social Psychology*, 103(5), 819-829. <https://doi.org/10.1037/a0029428>
- Akstinaite, V. (2016). Do successful adult leaders share common childhood experiences?. In P. Garrard & G. Robinson, (Eds.), *The Intoxication of Power* (pp. 203-228). Palgrave Macmillan. https://doi.org/10.1057/9781137439666_11
- Alesina, A., & La Ferrara, E. (2002). Who trusts others?. *Journal of Public Economics*, 85(2), 207-234. [https://doi.org/10.1016/S0047-2727\(01\)00084-6](https://doi.org/10.1016/S0047-2727(01)00084-6)
- Alimo-Metcalfe, B. (2010). An investigation of female and male constructs of leadership and empowerment. *Gender in Management: An International Journal*, 25(8), 640-648. <https://doi.org/10.1108/17542411011092309>
- Altmann, S. A. (1968). Sociobiology of rhesus monkeys IV: testing Mason's hypothesis of sex differences in affective behavior. *Behaviour*, 32(1), 49-68. <https://doi.org/10.1163/156853968X00081>
- Alvesson, M., & Billing, Y. D. (2009). *Understanding Gender and Organizations*. Sage.
- Alvesson, M., & Gabriel, Y. (2013). Beyond formulaic research: In praise of greater diversity in organizational research and publications. *Academy of Management Learning & Education*, 12(2), 245-263. <https://doi.org/10.5465/amle.2012.0327>
- Alvesson, M., & Kärreman, D. (2007). Constructing mystery: Empirical matters in theory development. *Academy of Management Review*, 32(4), 1265-1281. <https://doi.org/10.5465/amr.2007.26586822>
- Alvesson, M., & Kärreman, D. (2011). *Qualitative research and theory development: Mystery as method*. Sage Publications.
- Alvesson, M., & Sködborg, K. (2009). *Reflexive methodology: new vistas for qualitative research* (2nd ed.). Sage Publications.
- Amason, A. C., & Schweiger, D. M. (1997). The effects of conflict on strategic decision making effectiveness and organizational. In C. K. W. De Dreu & E. Van de Vliert (Eds.), *Using conflict in organizations* (pp. 101-115). Sage Publications.
- Andersen, J. A., & Hansson, P.H. (2011). At the end of the road? On differences between women and men in leadership behaviour. *Leadership & Organization Development Journal*, 32(5), 428-441. <https://doi.org/10.1108/01437731111146550>
- Anderson, C., Srivastava, S., Beer, J. S., Spataro, S. E., & Chatman, J. A. (2006). Knowing your place: self-perceptions of status in face-to-face groups. *Journal of Personality and Social Psychology*, 91(6), 1094-1110. <https://doi.org/10.1037/0022-3514.91.6.1094>
- Anfara Jr, V. A., & Mertz, N. T. (2014). *Theoretical frameworks in qualitative research*. Sage Publications.
- Angermeier, W. F., Phelps, J. B., Murray, S., & Howanstone, J. (1968). Dominance in monkeys: Sex differences. *Psychonomic Science*, 12(7), 344-344. <https://doi.org/10.3758/BF03331343>
- Antonakis, J. (2018). Charisma and the "New Leadership". In J. Antonakis & D. V. Day (Eds.), *The Nature of Leadership* (3rd ed.) (pp. 56-81). Sage.
- Antonakis, J., & Day, D. V. (2018). Leadership: Past, present, and future. In J. Antonakis & D. V. Day (Eds.), *The Nature of Leadership* (3rd ed) (pp. 3-26). Sage. <https://doi.org/10.1177/1548051812471559>
- Appelbaum, S. H., Audet, L., & Miller, J. C. (2003). Gender and leadership? Leadership and gender? A journey through the landscape of theories. *Leadership & Organization Development Journal*, 24(1), 43-51. <https://doi.org/10.1108/01437730310457320>
- Archer, J. (1991). The influence of testosterone on human aggression. *British Journal of Psychology*, 82(1), 1-28. <https://doi.org/10.1111/j.2044-8295.1991.tb02379.x>

- Archer, J. (1996). Sex differences in social behavior: Are the social role and evolutionary explanations compatible?. *American Psychologist*, 51(9), 909-17. <https://doi.org/10.1037/0003-066X.51.9.909>
- Archer, J. (2004). Sex differences in aggression in real-world settings: A meta-analytic review. *Review of General Psychology*, 8(4), 291-322. <https://doi.org/10.1037/1089-2680.8.4.291>
- Archer, J. (2006a). Cross-cultural differences in physical aggression between partners: A social-role analysis. *Personality and Social Psychology Review*, 10(2), 133-153. https://doi.org/10.1207/s15327957pspr1002_3
- Archer, J. (2006b). Testosterone and human aggression: an evaluation of the challenge hypothesis. *Neuroscience & Biobehavioral Reviews*, 30(3), 319-345. <https://doi.org/10.1016/j.neubiorev.2004.12.007>
- Archer, J., Birring, S. S., & Wu, F. C. (1998). The association between testosterone and aggression among young men: Empirical findings and a meta-analysis. *Aggressive Behavior*, 24(6), 411-420. [https://doi.org/10.1002/\(SICI\)1098-2337\(1998\)24:6<411::AID-AB2>3.0.CO;2-9](https://doi.org/10.1002/(SICI)1098-2337(1998)24:6<411::AID-AB2>3.0.CO;2-9)
- Archer, J., & Coyne, S. M. (2005). An integrated review of indirect, relational, and social aggression. *Personality and Social Psychology Review*, 9(3), 212-230. https://doi.org/10.1207/s15327957pspr0903_2
- Aries, E. J., & Johnson, F. L. (1983). Close friendship in adulthood: Conversational content between same-sex friends. *Sex Roles*, 9(12), 1183-1196. <https://doi.org/10.1007/BF00303101>
- Arkoff, A., Meredith, G., & Iwahara, S. (1962). Dominance-deference patterning in motherland-Japanese, Japanese-American, and Caucasian-American students. *The Journal of Social Psychology*, 58(1), 61-66. <https://doi.org/10.1080/00224545.1962.9712355>
- Arnold, H. J., & Feldman, D. C. (1981). Social desirability response bias in self-report choice situations. *Academy of Management Journal*, 24(2), 377-385. <https://doi.org/10.5465/255848>
- Arnold, K. A., Dupré, K. E., Hershcovis, M. S., & Turner, N. (2011). Interpersonal targets and types of workplace aggression as a function of perpetrator sex. *Employee Responsibilities and Rights Journal*, 23(3), 163-170. <https://doi.org/10.1007/s10672-010-9155-x>
- Asch, S. (1956). Studies of independence and conformity: a minority of one against a unanimous majority. *Psychological Monographs*, 70(9), (whole no. 416).
- Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14(1), 20-39. <https://doi.org/10.5465/amr.1989.4278999>
- Aukett, R., Ritchie, J., & Mill, K. (1988). Gender differences in friendship patterns. *Sex Roles*, 19(1-2), 57-66. <https://doi.org/10.1007/BF00292464>
- Auster, C. J., & Ohm, S. C. (2000). Masculinity and femininity in contemporary American society: A reevaluation using the Bem Sex-Role Inventory. *Sex Roles*, 43(7-8), 499-528. <https://doi.org/10.1023/A:1007119516728>
- Aven, F. F., Parker, B., & McEvoy, G. M. (1993). Gender and attitudinal commitment to organizations: A meta analysis. *Journal of Business Research*, 26(1), 63-73. [https://doi.org/10.1016/0148-2963\(93\)90043-O](https://doi.org/10.1016/0148-2963(93)90043-O)
- Avolio, B. J., Reichard, R. J., Hannah, S. T., Walumbwa, F. O., & Chan, A. (2009). A meta-analytic review of leadership impact research: Experimental and quasi-experimental studies. *The Leadership Quarterly*, 20(5), 764-784. <https://doi.org/10.1016/j.leaqua.2009.06.006>
- Axel Springer. (1. Oktober, 2019). Berufsgruppen mit den meisten Arbeitsunfähigkeitstagen aufgrund von Burn-out-Erkrankungen* im Jahr 2018 (je 1.000 AOK-Mitglieder) [Graph]. In Statista. Zugriff am 27. Oktober 2020, von <https://de.statista.com/statistik/daten/studie/239672/umfrage/berufsgruppen-mit-den-meisten-fehltagen-durch-burn-out-erkrankungen/>
- Aycinena, D., Baltaduonis, R., & Rentschler, L. (2014). Risk preferences and prenatal exposure to sex hormones for ladinos. *PloS one*, 9(8). <https://doi.org/10.1371/journal.pone.0103332>
- Ayman, R., & Korabik, K. (2010). Leadership: Why gender and culture matter. *American Psychologist*, 65(3), 157-170. <https://doi.org/10.1037/a0018806>
- Babchuk, W. A., Hames, R. B., & Thompson, R. A. (1985). Sex differences in the recognition of infant facial expressions of emotion: the primary caretaker hypothesis. *Ethology and Sociobiology*, 6(2), 89-101. [http://dx.doi.org/10.1016/0162-3095\(85\)90002-0](http://dx.doi.org/10.1016/0162-3095(85)90002-0)
- Badaruddin, D. H., Andrews, G. L., Bölte, S., Schilmoeller, K. J., Schilmoeller, G., Paul, L. K., & Brown, W. S. (2007). Social and behavioral problems of children with agenesis of the corpus callosum. *Child Psychiatry and Human Development*, 38(4), 287-302. <https://doi.org/10.1007/s10578-007-0065-6>
- Bagozzi, R. P., & Moore, D. J. (1994). Public service advertisements: Emotions and empathy guide prosocial behavior. *Journal of Marketing*, 58(1), 56-70. <https://doi.org/10.1177/002224299405800105>
- Bailey, A. A., & Hurd, P. L. (2005). Finger length ratio (2D: 4D) correlates with physical aggression in men but not in women. *Biological Psychology*, 68(3), 215-222. <https://doi.org/10.1016/j.biopsycho.2004.05.001>
- Baixauli-Soler, J. S., Belda-Ruiz, M., & Sanchez-Marin, G. (2015). Executive stock options, gender diversity in the top management team, and firm risk taking. *Journal of Business Research*, 68(2), 451-463. <https://doi.org/10.1016/j.jbusres.2014.06.003>
- Bajdo, L. M., & Dickson, M. W. (2001). Perceptions of organizational culture and women's advancement in organizations: A cross-cultural examination. *Sex Roles*, 45(5-6), 399-414. <https://doi.org/10.1023/A:1014365716222>
- Bakan, D. (1966). *The Duality of Human Existence*. Rand McNally.

- Baker, J. M., Liu, N., Cui, X., Vrticka, P., Saggarr, M., Hosseini, S. H., & Reiss, A. L. (2016). Sex differences in neural and behavioral signatures of cooperation revealed by fNIRS hyperscanning. *Scientific Reports*, 6, 26492. <https://doi.org/10.1038/srep26492>
- Baker, T., E. Aldrich, H., & Nina, L. (1997). Invisible entrepreneurs: The neglect of women business owners by mass media and scholarly journals in the USA. *Entrepreneurship & Regional Development*, 9(3), 221-238. <https://doi.org/10.1080/08985629700000013>
- Baldwin, D. R., Harris, S. M., & Chambliss, L. N. (1997). Stress and illness in adolescence: Issues of race and gender. *Adolescence*, 32(128), 839-853.
- Bales, R. F. (1953). The equilibrium problem in small groups. In T. Parson, R. F. Bales, & E. A. Shils (Eds), *Working papers in the Theory of Action* (pp. 111-161). Free Press.
- Balkundi, P., & Harrison, D. A. (2006). Ties, leaders, and time in teams: Strong inference about network structure's effects on team viability and performance. *Academy of Management Journal*, 49(1), 49-68. <https://doi.org/10.5465/amj.2006.20785500>
- Balliet, D., Li, N. P., Macfarlan, S. J., & Van Vugt, M. (2011). Sex differences in cooperation: a meta-analytic review of social dilemmas. *Psychological Bulletin*, 137(6), 881-909. <https://doi.org/10.1037/a0025354>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.
- Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of aggression through imitation of aggressive models. *The Journal of Abnormal and Social Psychology*, 63(3), 575-582. <https://doi.org/10.1037/h0045925>
- Bandura, A., Ross, D., & Ross, S. A. (1963). Imitation of film-mediated aggressive models. *The Journal of Abnormal and Social Psychology*, 66(1), 3-11. <https://doi.org/10.1037/h0048687>
- Bar-Tal, Y., Lurie, O., & Glick, D. (1994). The effect of gender on the stress process of Israeli soldiers during the Gulf War. *Anxiety, Stress, and Coping*, 7(3), 263-276. <https://doi.org/10.1080/10615809408249351>
- Barbuto, J. E., Fritz, S. M., Matkin, G. S., & Marx, D. B. (2007). Effects of gender, education, and age upon leaders' use of influence tactics and full range leadership behaviors. *Sex Roles*, 56(1-2), 71-83. <https://doi.org/10.1007/s11199-006-9152-6>
- Barbuto, J. E., & Wheeler, D. W. (2006). Scale development and construct clarification of servant leadership. *Group & Organization Management*, 31(3), 300-326. <https://doi.org/10.1177/1059601106287091>
- Barclay, P., & Van Vugt, M. (2015). The evolutionary psychology of human prosociality: Adaptations, byproducts, and mistakes. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.720.3604&rep=rep1&type=pdf>
- Barley, S. R. (1996). Technicians in the workplace: Ethnographic evidence for bringing work into organizational studies. *Administrative Science Quarterly*, 41(3), 404-441. <https://doi.org/10.2307/2393937>
- Baron, R. A., & Neuman, J. H. (1996). Workplace violence and workplace aggression: Evidence on their relative frequency and potential causes. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, 22(3), 161-173. [https://doi.org/10.1002/\(SICI\)1098-2337\(1996\)22:3<161::AID-AB1>3.0.CO;2-Q](https://doi.org/10.1002/(SICI)1098-2337(1996)22:3<161::AID-AB1>3.0.CO;2-Q)
- Barona, M., Kothari, R., Skuse, D., & Micali, N. (2015). Social communication and emotion difficulties and second to fourth digit ratio in a large community-based sample. *Molecular Autism*, 6, 68. <https://doi.org/10.1186/s13229-015-0063-7>
- Baron-Cohen, S. (2004). *The essential difference*. Penguin Books.
- Baron-Cohen, S., & Wheelwright, S. (2004). The empathy quotient: an investigation of adults with Asperger syndrome or high functioning autism, and normal sex differences. *Journal of Autism and Developmental Disorders*, 34(2), 163-175. <https://doi.org/10.1023/B:JADD.0000022607.19833.00>
- Baron-Cohen, S. (2002). The extreme male brain theory of autism. *Trends in Cognitive Sciences*, 6(6), 248-254. [https://doi.org/10.1016/S1364-6613\(02\)01904-6](https://doi.org/10.1016/S1364-6613(02)01904-6)
- Baron-Cohen, S., Cassidy, S., Auyeung, B., Allison, C., Achoukhi, M., Robertson, S., Pohl, A., & Lai, M. C. (2014). Attenuation of typical sex differences in 800 adults with autism vs. 3,900 controls. *PloS one*, 9(7), e102251. <https://doi.org/10.1371/journal.pone.0102251>
- Barraza, J., & Zak, P. (2009). Empathy toward strangers triggers oxytocin release and subsequent generosity. *Annals of the New York Academy of Sciences*, 1167(1), 182-189. <https://doi.org/10.1111/j.1749-6632.2009.04504.x>
- Barry III, H., Bacon, M. K., & Child, I. L. (1957). A cross-cultural survey of some sex differences in socialization. *The Journal of Abnormal and Social Psychology*, 55(3), 327-332. <https://doi.org/10.1037/h0041178>
- Bartol, K. M. (1978). The sex structuring of organizations: A search for possible causes. *Academy of Management Review*, 3(4), 805-815. <https://doi.org/10.5465/amr.1978.4289287>
- Bartunek, J. M., Rynes, S. L., & Ireland, R. D. (2006). What makes management research interesting, and why does it matter?. *Academy of Management Journal*, 49(1), 9-15. <https://doi.org/10.5465/amj.2006.20785494>
- Bartz, J. A., Zaki, J., Bolger, N., & Ochsner, K. N. (2011). Social effects of oxytocin in humans: context and person matter. *Trends in Cognitive Sciences*, 15(7), 301-309. <https://doi.org/10.1016/j.tics.2011.05.002>
- Bass, B. M., & Bass, R. (2008). *The Bass handbook of leadership: Theory, research, and managerial applications*. Free Press.
- Bass, B. M. & Avolio, B. J. (1994). Shatter the glass ceiling: Women may make better managers. *Human resource management*, 33(4), 549-560. <https://doi.org/10.1002/hrm.3930330405>
- Bass, B. M., Avolio, B. J., Jung, D. I., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology*, 88(2), 207-218. <https://doi.org/10.1037/0021-9010.88.2.207>

- Bate, S. P. (1997). Whatever happened to organizational anthropology? A review of the field of organizational ethnography and anthropological studies. *Human Relations*, 50(9), 1147-1175. <https://doi.org/10.1177/001872679705000905>
- Batson, C. D. (1990). How social an animal? The human capacity for caring. *American Psychologist*, 45(3), 336-346. <https://doi.org/10.1037/0003-066X.45.3.336>
- Baumeister, R. F., & Sommer, K. L. (1997). What do men want? Gender differences and two spheres of belongingness: Comment on Cross and Madson (1997). *Psychological Bulletin*, 122(1), 38-44. <https://doi.org/10.1037/0033-2909.122.1.38>
- Baumeister, R. F., Vohs, K. D., & Funder, D. C. (2007). Psychology as the science of self-reports and finger movements: Whatever happened to actual behavior?. *Perspectives on Psychological Science*, 2(4), 396-403. <https://doi.org/10.1111/j.1745-6916.2007.00051.x>
- Bear, M. F., Connor, B. W., & Paradiso, M. A. (2007). *Neuroscience – Exploring the Brain*. Lippincott Williams & Wilkins.
- Bechky B. A. & O'Mahony, S. (2016). Leveraging Comparative Field Data for Theory Generation. In K. D. Elsbach & R. M. Kramer (Eds.), *Handbook of Qualitative Organizational Research - Innovative Pathways and Methods* (pp. 168-176). Routledge.
- Becker, J., Ayman, R., & Korabik, K. (2002). Discrepancies in self/subordinates' perceptions of leadership behavior: Leader's gender, organizational context, and leader's self-monitoring. *Group & Organization Management*, 27(2), 226-244. <https://doi.org/10.1177/02F10501102027002004>
- Becker, S. W., & Eagly, A. H. (2004). The heroism of women and men. *American Psychologist*, 59(3), 163-173. <https://doi.org/10.1037/0003-066X.59.3>
- Beckmann, D. & Menkhoff, L. (2008). Will women be women? Analyzing the gender difference among financial experts. *Kyklos*, 61(3), 364-384. <https://doi.org/10.1111/j.1467-6435.2008.00406.x>
- Beehner, J. C., Bergman, T. J., Cheney, D. L., Seyfarth, R. M., & Whitten, P. L. (2006). Testosterone predicts future dominance rank and mating activity among male chacma baboons. *Behavioral Ecology and Sociobiology*, 59(4), 469-479. <https://doi.org/10.1007/s00265-005-0071-2>
- Beekun, R. I., Stedham, Y., Westerman, J. W., & Yamamura, J. H. (2010). Effects of justice and utilitarianism on ethical decision making: a cross-cultural examination of gender similarities and differences. *Business Ethics: A European Review*, 19(4), 309-325. <https://doi.org/10.1111/j.1467-8608.2010.01600.x>
- Belle, D. (1989). Gender differences in children's social networks and supports. In D. Belle (Ed.), *Children's Social Networks and Social Supports* (pp. 173-188). Wiley.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42(2), 155-162. <https://doi.org/10.1037/h0036215>
- Ben-Ami Bartal I., Decety J., & Mason P. (2011). Empathy and pro-social behavior in rats. *Science*, 334(6061), 1427-1430. <http://dx.doi.org/10.1126/science.1210789>
- Bendahan, S., Zehnder, C., Pralong, F. P., & Antonakis, J. (2015). Leader corruption depends on power and testosterone. *The Leadership Quarterly*, 26(2), 101-122. <https://doi.org/10.1016/j.leaqua.2014.07.010>
- Benderlioglu, Z., & Nelson, R. J. (2004). Digit length ratios predict reactive aggression in women, but not in men. *Hormones and Behavior*, 46(5), 558-564. <https://doi.org/10.1016/j.yhbeh.2004.06.004>
- Bendyna, M. E., Finucane T., Kirby, L., O'Donnell, J. P., & Wilcox, C. (1996) Gender Differences in Public Attitudes toward the Gulf War: A Test of Competing Hypotheses. *The Social Science Journal*, 33(1), 1-22. [https://doi.org/10.1016/S0362-3319\(96\)90002-6](https://doi.org/10.1016/S0362-3319(96)90002-6)
- Benenson, J. F. (1990). Gender differences in social networks. *The Journal of Early Adolescence*, 10(4), 472-495. <https://doi.org/10.1177/0272431690104004>
- Benenson, J. F. (1993). Greater Preference Among Females than Males for Dyadic Interaction in Early Childhood. *Child Development*, 64(2), 544-555. <https://doi.org/10.1111/j.1467-8624.1993.tb02927.x>
- Benenson, J. F., Apostoleris, N., & Parnass, J. (1998). The organization of children's same-sex peer relationships. *New Directions for Child and Adolescent Development*, 1998(81), 5-23. <https://doi.org/10.1002/cd.23219988103>
- Benenson, J. F., Duggan, V., & Markovits, H. (2004). Sex differences in infants' attraction to group versus individual stimuli. *Infant Behavior and Development*, 27(2), 173-180. <https://doi.org/10.1016/j.infbeh.2003.09.008>
- Benenson, J. F., Markovits, H., Muller, I., Challen, A., & Carder, H. P. (2007). Explaining sex differences in infants' preferences for groups. *Infant Behavior and Development*, 30(4), 587-595. <https://doi.org/10.1016/j.infbeh.2007.03.010>
- Benenson, J. F., Saelen, C., Markovits, H., & McCabe, S. (2008). Sex differences in the value of parents versus same-sex peers. *Evolutionary Psychology*, 6(1), 13-28. <https://doi.org/10.1177/147470490800600103>
- Benenson, J. F., Tennyson, R., & Wrangham, R. W. (2011). Male more than female infants imitate propulsive motion. *Cognition*, 121(2), 262-267. <https://doi.org/10.1016/j.cognition.2011.07.006>
- Benenson, J. F., & Wrangham, R. W. (2016). Cross-cultural sex differences in post-conflict affiliation following sports matches. *Current Biology*, 26(16), 2208-2212. <https://doi.org/10.1016/j.cub.2016.06.024>
- Benschop, Y. (2009). The micro-politics of gendering in networking. *Gender, Work & Organization*, 16(2), 217-237. <https://doi.org/10.1111/j.1468-0432.2009.00438.x>
- Bennett, V. M., Pierce, L., Snyder, J. A., & Toffel, M. W. (2013). Customer-driven misconduct: How competition corrupts business practices. *Management Science*, 59(8), 1725-1742. <https://doi.org/10.1287/mnsc.1120.1680>

- Benveniste, A. (2020, Auguste 4). The Fortune 500 now has a record number of female CEOs: A whopping 38. *Hartford Business*. <https://www.hartfordbusiness.com/article/the-fortune-500-now-has-a-record-number-of-female-ceos-a-whopping-g-38>
- Benschop, Y. (2009). The micro-politics of gendering in networking. *Gender, Work & Organization*, 16(2), 217-237. <https://doi.org/10.1111/j.1468-0432.2009.00438.x>
- Berenbaum, S. A., & Resnick, S. M. (1997). Early androgen effects on aggression in children and adults with congenital adrenal hyperplasia. *Psychoneuroendocrinology*, 22(7), 505-515. [https://doi.org/10.1016/S0306-4530\(97\)00049-8](https://doi.org/10.1016/S0306-4530(97)00049-8)
- Berger, J., Rosenholtz, S. J., & Zelditch, M. (1980). Status organizing processes. *Annual Review of Sociology*, 6, 479–508. <https://doi.org/10.1146/annurev.so.06.080180.002403>
- Berglund, E. V. A., Eriksson, M., & Westerlund, M. (2005). Communicative skills in relation to gender, birth order, childcare and socioeconomic status in 18-month-old children. *Scandinavian Journal of Psychology*, 46(6), 485-491. <https://doi.org/10.1111/j.1467-9450.2005.00480.x>
- Berkman, L. F., & Syme, S. L. (1979). Social networks, host resistance, and mortality: a nine-year follow-up study of Alameda County residents. *American Journal of Epidemiology*, 109(2), 186-204. <https://doi.org/10.1093/oxfordjournals.aje.a112674>
- Berkowicz, J. (2011). *Common childhood experiences and responses related to the development of leaders of change*. Doctoral Research Project, The Sage Colleges, School of Education. http://library3.sage.edu/archive/thesis/ED/2011berkowicz_j.PDF
- Berndt, T. J. (1982). The features and effects of friendship in early adolescence. *Child Development*, 53(6), 1447-1460. <https://doi.org/10.2307/1130071>
- Bernstein, E., Bunch, J., Canner, N., & Lee, M. (2016). Beyond the holacracy hype. *Harvard Business Review*, 94(7/8), 38-49.
- Bernstein, I. S., Judge, P. G., & Ruehlmann, T. E. (1993). Sex differences in adolescent rhesus monkey (*Macaca mulatta*) behavior. *American Journal of Primatology*, 31(3), 197-210. <https://doi.org/10.1002/ajp.1350310305>
- Bertram, C. (2015). Ein Jobtitel als Statement. *Personalwirtschaft*, 12, 16-21.
- Bethlehem, R. A., Van Honk, J., Auyeung, B., & Baron-Cohen, S. (2013). Oxytocin, brain physiology, and functional connectivity: a review of intranasal oxytocin fMRI studies. *Psychoneuroendocrinology*, 38(7), 962-974. <https://doi.org/10.1016/j.psyneuen.2012.10.011>
- Betzig, L. (1993). Sex, succession, and stratification in the first six civilizations: How powerful men reproduced, passed power on to their sons, and used power to defend their wealth, women, and children. In L. Ellis (Ed.), *Social stratification and socioeconomic inequality: Vol. 1. A comparative biosocial analysis* (pp. 37-74). Praeger Publishers/Greenwood Publishing.
- Bevelander, D., & Page, M. J. (2011). Ms. Trust: Gender, networks and trust—implications for management and education. *Academy of Management Learning & Education*, 10(4), 623-642. <https://doi.org/10.5465/amle.2009.0138>
- Beyer, F., Münte, T. F., Wiechert, J., Heldmann, M., & Krämer, U. M. (2014). Trait aggressiveness is not related to structural connectivity between orbitofrontal cortex and amygdala. *PLoS one*, 9(6), e101105. <https://doi.org/10.1371/journal.pone.0101105>
- Bhaskar, R. (2010). *Reclaiming reality: A critical introduction to contemporary philosophy*. Taylor & Francis.
- Bierema, L. L. (2016). Women’s leadership: Troubling notions of the “ideal” (male) leader. *Advances in Developing Human Resources*, 18(2), 119-136. <https://doi.org/10.1177/1523422316641398>
- Bilimoria, D., Joy, S., & Liang, X. (2008). Breaking barriers and creating inclusiveness: Lessons of organizational transformation to advance women faculty in academic science and engineering. *Human Resource Management*, 47(3), 423-441. <https://doi.org/10.1002/hrm.20225>
- Birindelli, G., Iannuzzi, A. P., & Savioli, M. (2019). The impact of women leaders on environmental performance: Evidence on gender diversity in banks. *Corporate Social Responsibility and Environmental Management*, 26(6), 1485-1499. <https://doi.org/10.1002/csr.1762>
- Björkqvist, K., & Niemelä, P. (1992). New trends in the study of female aggression. In K. Björkqvist & P. Niemelä (Eds.), *Of Mice and Women. Aspects of Female Aggression* (pp. 3-16). Academic Press. https://doi.org/10.1016/B978-0-12-102590-8.5_0006-4
- Björkqvist, K., Österman, K., & Lagerspetz, K. M. (1994). Sex differences in covert aggression among adults. *Aggressive Behavior*, 20(1), 27-33. [https://doi.org/10.1002/1098-2337\(1994\)20:1<27::AID-AB2480200105>3.0.CO;2-Q](https://doi.org/10.1002/1098-2337(1994)20:1<27::AID-AB2480200105>3.0.CO;2-Q)
- Blake, R., & Mouton, J. (1964). *The managerial grid: The key to leadership excellence*. Gulf Publishing.
- Blaker N., & Van Vugt, M. (2014). The Status-Size Hypothesis: How Cues of Physical Size and Social Status Influence Each Other. In J. Cheng, J. Tracy, & C. Anderson (Eds.), *The Psychology of Social Status* (pp. 119-137). Springer. https://doi.org/10.1007/978-1-4939-0867-7_6
- Blau, P. (1964). *Exchange and Power in Social Life*. Wiley.
- Blau, F. D., & Kahn, L. M. (2006). The US gender pay gap in the 1990s: Slowing convergence. *ILR Review*, 60(1), 45-66. <https://doi.org/10.1177/001979390606000103>
- Bleses, D., Vach, W., Slott, M., Wehberg, S., Thomsen, P., Madsen, T. O., & Basbøll, H. (2008). Early vocabulary development in Danish and other languages: A CDI-based comparison. *Journal of Child Language*, 35(03), 619-650. <https://doi.org/10.1017/S0305000908008714>
- Block, J. H. (1973). Conceptions of sex role: Some cross-cultural and longitudinal perspectives. *American Psychologist*, 28(6), 512-526. <https://doi.org/10.1037/h0035094>

- Boakes, R. (1984). *From Darwin to behaviourism: Psychology and the minds of animals*. CUP Archive.
- Bobes, M. A., Ostrosky, F., Diaz, K., Romero, C., Borja, K., Santos, Y., & Valdés-Sosa, M. (2013). Linkage of functional and structural anomalies in the left amygdala of reactive-aggressive men. *Social Cognitive and Affective Neuroscience*, 8(8), 928-936. <https://doi.org/10.1093/scan/nss101>
- Boehm, C. (1999). *Hierarchy in the forest*. Harvard University Press.
- Boesch, C., & Boesch-Achermann, H. (2000). *The chimpanzees of the Tai forest*. Oxford University Press.
- Bönte, W., Procher, V. D., & Urbig, D. (2015). Biology and selection into entrepreneurship—The relevance of prenatal testosterone exposure. *Entrepreneurship Theory and Practice*, 40(5), 1121-1148. <https://doi.org/10.1111/etap.12165>
- Bono, J. E., Hooper, A. C., & Yoon, D. J. (2012). Impact of rater personality on transformational and transactional leadership ratings. *The Leadership Quarterly*, 23(1), 132-145. <https://doi.org/10.1016/j.leaqua.2011.11.011>
- Bono, J. E., & Judge, T. A. (2004). Personality and transformational and transactional leadership: A meta-analysis. *The Journal of Applied Psychology*, 89(5), 901-910. <https://doi.org/10.1037/0021-9010.89.5.901>
- Book, E. W. (2000). *Why The Best Man For The Job Is A Woman: The Unique Female Qualities of Leadership*. HarperBusiness.
- Book, A. S., Starzyk, K. B., & Quinsey, V. L. (2001). The relationship between testosterone and aggression: A meta-analysis. *Aggression and Violent Behavior*, 6(6), 579-599. [https://doi.org/10.1016/S1359-1789\(00\)00032-X](https://doi.org/10.1016/S1359-1789(00)00032-X)
- Booth, A., Granger, D. A., Mazur, A., & Kivlighan, K. T. (2006). Testosterone and social behavior. *Social Forces*, 85(1), 167-191. <https://doi.org/10.1353/sof.2006.0116>
- Booth, J., Connelly, L., Lawrence, M., Chalmers, C., Joice, S., Becker, C., & Dougall, N. (2015). Evidence of perceived psychosocial stress as a risk factor for stroke in adults: a meta-analysis. *BMC Neurology*, 15, 233. <https://doi.org/10.1186/s12883-015-0456-4>
- Bornstein, M. H., Arterberry, M. E., & Lamb, M. E. (2014). *Development in infancy: A contemporary introduction*. Psychology Press.
- Bornstein, M. H., Hahn, C. S., & Haynes, O. M. (2004). Specific and general language performance across early childhood: Stability and gender considerations. *First Language*, 24(3), 267-304. <https://doi.org/10.1177/0142723704045681>
- Bosak, J. & Sczesny, S. (2008). Am I the right candidate? Self-ascribed fit of women and men to a leadership position. *Sex Roles*, 58(9-10), 682-688. <https://doi.org/10.1007/s11199-007-9380-4>
- Bosak, J., & Sczesny, S. (2011). Gender bias in leader selection? Evidence from a hiring simulation study. *Sex Roles*, 65(3-4), 234-242. <https://doi.org/10.1007/s11199-011-0012-7>
- Richerson, P. J., & Boyd, R. (2008). *Not by genes alone: How culture transformed human evolution*. University of Chicago Press.
- Bradburn, N. M., Rips, L. J., & Shevell, S. K. (1987). Answering autobiographical questions: The impact of memory and inference on surveys. *Science*, 236(4798), 157-161. <https://doi.org/10.1126/science.3563494>
- Brands, R. A., & Fernandez-Mateo, I. (2017). Leaning out: How negative recruitment experiences shape women's decisions to compete for executive roles. *Administrative Science Quarterly*, 62(3), 405-442. <https://doi.org/10.1177/0001839216682728>
- Brandt, T. M., & Edinger, P. (2015). Transformational leadership in teams—the effects of a team leader's sex and personality. *Gender in Management: An International Journal*, 30(1), 44-68. <https://doi.org/10.1108/GM-08-2013-0100>
- Brañas-Garza, P., Kovářik, J., & Neyse, L. (2013). Second-to-fourth digit ratio has a non-monotonic impact on altruism. *PLoS one*, 8(4), e60419. <https://doi.org/10.1371/journal.pone.0060419>
- Brass, D. J. (1985). Men's and women's networks: A study of interaction patterns and influence in an organization. *Academy of Management Journal*, 28(2), 327-343. <https://doi.org/10.5465/256204>
- Breedlove, S. M. (1992). Sexual dimorphism in the vertebrate nervous system. *Journal of Neuroscience*, 12(11), 4133-4142. <https://doi.org/10.1523/JNEUROSCI.12-11-04133.1992>
- Brewer, N., Mitchell, P., & Weber, N. (2002). Gender role, organization status, and conflict management styles. *International Journal of Conflict Management*, 13(1), 78-94. <https://doi.org/10.1108/eb022868>
- Broadbridge, A., & Simpson, R. (2011). 25 years on: reflecting on the past and looking to the future in gender and management research. *British Journal of Management*, 22(3), 470-483. <https://doi.org/10.1111/j.1467-8551.2011.00758.x>
- Brodbeck, F. C., Frese, M., Akerblom, S., Audia, G., Bakacsi, G., Bendova, H., Bodega, D., Bodur, M., Booth, S., Brenk, K., Castel, P., Den Hartog, D., Donnelly-Cox, G., Gratchev, M. V., Holber, I., Jarmus, S., Correia Jesuino, J., Jorbenadse, R., Kabsakal, H. E., Keating, M., ... & Wunderer, R. (2000). Cultural Variation of Leadership Prototypes across 22 European Countries. *Journal of Occupational and Organizational Psychology*, 73(1), 1-29. <https://doi.org/10.1348/096317900166859>
- Brodbeck, F. C., Hanges, P. J., Dickson, M. W., Gupta, V., & Dorfman, P. W. (2004). Societal culture and industry sector influences on organizational culture. In R. J. House, P. J. Hanges, M. Javidan, P. Dorfman, & V. Gupta (Eds.), *Culture, leadership, and organizations. The GLOBE study of 62 societies* (pp. 654-668). Sage.
- Brosnan, S. F., & De Waal, F. B. (2003). Monkeys reject unequal pay. *Nature*, 425(6955), 297-299. <https://doi.org/10.1038/nature01963>
- Brown, D., Brown, D., & Anastasopoulos, V. (2002). *Women on Boards: Not just the Right Thing...But the 'Bright' Thing*. (Report 341-02). The Conference Board of Canada. https://utsc.utoronto.ca/~phanira/WebResearchMethods/women_bod&fp-conference%20board.pdf

- Brown, W. S., Paul, L. K., Symington, M., & Dietrich, R. (2005). Comprehension of humor in primary agenesis of the corpus callosum. *Neuropsychologia*, 43(6), 906-916. <https://doi.org/10.1016/j.neuropsychologia.2004.09.008>
- Brown, W. S., & Paul, L. K. (2000). Cognitive and psychosocial deficits in agenesis of the corpus callosum with normal intelligence. *Cognitive Neuropsychiatry*, 5(2), 135-157. <https://doi.org/10.1080/135468000395781>
- Browne, K. (2002). *Biology at work: Rethinking sexual equality*. Rutgers University Press.
- Buchan, N. R., Croson, R. T., & Solnick, S. (2008). Trust and gender: An examination of behavior and beliefs in the Investment Game. *Journal of Economic Behavior & Organization*, 68(3-4), 466-476. <https://doi.org/10.1016/j.jebo.2007.10.006>
- Buchanan, B. (1974). Building organizational commitment: The socialization of managers in work organizations. *Administrative Science Quarterly*, 19(4), 533-546. <https://doi.org/10.2307/2391809>
- Buhrmester, D., & Prager, K. (1995). Patterns and functions of self-disclosure during childhood and adolescence. In K. Rotenberg (Ed.), *Disclosure processes in children and adolescence* (pp. 10-56). Cambridge University Press. <https://doi.org/10.1017/CBO9780511527746.002>
- Buil, I., Catalanb, S., & Martinezb, E. (2016). The importance of corporate brand identity in business management: an application to the UK banking sector. *BRQ Business Research Quarterly*, 19(1), 3-12. <https://doi.org/10.1016/j.brq.2014.11.001>
- Burda Jr, P. C., Vaux, A., & Schill, T. (1984). Social support resources: Variation across sex and sex role. *Personality and Social Psychology Bulletin*, 10(1), 119-126. <https://doi.org/10.1177/0146167284101014>
- Burger, J. M., & Cooper, H. M. (1979). The desirability of control. *Motivation and Emotion*, 3(4), 381-393. <https://doi.org/10.1007/BF00994052>
- Burgoyne, J. G., & Hodgson, V. E. (1983). Natural learning and managerial action: A phenomenological study in the field setting. *Journal of Management Studies*, 20(3), 387-399. <https://doi.org/10.1111/j.1467-6486.1983.tb00214.x>
- Burke, R. J., & Weir, T. (1978). Sex differences in adolescent life stress, social support, and well-being. *The Journal of Psychology*, 98(2), 277-288. <https://doi.org/10.1080/00223980.1978.9915972>
- Burris, V. (2008). From Vietnam to Iraq: Continuity and Change in Between-Group Differences in Support for Military Action. *Social Problems*, 55(4), 443-479. <https://doi.org/10.1525/sp.2008.55.4.443>
- Burt, R. S. (1998). The gender of social capital. *Rationality and Society*, 10(1), 5-46. <https://doi.org/10.1177/10434639801001001>
- Buser, T. (2012). Digit ratios, the menstrual cycle and social preferences. *Games and Economic Behavior*, 76(2), 457-470. <https://doi.org/10.1016/j.geb.2012.07.006>
- Buss, A. (1961). *The psychology of aggression*. Wiley.
- Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, 12(1), 1-14. <https://doi.org/10.1017/S0140525X00023992>
- Buss, D. M. (1995). Evolutionary psychology: A new paradigm for psychological science. *Psychological Inquiry*, 6(1), 1-30. https://doi.org/10.1207/s15327965pli0601_1
- Buss, D. M. (2004). *Evolutionäre Psychologie* (2nd ed.). Pearson Studium.
- Buss, D. M., & Kenrick, D. T. (1998). *Evolutionary social psychology*. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (p. 982-1026). McGraw-Hill.
- Buss, D. M., & Malamuth, N. (Eds.). (1996). *Sex, power, conflict: Evolutionary and feminist perspectives*. Oxford University Press.
- Buss, D. M., Haselton, M. G., Shackelford, T. K., Bleske, A. L., & Wakefield, J. C. (1998). Adaptations, exaptations, and spandrels. *American Psychologist*, 53(5), 533-548. <https://doi.org/10.1037/0003-066X.53.5.533>
- Buss, D. M., & Schmitt, D. P. (2011). Evolutionary Psychology and Feminism. *Sex Roles*, 64(9-10), 768-787. <https://doi.org/10.1007/s11199-011-9987-3>
- Bussey, K., & Bandura, A. (1984). Influence of gender constancy and social power on sex-linked modeling. *Journal of Personality and Social Psychology*, 47(6), 1292-1302. <https://doi.org/10.1037/0022-3514.47.6.1292>
- Bussey, K., & Bandura, A. (1992). Self-regulatory mechanisms governing gender development. *Child Development*, 63(5), 1236-1250. <https://doi.org/10.1111/j.1467-8624.1992.tb01692.x>
- Butovskaya, M., Burkova, V., Karelin, D., & Fink, B. (2015). Digit ratio (2D: 4D), aggression, and dominance in the Hadza and the Datoga of Tanzania. *American Journal of Human Biology*, 27(5), 620-627. <https://doi.org/10.1002/ajhb.22718>
- Butovskaya, M., Fedenok, J., Burkova, V., & Manning, J. (2013). Sex differences in 2D: 4D and aggression in children and adolescents from five regions of Russia. *American Journal of Physical Anthropology*, 152(1), 130-139. <https://doi.org/10.1002/ajpa.22337>
- Butterfield, D. A., & Grinnell, J. P. (1999). "Re-viewing" gender, leadership, and managerial behavior: Do three decades of research tell us anything? In G. Powell (Ed.), *Handbook of Gender and work* (pp. 223-238). Sage. <https://doi.org/10.4135/9781452231365.N12>
- Button K. S., Ioannidis J. P. A., Mokrysz C., Nosek, B. A., Flint, J., Robinson, E. S. J., & Munafò, M. R. (2013) Power failure: Why small sample size undermines the reliability of neuroscience. *Nature Reviews Neuroscience*, 14(5), 365-376. <https://doi.org/10.1038/nrn3475>
- Byrnes, J. P., Miller, D. C., & Schafer, W. D. (1999). Gender differences in risk taking: A meta-analysis. *Psychological Bulletin*, 125(3), 367-383. <https://doi.org/10.1037/0033-2909.125.3.367>

- Caldwell, M., & Peplau, L. (1982). Sex differences in same-sex friendship. *Sex Roles*, 8(7), 721-732. <https://doi.org/10.1007/BF00287568>
- Cahill, S. E. (1986). Language practices and self definition: The case of gender identity acquisition. *Sociological Quarterly*, 27(3), 295-311. <https://doi.org/10.1111/j.1533-8525.1986.tb00262.x>
- Callan, V. J. (1993). Subordinate–manager communication in different sex dyads: consequences for job satisfaction. *Journal of Occupational and Organizational Psychology*, 66(1), 13-27. <https://doi.org/10.1111/j.2044-8325.1993.tb00513.x>
- Cambridge Dictionary (n.d.). Nurture. Retrieved December 1, 2020, from <https://dictionary.cambridge.org/dictionary/english/nurture>
- Campbell, A. (2013). The evolutionary psychology of women's aggression. *Philosophical Transactions of the Royal Society B*, 368(1631). <https://doi.org/10.1098/rstb.2013.0078>
- Campbell, A., Muncer, S., & Odber, J. (1997). Aggression and testosterone: Testing a bio-social model. *Aggressive Behavior*, 23(4), 229-238. [https://doi.org/10.1002/\(SICI\)1098-2337\(1997\)23:4<229::AID-AB1>3.0.CO;2-F](https://doi.org/10.1002/(SICI)1098-2337(1997)23:4<229::AID-AB1>3.0.CO;2-F)
- Cann, A., & Siegfried, W. D. (1990). Gender stereotypes and dimensions of effective leader behavior. *Sex Roles*, 23(7-8), 413-419. <https://doi.org/10.1007/BF00289229>
- Cantor, D. W., & Bernay, T. (1992). *Women in power: The secrets of leadership*. Houghton Mifflin.
- Caplow, T. (1956). A theory of coalitions in the triad. *American Sociological Review*, 21(4), 489-493. <https://doi.org/10.2307/2088718>
- Card, N. A., Stucky, B. D., Sawalani, G. M., & Little, T. D. (2008). Direct and indirect aggression during childhood and adolescence: A meta-analytic review of gender differences, intercorrelations, and relations to maladjustment. *Child Development*, 79(5), 1185-1229. <https://doi.org/10.1111/j.1467-8624.2008.01184.x>
- Carli, L. L., & Eagly, A. H. (2001). Gender, hierarchy, and leadership: An introduction. *Journal of Social Issues*, 57(4), 629-636. <https://doi.org/10.1111/0022-4537.00232>
- Carlson, N. (2013, August 24). The Truth about Marissa Mayer: An Unauthorized Biography. *Business Insider*. <https://www.businessinsider.com/marissa-mayer-biography-2013-8?r=DE&IR=T>
- Carlyle, T. (1993). *On heroes, hero-worship, and the heroic in history* (Vol. 1). University of California Press.
- Carter, C. S. (2007). Sex differences in oxytocin and vasopressin: implications for autism spectrum disorders? *Behavioral Brain Research*, 176(1), 170–186. <https://doi.org/10.1016/j.bbr.2006.08.025>
- Carter, N. M., & Wagner, H. M. (2011). *The bottom line: Corporate performance and women's representation on boards (2004-2008)* (Report). Catalyst. https://www.catalyst.org/wp-content/uploads/2019/01/the_bottom_line_corporate_performance_and_womens_representation_on_boards_2004-2008.pdf
- Carter, G. G., & Wilkinson, G. S. (2013). Food sharing in vampire bats: reciprocal help predicts donations more than relatedness or harassment. *Proceedings of the Royal Society B*, 280(1753), 20122573. <https://doi.org/10.1098/rspb.2012.2.573>
- Case, C. R., & Maner, J. K. (2014). Divide and conquer: When and why leaders undermine the cohesive fabric of their group. *Journal of Personality and Social Psychology*, 107(6), 1033-1050. <https://doi.org/10.1037/a0038201>
- Cashdan, E. (1995). Hormones, sex, and status in women. *Hormones and Behavior*, 29(3), 354-366. <https://doi.org/10.1006/hbeh.1995.1025>
- Caspers, S., Zilles, K., Laird, A. R., & Eickhoff, S. B. (2010). ALE meta-analysis of action observation and imitation in the human brain. *Neuroimage*, 50(3), 1148-1167. <https://doi.org/10.1016/j.neuroimage.2009.12.112>
- Caticha, A. (2014). Towards an informational pragmatic realism. *Minds and Machines*, 24(1), 37-70. <https://doi.org/10.1007/s11023-013-9322-6>
- Caviness, V. S., Kennedy, D. N., Richelme, C., Rademacher, J. F. P. A., & Filipek, P. A. (1996). The human brain age 7–11 years: a volumetric analysis based on magnetic resonance images. *Cerebral Cortex*, 6(5), 726-736. <https://doi.org/10.1093/cercor/6.5.726>
- Cesarini, D., Dawes, C. T., Fowler, J. H., Johannesson, M., Lichtenstein, P., & Wallace, B. (2008). Heritability of cooperative behavior in the trust game. *Proceedings of the National Academy of Sciences*, 105(10), 3721–3726. <https://doi.org/10.1073/pnas.0710069105>
- Chang, S. A. (2010, 5. April). Outsiders and outperformers: women in fund management. *The Finance Professionals' Post*. <http://post.nyssa.org/nyssa-news/2010/04/outside-and-outperformers-women-in-fund-management.html>
- Chang, A., & Bordia, P. (2001). A multidimensional approach to the group cohesion-group performance relationship. *Small Group Research*, 32(4), 379-405. <https://doi.org/10.1177/104649640103200401>
- Chantal, Y., & Vallerand, R. J. (1996). Skill versus luck: A motivational analysis of gambling involvement. *Journal of Gambling Studies*, 12(4), 407-418. <https://doi.org/10.1007/BF01539185>
- Chapais, B. (2015). Competence and the evolutionary origins of status and power in humans. *Human Nature*, 26(2), 161-183. <https://doi.org/10.1007/s12110-015-9227-6>
- Chapple, E. D., & Arensberg, C. M. (1940). Measuring human relations: an introduction to the study of the interaction of individuals. *Genetic Psychology Monographs*, 22, 3–147.
- Charles, N., & Aull Davies, C. (2000). Cultural stereotypes and the gendering of senior management. *The Sociological Review*, 48(4), 544-567. <https://doi.org/10.1111/1467-954X.00232>
- Charlesworth, B. (1993). The evolution of sex and recombination in a varying environment. *Journal of Heredity*, 84(5), 345-350. <https://doi.org/10.1093/oxfordjournals.jhered.a111355>

- Charlton, B. G. (1997). The Inequity of Inequality Egalitarian Instincts and Evolutionary Psychology. *Journal of Health Psychology*, 2(3), 413-425. <https://doi.org/10.1177/135910539700200309>
- Charness, G., Masclet, D., & Villeval, M. C. (2014). The dark side of competition for status. *Management Science*, 60(1), 38-55. <https://doi.org/10.1287/mnsc.2013.1747>
- Chatman, J. A., & Jehn, K. A. (1994). Assessing the relationship between industry characteristics and organizational culture: how different can you be?. *Academy of Management Journal*, 37(3), 522-553. <https://doi.org/10.5465/256699>
- Chaturvedi, S., Arvey, R. D., Zhang, Z., & Christoforou, P. T. (2011). Genetic underpinnings of transformational leadership: The mediating role of dispositional hope. *Journal of Leadership & Organizational Studies*, 18(4), 469-479. <https://doi.org/10.1177/1548051811404891>
- Chen, G., Crossland, C., & Huang, S. (2016). Female board representation and corporate acquisition intensity. *Strategic Management Journal*, 37(2), 303-313. <https://doi.org/10.1002/smj.2323>
- Chen, W., Feng, H., Lv, C., & Lu, J. (2018). Relationships between empathy, gender, and testosterone levels in older adults. *Social Behavior and Personality: an International Journal*, 46(11), 1895-1908. <https://doi.org/10.2224/sbp.6884>
- Cheng, Y., Lee, P. L., Yang, C. Y., Lin, C. P., Hung, D., & Decety, J. (2008). Gender differences in the mu rhythm of the human mirror-neuron system. *PLoS One*, 3(5), e2113. <https://doi.org/10.1371/journal.pone.0002113>
- Cheng, Y., Chou, K. H., Decety, J., Chen, I. Y., Hung, D., Tzeng, O. L., & Lin, C. P. (2009). Sex differences in the neuroanatomy of human mirror-neuron system: a voxel-based morphometric investigation. *Neuroscience*, 158(2), 713-720. <https://doi.org/10.1016/j.neuroscience.2008.10.026>
- Cherryholmes, C. H. (1992). Notes on pragmatism and scientific realism. *Educational Researcher*, 21(6), 13-17. <https://doi.org/10.3102/0013189X021006013>
- Christov-Moore, L., Simpson, E. A., Coudé, G., Grigaityte, K., Iacoboni, M., & Ferrari, P. F. (2014). Empathy: gender effects in brain and behavior. *Neuroscience & Biobehavioral Reviews*, 46, 604-627. <https://doi.org/10.1016/j.neubiorev.2014.09.001>
- Christov-Moore, L., & Iacoboni, M. (2019). Sex differences in somatomotor representations of others' pain: a permutation-based analysis. *Brain Structure and Function*, 224(2), 937-947. <https://doi.org/10.1007/s00429-018-1814-y>
- Christov-Moore, L., Simpson, E. A., Coudé, G., Grigaityte, K., Iacoboni, M., & Ferrari, P. F. (2014). Empathy: gender effects in brain and behavior. *Neuroscience & Biobehavioral Reviews*, 46(4), 604-627. <https://doi.org/10.1016/j.neubiorev.2014.09.001>
- Churchland, P. S., & Winkielman, P. (2012). Modulating social behavior with oxytocin: how does it work? What does it mean?. *Hormones and behavior*, 61(3), 392-399. <https://doi.org/10.1016/j.yhbeh.2011.12.003>
- Chusmir, L. H., & Parker, B. (1991). Gender and situational differences in managers' values: A look at work and home lives. *Journal of Business Research*, 23(4), 325-335. [https://doi.org/10.1016/0148-2963\(91\)90018-S](https://doi.org/10.1016/0148-2963(91)90018-S)
- Cieschinger, A., Hucko, M., Kröger, M., Niesen, C., & Stockburger, C. (2016, September 23). Die wichtigsten Daten und Fakten zur Abgasaffäre. *Spiegel*. <https://www.spiegel.de/wirtschaft/unternehmen/volkswagen-skandal-die-wichtigsten-daten-und-fakten-zur-abgasaffaere-a-1058920.html>
- Clancy, S. M., & Dollinger, S. J. (1993). Photographic depictions of the self: Gender and age differences in social connectedness. *Sex Roles*, 29, 477-495. <https://doi.org/10.1007/BF00289322>
- Claus, V. A., Callahan, J., & Sandlin, J. R. (2013). Culture and leadership: Women in nonprofit and for-profit leadership positions within the European Union. *Human Resource Development International*, 16(3), 330-345. <https://doi.org/10.1080/13678868.2013.792489>
- Clawson, A. (1944). *Shipyard diary of a woman welder*. Penguin.
- Coccaro, E. F., McCloskey, M. S., Fitzgerald, D. A., & Phan, K. L. (2007). Amygdala and orbitofrontal reactivity to social threat in individuals with impulsive aggression. *Biological Psychiatry*, 62(2), 168-178. <https://doi.org/10.1016/j.biopsych.2006.08.024>
- Coco, C., Perciavalle, V., Maci, T., Nicoletti, F., Di Corrado, D., & Perciavalle, V. (2011). The second-to-fourth digit ratio correlates with the rate of academic performance in medical school students. *Molecular Medicine Reports*, 4(3), 471-476. <https://doi.org/10.3892/mmr.2011.456>
- Coie, J. D., & Dodge, K. A. (1998). Aggression and antisocial behavior. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (p. 779-862). John Wiley & Sons, Inc.
- Cole, M. W., Yarkoni, T., Repovš, G., Anticevic, A., & Braver, T. S. (2012). Global connectivity of prefrontal cortex predicts cognitive control and intelligence. *Journal of Neuroscience*, 32(26), 8988-8999.
- Collins, C. S., & Stockton, C. M. (2018). The central role of theory in qualitative research. *International Journal of Qualitative Methods*, 17(1), 1-10. <https://doi.org/10.1177/1609406918797475>
- Collins, N. L., Dunkel-Schetter, C., Lobel, M., & Scrimshaw, S. C. (1993). Social support in pregnancy: psychosocial correlates of birth outcomes and postpartum depression. *Journal of Personality and Social Psychology*, 65(6), 1243-1258. <https://doi.org/10.1037/0022-3514.65.6.1243>
- Collinson, D. L. (1992). *Managing the shopfloor. Subjectivity, masculinity and workplace culture*. De Gruyter.
- Colombo, M. (2014). Caring, the emotions, and social norm compliance. *Journal of Neuroscience, Psychology, and Economics*, 7(1), 33-47. <https://doi.org/10.1037/npe0000015>

- Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, 92(4), 909-927. <https://doi.org/10.1037/0021-9010.92.4.909>
- Confer, J. C., Easton, J. A., Fleischman, D. S., Goetz, C. D., Lewis, D. M., Perilloux, C., & Buss, D. M. (2010). Evolutionary psychology: Controversies, questions, prospects, and limitations. *American Psychologist*, 65(2), 110-126. <https://doi.org/10.1037/a0018413>
- Conover, P. J., & Sapiro, V. (1993). Gender, Feminist Consciousness, and War. *American Journal of Political Science*, 37(4), 1079-1099. <https://doi.org/10.2307/2111544>
- Cook, A., & Glass, C. (2018). Women on corporate boards: Do they advance corporate social responsibility?. *Human Relations*, 71(7), 897-924. <https://doi.org/10.1177/0018726717729207>
- Cooper, M. A., & Bernstein, I. S. (2002). Counter aggression and reconciliation in Assamese macaques (*Macaca assamensis*). *American Journal of Primatology: Official Journal of the American Society of Primatologists*, 56(4), 215-230. <https://doi.org/10.1002/ajp.1076>
- Cooper, R. M., & Zubek, J. P. (1958). Effects of enriched and restricted early environments on the learning ability of bright and dull rats. *Canadian Journal of Psychology/Revue Canadienne de Psychologie*, 12(3), 159-164. <https://doi.org/10.1037/h0083747>
- Corbin, J., & Strauss, A. (2014). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage publications.
- Cordoni, G., Palagi, E., & Tarli, S. B. (2006). Reconciliation and consolation in captive western gorillas. *International Journal of Primatology*, 27(5), 1365-1382. <https://doi.org/10.1007/s10764-006-9078-4>
- Cords, M., Sheehan, M. J., & Ekernas, L. S. (2010). Sex and age differences in juvenile social priorities in female philopatric, nondespotic blue monkeys. *American Journal of Primatology: Official Journal of the American Society of Primatologists*, 72(3), 193-205. <https://doi.org/10.1002/ajp.20768>
- Cornelius, R. R., & Averill, J. R. (1983). Sex differences in fear of spiders. *Journal of Personality and Social Psychology*, 45(2), 377-383. <https://doi.org/10.1037/0022-3514.45.2.377>
- Cosgrove, K. P., Mazure, C. M., & Staley, J. K. (2007). Evolving knowledge of sex differences in brain structure, function, and chemistry. *Biological Psychiatry*, 62(8), 847-855. <https://doi.org/10.1016/j.biopsych.2007.03.001>
- Costa Jr, P. T., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: robust and surprising findings. *Journal of Personality and Social Psychology*, 81(2), 322-331. <https://doi.org/10.1037/0022-3514.81.2.322>
- Coughlin, L., Wingard, E., Hollihan, K., & Hollihan, E. (2005). *Enlightened power: How women are transforming the practice of leadership*. John Wiley & Sons.
- Craig, I. W., Harper, E., & Loat, C. S. (2004). The genetic basis for sex differences in human behaviour: role of the sex chromosomes. *Annals of Human Genetics*, 68(3), 269-284. <https://doi.org/10.1046/j.1529-8817.2004.00098.x>
- Crockford, C., Deschner, T., Ziegler, T. E., & Wittig, R. M. (2014). Endogenous peripheral oxytocin measures can give insight into the dynamics of social relationships: a review. *Frontiers in Behavioral Neuroscience*, 8, 1-68. <https://doi.org/10.3389/fnbeh.2014.00068>
- Cross, C., Linehan, M., & Murphy, C. (2017). The unintended consequences of role-modelling behaviour in female career progression. *Personnel Review*, 46(1), 86-99. <https://doi.org/10.1108/PR-06-2015-0177>
- Crow, J. F. (1997). The high spontaneous mutation rate: is it a health risk?. *Proceedings of the National Academy of Sciences*, 94(16), 8380-8386. <https://doi.org/10.1073/pnas.94.16.8380>
- Crystal, D. S., Watanabe, H., & Chin, W. (1997). Intolerance of human differences: A cross-cultural and developmental study of American, Japanese, and Chinese children. *Journal of Applied Developmental Psychology*, 18(2), 149-167. [https://doi.org/10.1016/S0193-3973\(97\)90033-2](https://doi.org/10.1016/S0193-3973(97)90033-2)
- Cuadrado, I., Navas, M., Molero, F., Ferrer, E. & Morales, J. (2012). Gender differences in leadership styles as a function of leader and subordinates' sex and type of organization. *Journal of Applied Social Psychology*, 42(12), 3083-3113. <https://doi.org/10.1111/j.1559-1816.2012.00974.x>
- Curtis, M., Schmid, C., & Struber, M. (2012). *Gender diversity and corporate performance* (Report). Credit Suisse. https://women.govt.nz/sites/public_files/Credit%20Suisse_gender_diversity_and_corporate_performance_0.pdf
- Curran, J., & Stanworth, J. (1983). Franchising in the modern economy-towards a theoretical understanding. *International Small Business Journal*, 2(1), 8-26. <https://doi.org/10.1177/026465608300200101>
- Cyert, R. M., & March, J. G. (1963). A behavioral theory of the firm. In J. Miner (Ed.), *Organizational behavior 2. Essential theories of process and structure* (pp. 60-77). M. E. Sharpe.
- Dabbs, J. M. (1992). Testosterone and occupational achievement. *Social Forces*, 70(3), 813-824. <https://doi.org/10.1093/sf/70.3.813>
- Dabbs, J. M., Carr, T. S., Frady, R. L., & Riad, J. K. (1995). Testosterone, crime, and misbehavior among 692 male prison inmates. *Personality and Individual Differences*, 18(5), 627-633. [https://doi.org/10.1016/0191-8869\(94\)00177-T](https://doi.org/10.1016/0191-8869(94)00177-T)
- Dabbs Jr, J. M., de La Rue, D., & Williams, P. M. (1990). Testosterone and occupational choice: actors, ministers, and other men. *Journal of Personality and Social Psychology*, 59(6), 1261-1265. <https://doi.org/10.1037/0022-3514.59.6.1261>
- Dabbs Jr, J. M., Frady, R. L., Carr, T. S., & Besch, N. F. (1987). Saliva testosterone and criminal violence in young adult prison inmates. *Psychosomatic Medicine*, 49(2), 174-182. <https://doi.org/10.1097/00006842-198703000-00007>

- Dabbs, J., & Hargrove, M. F. (1997). Age, testosterone, and behavior among female prison inmates. *Psychosomatic Medicine*, 59(5), 477-480. <https://doi.org/10.1097/00006842-199709000-00003>
- Dabbs Jr, J. M., Jurkovic, G. J., & Frady, R. L. (1991). Salivary testosterone and cortisol among late adolescent male offenders. *Journal of Abnormal Child Psychology*, 19(4), 469-478. <https://doi.org/10.1007/BF00919089>
- Dabbs, J. M., Ruback, R. B., Frady, R. L., Hopper, C. H., & Sgoutas, D. S. (1988). Saliva testosterone and criminal violence among women. *Personality and Individual Differences*, 9(2), 269-275. [https://doi.org/10.1016/0191-8869\(88\)90088-8](https://doi.org/10.1016/0191-8869(88)90088-8)
- Daft, R. L. (1980). The evolution of organization analysis in ASQ, 1959-1979. *Administrative Science Quarterly*, 25(4), 623-636. <https://doi.org/10.2307/2392284>
- Daily, C. M. & Dalton D. R. (2003). Women in the Boardroom: A Business Imperative. *Journal of Business Strategy*, 24(5), 8-10. <https://doi.org/10.1108/jbs.2003.28824eaf.002>
- Dalton, M. (1959). *Men who manage: Fusion of feelings and theory in administration*. Wiley & Sons.
- Daly, M., & Wilson, M. (1988). *Homicide*. Aldine de Gruyter.
- Damanpour, F., Szabat, K. A., & Evan, W. M. (1989). The relationship between types of innovation and organizational performance. *Journal of Management Studies*, 26(6), 587-602. <https://doi.org/10.1111/j.1467-6486.1989.tb00746.x>
- Darwin, C. (1859). *On the origin of species by means of natural selection*. John Murray.
- Darwin, C. (1871). *The Descent of Man and Selection in Relation to Sex*. Appleton.
- Darwin, C. (1872). *The Expression of the Emotions in Man and Animals*. Oxford University Press.
- Davatzikos, C., & Resnick, S. M. (1998). Sex differences in anatomic measures of interhemispheric connectivity: correlations with cognition in women but not men. *Cerebral Cortex*, 8(7), 635-640. <https://doi.org/10.1093/cercor/8.7.635>
- David, S. P., Naudet, F., Laude, J., Radua, J., Fusar-Poli, P., Chu, I., Stefanick, M. L., & Ioannidis, J. P. (2018). Potential reporting bias in neuroimaging studies of sex differences. *Scientific Reports*, 8, 6082. <https://doi.org/10.1038/s41598-018-23976-1>
- David-Barrett, T., Rotkirch, A., Carney, J., Izquierdo, I. B., Krems, J. A., Townley, D., McDaniell, E., Byrne-Smith, A. & Dunbar, R. I. (2015). Women favour dyadic relationships, but men prefer clubs: cross-cultural evidence from social networking. *PLoS one*, 10(3), e0118329. <https://doi.org/10.1371/journal.pone.0118329>
- Davidson, L., & Duberman, L. (1982). Friendship: Communication and interactional patterns in same-sex dyads. *Sex Roles*, 8(8), 809-822. <https://doi.org/10.1007/BF00287852>
- Davies, M. (2010). *Woman's place is at the typewriter*. Temple University Press.
- Davies, J., & Easterby-Smith, M. (1984). Learning and developing from managerial work experiences. *Journal of Management Studies*, 21(2), 169-182. <https://doi.org/10.1111/j.1467-6486.1984.tb00230.x>
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44(1), 113-126. <https://doi.org/10.1037/0022-3514.44.1.113>
- Day, D. V. (2000). Leadership development: A review in context. *The Leadership Quarterly*, 11(4), 581-613. [https://doi.org/10.1016/S1048-9843\(00\)00061-8](https://doi.org/10.1016/S1048-9843(00)00061-8)
- Day, D. V. (2011). Integrative perspectives on longitudinal investigations of leader development: From childhood through adulthood. *The Leadership Quarterly*, 22(3), 561-571. <https://doi.org/10.1016/j.leaqua.2011.04.012>
- Day, D. V., Harrison, M. M., & Halpin, S. M. (2009). *An integrative approach to leader development: Connecting adult development, identity and expertise*. Routledge/Taylor & Francis Group.
- Daymon, C. (2000). Culture formation in a new television station: a multi-perspective analysis. *British Journal of Management*, 11(2), 121-135. <https://doi.org/10.1111/1467-8551.00155>
- Dean, L. G., Kendal, R. L., Schapiro, S. J., Thierry, B., & Laland, K. N. (2012). Identification of the social and cognitive processes underlying human cumulative culture. *Science*, 335(6072), 1114-1118. <https://doi.org/10.1126/science.1213969>
- De Corte, C. K., Buysse, A., Verhofstadt, L. L., Roeyers, H., Ponnet, K., & Davis, M. H. (2007). Measuring empathic tendencies: Reliability and validity of the Dutch version of the Interpersonal Reactivity Index. *Psychologica Belgica*, 47(4), 235-260. <https://doi.org/10.5334/pb-47-4-235>
- De Dreu, C. K. (2012). Oxytocin modulates the link between adult attachment and cooperation through reduced betrayal aversion. *Psychoneuroendocrinology*, 37(7), 871-880. <https://doi.org/10.1016/j.psyneuen.2011.10.003>
- De Dreu, C. K. (2012). Oxytocin modulates cooperation within and competition between groups: an integrative review and research agenda. *Hormones and Behavior*, 61(3), 419-428. <https://doi.org/10.1016/j.yhbeh.2011.12.009>
- De Dreu, C. K., Greer, L. L., Handgraaf, M. J., Shalvi, S., Van Kleef, G. A., Baas, M., Ten Velden, F. S., Van Dijk, E., & Feith, S. W. (2010). The neuropeptide oxytocin regulates parochial altruism in intergroup conflict among humans. *Science*, 328(5984), 1408-1411. <https://doi.org/10.1126/science.1189047>
- De Dreu, C. K., Greer, L. L., Van Kleef, G. A., Shalvi, S., & Handgraaf, M. J. (2011). Oxytocin promotes human ethnocentrism. *Proceedings of the National Academy of Sciences*, 108(4), 1262-1266. <https://doi.org/10.1073/pnas.1015316108>
- De Dreu, C. K., & De Vries, N. K. (1997). Minority dissent in organizations. In C. K. De Dreu & E. Van de Vliert (Eds.), *Using conflict in organizations* (pp. 72-86). Sage. <https://doi.org/10.4135/9781446217016.n6>
- De Dreu, C. K., & Van de Vliert, E. (Eds.). (1997). *Using conflict in organizations*. Sage.

- de Hilal, A. V. G. (2006). Brazilian national culture, organizational culture and cultural agreement: findings from a multinational company. *International Journal of Cross Cultural Management*, 6(2), 139-167. <https://doi.org/10.1177/1470595806066325>
- De Lacoste-Utamsing, C., & Holloway, R. L. (1982). Sexual dimorphism in the human corpus callosum. *Science*, 216(4553), 1431-1432. <https://doi.org/10.1126/science.7089533>
- De Lacoste, C., Holloway, R. L., & Woodward, D. J. (1986). Sex differences in the fetal human corpus callosum. *Human Neurobiology*, 5(2), 93-96.
- De Vries, G. J., & Forger, N. G. (2015). Sex differences in the brain: a whole body perspective. *Biology of Sex Differences*, 6(1), 15. <https://doi.org/10.1186/s13293-015-0032-z>
- De Waal, F. B. M. (1994). Chimpanzee's adaptive potential: A comparison of social life under captive and wild conditions. In R. W. Wrangham, W. C. McGrew, F. B. M. de Waal, & P. G. Heltne (Eds.), *Chimpanzee cultures* (pp. 243–260). Harvard University Press.
- De Waal, F. B. M. (1997a). *Bonobo: The Forgotten Ape*. University of California Press.
- De Waal, F. B. M. (1997b). Food transfers through mesh in brown capuchins. *Journal of Comparative Psychology*, 111(4), 370-378. <https://doi.org/10.1037/0735-7036.111.4.370>
- Decety, J. (2011). Dissecting the neural mechanisms mediating empathy. *Emotion Review*, 3(1), 92-108. <https://doi.org/10.1177/1754073910374662>
- Delamont, S. (2004). Ethnography and participant observation. In C. Seale, G. Gobo, J. F. Gubrium, & D. Silverman (Eds.), *Qualitative research practice* (pp. 205-217). Sage Publications. <https://dx.doi.org/10.4135/9781848608191.d19>
- Deluga, R. J. (1990). The effects of transformational, transactional, and laissez faire leadership characteristics on subordinate influencing behavior. *Basic and Applied Social Psychology*, 11(2), 191-203. https://doi.org/10.1207/s15324834baspp1102_6
- Den Hartog, D. N., House, R. J., Hanges, P. J., Ruiz-Quintanilla, S. A. & Dorfman, P. W. (1999). Culture Specific and Cross-culturally Generalizable Implicit Leadership Theories: Are Attributes of Charismatic/ Transformational Leadership Universally Endorsed?. *The Leadership Quarterly*, 10(2), 219–56. [https://doi.org/10.1016/S1048-9843\(99\)00018-1](https://doi.org/10.1016/S1048-9843(99)00018-1)
- Denis, J.-L., Langley, A., & Pineault, M. (2000). Becoming a leader in a complex organization. *Journal of Management Studies*, 37, 1063–1099. <https://doi.org/10.1111/1467-6486.00217>
- Derks, B., Ellemers, N., Van Laar, C., & de Groot, K. (2011a). Do sexist organizational cultures create the queen bee?. *British Journal of Social Psychology*, 50(3), 519–535. <https://doi.org/10.1348/014466610X525280>
- Derks, B., Van Laar, C., Ellemers, N., & de Groot, K. (2011b). Gender-bias primes elicit queen-bee responses among senior policewomen. *Psychological Science*, 22(10), 1243–1249. <https://doi.org/10.1177/0956797611417258>
- Derks, B., Van Laar, C., & Ellemers, N. (2016). The queen bee phenomenon: Why women leaders distance themselves from junior women. *The Leadership Quarterly*, 27(3), 456-469. <https://doi.org/10.1016/j.leaqua.2015.12.007>
- Derlega, V. J., & Chaikin, A. L. (1975). *Sharing intimacy: What we reveal to others and why*. Prentice-Hall.
- Derntl, B., Windischberger, C., Robinson, S., Kryspin-Exner, I., Gur, R. C., Moser, E., & Habel, U. (2009). Amygdala activity to fear and anger in healthy young males is associated with testosterone. *Psychoneuroendocrinology*, 34(5), 687-693. <https://doi.org/10.1016/j.psyneuen.2008.11.007>
- Desvaux, G., Devillard-Hoellinger, S. & Baumgarten, P. (2007). *Women Matter: Gender Diversity, a Corporate Performance Driver* (Report). McKinsey & Company. <http://www.mckinsey.com/~media/McKinsey/Business%20Functions/Organization/Our%20Insights/Gender%20diversity%20a%20corporate%20performance%20driver/Gender%20diversity%20a%20corporate%20performance%20driver.ashx>
- Di Bitetti, M. S. (1997). Evidence for an important social role of allogrooming in a platyrrhine primate. *Animal Behaviour*, 54(1), 199-211. <https://doi.org/10.1006/anbe.1996.0416>
- Di Pellegrino, G., Fadiga, L., Fogassi, L., Gallese, V., & Rizzolatti, G. (1992). Understanding motor events: a neurophysiological study. *Experimental Brain Research*, 91(1), 176-180. <https://doi.org/10.1007/BF00230027>
- Diefenbach, T., & Sillince, J. A. (2011). Formal and informal hierarchy in different types of organization. *Organization Studies*, 32(11), 1515-1537. <https://doi.org/10.1177/0170840611421254>
- Dildar, S., & Amjad, N. (2017). Gender differences in conflict resolution styles (CRS) in different roles: A systematic review. *Pakistan Journal of Social and Clinical Psychology*, 15(2), 37-41. <https://doi.org/10.5539/ijbm.v10n11p24>
- Dindia, K. (2000). Sex differences in self-disclosure, reciprocity of self-disclosure, and self-disclosure and liking: Three meta-analyses reviewed. In S. Petronio (Ed.), *Balancing the secrets of private disclosures* (pp. 21-35). Erlbaum.
- Dindia, K., & Allen, M. (1992). Sex differences in self-disclosure: A meta-analysis. *Psychological Bulletin*, 112(1), 106-124. <https://doi.org/10.1037/0033-2909.112.1.106>
- Dion, K. L. (2000). Group cohesion: From "field of forces" to multidimensional construct. *Group Dynamics: Theory, Research, and Practice*, 4(1), 7-26. <https://doi.org/10.1037/1089-2699.4.1.7>
- Dittmann, R. W., Kappes, M. H., Kappes, M. E., Börger, D., Meyer-Bahlburg, H. F., Stegner, H., Willig, R. H., & Wallis, H. (1990a). Congenital adrenal hyperplasia II: Gender-related behavior and attitudes in female salt-wasting and simple-virilizing patients. *Psychoneuroendocrinology*, 15(5-6), 421-434. [https://doi.org/10.1016/0306-4530\(90\)90066-I](https://doi.org/10.1016/0306-4530(90)90066-I)
- Dittmann, R. W., Kappes, M. H., Kappes, M. E., Börger, D., Stegner, H., Willig, R. H., & Wallis, H. (1990b). Congenital adrenal hyperplasia I: Gender-related behavior and attitudes in female patients and sisters. *Psychoneuroendocrinology*, 15(5-6), 401-420. [https://doi.org/10.1016/0306-4530\(90\)90065-H](https://doi.org/10.1016/0306-4530(90)90065-H)

- Dittrich, M. (2015). Gender differences in trust and reciprocity: evidence from a large-scale experiment with heterogeneous subjects. *Applied Economics*, 47(36), 3825-3838. <https://doi.org/10.1080/00036846.2015.1019036>
- Dobbins, G. H. (1985). Effects of gender on leaders' responses to poor performers: An attributional interpretation. *Academy of Management Journal*, 28(3), 587-598. <https://doi.org/10.5465/256115>
- Dobbins, G. H. (1986). Equity vs equality: Sex differences in leadership. *Sex Roles*, 15(9-10), 513-525. <https://doi.org/10.1007/BF00288228>
- Dobbins, G. H., & Platz, S. J. (1986). Sex differences in leadership: how real are they? *Academy of Management Review*, 11(1), 118-127. <https://doi.org/10.5465/amr.1986.4282639>
- Dobzhansky, T. (1972). Genetics and the diversity of behavior. *American Psychologist*, 27(6), 523-530. <https://doi.org/10.1037/h0032957>
- Dodd, M. S., Papineau, D., Grenne, T., Slack, J. F., Rittner, M., Pirajno, F., O'Neil, J., & Little, C. T. (2017). Evidence for early life in Earth's oldest hydrothermal vent precipitates. *Nature*, 543(7643), 60-64. <https://doi.org/10.1038/nature21377>
- Domes, G., Heinrichs, M., Michel, A., Berger, C., & Herpertz, S. C. (2007). Oxytocin improves "mind-reading" in humans. *Biological Psychiatry*, 61(6), 731-733. <https://doi.org/10.1016/j.biopsych.2006.07.015>
- Donaldson, Z. R., & Young, L. J. (2008). Oxytocin, vasopressin, and the neurogenetics of sociality. *Science*, 322(5903), 900-904. <https://doi.org/10.1126/science.1158668>
- Donnell, S. M., & Hall, J. (1980). Men and women as managers: A significant case of no significant difference. *Organizational Dynamics*, 8(4), 60-77. [https://doi.org/10.1016/0090-2616\(80\)90049-2](https://doi.org/10.1016/0090-2616(80)90049-2)
- Dorfman, P. W., Hanges, P. J., & Brodbeck, F. C. (2004). Leadership and Cultural Variation: The Identification of Culturally Endorsed Leadership Profiles. In R. J. House, P. J. Hanges, M. Javidan, P. W. Dorfman, & V. Gupta (Eds.), *Culture, Leadership, and Organizations. The GLOBE Study of 62 Societies* (pp. 669-720). Sage.
- Dorfman, P. W., & House, R. J. (2004). Cultural Influences on Organizational Leadership: Literature Review, Theoretical Rationale, and GLOBE Project Goals. In R. J. House, P. J. Hanges, M. Javidan, P. W. Dorfman, & V. Gupta (Eds.), *Culture, Leadership, and Organizations. The GLOBE Study of 62 Societies* (pp. 51-73). Sage.
- Drayton, L. A., & Santos, L. R. (2013). Capuchins' (*Cebus apella*) sensitivity to others' goal-directed actions in a helping context. *Animal Cognition*, 17(3), 1-12. <https://doi.org/10.1007/s10071-013-0700-5>
- DuBrin, A. J. (1989). Sex differences in the endorsement of influence tactics and political behavior tendencies. *Journal of Business and Psychology*, 4(1), 3-14. <https://doi.org/10.1007/BF01023035>
- DuBrin, A. J. (1991). Sex and gender differences in tactics of influence. *Psychological Reports*, 68, 635-646. <https://doi.org/10.2466/pr0.1991.68.2.635>
- DuBrin, A. J. (1994). Sex Differences in the Use and Effectiveness of Tactics of Impression Management. *Psychological Reports*, 74(2), 531-544. <https://doi.org/10.2466/pr0.1994.74.2.531>
- Dunbar, R. I. M. (1996). *Grooming, gossip, and the evolution of language*. Harvard University Press.
- Duncan, W. J. (1976). Organizations as political coalitions: A behavioral view of the goal formation process. *Journal of Behavioral Economics*, 5(1), 25-44. [https://doi.org/10.1016/S0090-5720\(76\)80003-4](https://doi.org/10.1016/S0090-5720(76)80003-4)
- Dwyer, S., Orlando C. R., & Chadwick, K. (2003). Gender diversity in management and firm performance: the influence of growth orientation and organizational culture. *Journal of Business Research*, 56(12), 1009-1019. [https://doi.org/10.1016/S0148-2963\(01\)00329-0](https://doi.org/10.1016/S0148-2963(01)00329-0)
- Dybå, T. & Dingsøyr, T. (2008). Empirical studies of agile software development: a systematic review. *Information and Software Technology*, 50(9), 833-859. <https://doi.org/10.1016/j.infsof.2008.01.006>
- Eagleman, D. (July/August, 2011) The Brain on Trial. *The Atlantic*, (July/August). <http://www.theatlantic.com/magazine/archive/2011/07/the-brain-on-trial/308520/>
- Eagly, A. H. (2009). The his and hers of prosocial behavior: An examination of the social psychology of gender. *American Psychologist*, 64(8), 644-658. <https://doi.org/10.1037/0003-066X.64.8.644>
- Eagly, A. H. & Carli, L. L. (2003). The female leadership advantage: An evaluation of the evidence. *The Leadership Quarterly*, 14(6), 807-834. <https://doi.org/10.1016/j.leaqua.2003.09.004>
- Eagly, A. H., & Carli, L. L. (1981). Sex of researchers and sex-typed communications as determinants of sex differences in influenceability: a meta-analysis of social influence studies. *Psychological Bulletin*, 90(1), 1-20. <https://doi.org/10.1037/0033-2909.90.1.1>
- Eagly, A. H., Johannesen-Schmidt, M. C., & Van Engen, M. L. (2003). Transformational, transactional, and laissez-faire leadership styles: a meta-analysis comparing women and men. *Psychological Bulletin*, 129(4), 569-591. <https://doi.org/10.1037/0033-2909.129.4.569>
- Eagly, A. H., & Johnson, B. T. (1990). Gender and Leadership Style: A Meta-Analysis. *Psychological Bulletin*, 108(2), 233-256. <https://doi.org/10.1037/0033-2909.108.2.233>
- Eagly, A. H., Karau, S. J., & Johnson, B. T. (1992). Gender and leadership style among school principals: A meta-analysis. *Educational Administration Quarterly*, 28(1), 76-102. <https://doi.org/10.1177/0013161X92028001004>
- Eagly, A. H., & Wood, W. (1991). Explaining sex differences in social behavior: A meta-analytic perspective. *Personality and Social Psychology Bulletin*, 17(3), 306-315. <https://doi.org/10.1177/0146167291173011>
- Eagly, A. H. (1987). *Sex differences in social behavior. A social-role interpretation*. Psychology Press.

- Eagly, A. H., & Crowley, M. (1986). Gender and helping behavior: A meta-analytic review of the social psychological literature. *Psychological Bulletin*, *100*(3), 283-308. <https://doi.org/10.1037/0033-2909.100.3.283>
- Eagly, A. H., Gartzia, L., & Carli, L. (2014). Female advantage: revisited. In S. Kumra, R. Simpson, & R. J. Burke (Eds.), *The Oxford Handbook of Gender in Organizations* (pp. 153-174). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199658213.013.005>
- Eagly, A. H., & Johannesen-Schmidt, M. C. (2001). The leadership styles of women and men. *Journal of Social Issues*, *57*(4), 781-797. <https://doi.org/10.1111/0022-4537.00241>
- Eagly, A. H., & Johnson, B. T. (1990). Gender and leadership style: A meta-analysis. *Psychological Bulletin*, *108*(2), 233-256. <https://doi.org/10.1037/0033-2909.108.2.233>
- Eagly, A. H., & Karau, S. J. (1991). Gender and the emergence of leaders: A meta-analysis. *Journal of Personality and Social Psychology*, *60*(5), 685-710. <https://doi.org/10.1037/0022-3514.60.5.685>
- Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, *109*(3), 573-598. <https://doi.org/10.1037/0033-295X.109.3.573>
- Eagly, A. H., Karau, S. J., & Makhijani, M. G. (1995). Gender and the effectiveness of leaders: a meta-analysis. *Psychological Bulletin*, *117*(1), 125-145. <https://doi.org/10.1037/0033-2909.117.1.125>
- Eagly, A. H., Makhijani, M. G. & Klonsky, B. G. (1992). Gender and the evaluation of leaders: A meta-analysis. *Psychological Bulletin*, *111*(1), 3-22. <https://doi.org/10.1037/0033-2909.111.1.3>
- Eagly, A. H., & Steffen, V. J. (1986). Gender and aggressive behavior: a meta-analytic review of the social psychological literature. *Psychological Bulletin*, *100*(3), 309-330. <https://doi.org/10.1037/0033-2909.100.3.309>
- Eagly, A. H., & Wood, W. (1999). The origins of sex differences in human behavior: Evolved dispositions versus social roles. *American Psychologist*, *54*(6), 408-423. <https://doi.org/10.1037/0003-066X.54.6.408>
- Eckhardt G. M., & Houston, M. J. (2002). Cultural paradoxes reflected in brand meaning: McDonald's in Shanghai, China. *Journal of International Marketing*, *10*(2), 68-82. <https://doi.org/10.1509/jimk.10.2.68.19532>
- Edding, C., Erfurt Sandhu, P., & Geppert, J. (2014). Geschlossene Gesellschaft? Wie Organisationen sich für Führungs-Frauen öffnen können. *Organisationsentwicklung*, *33*(4), 4-10.
- Eden, D., & Leviatan, U. (1975). Implicit leadership theory as a determinant of the factor structure underlying supervisory behavior scales. *Journal of Applied Psychology*, *60*(6), 736-741. <https://doi.org/10.1037/0021-9010.60.6.736>
- Edmondson, A. C., Bohmer, R. M., & Pisano, G. P. (2001). Disrupted routines: Team learning and new technology implementation in hospitals. *Administrative Science Quarterly*, *46*(4), 685-716. <https://doi.org/10.2307/3094828>
- Eichelman, B. (1983). The limbic system and aggression in humans. *Neuroscience & Biobehavioral Reviews*, *7*(3), 391-394. [https://doi.org/10.1016/0149-7634\(83\)90044-1](https://doi.org/10.1016/0149-7634(83)90044-1)
- Eichenberg, R. C. (2016). Gender difference in American public opinion on the use of military force, 1982-2013. *International Studies Quarterly*, *60*(1), 138-148. <https://doi.org/10.1093/isq/sqv019>
- Einarsen, S., & Skogstad, A. (1996). Bullying at work: Epidemiological findings in public and private organizations. *European Journal of Work and Organizational Psychology*, *5*(2), 185-201. <https://doi.org/10.1080/13594329608414854>
- Eisenberg, N., & Fabes, R. A. (1990). Empathy: Conceptualization, measurement, and relation to prosocial behavior. *Motivation and Emotion*, *14*(2), 131-149. <https://doi.org/10.1007/BF00991640>
- Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). *Prosocial Development*. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (p. 646-718). John Wiley & Sons, Inc.
- Eisenberg, N., & Miller, P. A. (1987). The relation of empathy to prosocial and related behaviors. *Psychological Bulletin*, *101*(1), 91-119. <https://doi.org/10.1037/0033-2909.101.1.91>
- Eisenberg, N., & Lennon, R. (1983). Sex differences in empathy and related capacities. *Psychological Bulletin*, *94*(1), 100-131. <https://doi.org/10.1037/0033-2909.94.1.100>
- Eisenegger, C., Naef, M., Snozzi, R., Heinrichs, M., & Fehr, E. (2010). Prejudice and truth about the effect of testosterone on human bargaining behaviour. *Nature*, *463*(7279), 356-359. <https://doi.org/10.1038/nature08711>
- Eisenegger, C., Naef, M., Snozzi, R., Heinrichs, M., & Fehr, E. (2012). New evidence on testosterone and cooperation: reply. *Nature*, *485*, E5-E6. <https://doi.org/10.1038/nature11136>
- Eisner, S. (2013). Leadership: Gender and executive style. *SAM Advanced Management Journal*, *78*(1), 26-41.
- Ellis, L. (1986). Evidence of neuroandrogenic etiology of sex roles from a combined analysis of human, nonhuman primate and nonprimate mammalian studies. *Personality and Individual Differences*, *7*(4), 519-552. [https://doi.org/10.1016/0191-8869\(86\)90131-5](https://doi.org/10.1016/0191-8869(86)90131-5)
- Ellis, L., Hershberger, S., Field, E., Wersinger, S., Pellis, S., Geary, D. C., Palmer, C., Hoyenga, K., Hetsroni, A., & Karadi, K. (2008). *Sex differences: Summarizing more than a century of scientific research*. Taylor & Francis.
- Ely, R. J. (1994). The effects of organizational demographics and social identity on relationships among professional women. *Administrative Science Quarterly*, *39*(2), 203-238. <https://doi.org/10.2307/2393234>
- Ely, R. J. (1995). The power in demography: Women's social constructions of gender identity at work. *Academy of Management Journal*, *38*(3), 589-634. <https://doi.org/10.5465/256740>

- Ely, R. J., Ibarra, H., & Kolb, D. M. (2011). Taking gender into account: Theory and design for women's leadership development programs. *Academy of Management Learning & Education*, 10(3), 474-493. <https://doi.org/10.5465/amle.2010.0046>
- Ely, R., & Padavic, I. (2007). A feminist analysis of organizational research on sex differences. *Academy of Management Review*, 32(4), 1121-1143. <https://doi.org/10.5465/amr.2007.26585842>
- Encyclopædia Britannica (1998). Phylogeny. In *Encyclopædia Britannica Vol. 9* (p. 411).
- England, P. (1979). Women and occupational prestige: A case of vacuous sex equality. *Signs: Journal of Women in Culture and Society*, 5(2), 252-265. <https://doi.org/10.1086/493707>
- Ensari, N., Riggio, R. E., Christian, J., & Carslaw, G. (2011). Who emerges as a leader? Meta-analyses of individual differences as predictors of leadership emergence. *Personality and Individual Differences*, 51(4), 532-536. <https://doi.org/10.1016/j.paid.2011.05.017>
- Eriksson, P., Henttonen, E., & Meriläinen, S. (2008). Managerial work and gender—Ethnography of cooperative relationships in small software companies. *Scandinavian Journal of Management*, 24(4), 354-363. <https://doi.org/10.1002/j.1550-8528.1999.tb00385.x>
- Epel, E. E., Moyer, A. E., Martin, C. D., Macary, S., Cummings, N., Rodin, J., & Rebuffe-Scrive, M. (1999). Stress-induced cortisol, mood, and fat distribution in men. *Obesity Research*, 7(1), 9-15. <https://doi.org/10.1002/j.1550-8528.1999.tb00385.x>
- Eppley, T. M., Suchak, M., Crick, J., & de Waal, F.B. (2013). Perseverance and food sharing among closely affiliated female chimpanzees. *Primates*, 54(4), 319-324. <https://doi.org/10.1007/s10329-013-0374-2>
- Erez, M., & Earley, P. C. (1993). *Culture, self-identity, and work*. Oxford University Press.
- Fagenson, E. A. (1990). Perceived masculine and feminine attributes examined as a function of individuals' sex and level in the organizational power hierarchy: A test of four theoretical perspectives. *Journal of Applied Psychology*, 75(2), 204-211. <https://doi.org/10.1037/0021-9010.75.2.204>
- Fairhurst, G. T., & Snavely, B. K. (1983). Majority and token minority group relationships: Power acquisition and communication. *Academy of Management Review*, 8(2), 292-300. <https://doi.org/10.5465/amr.1983.4284739>
- Fauchart, E., & Gruber, M. (2011). Darwinians, communitarians, and missionaries: The role of founder identity in entrepreneurship. *Academy of Management Journal*, 54(5), 935-957. <https://doi.org/10.5465/amj.2009.0211>
- Feather, N. T. (1969). Attribution of responsibility and valence of success and failure in relation to initial confidence and task performance. *Journal of Personality and Social Psychology*, 13(), 129-144. <https://doi.org/10.1037/h0028071>
- Fedigan, L. M., & Baxter, M. J. (1984). Sex differences and social organization in free-ranging spider monkeys (*Ateles geoffroyi*). *Primates*, 25(3), 279-294. <https://doi.org/10.1007/BF02382267>
- Feingold, A. (1994). Gender differences in variability in intellectual abilities: A cross-cultural perspective. *Sex Roles*, 30(1-2), 81-92. <https://doi.org/10.1007/BF01420741>
- Feldman, H. M., Dollaghan, C. A., Campbell, T. F., Kurs-Lasky, M., Janosky, J. E., & Paradise, J. L. (2000). Measurement properties of the MacArthur Communicative Development Inventories at ages one and two years. *Child Development*, 71(2), 310-322. <https://doi.org/10.1111/1467-8624.00146>
- Feng, C., Hackett, P. D., DeMarco, A. C., Chen, X., Stair, S., Haroon, E., Ditzen, B., Pagnoni, G., & Rilling, J. K. (2015). Oxytocin and vasopressin effects on the neural response to social cooperation are modulated by sex in humans. *Brain Imaging and Behavior*, 9(4), 754-764. <https://doi.org/10.1007/s11682-014-9333-9>
- Ferrari, P. F., Gallese, V., Rizzolatti, G., & Fogassi, L. (2003). Mirror neurons responding to the observation of ingestive and communicative mouth actions in the monkey ventral premotor cortex. *European Journal of Neuroscience*, 17(8), 1703-1714. <https://doi.org/10.1046/j.1460-9568.2003.02601.x>
- Fenson, L., Dale, P. S., Reznick, J. S., Bates, E., Thal, D. J., Pethick, S. J., Tomasello, M., Mervis, C. B., & Stiles, J. (1994). Variability in early communicative development. *Monographs of the Society for Research in Child Development*, 59(5), i-185. <https://doi.org/10.2307/1166093>
- Feshbach, N. D. (1969). Sex differences in children's modes of aggressive responses toward outsiders. *Merrill Palmer Quarterly*, 15(3), 249-258.
- Feshbach, N. D., & Sones, G. (1971). Sex differences in adolescent reactions toward newcomers. *Developmental Psychology*, 4(3), 381-386. <https://doi.org/10.1037/h0030986>
- Festinger, L. (1957). *A theory of cognitive dissonance* (Vol. 2). Stanford university press.
- Fieder, M., Huber, S., Bookstein, F. L., Iber, K., Schäfer, K., Winckler, G., & Wallner, B. (2005). Status and reproduction in humans: New evidence for the validity of evolutionary explanations on basis of a university sample. *Ethology*, 111(10), 940-950.
- Fieder, M., & Huber, S. (2007). The effects of sex and childlessness on the association between status and reproductive output in modern society. *Evolution and Human Behavior*, 28(6), 392-398. <https://doi.org/10.1016/j.evolhumbehav.2007.05.004>
- Fieder, M., & Huber, S. (2012). An evolutionary account of status, power, and career in modern societies. *Human Nature*, 23(2), 191-207. <https://doi.org/10.1007/s12110-012-9139-7>
- Fiedler, F. E. (1967). *A theory of leadership effectiveness*. McGraw-Hill.
- Fischer-Shofty, M., Levkovitz, Y., & Shamay-Tsoory, S. G. (2013). Oxytocin facilitates accurate perception of competition in men and kinship in women. *Social Cognitive and Affective Neuroscience*, 8(3), 313-317. <https://doi.org/10.1093/scan/nsr100>

- Fiske, M. H., & Ofshe, R. (1970). The process of status evolution. *Sociometry*, 33(3), 327-346. <https://doi.org/10.2307/2786161>
- Fisk, S. R., Miller, B. J., & Overton, J. (2017). Why social status matters for understanding the interrelationships between testosterone, economic risk-taking, and gender. *Sociology Compass*, 11(3), e12452. <https://doi.org/10.1111/soc4.12452>
- Fitzsimmons, T. W., Callan, V. J., & Paulsen, N. (2014). Gender disparity in the C-suite: Do male and female CEOs differ in how they reached the top?. *The Leadership Quarterly*, 25(2), 245-266. <https://doi.org/10.1016/j.leaqua.2013.08.005>
- Flanagan, J. G. (1989). Hierarchy in simple "egalitarian" societies. *Annual Review of Anthropology*, 18(1), 245-266. <https://doi.org/10.1146/annurev.an.18.100189.001333>
- Fleishman, E. A. (1953). The measurement of leadership attitudes in industry. *Journal of Applied Psychology*, 37(3), 153-158. <https://doi.org/10.1037/h0063436>
- Flinn, M. V., & England, B. G. (2003). Childhood stress: endocrine and immune responses to psychosocial events. In J. M. Wilce Jr. (Ed.), *Social & Cultural Lives of Immune Systems* (pp. 105-145). Routledge.
- Flinn, M. V., Quinlan, R. J., Decker, S. A., Turner, M. T., & England, B. G. (1996). Male-female differences in effects of parental absence on glucocorticoid stress response. *Human Nature*, 7(2), 125-162. <https://doi.org/10.1007/BF02692108>
- Flory, J. A., Gneezy, U., Leonard, K. L., & List, J. A. (2018). Gender, age, and competition: A disappearing gap?. *Journal of Economic Behavior & Organization*, 150, 256-276. <https://doi.org/10.1016/j.jebo.2018.03.027>
- Fodor, E. (2002). Smiling women and fighting men: the gender of the communist subject in state socialist Hungary. *Gender & Society*, 16(2), 240-263. <https://doi.org/10.1177/08912430222104921>
- Folstein, S. E., & Rosen-Sheidley, B. (2001). Genetics of autism: Complex aetiology for a heterogeneous disorder. *Nature Reviews: Genetics*, 2, 943-955. <https://doi.org/10.1038/35103559>
- Forret, M. L., & Dougherty, T. W. (2004). Networking behaviors and career outcomes: differences for men and women?. *Journal of Organizational Behavior*, 25(3), 419-437. <https://doi.org/10.1002/job.253>
- Fortune Editors (2016, March 30). The World's 19 most disappointing leaders. *Fortune*. <http://fortune.com/2016/03/30/most-disappointing-leaders/>
- Francis, R. C. (1988). On the relationship between aggression and social dominance. *Ethology*, 78(3), 223-237. <https://doi.org/10.1111/j.1439-0310.1988.tb00233.x>
- Frankel, L. P. (2014). *Nice girls don't get the corner office: Unconscious mistakes women make that sabotage their careers*. Hachette UK.
- Freedman, D. G. (1974). *Human infancy: An evolutionary perspective*. Halsted Press.
- FU Berlin (Otto-Stammer-Zentrum). (2019, July 26). Anteil der Frauen an den Mitgliedern der politischen Parteien in Deutschland am 31. Dezember 2018 [Graph]. *Statista*. <https://de.statista.com/statistik/daten/studie/192247/umfrage/frauenanteil-in-den-politischen-parteien/>
- Fullagar, C. J., Sumer, H. C., Sverke, M., & Slick, R. (2003). Managerial sex-role stereotyping: A cross cultural analysis. *International Journal of Cross Cultural Management*, 3(1), 93-107. <https://doi.org/10.1177/1470595803003001112>
- Fuller, J. B., Patterson, C. E., Hester, K. I. M., & Stringer, D. Y. (1996). A quantitative review of research on charismatic leadership. *Psychological Reports*, 78(1), 271-287. <https://doi.org/10.2466/pr0.1996.78.1.271>
- Fung, L. (1992). Participation motives in competitive sports: A cross-cultural comparison. *Adapted Physical Activity Quarterly*, 9(2), 114-122. <https://doi.org/10.1123/apaq.9.2.114>
- Furnham, A., & Skae, E. (1997). Changes in the stereotypical portrayal of men and women in British television advertisements. *European Psychologist*, 2, 44-51. <https://doi.org/10.1027/1016-9040.2.1.44>
- Gabriel, S., & Gardner, W. L. (1999). Are there "his" and "hers" types of interdependence? The implications of gender differences in collective versus relational interdependence for affect, behavior, and cognition. *Journal of Personality and Social Psychology*, 77(3), 642-655. <https://doi.org/10.1037/0022-3514.77.3.642>
- Gagliarducci, S., & Paserman, M. D. (2015). The Effect of Female Leadership on Establishment and Employee Outcomes: Evidence from Linked Employer-Employee Data. *Research in Labor Economics*, 41, 343-375. <https://doi.org/10.1108/S0147-912120140000041017>
- Gagnon, S. S., Nindl, B. C., Vaara, J. P., Santtila, M., Häkkinen, K., & Kyröläinen, H. (2018). Basal Endogenous Steroid Hormones, Sex Hormone-Binding Globulin, Physical Fitness, and Health Risk Factors in Young Adult Men. *Frontiers in Physiology*, 9, 1005. <https://doi.org/10.3389/fphys.2018.01005>
- Galizzi, M. M., & Nieboer, J. (2015). Digit ratio (2D: 4D) and altruism: evidence from a large, multi-ethnic sample. *Frontiers in Behavioral Neuroscience*, 9, 41. <https://doi.org/10.3389/fnbeh.2015.00041>
- Gallese, V., Fadiga, L., Fogassi, L., & Rizzolatti, G. (1996). Action recognition in the premotor cortex. *Brain*, 119(2), 593-609. <https://doi.org/10.1093/brain/119.2.593>
- Gamson, W. A. (1964). Experimental studies of coalition formation. *Advances in Experimental Social Psychology*, 1, 81-110. [https://doi.org/10.1016/S0065-2601\(08\)60049-0](https://doi.org/10.1016/S0065-2601(08)60049-0)
- Ganahl, D. J., Prinsen, T. J., & Netzley, S. B. (2003). A content-analysis of prime-time commercials: A contextual framework of gender representation. *Sex Roles*(9/10), 49, 545-551. <https://doi.org/10.1023/A:1025893025658>
- Gang, C., & Guiyang, X. (2000). Gender differences in academic achievement and the educational implications. *Chinese Education and Society*, 33(2), 44-49. <https://doi.org/10.2753/CED1061-1932330244>

- Gans, H. J. (1999). Participant observation in the era of “ethnography”. *Journal of Contemporary Ethnography*, 28(5), 540-548. <https://doi.org/10.1177/089124199129023532>
- Gansler, D. A., McLaughlin, N. C., Iguchi, L., Jerram, M., Moore, D. W., Bhadelia, R., & Fulwiler, C. (2009). A multivariate approach to aggression and the orbital frontal cortex in psychiatric patients. *Psychiatry Research: Neuroimaging*, 171(3), 145-154. <https://doi.org/10.1016/j.psychres.2008.03.007>
- Garbarino, E., Slonim, R., & Sydnor, J. (2011). Digit ratios (2D: 4D) as predictors of risky decision making for both sexes. *Journal of Risk and Uncertainty*, 42(1), 1-26. <https://doi.org/10.1007/s11166-010-9109-6>
- Garcia, J. R., Geher, G., Crosier, B., Saad, G., Gambacorta, D., Johnsen, L., & Prancitkas, E. (2011). The interdisciplinarity of evolutionary approaches to human behavior: a key to survival in the ivory archipelago. *Futures*, 43(8), 749-761. <https://doi.org/10.1016/j.futures.2011.05.018>
- Gardiner, M., & Tiggemann, M. (1999). Gender differences in leadership style, job stress and mental health in male-and female-dominated industries. *Journal of Occupational and Organizational Psychology*, 72(3), 301-315. <https://doi.org/10.1348/096317999166699>
- Gartzia, L., & Van Engen, M. (2012). Are (male) leaders “feminine” enough? Gendered traits of identity as mediators of sex differences in leadership styles. *Gender in Management*, 27(5), 296-314. <https://doi.org/10.1108/17542411211252624>
- Gat, A. (2006). *War in human civilization*. Oxford University Press.
- Geary, D. C. (2002). Sexual selection and sex differences in social cognition. In A. V. McGillicuddy-De Lisi & R. De Lisi (Eds.), *Biology, society, and behavior: The development of sex differences in cognition* (pp. 23-53). Ablex/Greenwood.
- Geary, D. C. (2010). *Male, female: The evolution of human sex differences*. American Psychological Association.
- Geertz, C. (1973). Thick description: Toward an interpretive theory of culture. In Y. S. Lincoln & N. K. Denzin (Eds.), *Turning points in qualitative research: Tying knots in a handkerchief* (pp. 143-168). Rowman Altamira.
- Geng, Y., Zhao, W., Zhou, F., Ma, X., Yao, S., Hurlmann, R., Becker, B., & Kendrick, K. M. (2018). Oxytocin enhancement of emotional empathy: generalization across cultures and effects on amygdala activity. *Frontiers in Neuroscience*, 12, 512. <https://doi.org/10.3389/fnins.2018.00512>
- Georgiev, A. V., Klimczuk, A. C., Traficante, D. M., & Maestripieri, D. (2013). When violence pays: A cost-benefit analysis of aggressive behavior in animals and humans. *Evolutionary Psychology*, 11(3), 678-699. <https://doi.org/10.1177/147470491301100313>
- Gershenoff, A. B., & Foti, R. J. (2003). Leader emergence and gender roles in all-female groups: A contextual examination. *Small Group Research*, 34(2), 170–196. <https://doi.org/10.1177/1046496402250429>
- Gerstner, C. R., & Day, D. V. (1994). Crosscultural Comparison of Leadership Prototypes. *The Leadership Quarterly*, 5(2), 121–34. <http://dx.doi.org/10.1037//0021-9010.82.6.827>
- Gerstner, C. R., & Day, D. V. (1997). Meta-Analytic review of leader–member exchange theory: Correlates and construct issues. *Journal of Applied Psychology*, 82(6), 827-844. <https://doi.org/10.1037//0021-9010.82.6.827>
- Gibb Dyer Jr, W., & Wilkins, A. L. (1991). Better Stories, Not Better Constructs, to Generate Better Theory: A Rejoinder to Eisenhardt. *Academy of Management Review*, 16(3), 613–619. <https://doi.org/10.5465/amr.1991.4279492>
- Giberson, T. R., Resick, C. J., Dickson, M. W., Mitchelson, J. K., Randall, K. R., & Clark, M. A. (2009). Leadership and organizational culture: Linking CEO characteristics to cultural values. *Journal of Business and Psychology*, 24(2), 123-137. <https://doi.org/10.1007/s10869-009-9109-1>
- Gibson, C. B. (1995). An investigation of gender differences in leadership across four countries. *Journal of International Business Studies*, 26(2), 255-279. <https://doi.org/10.1057/palgrave.jibs.8490847>
- Giedd, J. N., Castellanos, F. X., Rajapakse, J. C., Vaituzis, A. C., & Rapoport, J. L. (1997). Sexual dimorphism of the developing human brain. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 21(8), 1185-1201. [https://doi.org/10.1016/S0278-5846\(97\)00158-9](https://doi.org/10.1016/S0278-5846(97)00158-9)
- Gilby, I. C., & Wrangham, R. W. (2008). Association patterns among wild chimpanzees (*Pan troglodytes schweinfurthii*) reflect sex differences in cooperation. *Behavioral Ecology and Sociobiology*, 62(11), 1831-1842. <https://doi.org/10.1007/s00265-008-0612-6>
- Gilmore, J. H., Lin, W., Prastawa, M. W., Looney, C. B., Vetsa, Y. S. K., Knickmeyer, R. C., Evans, D. D., Smith, J. K., Hamer, R. M., Lieberman, J. A., & Gerig, G. (2007). Regional gray matter growth, sexual dimorphism, and cerebral asymmetry in the neonatal brain. *Journal of Neuroscience*, 27(6), 1255-1260. <https://doi.org/10.1523/JNEUROSCI.3339-06.2007>
- Gipson, A. N., Pfaff, D. L., Mendelsohn, D. B., Catenacci, L. T., & Burke, W. W. (2017). Women and leadership: Selection, development, leadership style, and performance. *The Journal of Applied Behavioral Science*, 53(1), 32-65. <https://doi.org/10.1177/0021886316687247>
- Girtler, R. (2001). *Methoden der Feldforschung*. Böhlau Verlag.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine.
- Glasman, L. R., & Albarracín, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological Bulletin*, 132(5), 778-822. <https://doi.org/10.1037/0033-2909.132.5.778>
- Glick, P. (1991). Trait-based and sex-based discrimination in occupational prestige, occupational salary, and hiring. *Sex Roles*, 25(5-6), 351-378. <https://doi.org/10.1007/BF00289761>
- Gobo, G. (2008). *Doing ethnography*. Sage.

- Goertzen, B. J., & Fritz, S. (2004). Does sex of dyad members really matter? A review of leader-member exchange. *Journal of Leadership Education*, 3(2), 26. <https://doi.org/10.12806/V3/I2/TF1>
- Goldstein, J. M., Seidman, L. J., Horton, N. J., Makris, N., Kennedy, D. N., Caviness Jr, V. S., Faraone Jr, S. V. & Tsuang, M. T. (2001). Normal sexual dimorphism of the adult human brain assessed by in vivo magnetic resonance imaging. *Cerebral Cortex*, 11(6), 490-497. <https://doi.org/10.1093/cercor/11.6.490>
- Goettner-Abendroth, H. (2018). Re-thinking “Matriarchy” in Modern Matriarchal Studies using two examples: The Khasi and the Mosuo. *Asian Journal of Women's Studies*, 24(1), 3–27. <https://doi.org/10.1080/12259276.2017.1421293>
- Goetzl, R. Z., Henke, R. M., Tabrizi, M., Pelletier, K. R., Loeppke, R., Ballard, D. W., ... & Serxner, S. (2014). Do workplace health promotion (wellness) programs work?. *Journal of Occupational and Environmental Medicine*, 56(9), 927-934. <https://doi.org/10.1097/JOM.0000000000000276>
- Goldman, B. A., Flake, W. L., & Matheson, M. B. (1990). Accuracy of college students' perceptions of their SAT scores, high school and college grade point averages relative to their ability. *Perceptual and Motor Skills*, 70(2), 514. <https://doi.org/10.2466/PMS.70.2.514-514>
- Gomez-Mejia, L. R. (1983). Sex differences during occupational socialization. *Academy of Management Journal*, 26(3), 492-499. <https://doi.org/10.5465/256260>
- Goodall, J., (1986). *The Chimpanzees of Gombe: Patterns of Behaviour*. Harvard University Press.
- Gopal, A., Clark, E., Allgair, A., D'Amato, C., Furman, M., Gansler, D. A., & Fulwiler, C. (2013). Dorsal/ventral parcellation of the amygdala: relevance to impulsivity and aggression. *Psychiatry Research: Neuroimaging*, 211(1), 24-30. <https://doi.org/10.1016/j.psychres.2012.10.010>
- Gordon, G. G. (1991). Industry determinants of organizational culture. *Academy of Management Review*, 16(2), 396-415. <https://doi.org/10.5465/amr.1991.4278959>
- Gordon, A. H., Lee, P. A., Dulcan, M. K., & Finegold, D. N. (1986). Behavioral problems, social competency, and self perception among girls with congenital adrenal hyperplasia. *Child Psychiatry & Human Development*, 17(2), 129-138. <https://doi.org/10.1007/BF00706652>
- Gough, H. G., & Heilbrun, A. B. (1965). *Adjective check list manual*. Consulting Psychologists Press.
- Gould, S. J. (1977). *Ontogeny and phylogeny*. Harvard University Press.
- Gould, S. J. (1987). *An urchin in the storm. Essays about books and ideas*. W.W. Norton.
- Gould, R. J., & Slone, C. G. (1982). The "feminine modesty" effect: A self-presentational interpretation of sex differences in causal attribution. *Personality and Social Psychology Bulletin*, 8(3), 477-485. <https://doi.org/10.1177/0146167282083014>
- Gould, R. V. (2002). The origins of status hierarchies: A formal theory and empirical test. *American Journal of Sociology*, 107(5), 1143-1178. <https://doi.org/10.1086/341744>
- Gowaty, P. A. (1997). Sexual dialectics, sexual selection, and variation in reproductive behavior. In P. A. Gotway (Ed.), *Feminism and evolutionary biology* (pp. 351-384). Springer.
- Grabowska, A. (2017). Sex on the brain: Are gender-dependent structural and functional differences associated with behavior?. *Journal of Neuroscience Research*, 95(1-2), 200-212. <https://doi.org/10.1002/jnr.23953>
- Graen, G., Dansereau Jr, F., & Minami, T. (1972). Dysfunctional leadership styles. *Organizational behavior and human performance*, 7(2), 216-236.
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6(2), 219-247. [https://doi.org/10.1016/1048-9843\(95\)90036-5](https://doi.org/10.1016/1048-9843(95)90036-5)
- Greene, F. J., Han, L., Martin, S., Zhang, S., & Wittert, G. (2014). Testosterone is associated with self-employment among Australian men. *Economics & Human Biology*, 13, 76-84. <https://doi.org/10.1016/j.ehb.2013.02.003>
- Greene, K., Derlega, V. J., & Mathews, A. (2006). Self-disclosure in personal relationships. In K. Greene, V. J. Derlega, A. Mathews, A. L. Vangelisti, & D. Perlman (Eds.), *The Cambridge Handbook of Personal Relationships* (pp. 409-428). Cambridge University Press. <https://doi.org/10.1017/CBO9780511606632.023>
- Greenleaf, R. K. (1970). *The Servant as Leader*. Greenleaf Center.
- Greenleaf, R. K. (1977). *Servant Leadership*. Paulist Press.
- Grinker, W. J., Cooke, D. D., & Kirsch, A. W. (1970). *Climbing the Job Ladder: A Study of Employee Advancement in Eleven Industries*. Shelley and Co.
- Gruber, T., Poisot, T., Zuberbühler, K., Hoppitt, W., & Hobaiter, C. (2015). The spread of a novel behavior in wild chimpanzees: New insights into the ape cultural mind. *Communicative & Integrative Biology*, 8(2), e1017164. <https://doi.org/10.1080/19420889.2015.1017164>
- Guilaine, J., & Zammit, J. (2004). *The origins of war: Violence in prehistory*. Blackwell.
- Grandys, M., Majerczak, J., Zapart-Bukowska, J., Kulpa, J., & Zoladz, J. A. (2011). Gonadal hormone status in highly trained sprinters and in untrained men. *The Journal of Strength & Conditioning Research*, 25(4), 1079-1084. <https://doi.org/10.1519/JSC.0b013e3181d4d3f4>
- Gray, J. A., & Buffery, A. W. (1971). Sex differences in emotional and cognitive behaviour in mammals including man: adaptive and neural bases. *Acta Psychologica*, 35(2), 89-111. [https://doi.org/10.1016/0001-6918\(71\)90014-X](https://doi.org/10.1016/0001-6918(71)90014-X)

- Green, S. G., Anderson, S. E., & Shivers, S. L. (1996). Demographic and organizational influences on leader-member exchange and related work attitudes. *Organizational Behavior and Human Decision Processes*, 66(2), 203-214. <https://doi.org/10.1006/obhd.1996.0049>
- Greene, F. J., Han, L., Martin, S., Zhang, S., & Wittert, G. (2014). Testosterone is associated with self-employment among Australian men. *Economics & Human Biology*, 13, 76-84. <https://doi.org/10.1016/j.ehb.2013.02.003>
- Greer, M. J., & Greene, P. G., (2003). Feminist Theory and the Study of Entrepreneurship. In J. Butler (Ed.), *New Perspectives on Women Entrepreneurs* (pp. 1-24). Information Age Publication.
- Grimshaw, G. M., Bryden, M. P., & Finegan, J. A. K. (1995). Relations between prenatal testosterone and cerebral lateralization in children. *Neuropsychology*, 9(1), 68-79. <https://doi.org/10.1037/0894-4105.9.1.68>
- Grimshaw, G. M., Sitarenios, G., & Finegan, J. A. K. (1995). Mental rotation at 7 years-relations with prenatal testosterone levels and spatial play experiences. *Brain and Cognition*, 29(1), 85-100. <https://doi.org/10.1006/brcg.1995.1269>
- Groen, Y., Wijers, A. A., Tucha, O., & Althaus, M. (2013). Are there sex differences in ERPs related to processing empathy-evoking pictures?. *Neuropsychologia*, 51(1), 142-155. <https://doi.org/10.1016/j.neuropsychologia.2012.11.012>
- Guiso, L., & Rustichini, A. (2011). *What drives women out of entrepreneurship? The joint role of testosterone and culture*. (EUI Working Paper ECO 2011/02). Einaudi Institute for Economics and Finance (EIEF). http://www.eief.it/files/2012/09/wp-02-what-drives-women-out-of-entrepreneurship_the-joint-role-of-testosterone-and-culture.pdf
- Gunnar, M. R., & Donahue, M. (1980). Sex differences in social responsiveness between six months and twelve months. *Child Development*, 51(1), 262-265. <https://doi.org/10.2307/1129619>
- Gunnar-vonGnechten, M. R. (1978). Changing a frightening toy into a pleasant toy by allowing the infant to control its actions. *Developmental Psychology*, 14(2), 147- 162. <https://doi.org/10.1037/0012-1649.14.2.157>
- Gur, R. C., Turetsky, B. I., Matsui, M., Yan, M., Bilker, W., Hughett, P., & Gur, R. E. (1999). Sex differences in brain gray and white matter in healthy young adults: correlations with cognitive performance. *Journal of Neuroscience*, 19(10), 4065-4072. <https://doi.org/10.1523/JNEUROSCI.19-10-04065.1999>
- Gur, R. C., Gunning-Dixon, F., Bilker, W. B., & Gur, R. E. (2002). Sex differences in temporo-limbic and frontal brain volumes of healthy adults. *Cerebral Cortex*, 12(9), 998-1003. <https://doi.org/10.1093/cercor/12.9.998>
- Hackman, M. Z., Hills, M. J., Furniss, A. H., & Paterson, T. J. (1992). Perceptions of gender-role characteristics and transformational and transactional leadership behaviours. *Perceptual and Motor Skills*, 75(1), 311-319. <https://doi.org/10.2466/pms.1992.75.1.311>
- Hackney, A. X. (1996). Testosterone, the hypothalamo-pituitary-testicular axis, and endurance exercise training: a review. *Biology of Sport*, 13(2), 85-98.
- Hackney, A. C., Szczepanowska, E., & Viru, A. M. (2003). Basal testicular testosterone production in endurance-trained men is suppressed. *European Journal of Applied Physiology*, 89(2), 198-201. <https://doi.org/10.1007/s00421-003-0794-6>
- Haines, E. L., Deaux, K., & Lofaro, N. (2016). The times they are a-changing... or are they not? A comparison of gender stereotypes, 1983–2014. *Psychology of Women Quarterly*, 40(3), 353-363. <https://doi.org/10.1177/0361684316634081>
- Haire, Mason, Edwin E. Ghiselli, & Lyman W. Porter (1966). *Managerial thinking: An international study*. John Wiley.
- Halevy, N., Chou, E. Y., Cohen, T. R., & Livingston, R. W. (2012). Status conferral in intergroup social dilemmas: behavioral antecedents and consequences of prestige and dominance. *Journal of Personality and Social Psychology*, 102(2), 351-366. <https://doi.org/10.1037/a0025515>
- Hall, J. A. (2011). Sex differences in friendship expectations: A meta-analysis. *Journal of Social and Personal Relationships*, 28(6), 723-747. <https://doi.org/10.1177/0265407510386192>
- Hall, K. R. L., & DeVore I. (1965). Baboon Social Behavior. In I. DeVore (Ed.), *Primate Behavior. Field Studies of Monkeys and Apes* (pp. 53-110). Holt, Rinehart and Winston.
- Hallgren, M., & Olhager, J. (2009). Lean and agile manufacturing: external and internal drivers and performance outcomes. *International Journal of Operations & Production Management*, 29(10), 976-999. <https://doi.org/10.1108/01443570910993456>
- Halpern, D. F. (2014). It gets crowded with an elephant and an ape in the room: Teaching about female and male cognitive differences and similarities. *Teaching of Psychology*, 41(1), 88-93. <https://doi.org/10.1177/0098628313514187>
- Hamilton, L. D., Carre, J. M., Mehta, P. H., Olmstead, N., & Whitaker, J. D. (2015). Social neuroendocrinology of status: A review and future directions. *Adaptive Human Behavior and Physiology*, 1, 202–230. <https://doi.org/10.1007/s40750-015-0025-5>
- Hamilton, W. D. (1964). The genetical evolution of social behavior: I. *Journal of Theoretical Biology*, 7(1), 1–16. [https://doi.org/10.1016/0022-5193\(64\)90038-4](https://doi.org/10.1016/0022-5193(64)90038-4)
- Hamilton, W. D. (1964). The genetical evolution of social behavior: II. *Journal of Theoretical Biology*, 7(1), 17–52. [https://doi.org/10.1016/0022-5193\(64\)90039-6](https://doi.org/10.1016/0022-5193(64)90039-6)
- Hamilton, W. D. (1980). Sex versus non-sex versus parasite. *Oikos*, 35, 282-290. <https://doi.org/10.2307/3544435>
- Hamel, G. (2011). First, let's fire all the managers. *Harvard Business Review*, 89(12), 48-60.
- Hampson, E., Ellis, C. L., & Tenk, C. M. (2008). On the relation between 2D: 4D and sex-dimorphic personality traits. *Archives of Sexual Behavior*, 37(1), 133-144. <https://doi.org/10.1007/s10508-007-9263-3>
- Hampson E., Van Anders S. M., & Mullin, L. I. (2006). A female advantage in the recognition of emotional facial expressions: test of an evolutionary hypothesis. *Evolution and Human Behavior*, 27(6), 401–416. <https://doi.org/10.1016/j.evolhumbeh.av.2006.05.00>

- Hannagan, R. J. (2011). One species, two sexes, and politics by other means. *Sex Roles*, 64, 751-753. <https://doi.org/10.1007/s11199-011-9944-1>
- Hannah, S. T., Balthazard, P. A., Waldman, D. A., Jennings, P. L., & Thatcher, R. W. (2013). The psychological and neurological bases of leader self-complexity and effects on adaptive decision-making. *Journal of Applied Psychology*, 98(3), 393-411. <https://doi.org/10.1037/a0032257>
- Hansbrough, T. K., Lord, R. G., & Schyns, B. (2015). Reconsidering the accuracy of follower leadership ratings. *The Leadership Quarterly*, 26(2), 220-237. <https://doi.org/10.1016/j.leaqua.2014.11.006>
- Haqq, C. M., King, C. Y., Ukiyama, E., Falsafi, S., Haqq, T. N., Donahoe, P. K., & Weiss, M. A. (1994). Molecular basis of mammalian sexual determination: activation of Mullerian inhibiting substance gene expression by SRY. *Science*, 266(5190), 1494-1500. <https://doi.org/10.1126/science.7985018>
- Harding, S. G. (1986). *The science question in feminism*. Cornell University Press.
- Harlow, H. F. & Zimmerman, R. R. (1959). Affectional responses in the infant monkey. *Science*, 130(3373), 421-432. <https://doi.org/10.1126/science.130.3373.421>
- Harraf, A., Wanasika, I., Tate, K., & Talbott, K. (2015). Organizational agility. *Journal of Applied Business Research*, 31(2), 675-686. <https://doi.org/10.19030/jabr.v31i2.9160>
- Harris, J. A., Rushton, J. P., Hampson, E., & Jackson, D. N. (1996). Salivary testosterone and self-report aggressive and pro-social personality characteristics in men and women. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, 22(5), 321-331. [https://doi.org/10.1002/\(SICI\)1098-2337\(1996\)22:5<321::AID-A B1>3.0.CO;2-M](https://doi.org/10.1002/(SICI)1098-2337(1996)22:5<321::AID-A B1>3.0.CO;2-M)
- Harris, J. A., Vernon, P. A., & Boomsma, D. I. (1998). The heritability of testosterone: a study of Dutch adolescent twins and their parents. *Behavior Genetics*, 28(3), 165-171. <https://doi.org/10.1023/a:1021466929053>
- Hartman, S. J., & Harris, O. J. (1992). The Role of Parental Influence in Leadership. *The Journal of Social Psychology*, 132(2), 153-167. <https://doi.org/10.1080/00224545.1992.9922968>
- Hartnell, C. A., Kinicki, A. J., Lambert, L. S., Fugate, M., & Doyle Corner, P. (2016). Do similarities or differences between CEO leadership and organizational culture have a more positive effect on firm performance? A test of competing predictions. *Journal of Applied Psychology*, 101(6), 846-861. <https://doi.org/10.1037/apl0000083>
- Harvey, J. H., & Omarzu, J. (1997). Minding the close relationship. *Personality and Social Psychology Review*, 1(3), 224-240. https://doi.org/10.1207/s15327957pspr0103_3
- Haslam, S. A., Ryan, M. K., Kulich, C., Trojanowski, G., & Atkins, C. (2010). Investing with prejudice: The relationship between women's presence on company boards and objective and subjective measures of company performance. *British Journal of Management*, 21(2), 484-497. <https://doi.org/10.1111/j.1467-8551.2009.00670.x>
- Hatfield, J. D., & Huseman, R. C. (1982). Perceptual congruence about communication as related to satisfaction: Moderating effects of individual characteristics. *Academy of Management Journal*, 25(2), 349-358. <https://doi.org/10.5465/255996>
- Haviland, J. J., & Malatesta, C. Z. (1981). The development of sex differences in nonverbal signals: Fallacies, facts, and fantasies. In C. Mayo & N. M. Henley (Eds.), *Gender and nonverbal behavior* (pp. 183-208). Springer. https://doi.org/10.1007/978-1-4612-5953-4_10
- Hawley, P. H. (1999). The ontogenesis of social dominance: A strategy-based evolutionary perspective. *Developmental Review*, 19(1), 97-132. <https://doi.org/10.1006/drev.1998.0470>
- Hawley, P. H. (2014). Evolution, prosocial behavior, and altruism. In L. M. Padilla-Walker & G. Carlo (Eds.), *Prosocial development: A multidimensional approach* (pp. 43-69). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199964772.003.0003>
- Hegstrom, J. L., & Griffith, W. I. (1992). Dominance, sex, and leader emergence. *Sex Roles*, 27(5-6), 209-220. <https://doi.org/10.1007/BF00289925>
- Heilbron, N., & Prinstein, M. J. (2008). A review and reconceptualization of social aggression: Adaptive and maladaptive correlates. *Clinical Child and Family Psychology Review*, 11(4), 176-217. <https://doi.org/10.1007/s10567-008-0037-9>
- Heilman, M. E. (2001). Description and prescription: How gender stereotypes prevent women's ascent up the organizational ladder. *Journal of Social Issues*, 57(4), 657-674. <https://doi.org/10.1111/0022-4537.00234>
- Heilman, M. E. (2012). Gender stereotypes and workplace bias. *Research in Organizational Behavior*, 32, 113-135. <https://doi.org/10.1016/j.riob.2012.11.003>
- Heilman, M. E., Block, C. J., Martell, R. F., & Simon, M. C. (1989). Has anything changed? Current characterizations of men, women, and managers. *Journal of Applied Psychology*, 74(6), 935-942. <https://doi.org/10.1037/0021-9010.74.6.935>
- Heilman, M. E., Wallen, A. S., Fuchs, D. & Tamkins, M. M. (2004). Penalties for success: reactions to women who succeed at male gender-typed tasks. *Journal of Applied Psychology*, 89(3), 416-427. <https://doi.org/10.1037/0021-9010.89.3.416>
- Heinrichs, M., von Dawans, B., & Domes, G. (2009). Oxytocin, vasopressin, and human social behavior. *Frontiers in Neuroendocrinology*, 30(4), 548-557. <https://doi.org/10.1016/j.yfrne.2009.05.005>
- Helgesen, S. (1990). *The female advantage: Women's ways of leadership*. Doubleday Currency.
- Helleday, J., Edman, G., Ritzen, E. M., & Siwers, B. (1993). Personality characteristics and platelet MAO activity in women with congenital adrenal hyperplasia (CAH). *Psychoneuroendocrinology*, 18(5-6), 343-54. [https://doi.org/10.1016/0306-4530\(93\)90010-I](https://doi.org/10.1016/0306-4530(93)90010-I)
- Heller, F. A., & Wilpert, B. (1981). *Competence and power in managerial decision making: A study of senior levels of organization in eight countries*. Praeger.

- Hennig, M. & Jardim, A. (1977). *The managerial woman*. Anchor Books.
- Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: Freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and human behavior*, 22(3), 165-196. [https://doi.org/10.1016/S1090-5138\(00\)00071-4](https://doi.org/10.1016/S1090-5138(00)00071-4)
- Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., McElreath, R., Alvard, M., Barr, A., Ensminger, J., Henrich, N. S., Hill, K., Gill-White, F., Gurven, M., Marlowe, F. W., Patton, J. Q., & Tracer, D. (2005). "Economic man" in cross-cultural perspective: Behavioral experiments in 15 small-scale societies. *Behavioral and Brain Sciences*, 28(6), 795-815. <https://doi.org/10.1017/S0140525X05000142>
- Herman-Giddens, M. E., Slora, E. J., Wasserman, R. C., Bourdony, C. J., Bhapkar, M. V., Koch, G. G., & Hasemeier, C. M. (1997). Secondary sexual characteristics and menses in young girls seen in office practice: a study from the Pediatric Research in Office Settings network. *Pediatrics*, 99(4), 505-512. <https://doi.org/10.1542/peds.99.4.505>
- Hersey, P., & Blanchard, K. H. (1969). Life cycle theory of leadership. *Training & Development Journal*, 23(5), 26-34. <https://doi.org/10.4236/jss.2016.48016>
- Heyns, M., & Rothmann, S. (2016). Comparing trust levels of male and female managers: Measurement invariance of the Behavioural Trust Inventory. *South African Journal of Psychology*, 46(1), 74-87. <https://doi.org/10.1177/0081246315596732>
- Hill, V., & Carley, K. M. (2011). Win friends and influence people: Relationships as conduits of organizational culture in temporary placement agencies. *Journal of Management Inquiry*, 20(4), 432-442. <https://doi.org/10.1177/1056492611432807>
- Hill, K., & Kaplan, H. (1988). Tradeoffs in male and female reproductive strategies among the Ache: Part 1. In L. Betzig, M. Borgerhoff Mulder & P. Turke (Eds.), *Human Reproductive Behavior* (pp. 277-290). Cambridge University Press.
- Hinde, R. A., & Spencer-Booth, Y. (1967). The behaviour of socially living rhesus monkeys in their first two and a half years. *Animal Behaviour*, 15(1), 169-196. [https://doi.org/10.1016/S0003-3472\(67\)80029-0](https://doi.org/10.1016/S0003-3472(67)80029-0)
- Hippel, C. v., Walsh, A. M., & Zouroudis, A. (2011). Identity separation in response to stereotype threat. *Social Psychological and Personality Science*, 2(3), 317-324. <https://doi.org/10.1177/1948550610390391>
- Hobfoll, S. E., & Lerman, M. (1988). Personal relationships, personal attributes, and stress resistance: Mothers' reactions to their child's illness. *American Journal of Community Psychology*, 16(4), 565-589. <https://doi.org/10.1007/BF00922772>
- Holt, C. L., & Ellis, J. B. (1998). Assessing the current validity of the Bem Sex-Role Inventory. *Sex Roles*, 39(11-12), 929-941. <https://doi.org/10.1023/A:1018836923919>
- Hoobler, J. M., Masterson, C. R., Nkomo, S. M., & Michel, E. J. (2018). The business case for women leaders: Meta-analysis, research critique, and path forward. *Journal of Management*, 44(6), 2473-2499. <https://doi.org/10.1177/0149206316628643>
- Hönekopp, J. (2012). Digit ratio 2D: 4D in relation to autism spectrum disorders, empathizing, and systemizing: a quantitative review. *Autism Research*, 5(4), 221-230. <https://doi.org/10.1002/aur.1230>
- Hönekopp, J., Bartholdt, L., Beier, L., & Liebert, A. (2007). Second to fourth digit length ratio (2D: 4D) and adult sex hormone levels: new data and a meta-analytic review. *Psychoneuroendocrinology*, 32(4), 313-321. <https://doi.org/10.1016/j.psyneuen.2007.01.007>
- Hönekopp, J., & Schuster, M. (2010). A meta-analysis on 2D: 4D and athletic prowess: Substantial relationships but neither hand out-predicts the other. *Personality and Individual Differences*, 48(1), 4-10. <https://doi.org/10.1016/j.paid.2009.08.009>
- Hönig, K. (2004). Historische Rekonstruktion. In T. F. Steffen, C. Rosenthal, & A. Väth, (Eds.), *Gender Studies. Wissenschaftstheorien und Gesellschaftskritik* (pp. 43-53). Königshausen & Neumann.
- Hoel, H., Cooper, C. L., & Faragher, B. (2001). The experience of bullying in Great Britain: The impact of organizational status. *European Journal of Work and Organizational Psychology*, 10(4), 443-465. <https://doi.org/10.1080594320143000780>
- Hoert, J., Herd, A. M., & Hambrick, M. (2018). The role of leadership support for health promotion in employee wellness program participation, perceived job stress, and health behaviors. *American Journal of Health Promotion*, 32(4), 1054-1061. <https://doi.org/10.1177/0890117116677798>
- Hofstede, G. (1980a). *Culture's Consequences: International differences in work-related values*. Sage.
- Hofstede, G., (1980b). Motivation, leadership, and organization: Do American theories apply abroad? *Organizational Dynamics*, 9(1), 42-63. [https://doi.org/10.1016/0090-2616\(80\)90013-3](https://doi.org/10.1016/0090-2616(80)90013-3)
- Hofstede, G. (1996). Gender stereotypes and partner preferences of Asian women in masculine and feminine cultures. *Journal of Cross-Cultural Psychology*, 27(5), 533-546. <https://doi.org/10.1177/0022022196275003>
- Hofstede, G. (1998). Identifying organizational subcultures: An empirical approach. *Journal of Management Studies*, 35(1), 1-12. <https://doi.org/10.1111/1467-6486.00081>
- Hofstede, G. (2001). *Culture's Consequences. Comparing Values, Behaviors, Institutions, and Organizations across Nations*. Sage.
- Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, 2(1), 1-26. <https://doi.org/10.9707/2307-0919.1014>
- Hofstede, G., & Bond, M. H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, 16(4), 4-21. [https://doi.org/10.1016/0090-2616\(88\)90009-5](https://doi.org/10.1016/0090-2616(88)90009-5)

- Hofstede, G., Neuijen, B., Ohayv, D. D., & Sanders, G. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. *Administrative Science Quarterly*, 35(2), 286-316. <https://doi.org/10.2307/2393392>
- <https://www.hofstede-insights.com/>
- Hogarth, R. M., Karelaia, N., & Trujillo, C. A. (2012). When should I quit? Gender differences in exiting competitions. *Journal of Economic Behavior & Organization*, 83(1), 136-150. <https://doi.org/10.1016/j.jebo.2011.06.021>
- Hogg, M. A., & Turner, J. C. (1985). Interpersonal attraction, social identification and psychological group formation. *European Journal of Social Psychology*, 15, 51-6. <https://doi.org/10.1002/ejsp.2420150105>
- Holloway, R. L., Anderson, P. J., Defendini, R., & Harper, C. (1993). Sexual dimorphism of the human corpus callosum from three independent samples: relative size of the corpus callosum. *American Journal of Physical Anthropology*, 92(4), 481-498. <https://doi.org/10.1002/ajpa.1330920407>
- Holmström, R. (1992). Female aggression among great apes: A psychoanalytic perspective. In K. Björkqvist & P. Niemelä (Eds.), *Of Mice and Women: Aspects of Female Aggression* (pp. 296-306). Academic Press. <https://doi.org/10.1016/B978-0-12-102590-8.50032-5>
- Hoogendoorn, S., Oosterbeek, H., & Van Praag, M. (2013). The impact of gender diversity on the performance of business teams: Evidence from a field experiment. *Management Science*, 59(7), 1514-1528. <https://doi.org/10.1287/mnsc.1120.1674>
- Hopcroft, R. L. (2006). Sex, status, and reproductive success in the contemporary United States. *Evolution and Human Behavior*, 27(2), 104-120. <https://doi.org/10.1016/j.evolhumbehav.2005.07.004>
- Horak, S., & Cui, J. (2017). Financial performance and risk behavior of gender-diversified boards in the Chinese automotive industry: initial insights. *Personnel Review*, 46(4), 847-866. <https://doi.org/10.1108/PR-10-2015-0274>
- Horner, V., Darby Proctor, K. E. B., Whiten, A., & de Waal, F. B. (2010). Prestige affects cultural learning in chimpanzees. *PloS one*, 5(5). <https://doi.org/10.1371/journal.pone.0010625>
- Hosie, R. (2017). Women are better leaders than men, study of 3,000 managers conclude. *Independent*. <https://www.independent.co.uk/life-style/women-better-leaders-men-study-a7658781.html>
- House, R. J., & Aditya, R. N. (1997). The social scientific study of leadership: Quo vadis?. *Journal of Management*, 23(3), 409-473. [https://doi.org/10.1016/S0149-2063\(97\)90037-4](https://doi.org/10.1016/S0149-2063(97)90037-4)
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, Leadership, and Organizations. The GLOBE Study of 62 Societies*. Sage.
- Hoyt, C. L., Johnson, S. K., Murphy, S. E., & Skinnell, K. H. (2010). The impact of blatant stereotype activation and group sex-composition on female leaders. *The Leadership Quarterly*, 21(5), 716-732. <https://doi.org/10.1016/j.adp.2010.07.003>
- Huang, Y., Xu, S., Hua, J., Zhu, D., Liu, C., Hu, Y., Liu, T., & Xu, D. (2015). Association between job strain and risk of incident stroke: A meta-analysis. *Neurology*, 85(19), 1648-1654. <https://doi.org/10.1212/WNL.0000000000002098>
- Hudgens, G. A., & Fatkin, L. T. (1984). *Risk-taking performance of military personnel: Sex differences and practice effects* (Report ADP003262). Army Materiel Command Aberdeen Proving Ground Md Human Engineering Lab. <https://apps.dtic.mil/sti/pdfs/ADP003262.pdf>
- Hudgens, G. A., & Fatkin, L. T. (1985). Sex differences in risk-taking: Repeated sessions on a computer simulation task. *Journal of Psychology*, 119(9), 197-206. <https://doi.org/10.1080/00223980.1985.10542887>
- Hüttges, A., & Fay, D. (2015). Gender influences on career development. *Journal of Personnel Psychology*, 14(3), 113-120. <https://doi.org/10.1027/1866-5888/a000152>
- Huh, H. (2011). Digit ratios and preferences for aggressive content in entertainment. *Personality and Individual Differences*, 51(4), 451-453. <https://doi.org/10.1016/j.paid.2011.04.012>
- Hunter, S. T., Bedell-Avers, K. E., & Mumford, M. D. (2007). The typical leadership study: Assumptions, implications, and potential remedies. *The Leadership Quarterly*, 18(5), 435-446. <https://doi.org/10.1016/j.leaqua.2007.07.001>
- Hunter, L. M., Hatch, A., & Johnson, A. (2004). Cross-national gender variation in environmental behaviors. *Social Science Quarterly*, 85(3), 677-694. <https://doi.org/10.1111/j.0038-4941.2004.00239.x>
- Hurlmann, R., Patin, A., Onur, O. A., Cohen, M. X., Baumgartner, T., Metzler, S., Dziobek, I., Gallinat, J., Wagner, M., Maier, W., & Kendrick, K. M. (2010). Oxytocin enhances amygdala-dependent, socially reinforced learning and emotional empathy in humans. *Journal of Neuroscience*, 30(14), 4999-5007. <https://doi.org/10.1523/JNEUROSCI.5538-09.2010>
- Hyde, J. S. (1984). How large are gender differences in aggression? A developmental meta-analysis. *Developmental Psychology*, 20(4), 722-736. <https://doi.org/10.1037/0012-1649.20.4.722>
- Ibarra, H. (1992). Homophily and differential returns: Sex differences in network structure and access in an advertising firm. *Administrative Science Quarterly*, 37(9), 422-447. <https://doi.org/10.2307/2393451>
- Idris, A. N., Chandran, V., Syed Zakaria, S. Z., & Rasat, R. (2014). Behavioural outcome in children with congenital adrenal hyperplasia: experience of a single centre. *International Journal of Endocrinology*, 2014. <https://doi.org/10.1155/2014/483718>
- Ingram, G. P. (2014). From hitting to tattling to gossip: An evolutionary rationale for the development of indirect aggression. *Evolutionary Psychology*, 12(2), 343-363. <https://doi.org/10.1177/147470491401200205>

- Inzlicht, M., & Ben-Zeev, T. (2000). A threatening intellectual environment: why females are susceptible to experiencing problem-solving deficits in the presence of males. *Psychological Science*, *11*(5), 365–371. <https://doi.org/10.1111/1467-9280.00272>
- Jordan, A. D., Dolcos, S., Denkova, E., & Dolcos, F. (2013). Sex differences in the response to emotional distraction: an event-related fMRI investigation. *Cognitive, Affective, & Behavioral Neuroscience*, *13*(1), 116-134. <https://doi.org/10.3758/s13415-012-0134-6>
- Izraeli, D. N. (1994). Outsiders in the promised land: Women managers in Israel. In N. J. Adler & D. N. Izraeli (Eds.), *Competitive frontiers: Women managers in a global economy* (pp. 301-324). Blackwell.
- Jackall, R. (1988). *Moral mazes: The world of corporate managers*. Oxford University Press.
- James, W. (1907). *Pragmatism, a New Name for Some Old Ways of Thinking*, Popular Lectures.
- James-Hawkins, L., Qutteina, Y., & Yount, K. M. (2017). The patriarchal bargain in a context of rapid changes to normative gender roles: Young Arab women's role conflict in Qatar. *Sex Roles*, *77*(3-4), 155-168. <https://doi.org/10.1007/s11199-016-0708-9>
- Jamieson, K. H., & Hall, K. (1995). *Beyond the double bind: Women and leadership*. Oxford University Press on Demand.
- Jarzabkowski, P., Bednarek, R., & Lê, J. K. (2014). Producing persuasive findings: Demystifying ethnographic textwork in strategy and organization research. *Strategic Organization*, *12*(4), 274-287. <https://doi.org/10.1177/1476127014554575>
- Javidan, M., Dorfman, P. W., Howell, J. P., & Hanges, P. J. (2010). Leadership and cultural context: A theoretical and empirical examination based on Project GLOBE. In N. Nohria & R. Khurana (Eds.), *Handbook of leadership theory and practice*. (pp. 335–376). Harvard Business Press.
- Jehn, K. A. (1997). Affective and cognitive conflict in work groups: Increasing performance through value-based intragroup conflict. In C. K. De Dreu & E. Van de Vliert (Eds.), *Using conflict in organizations* (pp. 87-100). Sage Publishing.
- Jehn, K. A., & Mannix, E. A. (2001). The dynamic nature of conflict: A longitudinal study of intragroup conflict and group performance. *Academy of Management Journal*, *44*(2), 238-251. <https://doi.org/10.5465/3069453>
- Jelinek, M. & Adler, N. J. (1988). Women: World-Class Managers for Global Competition. *Academy Of Management Executive*, *2*(1), 11-19. <https://doi.org/10.5465/ame.1988.4275576>
- Jensen, A. R., & Reynolds, C. R. (1983). Sex differences on the WISC-R. *Personality and Individual Differences*, *4*(2), 223-226.
- Jensen-Campbell, L. A., Graziano, W. G., & West, S. G. (1995). Dominance, prosocial orientation, and female preferences: Do nice guys really finish last?. *Journal of Personality and Social Psychology*, *68*(3), 427-440. <https://doi.org/10.1037/0022-3514.68.3.427>
- Jeong, S. H., & Harrison, D. A. (2017). Glass breaking, strategy making, and value creating: Meta-analytic outcomes of women as CEOs and TMT members. *Academy of Management Journal*, *60*(4), 1219-1252. <https://doi.org/10.5465/amj.2014.0716>
- Jeret, J. S., Serur, D., Wisniewski, K. E., & Lubin, R. A. (1987). Clinicopathological findings associated with agenesis of the corpus callosum. *Brain and Development*, *9*(3), 255-264. [https://doi.org/10.1016/S0387-7604\(87\)80042-6](https://doi.org/10.1016/S0387-7604(87)80042-6)
- Jermier, J. M., Slocum Jr, J. W., Fry, L. W., & Gaines, J. (1991). Organizational subcultures in a soft bureaucracy: Resistance behind the myth and facade of an official culture. *Organization Science*, *2*(2), 170-194. <https://doi.org/10.1287/orsc.2.2.170>
- Joas, H. (1993). *Pragmatism and social theory*. University of Chicago Press.
- Jogulu, U. D., & Wood, G. J. (2006). The role of leadership theory in raising the profile of women in management. *Equal opportunities international*, *25*(4), 236-250. <https://doi.org/10.1108/02610150610706230>
- Johnson, A. M., Vernon, P. A., Harris, J. A., & Jang, K. L. (2004). A behavior genetic investigation of the relationship between leadership and personality. *Twin Research and Human Genetics*, *7*(1), 27-32. <https://doi.org/10.1375/twin.7.1.27>
- Johnson, A. M., Vernon, P. A., McCarthy, J. M., Molson, M., Harris, J. A., & Jang, K. L. (1998). Nature vs nurture: Are leaders born or made? A behavior genetic investigation of leadership style. *Twin Research and Human Genetics*, *1*(4), 216-223. <https://doi.org/10.1375/twin.1.4.216>
- Johnson, F. L., & Aries, E. J. (1983). Conversational patterns among same-sex pairs of late-adolescent close friends. *The Journal of Genetic Psychology*, *142*(2), 225-238. <https://doi.org/10.1080/00221325.1983.10533514>
- Johnson, J. J., & McIntyre, C. L. (1998). Organizational culture and climate correlates of job satisfaction. *Psychological Reports*, *82*, 843–850. <https://doi.org/10.2466/pr0.1998.82.3.843>
- Johnson, P., & Duberley, J. (2000). *Understanding management research: An introduction to epistemology*. Sage.
- Johnson, S. C., Farnworth, T., Pinkston, J. B., Bigler, E. D., & Blatter, D. D. (1994). Corpus callosum surface area across the human adult life span: effect of age and gender. *Brain Research Bulletin*, *35*(4), 373-377. [https://doi.org/10.1016/0361-9230\(94\)90116-3](https://doi.org/10.1016/0361-9230(94)90116-3)
- Johnston, W. A., & Dark, V. J. (1986). Selective attention. *Annual Review of Psychology*, *37*(1), 43-75. <https://doi.org/10.1146/annurev.ps.37.020186.000355>
- Jones, G. R. (1986). Socialization tactics, self-efficacy, and newcomers' adjustments to organizations. *Academy of Management Journal*, *29*(2), 262-279. <https://doi.org/10.5465/256188>
- Josephs, R. A., Newman, M. L., Brown, R. P., & Beer, J. M. (2003). Status, testosterone, and human intellectual performance: Stereotype threat as status concern. *Psychological Science*, *14*, 158–163. <https://doi.org/10.1037/0022-3514.90.6.999>

- Josephs, R. A., Sellers, J. G., Newman, M. L., & Mehta, P. H. (2006). The mismatch effect: when testosterone and status are at odds. *Journal of Personality and Social Psychology*, 90(6), 999-1013. <https://doi.org/10.1037/0022-3514.90.6.999>
- Joyce, C. W., Kelly, J. C., Chan, J. C., Colgan, G., O'Briain, D., Mc Cabe, J. P., & Curtin, W. (2013). Second to fourth digit ratio confirms aggressive tendencies in patients with boxers fractures. *Injury*, 44(11), 1636-1639. <https://doi.org/10.1016/j.injury.2013.07.018>
- Judge, E. (2003, 11. November). Women on board: help or hindrance? *The Times*. <https://www.thetimes.co.uk/article/women-on-board-help-or-hindrance-2c6fnqf6fng>
- Judge, T. A., & Bono, J. E. (2000). Five-factor model of personality and transformational leadership. *Journal of Applied Psychology*, 85(5), 751-765. <https://doi.org/10.1037/0021-9010.85.5.751>
- Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: a qualitative and quantitative review. *Journal of Applied Psychology*, 87(4), 765-780. <https://doi.org/10.1037/0021-9010.87.4.765>
- Kagerbauer, S. M., Martin, J., Schuster, T., Blobner, M., Kochs, E. F., & Landgraf, R. (2013). Plasma oxytocin and vasopressin do not predict neuropeptide concentrations in human cerebrospinal fluid. *Journal of Neuroendocrinology*, 25(7), 668-673. <https://doi.org/10.1111/jne.12038>
- Kahn, A. (1972). Reactions to the Generosity or Stinginess of an Intelligent or Stupid Work Partner: A Test of Equity Theory in a Direct Exchange Relationship. *Journal of Personality and Social Psychology*, 21(1), 116-23 <https://doi.org/10.1037/h0031935>
- Kahn, R. L., & Katz, D. (1953). *Leadership practices in relation to productivity and morale*. Group Dynamics.
- Kajantie, E., & Phillips, D. I. (2006). The effects of sex and hormonal status on the physiological response to acute psychosocial stress. *Psychoneuroendocrinology*, 31(2), 151-178. <https://doi.org/10.1016/j.psyneuen.2005.07.002>
- Kakabadse, N. K., Figueira, C., Nicolopoulou, K., Hong Yang, J., Kakabadse, A. P., & Özbilgin, M. F. (2015). Gender diversity and board performance: women's experiences and perspectives. *Human Resource Management*, 54(2), 265-281. <https://doi.org/10.1002/hrm.21694>
- Kakkar, H., Sivanathan, N., & Gobel, M. S. (2020). Fall from grace: The role of dominance and prestige in the punishment of high-status actors. *Academy of Management Journal*, 63(2), 530-553. <https://doi.org/10.5465/amj.2017.0729>
- Kalma, A. (1991). Hierarchisation and dominance assessment at first glance. *European Journal of Social Psychology*, 21(2), 165-181. <https://doi.org/10.1002/ejsp.2420210206>
- Kam, C. D., & Kinder, D. R. (2007) Terror and Ethnocentrism: Foundations of American Support for the War on Terrorism. *The Journal of Politics*, 69(2), 320-338. <https://doi.org/10.1111/j.1468-2508.2007.00534.x>
- Kanfer, F. H., Duerfeldt, P. H., Martin, B., & Dorsey, T. E. (1971). Effects of model reinforcement, expectation to perform, and task performance on model observation. *Journal of Personality and Social Psychology*, 20(2), 214-217. <https://doi.org/10.1037/h0031671>
- Kanter, R. M. (1976). The impact of hierarchical structures on the work behavior of women and men. *Social Problems*, 23(4), 415-430. <https://doi.org/10.2307/799852>
- Kanter R. M. (1977a) Some Effects of Proportions on Group Life. In P. P. Rieker & E. Carmen (Eds.), *The Gender Gap in Psychotherapy* (pp. 53-73). Springer. https://doi.org/10.1007/978-1-4684-4754-5_5
- Kanter, R. M. (1977b). *Men and Women of the Corporation*. Basic Books.
- Kanthak, K., & Woon, J., (2015). Women Don't Run? Election Aversion and Candidate Entry. *American Journal of Political Science*, 59(3), 595-612. <https://doi.org/10.1111/ajps.12158>
- Kanuha, V. K. (2000). "Being" native versus "going native": Conducting social work research as an insider. *Social work*, 45(5), 439-447. <https://doi.org/10.1093/sw/45.5.439>
- Kassinis, G., Panayiotou, A., Dimou, A., & Katsifaraki, G. (2016). Gender and environmental sustainability: A longitudinal analysis. *Corporate Social Responsibility and Environmental Management*, 23(6), 399-412. <https://doi.org/10.1002/csr.1386>
- Kato, R., & Takeda, Y. (2017). Females are sensitive to unpleasant human emotions regardless of the emotional context of photographs. *Neuroscience Letters*, 651, 177-181. <https://doi.org/10.1016/j.neulet.2017.05.013>
- Kaukiainen, A., Salmivalli, C., Björkqvist, K., Österman, K., Lahtinen, A., Kostamo, A., & Lagerspetz, K. (2001). Overt and covert aggression in work settings in relation to the subjective well-being of employees. *Aggressive Behavior*, 27(5), 360-371. <https://doi.org/10.1002/ab.1021>
- Kawasaki, S., Nishimura, Y., Takizawa, R., Koike, S., Kinoshita, A., Satomura, Y., Sakakibara, E., Sakurada, H., Yamagishi, M., Nishimura, F., Yoshikawa, A., Inai, A., Nishioka, M., Eriuchi, Y., Kakiuchi, C., Araki, T., Kan, C., Umeda, M., Shimazu, A., ... & Kasai, K. (2015). Using social epidemiology and neuroscience to explore the relationship between job stress and frontotemporal cortex activity among workers. *Social Neuroscience*, 10(3), 230-242. <https://doi.org/10.1080/17470919.2014.997370>
- Keightley, P. D., & Eyre-Walker, A. (2000). Deleterious mutations and the evolution of sex. *Science*, 290(5490), 331-333. <https://doi.org/10.1126/science.290.5490.331>
- Kellogg, K. C. (2009). Operating room: Relational spaces and microinstitutional change in surgery. *American Journal of Sociology*, 115(3), 657-711. <https://doi.org/10.1086/603535>
- Kempe, V., & Heffernan, E. (2011). Digit ratio is linked to affective empathy in women. *Personality and Individual Differences*, 50(3), 430-433. <https://doi.org/10.1016/j.paid.2010.10.024>
- Kemper, T. D. (1990). *Social structure and testosterone: Explorations of the socio-biosocial chain*. Rutgers Univ. Press.

- Kempster, S. (2009). Observing the invisible: Examining the role of observational learning in the development of leadership practice. *Journal of Management Development*, 28(5), 439-456. <https://doi.org/10.1108/02621710910955976>
- Kennedy, B. L., & Thornburg, R. (2018). Deduction, induction, and abduction. In U. Flick (Ed.), *The SAGE handbook of qualitative data collection* (pp. 49-64). Sage. <https://dx.doi.org/10.4135/9781526416070.n4>
- Kent, R. L., & Moss, S. E. (1994). Effects of sex and gender role on leader emergence. *Academy of Management Journal*, 37(5), 1335-1346. <https://doi.org/10.5465/256675>
- Kilduff, L. P., Hopp, R. N., Cook, C. J., Crewther, B. T., & Manning, J. T. (2013). Digit ratio (2D: 4D), aggression, and testosterone in men exposed to an aggressive video stimulus. *Evolutionary Psychology*, 11(5), 953-964. <https://doi.org/10.1177/147470491301100502>
- Kilmann, R. H. (1983). A dialectical approach to formulating and testing social science theories: Assumptional analysis. *Human Relations*, 36(1), 1-21. <https://doi.org/10.1177/001872678303600101>
- Kimhi, S., & Shamai, M. (2006). Are women at higher risk than men? Gender differences among teenagers and adults in their response to threat of war and terror. *Women & Health*, 43(3), 1-19. https://doi.org/10.1300/J013v43n03_01
- Kimura, D. (1992). Sex differences in the brain. *Scientific American*, 267(3), 118-125. <https://doi.org/10.1038/scientificamerican0992-118>
- King, A. J., Johnson, D. D. P., & Van Vugt, M. (2009). The origins and evolution of leadership. *Current Biology*, 19(19), R911-R916. <https://doi.org/10.1016/j.cub.2009.07.027>
- Kissel, P., & Buttgen, M. (2015). Using social media to communicate employer brand identity: the impact on corporate image and employer attractiveness. *Journal of Brand Management*, 22(9), 755-777. <https://doi.org/10.1057/bm.2015.42>
- Kluckhohn, F. R. (1951). Cultural factors in social work practice and education. *Social Service Review*, 25(1), 38-47. <https://doi.org/10.1086/638125>
- Knipfer, K., Shaughnessy, B., Hentschel, T., & Schmid, E. (2017). Unlocking women's leadership potential: A curricular example for developing female leaders in academia. *Journal of Management Education*, 41(2), 272-302. <https://doi.org/10.1177/1052562916673863>
- Knight, E. L., & Mehta, P. H. (2014). Hormones and hierarchies. In J. T. Cheng, J. L. Tracy & C. Anderson (Eds.), *The psychology of social status* (pp. 269-301). Springer. https://doi.org/10.1007/978-1-4939-0867-7_13
- Kohn, A. (1992). *No contest: The case against competition*. Harcourt.
- Komura, Y., Tamura, R., Uwano, T., Nishijo, H., Kaga, K., & Ono, T. (2001). Retrospective and prospective coding for predicted reward in the sensory thalamus. *Nature*, 412, 546-549. <https://doi.org/10.1038/35087595>
- Kondo, T., Zákány, J., Innis, J. W., & Duboule, D. (1997). Of fingers, toes and penises. *Nature*, 390(6655), 29-29. <https://doi.org/10.1038/36234>
- Kondrashov, A. S. (1988). Deleterious mutations and the evolution of sexual reproduction. *Nature*, 336(6198), 435-440. <https://doi.org/10.1126/science.290.5490.331>
- Konrad, A.M., Kramer, V.W. & Erkut, S. (2008). Critical Mass: The Impact of Three or More Women on Corporate Boards. *Organizational Dynamics*, 37(2), 145-164. <https://doi.org/10.1016/j.orgdyn.2008.02.005>
- Konrad, A. M., Corrigan, E., Lieb, P., & Ritchie Jr, J. E. (2000). Sex differences in job attribute preferences among managers and business students. *Group & Organization Management*, 25(2), 108-131. <https://doi.org/10.1177/1059601100252002>
- Konrad, A. M., Ritchie Jr, J. E., Lieb, P., & Corrigan, E. (2000). Sex differences and similarities in job attribute preferences: a meta-analysis. *Psychological Bulletin*, 126(4), 593-641. <https://doi.org/10.1037/0033-2909.126.4.593>
- Konrad, A. M., Winter, S., & Gutek, B. A. (1992). Diversity in work group sex composition: Implications for majority and minority members. *Research in the Sociology of Organizations*, 10(1), 15-140. <https://doi.org/10.2307/2667087>
- Korabik, K., Baril, G. L., & Watson, C. (1993). Managers' conflict management style and leadership effectiveness: The moderating effects of gender. *Sex Roles*, 29(5-6), 405-420. <https://doi.org/10.1007/BF00289432>
- Korabik, K. & Ayman, R. (1989). Should Women Managers Have to Act Like Men? *Journal of Management Development*, 8(6), 23-32. <https://doi.org/10.1108/EUM0000000001366>
- Korner, A. F. (1969). Neonatal startles, smiles, erections, and reflex sucks as related to state, sex, and individuality. *Child Development*, 40(4), 1039-1053. <https://doi.org/10.2307/1127010>
- Korucuoglu, O., Harms, M. P., Kennedy, J. T., Golosheykin, S., Astafiev, S. V., Barch, D. M., & Anokhin, A. P. (2020). Adolescent decision-making under risk: neural correlates and sex differences. *Cerebral Cortex*, 30(4), 2691-2707. <https://doi.org/10.1093/cercor/bhz269>
- Koski, S. E., Koops, K., & Sterck, E. H. (2007). Reconciliation, relationship quality, and postconflict anxiety: Testing the integrated hypothesis in captive chimpanzees. *American Journal of Primatology: Official Journal of the American Society of Primatologists*, 69(2), 158-172. <https://doi.org/10.1002/ajp.20338>
- Koski, J. E., Xie, H., & Olson, I. R. (2015). Understanding social hierarchies: The neural and psychological foundations of status perception. *Social Neuroscience*, 10(5), 527-550. <https://doi.org/10.1080/17470919.2015.1013223>
- Kouzes, J. M., & Posner, Z. P. (2002). *Leadership challenge* (3rd ed.). Jossey-Bass.
- Kramsch, C., & Widdowson, H. G. (1998). *Language and culture*. Oxford University Press.
- Krause, J., & Ruxton, G. D. (2002). *Living in groups*. Oxford University Press.
- Krishnan, H. A., Park, D., & Kilbourne, L. (2006). The development of a conceptual model to explain turnover among women in top management teams. *International Journal of Management*, 23(3), 470-477.

- Kramer, V. W., Konrad, A. M., Erkut, S. & Hooper, M. J. (2006). *Critical mass on corporate boards: Why three or more women enhance governance*. Wellesley Centers for Women.
- Kraus, C., Heistermann, M., & Kappeler, P. M. (1999). Physiological suppression of sexual function of subordinate males: a subtle form of intrasexual competition among male sifakas (*Propithecus verreauxi*)?. *Physiology & Behavior*, 66(5), 855-861. [https://doi.org/10.1016/S0031-9384\(99\)00024-4](https://doi.org/10.1016/S0031-9384(99)00024-4)
- Kuchinke, K. P. (1999). Leadership and culture: Work-related values and leadership styles among one company's US and German telecommunication employees. *Human Resource Development Quarterly*, 10(2), 135-154. <https://doi.org/10.1002/hrdq.3920100205>
- Kuepper, Y., & Hennig, J. (2007). Behavioral aggression is associated with the 2D: 4D ratio in men but not in women. *Journal of Individual Differences*, 28(2), 64-72. <https://doi.org/10.1027/1614-0001.28.2.64>
- Küpper, B., & Zick, A. (2011). Inverse gender gap in Germany: Social dominance orientation among men and women. *International Journal of Psychology*, 46(1), 33-45. <https://doi.org/10.1080/00207594.2010.491121>
- Kuhn, T. S. (2012). *The Structure of Scientific Revolutions*. University of Chicago Press.
- Kummer, H. (1978). On the value of social relationships to nonhuman primates: a heuristic scheme. *Social Science Information*, 17(4-5), 687-705. <https://doi.org/10.1177/053901847801700418>
- Kunze, A., & Miller, A. R. (2017). Women helping women? Evidence from private sector data on workplace hierarchies. *Review of Economics and Statistics*, 99(5), 769-775. https://doi.org/10.1162/REST_a_00668
- Kuo, F. Y., Tseng, C. Y., Tseng, F. C., & Lin, C. S. (2013). A study of social information control affordances and gender difference in Facebook self-presentation. *Cyberpsychology, Behavior, and Social Networking*, 16(9), 635-644. <https://doi.org/10.1089/cyber.2012.0345>
- Ladd, G. W. (1983). Social network of popular, average and rejected children in school settings. *Merrill-Palmer Quarterly*, 29(3), 283-307.
- Laloux, F. (2014). *Reinventing organizations: A guide to creating organizations inspired by the next stage in human consciousness*. Nelson Parker.
- Lamb, M. E., Bornstein, M. H., & Teti, D. M. (2002). *Development in infancy: An introduction* (4th ed.). Lawrence Erlbaum Associates Publishers.
- Landry, E. E., Bernardi, R. A., & Bosco, S. M. (2016). Recognition for sustained corporate social responsibility: Female directors make a difference. *Corporate Social Responsibility and Environmental Management*, 23(1), 27-36. <https://doi.org/10.1002/csr.1358>
- Lange, J. (2019) Feelgood-Manager – Pausenclown oder Wertschöpfungsfaktor?. In M. Dahm & S. Thode (Eds.), *Strategie und Transformation im digitalen Zeitalter* (pp. 167-178). Springer Gabler.
- Langford, D. J., Tuttle, A. H., Brown, K., Deschenes, S., Fischer, D. B., & Mutso, A. (2010). Social approach to pain in laboratory mice. *Social Neuroscience*, 5(2), 163-170. <https://doi.org/10.1080/17470910903216609>
- Langfred, C. W. (1998). Is group cohesiveness a double-edged sword? An investigation of the effects of cohesiveness on performance. *Small Group Research*, 29(1), 124-143. <https://doi.org/10.1177/1046496498291005>
- Latham, G. P., & Saari, L. M. (1979) Application of social learning theory to training supervisors through behavioral modeling. *Journal of Applied Psychology*, 64(3), 239-246. <https://doi.org/10.1037/0021-9010.64.3.239>
- Laud, R. L., & Johnson, M. (2013). Journey to the top: Are there really gender differences in the selection and utilization of career tactics?. *Journal of Organizational Culture, Communications and Conflict*, 17(1), 51-68.
- Laurenceau, J. P., Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of personality and social psychology*, 74(5), 1238-1251. <https://doi.org/10.1037/0022-3514.74.5.1238>
- Lawrence, B. S. (1997). Perspective—The black box of organizational demography. *Organization Science*, 8(1), 1-22. <https://doi.org/10.1287/orsc.8.1.1>
- Leahey, E., Beckman, C. M., & Stanko, T. L. (2017). Prominent but less productive: The impact of interdisciplinarity on scientists' research. *Administrative Science Quarterly*, 62(1), 105-139. <https://doi.org/10.1177/0001839216665364>
- Leaper, C., & Friedman, C. K. (2007). The Socialization of Gender. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (p. 561-587). The Guilford Press.
- LeDoux, J. (2003). The emotional brain, fear, and the amygdala. *Cellular and molecular neurobiology*, 23(4-5), 727-738. <https://doi.org/10.1023/A:1025048802629>
- Lee, H. J., Macbeth, A. H., Pagani, J. H., & Young 3rd, W. S. (2009). Oxytocin: The great facilitator of life. *Progress in neurobiology*, 88(2), 127-151. <https://doi.org/10.1016/j.pneurobio.2009.04.001>
- Lee, M., Pitesa, M., Pillutla, M. M., & Thau, S. (2017). Male immorality: An evolutionary account of sex differences in unethical negotiation behavior. *Academy of Management Journal*, 60(5), 2014-2044. <https://doi.org/10.5465/amj.2015.0461>
- Lee, S. Y., Kesebir, S., & Pillutla, M. M. (2016). Gender differences in response to competition with same-gender coworkers: A relational perspective. *Journal of Personality and Social Psychology*, 110(6), 869-886. <https://doi.org/10.1037/pspi000051>
- Lee, T. M., Chan, C. C., Leung, A. W., Fox, P. T., & Gao, J. H. (2009). Sex-related differences in neural activity during risk taking: an fMRI study. *Cerebral Cortex*, 19(6), 1303-1312. <https://doi.org/10.1093/cercor/bhn172>

- Lee, T. W., Mitchell, T. R., & Sablinski, C. J. (1999). Qualitative research in organizational and vocational psychology, 1979–1999. *Journal of Vocational Behavior*, 55(2), 161-187. <https://doi.org/10.1006/jvbe.1999.1707>
- Leeb, R. T., & Rejskind, F. G. (2004). Here's looking at you, kid! A longitudinal study of perceived gender differences in mutual gaze behavior in young infants. *Sex Roles*, 50(1-2), 1-14. <https://doi.org/10.1023/B:SERS.0000011068.42663.ce>
- Lemmers-Jansen, I. L., Fett, A. K. J., Shergill, S. S., Van Kesteren, M. T., & Krabbendam, L. (2019). Girls-Boys An Investigation of Gender Differences in the Behavioral and Neural Mechanisms of Trust and Reciprocity in Adolescence. *Frontiers in Human Neuroscience*, 13, 257. <https://doi.org/10.3389/fnhum.2019.00257>
- Leonard, C. M., Towler, S., Welcome, S., Halderman, L. K., Otto, R., Eckert, M. A., & Chiarello, C. (2008). Size matters: cerebral volume influences sex differences in neuroanatomy. *Cerebral Cortex*, 18(12), 2920-2931. <https://doi.org/10.1093/cercor/bhn052>
- Leveroni, C. L., & Berenbaum, S. A. (1998). Early androgen effects on interest in infants: evidence from children with congenital adrenal hyperplasia. *Developmental Neuropsychology*, 14(2-3), 321-340. <https://doi.org/10.1080/87565649809540714>
- Levi, M., Li, K. & Zhang, F. (2014). Director gender and mergers and acquisitions. *Journal of Corporate Finance*, 28, 185-200. <https://doi.org/10.1016/j.jcorpfin.2013.11.005>
- Levy, J., & Heller, W. (1992). Gender differences in human neuropsychological function. In A. A. Gerall, H. Moltz, & I. L. Ward (Eds.), *Sexual differentiation* (pp. 245-274). Springer. https://doi.org/10.1007/978-1-4899-2453-7_8
- Lewin, K., & Lippitt, R. (1938). An experimental approach to the study of autocracy and democracy: A preliminary note. *Sociometry*, 1(3/4), 292-300. <https://doi.org/10.2307/2785585>
- Liben, L. S., Susman, E. J., Finkelstein, J. W., Chinchilli, V. M., Kunselman, S., Schwab, J., & Dubas, J. S. (2002). The effects of sex steroids on spatial performance: A review and an experimental clinical investigation. *Developmental Psychology*, 38(2), 236-253. <https://doi.org/10.1037/0012-1649.38.2.236>
- Liden, R. C., & Maslyn, J. M. (1998). Multidimensionality of leader-member exchange: An empirical assessment through scale development. *Journal of Management*, 24(1), 43-72. [https://doi.org/10.1016/S0149-2063\(99\)80053-1](https://doi.org/10.1016/S0149-2063(99)80053-1)
- Liebal K., Vaish A., Haun D., & Tomasello M. (2014). Does sympathy motivate prosocial behaviour in great apes? *PLOS One*, 9(1), <https://doi.org/10.1371/journal.pone.0084299>
- Lier, L. M., Breuer, C., & Dallmeyer, S. (2019). Organizational-level determinants of participation in workplace health promotion programs: a cross-company study. *BMC Public Health*, 19(1), 268. <https://doi.org/10.1186/s12889-019-6578-7>
- Liker, A., & Bókony, V. (2009). Larger groups are more successful in innovative problem solving in house sparrows. *Proceedings of the National Academy of Sciences*, 106(19), 7893-7898. <https://doi.org/10.1073/pnas.0900042106>
- Likert, R. (1961). *New patterns of management*. McGraw-Hill.
- Lim, B. C., & Ployhart, R. E. (2004). Transformational leadership: relations to the five-factor model and team performance in typical and maximum contexts. *Journal of Applied Psychology*, 89(4), 610. <https://doi.org/10.1037/0021-9010.89.4.610>
- Lindebaum, D. (2016). Critical essay: Building new management theories on sound data? The case of neuroscience. *Human Relations*, 69(3), 537-550. <https://doi.org/10.1177/0018726715599831>
- Lindner, R. (2018, April 21). Marissa Mayer meldet sich zurück. *Frankfurter Allgemeine*. <http://www.faz.net/aktuell/wirtschaft/diginomics/ehemalige-yahoo-chefin-mayer-meldet-sich-zurueck-15552294.html>
- Linehan, M., & Scullion, H. (2008). The development of female global managers: The role of mentoring and networking. *Journal of Business Ethics*, 83(1), 29-40. <https://doi.org/10.1007/s10551-007-9657-0>
- Linnan, L. A., Sorensen, G., Colditz, G., Klar, N., & Emmons, K. M. (2001). Using theory to understand the multiple determinants of low participation in worksite health promotion programs. *Health Education & Behavior*, 28(5), 591-607. <https://doi.org/10.1177/109019810102800506>
- Lippa, R. A. (2005). *Gender, nature, and nurture*. Routledge.
- Lirtzman, S. I., & Wahba, M. A. (1972). Determinant of coalitional behavior of men and women: Sex roles or situational requirements? *Journal of Applied Psychology*, 56(5), 406-411. <https://doi.org/10.1037/h0033447>
- Litterer, J. A. (1966). Conflict in organization: A re-examination. *Academy of Management Journal*, 9(3), 178-186. <https://doi.org/10.5465/255117>
- Lizotte, M. K. (2016). Investigating women's greater support of the Affordable Care Act. *The Social Science Journal*, 53(2), 209-217. <https://doi.org/10.1016/j.soscij.2014.12.003>
- Lizotte, M. K. (2018). Attitudes toward women and the influence of gender on political decision making. *Oxford Research Encyclopedia of Politics*. <https://doi.org/10.1093/acrefore/9780190228637.013.771>
- Lockard, R. B. (1971). Reflections on the fall of comparative psychology: Is there a message for us all?. *American Psychologist*, 26(2), 168-179. <https://doi.org/10.1037/h0030816>
- Locke, K. (2001). *Grounded theory in management research*. Sage.
- Locke, K. (2011). Field Research Practice in Management and Organization Studies: Reclaiming its Tradition of Discovery. *Academy of Management Annals*, 5(1) 613-52. <https://doi.org/10.5465/19416520.2011.593319>
- Loden, M. (1985). *Feminine leadership or how to succeed in business without being one of the boys*. Times Books.
- Lofland, J. & Lofland, L. H. (1984). *Analyzing social settings* (2nd rev. ed.). Wadsworth Publishing Company.
- Longman, K., Daniels, J., Bray, D. L., & Liddell, W. (2018). How Organizational Culture Shapes Women's Leadership Experiences. *Administrative Sciences*, 8(2), 8. <https://doi.org/10.3390/admsci8020008>

- Longman, D., Stock, J. T., & Wells, J. C. K. (2011). Digit ratio (2D: 4D) and rowing ergometer performance in males and females. *American Journal of Physical Anthropology*, 144(3), 337-341. <https://doi.org/10.1002/ajpa.21407>
- Lonsdorf, E. V., Anderson, K. E., Stanton, M. A., Shender, M., Heintz, M. R., Goodall, J., & Murray, C. M. (2014). Boys will be boys: sex differences in wild infant chimpanzee social interactions. *Animal Behaviour*, 88, 79-83. <https://doi.org/10.1016/j.anbehav.2013.11.015>
- Lord, R. G. (1985). An information processing approach to social perceptions, leadership and behavioral measurement in organizations. *Research in Organizational Behavior*, 7(1), 87-128.
- Lord, R. G., Binning, J. F., Rush, M. C., & Thomas, J. C. (1978). The effect of performance cues and leader behavior on questionnaire ratings of leadership behavior. *Organizational Behavior and Human Performance*, 21(1), 27-39. [https://doi.org/10.1016/0030-5073\(78\)90036-3](https://doi.org/10.1016/0030-5073(78)90036-3)
- Lord, R. G., De Vader, C. L., & Alliger, G. M. (1986). A meta-analysis of the relation between personality traits and leadership perceptions: An application of validity generalization procedures. *Journal of Applied Psychology*, 71(3), 402. <https://doi.org/10.1037/0021-9010.71.3.402>
- Lovejoy, J., & Wallen, K. (1988). Sexually dimorphic behavior in group-housed rhesus monkeys (*Macaca mulatta*) at 1 year of age. *Psychobiology*, 16(4), 348-356. <https://doi.org/10.3758/BF03327332>
- Lowe, K. B., Kroeck, K. G. & Sivasubramaniam, N. (1996). Effectiveness correlates of transformational and transactional leadership: A meta-analytic review of the MLQ literature. *The Leadership Quarterly*, 7(3), 385-425. [https://doi.org/10.1016/S1048-9843\(96\)90027-2](https://doi.org/10.1016/S1048-9843(96)90027-2)
- Luders, E., Toga, A. W., & Thompson, P. M. (2014). Why size matters: differences in brain volume account for apparent sex differences in callosal anatomy: the sexual dimorphism of the corpus callosum. *Neuroimage*, 84, 820-824. <https://doi.org/10.1016/j.neuroimage.2013.09.040>
- Lück, M. (2005). *Psychobiologische Grundlagen aggressiven und gewalttätigen Verhaltens*. BIS Verlag.
- Lueptow, L. B., Garovich, L., & Lueptow, M. B. (1995). The persistence of gender stereotypes in the face of changing sex roles: Evidence contrary to the sociocultural model. *Ethology and Sociobiology*, 16(6), 509-530. [https://doi.org/10.1016/0162-3095\(95\)00072-0](https://doi.org/10.1016/0162-3095(95)00072-0)
- Lutchmaya, S., Baron-Cohen, S., & Raggatt, P. (2002b). Foetal testosterone and vocabulary size in 18-and 24-month-old infants. *Infant Behavior and Development*, 24(4), 418-424. [https://doi.org/10.1016/S0163-6383\(02\)00087-5](https://doi.org/10.1016/S0163-6383(02)00087-5)
- Lutchmaya, S., Baron-Cohen, S., & Raggatt, P. (2002a). Foetal testosterone and eye contact in 12-month-old human infants. *Infant Behavior and Development*, 25(3), 327-335. [https://doi.org/10.1016/S0163-6383\(02\)00094-2](https://doi.org/10.1016/S0163-6383(02)00094-2)
- Luxen, M. F., & Buunk, B. P. (2005). Second-to-fourth digit ratio related to verbal and numerical intelligence and the Big Five. *Personality and Individual Differences*, 39(5), 959-966. <https://doi.org/10.1016/j.paid.2005.03.016>
- Lyons, N. P. (1983). Two perspectives: On self, relationships, and morality. *Harvard Educational Review*, 53(2), 125—145. <https://doi.org/10.17763/haer.53.2.h08w5m7v217j84t1>
- Lyons, N. P., Saltonstall, J. F., & Hanmer, T. J. (1990). Competencies and Visions. In C. Gilligan, N. P. Lyons, & T. J. Hanmer (Eds.), *Making connections. The relational worlds of adolescent girls at Emma Willard School* (pp. 183-213). Harvard University Press.
- Lyness, K. S., & Kropf, M. B. (2005). The relationships of national gender equality and organizational support with work-family balance: A study of European managers. *Human Relations*, 58(1), 33-60. <https://doi.org/10.1177/0018726705050934>
- Lyness, K. S., & Thompson, D. E. (2000). Climbing the corporate ladder: Do female and male executives follow the same route? *Journal of Applied Psychology*, 85(1), 86–101. <https://doi.org/10.1037/0021-9010.85.1.86>
- Lynn, R., Irwing, P., & Cammock, T. (2001). Sex differences in general knowledge. *Intelligence*, 30(1), 27-39. [https://doi.org/10.1016/S0160-2896\(01\)00064-2](https://doi.org/10.1016/S0160-2896(01)00064-2)
- Lynn, R., Wilberg, S., & Margraf-Stiksrud, J. (2004). Sex differences in general knowledge in German high school students. *Personality and Individual Differences*, 37(8), 1643-1650. <https://doi.org/10.1016/j.paid.2004.02.018>
- Lytton, H., & Romney, D. M. (1991). Parents' differential socialization of boys and girls: A meta-analysis. *Psychological Bulletin*, 109(2), 267-296. <https://doi.org/10.1037/0033-2909.109.2.267>
- Ma, X., Zhao, W., Luo, R., Zhou, F., Geng, Y., Xu, L., Gao, Z., Zheng, X., Becker, B. & Kendrick, K. M. (2018). Sex-and context-dependent effects of oxytocin on social sharing. *Neuroimage*, 183, 62-72. <https://doi.org/10.1016/j.neuroimage.2018.08.004>
- Maccoby, E. E. (1990). Gender and relationships: A developmental account. *American Psychologist*, 45(4), 513-520. <https://doi.org/10.1037//0003-066x.45.4.513>
- Maccoby, E. E. (2007). Historical overview of socialization research and theory. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (pp. 13-41). The Guilford Press.
- Maccoby, E. E., & Jacklin, C. N. (1974). *The psychology of sex differences*. Stanford University Press.
- Maccoby, E. E., & Jacklin, C. N. (1980). Sex differences in aggression: A rejoinder and reprise. *Child Development*, 51(4), 964-980. <https://doi.org/10.2307/1129535>
- MacDonald, K., & MacDonald, T. M. (2010). The peptide that binds: a systematic review of oxytocin and its prosocial effects in humans. *Harvard Review of Psychiatry*, 18(1), 1-21.

- Maciel, F. A., da Rocha, A., & da Silva, J. F. (2013). Brand personality of Global Quick-Service Restaurants in emerging and developed markets: A comparative study in Brazil and the US. *Latin American Business Review*, 14(2), 139-161. <https://doi.org/10.1080/10978526.2013.808950>
- Macphail, E. M. (1987). The comparative psychology of intelligence. *Behavioral and Brain Sciences*, 10(4), 645-656. <https://doi.org/10.1017/S0140525X00055291>
- Maddux, W. W., & Brewer, M. B. (2005). Gender differences in the relational and collective bases for trust. *Group Processes & Intergroup Relations*, 8(2), 159-171. <https://doi.org/10.1177/1368430205051065>
- Maier, M. (1999). On the gendered substructure of organization: Dimensions and dilemmas of corporate masculinity. In G. N. Powell (Ed.), *Handbook of gender and work* (pp. 69-93). Sage.
- Mailhos, A., Buunk, A. P., Del Arca, D., & Tutte, V. (2015). Soccer players awarded one or more red cards exhibit lower 2D:4D ratios. *Aggressive Behavior*, 42(5), 417-26. <https://doi.org/10.1002/ab.21638>
- Major, B., & Deaux, K. (1982). Individual Differences in Justice Behavior. In J. Greenberg & R. L. Cohen (Eds.), *Equity and Justice in Social Behavior* (pp. 43-76). Academic Press. <https://doi.org/10.1016/B978-0-12-299580-4.50008-2>
- Malas, M. A., Dogan, S., Evcil, E. H., & Desdicioglu, K. (2006). Fetal development of the hand, digits and digit ratio (2D:4D). *Early human development*, 82(7), 469-475. <https://doi.org/10.1016/j.earlhu mdev.2005.12.002>
- Man Zhang, C., & Greve, H. R. (2019). Dominant coalitions directing acquisitions: Different decision makers, different decisions. *Academy of Management Journal*, 62(1), 44-65. <https://doi.org/10.5465/amj.2017.0323>
- Manager Magazin (2019, August 1). Wo Frauen im Topmanagement gefragt sind - und wo nicht. *Manager Magazin*. <https://www.manager-magazin.de/unternehmen/artikel/dax-konzerne-61-frauen-und-640-maenner-als-vorstaende-a-1279965.html>
- Maner, J. K., & Case, C. R. (2016). Dominance and prestige: Dual strategies for navigating social hierarchies. In J. M. Olson & M. P. Zanna (Eds.), *Advances in experimental social psychology* (Vol. 54) (pp. 129-180). Academic Press. <https://doi.org/10.1016/bs.aesp.2016.02.001>
- Maner, J. K., & Gailliot, M. T. (2007). Altruism and egoism: Prosocial motivations for helping depend on relationship context. *European Journal of Social Psychology*, 37(2), 347-358. <https://doi.org/10.1002/ejsp.364>
- Mann, F. C. (1965). Toward an understanding of the leadership role in formal organizations. *Leadership and productivity*, 68-103.
- Manning, J. T., Barley, L., Walton, J., Lewis-Jones, D. I., Trivers, R. L., Singh, D., Thornhill, R., Rohde, T. Bereczkei, P., Henzi, M., Soler, M., & Szwed, A. (2000). The 2nd:4th digit ratio, sexual dimorphism, population differences, and reproductive success: evidence for sexually antagonistic genes?. *Evolution and Human Behavior*, 21(3), 163-183. [https://doi.org/10.1016/S1090-5138\(00\)00029-5](https://doi.org/10.1016/S1090-5138(00)00029-5)
- Manning, J. T., & Fink, B. (2008). Digit ratio (2D:4D), dominance, reproductive success, asymmetry, and sociosexuality in the BBC Internet Study. *American Journal of Human Biology*, 20(4), 451-461. <https://doi.org/10.1002/ajhb.20767>
- Manning, J. T., Morris, L., & Caswell, N. (2007). Endurance running and digit ratio (2D:4D): implications for fetal testosterone effects on running speed and vascular health. *American Journal of Human Biology*, 19(3), 416-421. <https://doi.org/10.1002/ajhb.20603>
- Maras, A., Laucht, M., Gerdes, D., Wilhelm, C., Lewicka, S., Haack, D., Malisova, L., & Schmidt, M. H. (2003). Association of testosterone and dihydrotestosterone with externalizing behavior in adolescent boys and girls. *Psychoneuroendocrinology*, 28(7), 932-940. [https://doi.org/10.1016/S0306-4530\(02\)00119-1](https://doi.org/10.1016/S0306-4530(02)00119-1)
- Markovits, H., Gauthier, E., Gagnon-St-Pierre, É., & Benenson, J. F. (2017). High status males invest more than high status females in lower status same-sex collaborators. *Plos One*, 12(9), e0185408. <https://doi.org/10.1371/journal.pone.0185408>
- Marks, G. (2019). When men are afraid to interact with women at work, it harms the whole company. *The Guardian*. <https://www.theguardian.com/business/2019/sep/05/when-men-are-afraid-to-interact-with-women-at-work-it-harms-the-whole-company>
- Markus, H., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224-253. <https://doi.org/10.1037/0033-295X.98.2.224>
- Marsden, P. V., Kalleberg, A. L., & Cook, C. R. (1993). Gender differences in organizational commitment: Influences of work positions and family roles. *Work and Occupations*, 20(3), 368-390. <https://doi.org/10.1177/0730888493020003005>
- Marsh, H. W., & Myers, M. (1986). Masculinity, femininity, and androgyny: A methodological and theoretical critique. *Sex Roles*, 14(7-8), 397-430. <https://doi.org/10.1007/BF00288424>
- Marshall, J. (1993). Organizational cultures and women managers: Exploring the dynamics of resilience. *Applied Psychology: An International Review*, 42(4), 313-322. <https://doi.org/10.1111/j.1464-0597.1993.tb00747.x>
- Marshall, J. (1995). Gender and management: a critical review of research. *British Journal of Management*, 6(1), S53-S62. <https://doi.org/10.1111/j.1467-8551.1995.tb00138.x>
- Marshall, C., & Rossman, G. (2006). *The how of the study: Building the research design. Designing qualitative research*. Sage.
- Martin, J. (1982). Stories and scripts in organizational settings. In A. Hastorf & A. Isen (Eds.), *Cognitive social psychology* (pp. 255-305). Elsevier-North Holland.
- Martin, G. B., & Clark, R. D. (1982). Distress crying in neonates: Species and peer specificity. *Developmental Psychology*, 18(1), 3-9. <https://doi.org/10.1037/0012-1649.18.1.3>
- Martin, J., & Siehl, C. (1983). Organizational culture and counterculture: An uneasy symbiosis. *Organizational Dynamics*, 12(2), 52-64. [https://doi.org/10.1016/0090-2616\(83\)90033-5](https://doi.org/10.1016/0090-2616(83)90033-5)

- Mascaro, O., & Csibra, G. (2012). Representation of stable social dominance relations by human infants. *Proceedings of the National Academy of Sciences*, 109(18), 6862-6867. <https://doi.org/10.1073/pnas.1113194109>
- Mast, M. S. (2001). Gender differences and similarities in dominance hierarchies in same-gender groups based on speaking time. *Sex Roles*, 44(9-10), 537-556. <https://doi.org/10.1023/A:1012239024732>
- Mathews, G. A., Fane, B. A., Conway, G. S., Brook, C. G., & Hines, M. (2009). Personality and congenital adrenal hyperplasia: possible effects of prenatal androgen exposure. *Hormones and Behavior*, 55(2), 285-291. <https://doi.org/10.1016/j.yhbeh.2008.11.007>
- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2), 171-194. <https://doi.org/10.1037/0033-2909.108.2.171>
- Matsa, D. A., & Miller, A. R. (2013). A female style in corporate leadership? Evidence from quotas. *American Economic Journal: Applied Economics*, 5(3), 136-69. <https://doi.org/10.1257/app.5.3.136>
- Matthies, S., Rüscher, N., Weber, M., Lieb, K., Philipsen, A., Tuescher, O., Ebert, D., Hennig, J., & Van Elst, L. T. (2012). Small amygdala—high aggression? The role of the amygdala in modulating aggression in healthy subjects. *The World Journal of Biological Psychiatry*, 13(1), 75-81. <https://doi.org/10.3109/15622975.2010.541282>
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 709-734. <https://doi.org/10.5465/amr.1995.9508080335>
- Mayr, U., Wozniak, D., Davidson, C., Kuhns, D., & Harbaugh, W. T. (2012). Competitiveness across the life span: the feisty fifties. *Psychology and Aging*, 27(2), 278-285. <https://doi.org/10.1037/a0025655>
- Mayring P. (2010) Qualitative Inhaltsanalyse. In G. Mey & K. Mruck (Eds.), *Handbuch Qualitative Forschung in der Psychologie* (pp. 601-613). VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-531-92052-8_42
- Mazur, A. (1985). A biosocial model of status in face-to-face primate groups. *Social Forces*, 64(2), 377-402. <https://doi.org/10.1093/sf/64.2.377>
- Mazur, A., & Booth, A. (1998). Testosterone and dominance in men. *Behavioral and brain sciences*, 21(3), 353-363. <https://doi.org/10.1017/S0140525X98001228>
- McCarrey, M. W., Edwards, S., & Jones, R. (1978). Personal values of Canadian Anglophone and Francophone employees and ethnolinguistic group membership, sex, and position level. *The Journal of Social Psychology*, 104(2), 175-184. <https://doi.org/10.1080/00224545.1978.9924059>
- McCarter, M. W., Wade-Benzoni, K. A., Kamal, D. K. F., Bang, H. M., Hyde, S. J., & Maredia, R. (2020). Models of intragroup conflict in management: A literature review. *Journal of Economic Behavior & Organization*, 178, 925-946. <https://doi.org/10.1016/j.jebo.2018.04.017>
- McCarthy, M. M. (2016). Multifaceted origins of sex differences in the brain. *The Royal Society Publishing*, 371(1688). <https://doi.org/10.1098/rstb.2015.0106>
- McCarthy, M. M., & Arnold, A. P. (2008). Sex differences in the brain: What's old and what's new. In J. B. Becker, K. J. Berkley, N. Geary, E. Hampson, J. P. Herman, & E. A. Young (Eds.), *Sex Differences in the Brain from Genes to Behavior* (pp. 15-33). Oxford University Press.
- McCarthy, M. M., Arnold, A. P., Ball, G. F., Blaustein, J. D., & De Vries, G. J. (2012). Sex differences in the brain: the not so inconvenient truth. *Journal of Neuroscience*, 32(7), 2241-2247. <https://doi.org/10.1523/JNEUROSCI.5372-11.2012>
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, 60(2), 175-215. <https://doi.org/10.1111/j.1467-6494.1992.tb00970.x>
- McDermott, M. (2002). Trends in the race and ethnicity of eminent Americans. *Sociological Forum*, 17, 137-160. <https://doi.org/10.1023/A:1014597624575>
- McDonald, M. M., Navarrete, C. D., & Van Vugt, M. (2012). Evolution and the psychology of intergroup conflict: The male warrior hypothesis. *Philosophical Transactions of the Royal Society B*, 367, 670-679. <https://doi.org/10.1098/rstb.2011.0301>
- McDonald, S. (2011). What's in the "old boys" network? Accessing social capital in gendered and racialized networks. *Social Networks*, 33(4), 317-330. <https://doi.org/10.1016/j.socnet.2011.10.002>
- McDonald, T. W., Toussaint, L. L., & Schweiger, J. A. (2004). The influence of social status on token women leaders' expectations about leading male-dominated groups. *Sex Roles*, 50(5-6), 401-409. <https://doi.org/10.1023/B:SERS.00000018894.96308.52>
- McGuire, W. J., & McGuire, C. V. (1982). Significant others in self space: Sex differences and developmental trends in social self. In J. Suls (Ed.), *Psychological Perspectives on the Self* (Vol. 1) (pp. 71-96). Erlbaum.
- McIntyre, M. H., Ellison, P. T., Lieberman, D. E., Demerath, E., & Towne, B. (2005). The development of sex differences in digital formula from infancy in the Fels Longitudinal Study. *Proceedings of the Royal Society B: Biological Sciences*, 272(1571), 1473-1479. <https://doi.org/10.1098/rspb.2005.3100>
- McKee, R. A., Lee, Y. T., Atwater, L., & Antonakis, J. (2018). Effects of personality and gender on self-other agreement in ratings of leadership. *Journal of Occupational and Organizational Psychology*, 91(2), 285-315. <https://doi.org/10.1111/joop.12209>
- McLaren, A. (1990). What makes a man a man?. *Nature*, 346(6281), 216-217. <https://doi.org/10.1038/346216a0>
- Mealey, L. (2000). *Sex differences: Developmental and evolutionary strategies*. Academic Press.
- Mearns, S. L. (2011). Pragmatic critical realism: Could this methodological approach expand our understanding of employment relations?. *Work*, 38(4), 359-367. <https://doi.org/10.3233/WOR-2011-1139>

- Megargee, E. I. (1969). Influence of sex roles on the manifestation of leadership. *Journal of Applied Psychology*, 53(5), 377-382. <https://doi.org/10.1037/h0028093>
- Mehta, P. H., Jones, A. C., & Josephs, R. A. (2008). The social endocrinology of dominance: basal testosterone predicts cortisol changes and behavior following victory and defeat. *Journal of Personality and Social Psychology*, 94(6), 1078-1093. <https://doi.org/10.1037/0022-3514.94.6.1078>
- Mehta, P. H., & Josephs, R. A. (2010). Testosterone and cortisol jointly regulate dominance: Evidence for a dual-hormone hypothesis. *Hormones and Behavior*, 58(5), 898-906. <https://doi.org/10.1016/j.yhbeh.2010.08.020>
- Mehta, P. H., Wuehrmann, E. V., & Josephs, R. A. (2009). When are low testosterone levels advantageous? The moderating role of individual versus intergroup competition. *Hormones and Behavior*, 56(1), 158-162. <https://doi.org/10.1016/j.yhbeh.2009.04.001>
- Meikle, A. W., Bishop, D. T., Stringham, J. D., & West, D. W. (1986). Quantitating genetic and nongenetic factors that determine plasma sex steroid variation in normal male twins. *Metabolism*, 35(12), 1090-1095. [https://doi.org/10.1016/0026-0495\(86\)90020-X](https://doi.org/10.1016/0026-0495(86)90020-X)
- Mejia, Z. (2017, May 31). Why Marissa Mayer is the 'least likable' CEO in tech. *CNBC*. <https://www.cnbc.com/2017/05/31/why-yahoo-ceo-marissa-mayer-is-the-least-likable-ceo-in-tech.html>
- Metcalf, B., & Dick, G. (2002). Is the force still with her? Gender and commitment in the police. *Women in Management Review*, 17(8), 392-403. <https://doi.org/10.1108/09649420210451823>
- Meyer, J. P., & Allen, N. J. (1997). *Commitment in the workplace: Theory, research, and application*. Sage.
- Mickelson, K. D., Helgeson, V. S., & Weiner, E. (1995). Gender effects on social support provision and receipt. *Personal Relationships*, 2(3), 211-224. <https://doi.org/10.1111/j.1475-6811.1995.tb00087.x>
- Mikula, G. (1974). Nationality, performance, and sex as determinants of reward allocation. *Journal of Personality and Social Psychology*, 29(4), 435-440. <https://doi.org/10.1037/h0036208>
- Miles, M. B. (1979). Qualitative data as an attractive nuisance: The problem of analysis. *Administrative Science Quarterly*, 24(4), 590-601. <https://doi.org/10.2307/2392365>
- Miller Burke, J. & Attridge, M. (2011). Pathways to Career and Leadership Success: Part 2—Striking Gender Similarities Among \$100 k Professionals. *Journal of Workplace Behavioral Health*, 26(3), 207-239. <https://doi.org/10.1080/15555240.2011.589722>
- Miller, L. C., & Kenny, D. A. (1986). Reciprocity of self-disclosure at the individual and dyadic levels: A social relations analysis. *Journal of Personality and Social Psychology*, 50(4), 713-719. <https://doi.org/10.1037/0022-3514.50.4.713>
- Miller, G. F., & Penke, L. (2007). The evolution of human intelligence and the coefficient of additive genetic variance in human brain size. *Intelligence*, 35(2), 97-114. <https://doi.org/10.1016/j.intell.2006.08.008>
- Miller, G. A., & Sharda, B. D. (1997). Cultural and organizational structure: A multinational comparison. *International Review of Modern Sociology*, 27(1), 19-39. <https://www.jstor.org/stable/41421119>
- Millet, K., & Dewitte, S. (2006). Second to fourth digit ratio and cooperative behavior. *Biological Psychology*, 71(1), 111-115. <https://doi.org/10.1016/j.biopsycho.2005.06.001>
- Millet, K., & Dewitte, S. (2009). The presence of aggression cues inverts the relation between digit ratio (2D: 4D) and prosocial behaviour in a dictator game. *British Journal of Psychology*, 100(1), 151-162. <https://doi.org/10.1348/000712608X324359>
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, 80(4), 252-283. <https://doi.org/10.1037/h0035002>
- Missakian, E. A. (1980). Gender differences in agonistic behavior and dominance relations of Synanon communally reared children. In D. R. Omark, F. F. Strayer, & D. G. Freedman (Eds.), *Dominance relations: An ethological view of human conflict and social interaction*, (pp. 397-413). Garland STPM.
- Möbius, P. J. (1901). The physiological mental weakness of woman. *Alienist and Neurologist*, 22, 427-440.
- Moffat, S. D., & Hampson, E. (1996). A curvilinear relationship between testosterone and spatial cognition in humans: possible influence of hand preference. *Psychoneuroendocrinology*, 21(3), 323-337. [https://doi.org/10.1016/0306-4530\(95\)00051-8](https://doi.org/10.1016/0306-4530(95)00051-8)
- Mohai, P., & Kershner, D. (2002). Race and environmental voting in the US Congress. *Social Science Quarterly*, 83(1), 167-189. <https://doi.org/10.1111/1540-6237.00077>
- Mokrusch, T., Schüler, M., & Harms, D. (1989). Frühe Formen des Mitleids. *Zeitschrift für Kinder- und Jugendpsychiatrie*, 17(2), 79-84.
- Money, J., & Ehrhardt, A. A. (1972). *Man and woman, boy and girl: Differentiation and dimorphism of gender identity from conception to maturity*. Johns Hopkins University Press.
- Monsour, M. (1992). Meanings of intimacy in cross-and same-sex friendships. *Journal of Social and Personal Relationships*, 9(2), 277-295. <https://doi.org/10.1177/0265407592092007>
- Moore, G. (1990). Structural determinants of men's and women's personal networks. *American Sociological Review*, 55(5), 726-735. <https://doi.org/10.2307/2095868>
- Moors, A., & De Houwer, J. (2005). Automatic processing of dominance and submissiveness. *Experimental Psychology*, 52(4), 296-302. <https://doi.org/10.1027/1618-3169.52.4.296>
- Moore, S., & Boldero, J. (1991). Psychosocial development and friendship functions in adolescence. *Sex Roles*, 25(9-10), 521-536. <https://doi.org/10.1007/BF00290061>

- Moosa, M. M., & Ud-Dean, S. M. (2011). The role of dominance hierarchy in the evolution of social species. *Journal for the Theory of Social Behaviour*, 41(2), 203-208. <https://doi.org/10.1111/j.1468-5914.2010.00458.x>
- Morgan, D. L. (1993). Qualitative content analysis: A guide to paths not taken. *Qualitative Health Research*, 3(1), 112–121. <https://doi.org/10.1177/104973239300300107>
- Morrison, E. W. (1993). Longitudinal study of the effects of information seeking on newcomer socialization. *Journal of Applied Psychology*, 78(2), 173-183. <https://doi.org/10.1037/0021-9010.78.2.173>
- Moskowitz, D. S., Suh, E. J., & Desaulniers, J. (1994). Situational influences on gender differences in agency and communion. *Journal of Personality and Social Psychology*, 66(4), 753-761. <https://doi.org/10.1037/0022-3514.66.4.753>
- Moss, J. (2020, Sept 28). Preventing Burnout Is About Empathetic Leadership. *Harvard Business Review*. <https://hbr.org/2020/09/preventing-burnout-is-about-empathetic-leadership>
- Moss, S. E., & Kent, R. L. (1996). Gender and gender-role categorization of emergent leaders: A critical review and comprehensive analysis. *Sex Roles*, 35, 79–96. <https://doi.org/10.1007/BF01548176>
- Mousnier, R. (1973). *Social hierarchies*. Schocken Books.
- Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14(2), 224-247. [https://doi.org/10.1016/0001-8791\(79\)90072-1](https://doi.org/10.1016/0001-8791(79)90072-1)
- Mukarram, S. S., Ajmal, T., & Saeed, A. (2018). Women directors' propensity towards risk in technology firms. *Corporate Governance: The International Journal of Business in Society*, 18(2), 353-367. <https://doi.org/10.1108/CG-09-2017-0213>
- Muller, M. N. (2002). Agonistic relations among kanyawara chimpanzees. In C. Boesch, G. Hohmann, & L. Marchant (Eds.), *Behavioural diversity in chimpanzees and bonobos* (pp. 112-124). Cambridge University Press.
- Mumford, M. D. (2006). *Pathways to outstanding leadership: A comparative analysis of charismatic, ideological, and pragmatic leaders*. Lawrence Erlbaum Associates Publishers.
- Murnighan, J. K. (1978). Models of coalition behavior: Game theoretic, social psychological, and political perspectives. *Psychological Bulletin*, 85(5), 1130-1153. <https://doi.org/10.1037/0033-2909.85.5.1130>
- Murphy, S. E., & Ensher, E. A. (1999). The effects of leader and subordinate characteristics in the development of leader-member exchange quality. *Journal of Applied Social Psychology*, 29(7), 1371-1394. <https://doi.org/10.1111/j.1559-1816.1999.tb00144.x>
- Murphy, S. E., & Johnson, S. K. (2011). The benefits of a long-lens approach to leader development: Understanding the seeds of leadership. *The Leadership Quarterly*, 22(3), 459-470. <https://doi.org/10.1016/j.leaqua.2011.04.004>
- Myatt, M. (November 20, 2015). Marissa Mayer: A case study in poor leadership. *Forbes*. <https://www.forbes.com/sites/mikemyatt/2015/11/20/marissa-mayer-case-study-in-poor-leadership/#23e193b03b46>
- Nagel, U., & Kummer, H. (1974). Variation in cercopithecoid aggressive behavior. In R. L. Holloway (Ed.), *Primate aggression, territoriality, and xenophobia* (pp. 159-184). Academic Press New York.
- Najeh, H. (2019). The function "Chief happiness officer" and the double performance Reality and perspectives in African countries Case of B2S Morocco. *Journal of Behavior Studies in Organizations*, 2, 18-15. http://dx.doi.org/10.32038/JB_SO.2019.02.03
- Neave, N., Laing, S., Fink, B., & Manning, J. T. (2003). Second to fourth digit ratio, testosterone and perceived male dominance. *Proceedings of the Royal Society of London B: Biological Sciences*, 270(1529), 2167-2172. <https://doi.org/10.1098/rspb.2003.2502>
- Neff, K. D., & Terry-Schmitt, L. N. (2002). Youths' attributions for power-related gender differences: nature, nurture, or God?. *Cognitive Development*, 17(2), 1185-1202. [https://doi.org/10.1016/S0885-2014\(02\)00094-1](https://doi.org/10.1016/S0885-2014(02)00094-1)
- Nei, M., & Hughes, A. L. (1991). Polymorphism and evolution of the major histocompatibility complex loci in mammals. In R. K. Selander, A. G. Clark, & T. S. Whittam (Eds.), *Evolution at the molecular level* (pp. 222-247). Sinauer Associates.
- Nelson, R. E., & Gopalan, S. (2003). Do organizational cultures replicate national cultures? Isomorphism, rejection and reciprocal opposition in the corporate values of three countries. *Organization Studies*, 24(7), 1115-1151. <https://doi.org/10.1177/01708406030247006>
- Nettle, D., & Pollet, T. V. (2008). Natural selection on male wealth in humans. *The American Naturalist*, 172(5), 658-666. <https://doi.org/10.1086/591690>
- New, A. S., Hazlett, E. A., Newmark, R. E., Zhang, J., Triebwasser, J., Meyerson, D., Lazarus, S., Trisdorfer, R., Goldstein, K. E., Goodman, M., Koenigsberg, H. W., Flory, J. D., Siever, L. J., & Buchsbaum, M. S. (2009). Laboratory induced aggression: a positron emission tomography study of aggressive individuals with borderline personality disorder. *Biological Psychiatry*, 66(12), 1107-1114. <https://doi.org/10.1016/j.biopsych.2009.07.015>
- Newhoff, M., Treiman, D. M., Smith, K. A., & Steinmetz, P. N. (2015). Gender differences in human single neuron responses to male emotional faces. *Frontiers in Human Neuroscience*, 9, 499. <https://doi.org/10.3389/fnhum.2015.00499>
- Newman, M. L., Sellers, J. G., & Josephs, R. A. (2005). Testosterone, cognition, and social status. *Hormones and Behavior*, 47(2), 205-211. <https://doi.org/10.1016/j.yhbeh.2004.09.008>
- Nguyen, T. V., McCracken, J. T., Albaugh, M. D., Botteron, K. N., Hudziak, J. J., & Ducharme, S. (2016). A testosterone-related structural brain phenotype predicts aggressive behavior from childhood to adulthood. *Psychoneuroendocrinology*, 63, 109-118. <https://doi.org/10.1016/j.psyneuen.2015.09.021>
- Nibler, R., & Harris, K. L. (2003). The effects of culture and cohesiveness on intragroup conflict and effectiveness. *The Journal of social psychology*, 143(5), 613-631. <https://doi.org/10.1080/00224540309598467>

- Nicholson, N. (2005). Objections to evolutionary psychology: Reflections, implications and the leadership exemplar. *Human Relations*, 58(3), 393-409. <https://doi.org/10.1177/0018726705053428>
- Nicolaou, N., Shane, S., Cherkas, L., Hunkin, J., & Spector, T. D. (2008). Is the tendency to engage in entrepreneurship genetic?. *Management Science*, 54(1), 167-179. <https://doi.org/10.1287/mnsc.1070.0761>
- Nieschlag, S., Nieschlag, E., & Behre, H. M. (2004). *Testosterone: Action, deficiency, substitution*. Cambridge University Press.
- Niessen, A. & Ruenzi, S. (2005). *Sex Matters: Gender and Mutual Funds*. Retrieved from https://www.researchgate.net/profile/Stefan_Ruenzi/publication/228907762_Sex_matters_gender_and_mutual_funds/links/0deec52dcd8b691b0b000000.pdf
- Nieuwenhuisen, K., Slob, A. K., & Ten, J. J. V. D. W. (1988). Gender-related behaviors in group-living stump-tail macaques. *Psychobiology*, 16(4), 357-371. <https://doi.org/10.3758/BF03327333>
- Nieuwenhuisen, K., Bonke-Jansen, M., Broekhuijzen, E., De Neef, K. J., Van Hooff, J. A. R. A. M., Ten Bosch, J. V. D. W., & Slob, A. K. (1988). Behavioral aspects of puberty in group-living stump-tail monkeys (*Macaca arctoides*). *Physiology & Behavior*, 42(3), 255-264. [https://doi.org/10.1016/0031-9384\(88\)90079-0](https://doi.org/10.1016/0031-9384(88)90079-0)
- Nishida, T. (1970). Social behavior and relationship among wild chimpanzees of the Mahali Mountains. *Primates*, 11(1), 47-87. <https://doi.org/10.1007/BF01730675>
- Nissani, M. (1997). Ten cheers for interdisciplinarity: The case for interdisciplinary knowledge and research. *The Social Science Journal*, 34(2), 201-216. [https://doi.org/10.1016/S0362-3319\(97\)90051-3](https://doi.org/10.1016/S0362-3319(97)90051-3)
- Nofal, A. M., Nicolaou, N., Symeonidou, N., & Shane, S. (2018). Biology and Management: A Review, Critique, and Research Agenda. *Journal of Management*, 44(1), 7-31. <https://doi.org/10.1177/0149206317720723>
- Norman, L., Rankin-Wright, A. J., & Allison, W. (2018). "It's a Concrete Ceiling; It's Not Even Glass": Understanding Tenets of Organizational Culture That Supports the Progression of Women as Coaches and Coach Developers. *Journal of Sport and Social Issues*, 42(5), 393-414. <https://doi.org/10.1177/0193723518790086>
- Nyquist, L. V., & Spence, J. T. (1986). Effects of dispositional dominance and sex role expectations on leadership behaviors. *Journal of Personality and Social Psychology*, 50(1), 87-93. <https://doi.org/10.1037/0022-3514.50.1.87>
- O'Brien, E., Konrath, S. H., Grühn, D., & Hagen, A. L. (2013). Empathic concern and perspective taking: Linear and quadratic effects of age across the adult life span. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 68(2), 168-175. <https://doi.org/10.1093/geronb/gbs055>
- O'Connell, S. M. (1995). Empathy in chimpanzees: evidence for theory of mind?. *Primates*, 36(3), 397-410. <https://doi.org/10.1007/BF02382862>
- O'Doherty, J., Dayan, P., Schultz, J., Deichmann, R., Friston, K., & Dolan, R. J. (2004). Dissociable roles of ventral and dorsal striatum in instrumental conditioning. *Science*, 304(5669), 452-454. <https://doi.org/10.1126/science.1094285>
- O'Donnell, S. (1999). The function of male dominance in the eusocial wasp, *Mischocyttarus mastigophorus* (Hymenoptera: Vespidae). *Ethology*, 105(3), 273-282. <https://doi.org/10.1046/j.1439-0310.1999.00382.x>
- O'Farrell, B., & Harlan, S. L. (1982). Craftworkers and clerks: The effect of male co-worker hostility on women's satisfaction with non-traditional jobs. *Social Problems*, 29(3), 252-265. <https://doi.org/10.2307/800158>
- O'Neil, D. A., Hopkins, M. M., & Bilimoria, D. (2015). A framework for developing women leaders: Applications to executive coaching. *Journal of Applied Behavioral Science*, 51(2), 253-276. <https://doi.org/10.1177/0021886315575550>
- O'Reilly III, C. A., Caldwell, D. F., Chatman, J. A., & Doerr, B. (2014). The promise and problems of organizational culture: CEO personality, culture, and firm performance. *Group & Organization Management*, 39(6), 595-625. <https://doi.org/10.1177/1059601114550713>
- O'Toole, L. L. (2009). McDonald's at the gym? A tale of two Curves®. *Qualitative Sociology*, 32(1), 75-91. <https://doi.org/10.1007/s11333-008-9120-2>
- Ökten, A., Kalyoncu, M., & Yariş, N. (2002). The ratio of second-and fourth-digit lengths and congenital adrenal hyperplasia due to 21-hydroxylase deficiency. *Early Human Development*, 70(1-2), 47-54. [https://doi.org/10.1016/S0378-3782\(02\)00073-7](https://doi.org/10.1016/S0378-3782(02)00073-7)
- Österman, K., Björkqvist, K., Lagerspetz, K. M., Kaukiainen, A., Huesmann, L. R., & Fraczek, A. (1994). Peer and self-estimated aggression and victimization in 8-year-old children from five ethnic groups. *Aggressive Behavior*, 20(6), 411-428. [https://doi.org/10.1002/1098-2337\(1994\)20:6<411::AID-AB2480200602>3.0.CO;2-4](https://doi.org/10.1002/1098-2337(1994)20:6<411::AID-AB2480200602>3.0.CO;2-4)
- Offermann, L. R., & Hellmann, P. S. (1997). Culture's consequences for leadership behavior: National values in action. *Journal of Cross-Cultural Psychology*, 28(3), 342-351. <https://doi.org/10.1177/0022022197283008>
- Ohlsson Gotby, A., Nordenström, A., Falhammar, H., Nordenskjöld, A., Hirschberg, A. L., Frisén, L., Landén, M., & Lichtenstein, P. (2015). Congenital Adrenal Hyperplasia, Polycystic Ovary Syndrome and criminal behavior: A Swedish population based study. *Psychiatry Research*, 229(3), 953-959. <https://doi.org/10.1016/j.psychres.2015.07.008>
- Okabe, S., Kitano, K., Nagasawa, M., Mogi, K., & Kikusui, T. (2013). Testosterone inhibits facilitating effects of parenting experience on parental behavior and the oxytocin neural system in mice. *Physiology & Behavior*, 118, 159-164. <https://doi.org/10.1016/j.physbeh.2013.05.017>
- Olf, M., Frijling, J. L., Kubzansky, L. D., Bradley, B., Ellenbogen, M. A., Cardoso, C., Bartz, J. A., Yee, R. Y., & van Zuiden, M. (2013). The role of oxytocin in social bonding, stress regulation and mental health: an update on the moderating effects of context and interindividual differences. *Psychoneuroendocrinology*, 38(9), 1883-1894. <https://doi.org/10.1016/j.psyneuen.2013.06.019>

- Olsen, R. & Cox, C. (2001). The influence of gender on the perception and response to investment risk: the case of professional investors. *Journal of Psychology and Financial Markets*, 2(1), 29–36. https://doi.org/10.1207/S15327760JPF_M0201_3
- Omar, A. & Davidson, M. J. (2001). Women in Management: A Comparative Cross-cultural Overview. *Cross Cultural Management: An International Journal*, 8(3/4), 35–67. <https://doi.org/10.1108/13527600110797272>
- Omark, D. R., Omark, M., & Edelman, M. (1975). Formation of dominance hierarchies in young children. In T. R. Williams (Ed.) *Psychological Anthropology* (pp. 289-315). De Gruyter.
- Ouchi, W. G. (1981). *Theory Z: How American Business Can Meet the Japanese Challenge*. Addison Wesley.
- Øgaard, T., Larsen, S., & Marnburg, E. (2005). Organizational culture and performance—evidence from the fast food restaurant industry. *Food Service Technology*, 5(1), 23-34. <https://doi.org/10.1111/j.1471-5740.2005.00109.x>
- Palgi, S., Klein, E., & Shamay-Tsoory, S. G. (2015). Intranasal administration of oxytocin increases compassion toward women. *Social Cognitive and Affective Neuroscience*, 10(3), 311-317. <https://doi.org/10.1093/scan/nsu040>
- Palmer, C. T., & Tilley, C. F. (1995). Sexual access to females as a motivation for joining gangs: An evolutionary approach. *Journal of Sex Research*, 82(2), 213-217. <https://doi.org/10.1080/00224499509551792>
- Palmer, R. A. (2018). *Ethnography in organizational studies: a matter of new, under-researched, or extreme fields only? - A proposition to apply ethnography to generate surprise findings in traditional, saturated, everyday fields of research* [Paper presentation]. EGOS Conference 2018: Tallinn, Estonia.
- Pardini, D. A., Raine, A., Erickson, K., & Loeber, R. (2014). Lower amygdala volume in men is associated with childhood aggression, early psychopathic traits, and future violence. *Biological Psychiatry*, 75(1), 73-80. <https://doi.org/10.1016/j.biopsych.2013.04.003>
- Parke, R. & Slaby, R. (1983) The Development of Aggression. In P. Mussen & E. Hetherington (Eds.), *Handbook of Child Psychology: Socialization, Personality, and Social Development* (Vol. 4) (pp. 457-641). Wiley.
- Parker, B., & Chusmir, L. (1990). A generational and sex-based view of managerial work values. *Psychological Reports*, 66(3), 947-950. <https://doi.org/10.2466/pr0.1990.66.3.947>
- Parks, K. M., & Steelman, L. A. (2008). Organizational wellness programs: a meta-analysis. *Journal of Occupational Health Psychology*, 13(1), 58-68. <https://doi.org/10.1037/1076-8998.13.1.58>
- Parks, M. R., & Floyd, K. (1996). Meanings for closeness and intimacy in friendship. *Journal of Social and Personal Relationships*, 13(1), 85-107. <https://doi.org/10.1177/0265407596131005>
- Passey, D. G., Brown, M. C., Hammerback, K., Harris, J. R., & Hannon, P. A. (2018). Managers' support for employee wellness programs: An integrative review. *American Journal of Health Promotion*, 32(8), 1789-1799. <https://doi.org/10.1177/0890117118764856>
- Pasterski, V., Hindmarsh, P., Geffner, M., Brook, C., Brain, C., & Hines, M. (2007). Increased aggression and activity level in 3-to 11-year-old girls with congenital adrenal hyperplasia (CAH). *Hormones and Behavior*, 52(3), 368-374. <https://doi.org/10.1016/j.yhbeh.2007.05.015>
- Paul, S. N., Kato, B. S., Hunkin, J. L., Vivekanandan, S., & Spector, T. D. (2006). The big finger: the second to fourth digit ratio is a predictor of sporting ability in women. *British Journal of Sports Medicine*, 40(12), 981-983. <http://dx.doi.org/10.1136/bjism.2006.027193>
- Paul, L. K., Brown, W. S., Adolphs, R., Tyszka, J. M., Richards, L. J., Mukherjee, P., & Sherr, E. H. (2007). Agenesis of the corpus callosum: genetic, developmental and functional aspects of connectivity. *Nature Reviews Neuroscience*, 8(4), 287-299. <https://doi.org/10.1038/nrn2107>
- Paul, L. K., Schieffer, B., & Brown, W. S. (2004). Social processing deficits in agenesis of the corpus callosum: narratives from the Thematic Apperception Test. *Archives of Clinical Neuropsychology*, 19(2), 215-225. [https://doi.org/10.1016/S0887-6177\(03\)00024-6](https://doi.org/10.1016/S0887-6177(03)00024-6)
- Paul, L. K., Van Lancker-Sidtis, D., Schieffer, B., Dietrich, R., & Brown, W. S. (2003). Communicative deficits in agenesis of the corpus callosum: nonliteral language and affective prosody. *Brain and Language*, 85(2), 313-324. [https://doi.org/10.1016/S0093-934X\(03\)00062-2](https://doi.org/10.1016/S0093-934X(03)00062-2)
- Pawłowski, B. (1998). Neocortex size, social skills and mating success in primates. *Behaviour*, 135(3), 357-368. <https://doi.org/10.1163/156853998793066285>
- Peck, J. R., & Eyre-Walker, A. (1997). The muddle about mutations. *Nature*, 387(6629), 135-136. <https://doi.org/10.1038/387135a0>
- Peirce, C. S. (1965). *Collected Papers: Pragmatism and pragmaticism and Scientific metaphysics* (Vol. 5). Belknap Press of Harvard University Press.
- Pelled, L. H., & Xin, K. R. (2000). Relational demography and relationship quality in two cultures. *Organization Studies*, 21(6), 1077-1094. <https://doi.org/10.1177/0170840600216003>
- Perciavalle, V., Di Corrado, D., Petralia, M. C., Gurrisi, L., Massimino, S., & Coco, M. (2013). The second-to-fourth digit ratio correlates with aggressive behavior in professional soccer players. *Molecular Medicine Reports*, 7(6), 1733-1738. <https://doi.org/10.3892/mmr.2013.1426>
- Pérusse, D. (1993). Cultural and reproductive success in industrial societies: Testing the relationship at the proximate. *Behavioral and Brain Sciences*, 16(2), 267 - 322. <https://doi.org/10.1017/S0140525X00029939>
- Peters, T. J., & Waterman, R. H. (1982). *In search of excellence: Lessons from America's best run companies*. Harper & Row.

- Peters, J., Shackelford, T. K., & Buss, D. M. (2002). Understanding domestic violence against women: Using evolutionary psychology to extend the feminist functional analysis. *Violence and Victims*, 17(2), 255-264. <https://doi.org/10.1891/vivi.17.2.255.33644>
- Petrie, M., Halliday, T., & Sanders, C. (1991). Peahens prefer peacocks with elaborate trains. *Animal Behaviour*, 41(2), 323-331. [https://doi.org/10.1016/S0003-3472\(05\)80484-1](https://doi.org/10.1016/S0003-3472(05)80484-1)
- Pfaff, L. A., Boatwright, K. J., Potthoff, A. L., Finan, C., Ulrey, L. A., & Huber, D.M. (2013). Perceptions of Women and Men Leaders Following 360-Degree Feedback Evaluations. *Performance Improvement Quarterly*, 26(1), 35-56. <https://doi.org/10.1002/piq.21134>
- Pfaff, D. W., Rubin, R. T., Schneider, J. E., & Head, G. (2018). *Principles of hormone/behavior relations*. Academic Press.
- Phelan, J.E., Moss-Racusin, C.A. & Rudman, L.A. (2008). Competent yet out in the cold: Shifting criteria for hiring reflect backlash toward agentic women. *Psychology of Women Quarterly*, 32(4), 406-413. <https://doi.org/10.1111/j.1471-6402.2008.00454.x>
- Phillips, M. E. (1994). Industry mindsets: Exploring the cultures of two macro-organizational settings. *Organization Science*, 5(3), 384-402. <https://doi.org/10.1287/orsc.5.3.384>
- Phillips, M., Young, A. W., Scott, S. K., Calder, A. J., Andrew, C., Giampietro, V., Williams, S. C. R., Bullmore, E. T., Brammer, M., & Gray, J. A. (1998). Neural responses to facial and vocal expressions of fear and disgust. *Proceedings of the Royal Society B: Biological Sciences*, 265(1408), 1809-1817. <https://doi.org/10.1098/rspb.1998.0506>
- Phillips, M. L., Youn, A. W., Senior, C., Brammer, M., Andrew, C., Calder, A. J., Bullmore, E. T., Perrett, D. I., Rowland, D., Williams, S. C. R., Gray, J. A., & David, A. S. (1997). A specific neural substrate for perceiving facial expressions of disgust. *Nature*, 389, 495-498. <https://doi.org/10.1038/39051>
- Phoenix, C. H., Goy, R. W., Gerall, A. A., & Young, W. C. (1959). Organizing action of prenatally administered testosterone propionate on the tissues mediating mating behavior in the female guinea pig. *Endocrinology*, 65(3), 369-382. <https://doi.org/10.1210/endo-65-3-369>
- Pierce, J. R., & Thompson, L. (2018). Explaining Differences in Men and Women's Use of Unethical Tactics in Negotiations. *Negotiation and Conflict Management Research*, 11(4), 278-297. <https://doi.org/10.1111/ncmr.12135>
- Pilbeam, D. R., & Lieberman, D. E. (2017). Reconstructing the last common ancestor of chimpanzees and humans. In M. N. Muller, R. W. Wrangham, & D. R. Pilbeam (Eds.), *Chimpanzees and Human Evolution* (pp. 22-141). The Belknap Press of Harvard University Press.
- Plotnik, J. M., & de Waal, F. B. (2014). Asian elephants (*Elephas maximus*) reassure others in distress. *PeerJ*, 2, e278. <https://doi.org/10.7717/peerj.278>
- Plutchik, R. (1987). Evolutionary bases of empathy. In N. Eisenberg & J. Strayer (Eds.), *Empathy and its development* (pp. 38-46). Cambridge University Press.
- Podsakoff, P. M., & Podsakoff, N. P. (2019). Experimental designs in management and leadership research: Strengths, limitations, and recommendations for improving publishability. *The Leadership Quarterly*, 30(1), 11-33. <https://doi.org/10.1016/j.leaqua.2018.11.002>
- Polderman, T. J., Benyamin, B., De Leeuw, C. A., Sullivan, P. F., Van Bochoven, A., Visscher, P. M., & Posthuma, D. (2015). Meta-analysis of the heritability of human traits based on fifty years of twin studies. *Nature Genetics*, 47(7), 702-709. <https://doi.org/10.1038/ng.3285>
- Pollert, A. (1981). *Girls, Wives, Factory Lives*. Macmillan.
- Porras, J. I., Hargis, K., Patterson, K. J., Maxfield, D. G., Roberts, N., & Bies, R. J. (1982) Modeling-based organizational development: A longitudinal assessment. *Journal of Applied Behavioral Science*, 18(4), 433-446. <https://doi.org/10.1177/002188638201800405>
- Porter, L. W., Steers, R. M., Mowday, R. T., & Boulian, P. V. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. *Journal of Applied Psychology*, 59(5), 603-609. <https://doi.org/10.1037/h0037335>
- Post, C. (2015). When is female leadership an advantage? Coordination requirements, team cohesion, and team interaction norms. *Journal of Organizational Behavior*, 36(8), 1153-1175. <https://doi.org/10.1002/job.2031>
- Post, C. & Byron, K. (2015). Women on boards and firm financial performance: a meta-analysis. *Academy of Management Journal*, 58(5), 1546-1571. <https://doi.org/10.5465/amj.2013.0319>
- Post, C., Latu, I. M., & Belkin, L. Y. (2019). A Female Leadership Trust Advantage in Times of Crisis: Under What Conditions?. *Psychology of Women Quarterly*, 43(2), 215-231. <https://doi.org/10.1177/0361684319828292>
- Post, C., Rahman, N., & Rubow, E. (2011). Green governance: Boards of directors' composition and environmental corporate social responsibility. *Business & Society*, 50(1), 189-223. <https://doi.org/10.1177/0007650310394642>
- Potters, J., Sefton, M., & Vesterlund, L. (2007). Leading-by-example and signaling in voluntary contribution games: an experimental study. *Economic Theory*, 33(1), 169-182. <https://doi.org/10.1007/s00199-006-0186-3>
- Powell, G. N. (1982). Sex-role identity and sex: An important distinction for research on women in management. *Basic and Applied Social Psychology*, 3(1), 67-79. https://doi.org/10.1207/s15324834basp0301_6
- Powell, G. N. (1990). One more time: Do female and male managers differ?. *Academy of Management Perspectives*, 4(3), 68-75. <https://doi.org/10.5465/ame.1990.4274684>
- Powell, G. N. (2012). Six ways of seeing the elephant: the intersection of sex, gender, and leadership. *Gender in Management: An International Journal*, 27(2), 119-141. <https://doi.org/10.1108/17542411211214167>

- Powell, G. N., & Butterfield, D. A. (1979). The “good manager”: Masculine or androgynous?. *Academy of Management Journal*, 22(2), 395-403. <https://doi.org/10.5465/255597>
- Powell, G. N., & Butterfield, D. A. (1989). The “good manager”: did androgyny fare better in the 1980's? *Group and Organization Studies*, 14(2), 216-233. <https://doi.org/10.1177/105960118901400209>
- Powell, G. N., & Butterfield, D. A. (1994). Investigating the “glass ceiling” phenomenon: An empirical study of actual promotions to top management. *Academy of Management Journal*, 37(1), 68-86. <https://doi.org/10.5465/256770>
- Powell, G. N., & Butterfield, D. A. (2003). Gender, gender identity, and aspirations to top management. *Women in Management Review*, 18(1/2), 88-96. <https://doi.org/10.1108/09649420310462361>
- Powell, G. N., Butterfield, D. A., & Bartol, K. M. (2008). Leader evaluations: a new female advantage?. *Gender in Management: An International Journal*, 23(3), 156-174. <https://doi.org/10.1108/17542410810866926>
- Powell, G. N., Butterfield, D. A., & Parent, J. D. (2002). Gender and managerial stereotypes: have the times changed? *Journal of Management*, 28(2), 177-193. [https://doi.org/10.1016/S0149-2063\(01\)00136-2](https://doi.org/10.1016/S0149-2063(01)00136-2)
- Powers, R. S., & Wojtkiewicz, R. A. (2004). Occupational aspirations, gender, and educational attainment. *Sociological Spectrum*, 24(5), 601-622. <https://doi.org/10.1080/02732170490448784>
- Prager, K. J. (1997). *The psychology of intimacy*. Guilford Press.
- Prager, K. J., Fuller, D. O., & Gonzalez, A. S. (1989). The Function of Self-Disclosure in Social Interaction. *Journal of Social Behavior and Personality*, 4(5), 563-580.
- Pratto, F. (1996). Sexual politics: The gender gap in the bedroom, the cupboard, and the cabinet. In D. M. Buss & N. M. Malamuth (Eds.), *Sex, power, conflict: Evolutionary and feminist perspectives* (pp. 179-230). Oxford University Press.
- Pratto, F., & Hegarty, P. (2000). The political psychology of reproductive strategies. *Psychological Science*, 11(1), 57-62. <https://doi.org/10.1111/1467-9280.00215>
- Pratto, F., Stallworth, L. M., & Sidanius, J. (1997a). The gender gap: Differences in political attitudes and social dominance orientation. *British Journal of Social Psychology*, 36(1), 49-68. <https://doi.org/10.1111/j.2044-8309.1997.tb01118.x>
- Preece, J., & Stoddard, O. (2015). Why women don't run: Experimental evidence on gender differences in political competition aversion. *Journal of Economic Behavior & Organization*, 117, 296-308. <https://doi.org/10.1016/j.jebo.2015.04.019>
- Prentice, D. A., & Carranza, E. (2002). What women and men should be, shouldn't be, are allowed to be, and don't have to be: The contents of prescriptive gender stereotypes. *Psychology of Women Quarterly*, 26(4), 269-281. <https://doi.org/10.1111/1471-6402.t01-1-00066>
- Preston, S. D., and de Waal, F. B. M. (2002). Empathy: its ultimate and proximate bases. *Behavioral and Brain Sciences*, 25(1), 1-20. <https://doi.org/10.1017/S0140525X02000018>
- Preston, S. D. & de Waal, F. B. (2002). The communication of emotions and the possibility of empathy in animals. In S. Post, L. G. Underwood, J. P. Schloss, & W. B. Hurlburt (Eds.), *Altruistic love: Science, philosophy, and religion in dialogue* (pp. 284-308). <https://doi.org/10.1093/acprof:oso/9780195143584.003.0025>
- Proverbio, A. M., Adorni, R., Zani, A., & Trestianu, L. (2009). Sex differences in the brain response to affective scenes with or without humans. *Neuropsychologia*, 47(12), 2374-2388. <https://doi.org/10.1016/j.neuropsychologia.2008.10.030>
- Purifoy, F. E., & Koopmans, L. H. 1979. Androstenedione, testosterone, and free testosterone concentration in women of various occupations. *Social Biology*, 26(3), 179-188 <https://doi.org/10.1080/19485565.1979.9988376>
- Putz, D. A., Gaulin, S. J., Sporter, R. J., & McBurney, D. H. (2004). Sex hormones and finger length: What does 2D: 4D indicate?. *Evolution and Human Behavior*, 25(3), 182-199. <https://doi.org/10.1016/j.evolhumbehav.2004.03.005>
- Radford, A.N., Majolo, B., Aureli, F., 2016. Within-group behavioural consequences of between-group conflict: a prospective review. *Proc. R. Soc. B Biol. Sci.* 283, 20161567. *Proceedings of the Royal Society B: Biological Sciences*, 283(1843). <https://doi.org/10.1098/rspb.2016.1567>
- Radke, S., Roelofs, K., & De Bruijn, E. R. (2013). Acting on anger social anxiety modulates approach-avoidance tendencies after oxytocin administration. *Psychological Science*, 24(8), 1573-1578. <https://doi.org/10.1177/0956797612472682>
- Radke-Yarrow, M., Zahn-Waxler, C., & Chapman, M. (1983). Children's prosocial disposition and behavior. In P. H. Mussen, J. H. Flavell & E. M. Markman (Eds.), *Handbook of child psychology: formerly Carmichael's Manual of child psychology* (pp. 469-545). Wiley.
- Randall, D. M. (1993). Cross-cultural research on organizational commitment: A review and application of Hofstede's Value Survey Module. *Journal of Business Research*, 26(1), 9-110. [https://doi.org/10.1016/0148-2963\(93\)90045-Q](https://doi.org/10.1016/0148-2963(93)90045-Q)
- Rao, H., Korczykowski, M., Pluta, J., Hoang, A., & Detre, J. A. (2008). Neural correlates of voluntary and involuntary risk taking in the human brain: an fMRI Study of the Balloon Analog Risk Task (BART). *Neuroimage*, 42(2), 902-910. <https://doi.org/10.1016/j.neuroimage.2008.05.046>
- Rawlins, W. K. (1992). *Friendship Matters*. Aldine de Gruyter
- Reichard, R. J., Riggio, R. E., Guerin, D. W., Oliver, P. H., Gottfried, A. W., & Gottfried, A. E. (2011). A longitudinal analysis of relationships between adolescent personality and intelligence with adult leader emergence and transformational leadership. *The Leadership Quarterly*, 22(3), 471-481. <https://doi.org/10.1016/j.leaqua.2011.04.005>
- Reingold, J. (2016, March 15). The Zappos experiment. *Fortune*. <https://gattoweb.uky.edu/faculty/troske/teaching/eco411/articles/The%20Zappos%20Experiment%20Fortune%202013-15-2016.pdf>
- Reinhardt, V. (1987). Are male rhesus monkeys more aggressive than females? *Primates*, 28(1), 123-125. <https://doi.org/10.1007/BF02382190>

- Reis, H. T., & Shaver, P. (1988). *Intimacy as an interpersonal process*. In S. Duck, D. F. Hay, S. E. Hobfoll, W. Ickes & B. M. Montgomery (Eds.), *Handbook of personal relationships: Theory, research and interventions* (p. 367–389). John Wiley & Sons.
- Reis, H. T., Wheeler, L., Kernis, M. H., Spiegel, N., & Nezlek, J. (1985). On specificity in the impact of social participation on physical and psychological health. *Journal of Personality and Social Psychology*, 48(2), 456. <https://doi.org/10.1037/022-3514.48.2.456>
- Reisman, J. M. (1990). Intimacy in same-sex friendships. *Sex Roles*, 23, 65-82. <https://doi.org/10.1007/BF00289880>
- Resnick, S. M., Berenbaum, S. A., Gottesman, I. I., & Bouchard, T. J. (1986). Early hormonal influences on cognitive functioning in congenital adrenal hyperplasia. *Developmental Psychology*, 22(2), 191. <https://doi.org/10.1037/0012-1649.22.2.191>
- Reynolds, K. (2016). Servant-leadership: A feminist perspective. *International Journal of Servant Leadership*, 10(1), 35-63.
- Riad, S. (2011). Invoking Cleopatra to examine the shifting ground of leadership. *The Leadership Quarterly*, 22(5), 831–850. <https://doi.org/10.1016/j.leaqua.2011.07.006>
- Richerson, P. J., & Boyd, R. (2005). *Not by genes alone: How culture transformed human evolution*. University of Chicago Press.
- Ridgeway, C. L., & Dickema, D. (1992). Are gender differences status differences?. In C. L. Ridgeway (Ed.), *Gender, interaction, and inequality* (pp. 157-180). Springer. https://doi.org/10.1007/978-1-4757-2199-7_7
- Ridley, M. (2003). *Nature via nurture: Genes, experience, and what makes us human*. HarperCollins.
- Riedl, R., & Javor, A. (2012). The biology of trust: Integrating evidence from genetics, endocrinology, and functional brain imaging. *Journal of Neuroscience, Psychology, and Economics*, 5(2), 63-91. <https://doi.org/10.1037/a0026318>
- Riem, M. M., Bakermans-Kranenburg, M. J., Huffmeijer, R., & Van IJzendoorn, M. H. (2013). Does intranasal oxytocin promote prosocial behavior to an excluded fellow player? A randomized-controlled trial with Cyberball. *Psychoneuroendocrinology*, 38(8), 1418-1425. <https://doi.org/10.1016/j.psyneuen.2012.12.023>
- Riger, S., & Galligan, P. (1980). Women in management: An exploration of competing paradigms. *American Psychologist*, 35(10), 902-910. <https://doi.org/10.1037/0003-066X.35.10.902>
- Riggio, R. E. (2010). Why Women Make Better Leaders Than Men. *Psychology Today*. <https://www.psychologytoday.com/ie/blog/cutting-edge-leadership/201003/why-women-make-better-leaders-men>
- Rigg, C., & Sparrow, J. (1994). Gender, diversity and working styles. *Women in Management Review*, 9(1), 9-16. <https://doi.org/10.1108/09649429410050971>
- Rilling, J. K., DeMarco, A. C., Hackett, P. D., Chen, X., Gautam, P., Stair, S., Haroon, E., Thompson, R., Ditzen, B., Patel, R., & Pagnoni, G. (2014). Sex differences in the neural and behavioral response to intranasal oxytocin and vasopressin during human social interaction. *Psychoneuroendocrinology*, 39, 237-248. <https://doi.org/10.1016/j.psyneuen.2013.09.022>
- Rimmele, U., Hediger, K., Heinrichs, M., & Klaver, P. (2009). Oxytocin makes a face in memory familiar. *The Journal of Neuroscience*, 29(1), 38-42. <https://doi.org/10.1523/JNEUROSCI.4260-08.2009>
- Rink, F., Ryan, M. K., & Stoker, J. I. (2012). Influence in times of crisis: how social and financial resources affect men's and women's evaluations of glass-cliff positions. *Psychological Science*, 23(11), 1306-1313. <https://doi.org/10.1177/0956797612453115>
- Ritter, B. A., & Yoder, J. D. (2004). Gender differences in leader emergence persist even for dominant women: An updated confirmation of role congruity theory. *Psychology of Women Quarterly*, 28(3), 187-193. <https://doi.org/10.1111/j.1471-6402.2004.00135.x>
- Rizzolatti, G., Fadiga, L., Gallese, V., & Fogassi, L. (1996). Premotor cortex and the recognition of motor actions. *Cognitive Brain Research*, 3(2), 131-141. [https://doi.org/10.1016/0926-6410\(95\)00038-0](https://doi.org/10.1016/0926-6410(95)00038-0)
- Roberson, L., & Kulik, C. T. (2007). Stereotype threat at work. *The Academy of Management Perspectives*, 21(2), 24-40. <https://doi.org/10.5465/amp.2007.25356510>
- Roberts, T. A., & Pennebaker, J. W. (1995). Gender differences in perceiving internal state: Toward a his-and-hers model of perceptual cue use. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 27) (pp. 143-175). Academic Press. [https://doi.org/10.1016/S0065-2601\(08\)60405-0](https://doi.org/10.1016/S0065-2601(08)60405-0)
- Roberts, W., & Strayer, J. (1996). Empathy, emotional expressiveness, and prosocial behavior. *Child Development*, 67(2), 449-470. <https://doi.org/10.1111/j.1467-8624.1996.tb01745.x>
- Robertson, B. J. (2015). *Holacracy: The new management system for a rapidly changing world*. Henry Holt and Company.
- Robinson, E., & Hogenkamp, P. S. (2015). Visual perceptions of male obesity: a cross-cultural study examining male and female lay perceptions of obesity in Caucasian males. *BMC Public Health*, 15(1), 1-9. <https://doi.org/10.1186/s12889-015-1821-3>
- Robinson, J. L., & Lipman-Blumen, J. (2017). Challenging Our Assumptions About Male and Female Preferences for Competition. *Journal of Leadership Studies*, 10(4), 66–74. <https://doi.org/10.1002/jls.21507>
- Rogers, D. (2012). Inequality: Why egalitarian societies died out. *New Scientist*. <https://www.newscientist.com/article/dn22071-inequality-why-egalitarian-societies-died-out/>
- Ronay, R., & Carney, D. R. (2013). Testosterone's negative relationship with empathic accuracy and perceived leadership ability. *Social Psychological and Personality Science*, 4(1), 92-99. <https://doi.org/10.1177/1948550612442395>
- Rose, S. M. (1985). Same- and cross-sex friendships and the psychology of homosociality. *Sex Roles: A Journal of Research*, 12(1-2), 63–74. <https://doi.org/10.1007/BF00288037>

- Rose, R. M., Bernstein, I. S., & Gordon, T. P. (1975). Consequences of social conflict on plasma testosterone levels in rhesus monkeys. *Psychosomatic Medicine*, 37(1), 50–61. <https://doi.org/10.1097/00006842-197501000-00006>
- Rosener J. B. (2011). Ways Women Lead. In P. Werhane & M. Painter-Morland (Eds.), *Leadership, Gender, and Organization. Issues in Business Ethics* (Vol. 27) (pp. 19-29). Springer, Dordrecht. https://doi.org/10.1007/978-90-481-9014-0_3
- Rosener, J. B. (1995). *America's competitive secret: Women managers*. Oxford University Press.
- Roslow, S. (1940). Nation-wide and local validation of the PQ or Personality Quotient test. *Journal of Applied Psychology*, 24(5), 529–539. <https://doi.org/10.1037/h0061608>
- Rovira-Asenjo, N., Pietraszkiewicz, A., Szczesny, S., Gumí, T., Guimerà, R., & Sales-Pardo, M. (2017). Leader evaluation and team cohesiveness in the process of team development: A matter of gender?. *PloS one*. <https://doi.org/10.1371/journal.pone.0186045>
- Rowe, R., Maughan, B., Worthman, C. M., Costello, E. J., & Angold, A. (2004). Testosterone, antisocial behavior, and social dominance in boys: Pubertal development and biosocial interaction. *Biological Psychiatry*, 55(5), 546-552. <https://doi.org/10.1016/j.biopsych.2003.10.010>
- Rowley, S., Hossain, F., & Barry, P. (2010). Leadership through a gender lens: How cultural environments and theoretical perspectives interact with gender. *International Journal of Public Administration*, 33(2), 81-87. <https://doi.org/10.1080/01900690903241757>
- Roy, R., Benenson, J. F., & Lilly, F. (2000). Beyond intimacy: Conceptualizing sex differences in same-sex friendships. *The Journal of Psychology*, 134(1), 93-101. <https://doi.org/10.1080/00223980009600852>
- Royle, T. (1995). Corporate versus societal culture: a comparative study of McDonald's in Europe. Are societies and organizations becoming increasingly similar across the world?. *International Journal of Contemporary Hospitality Management*, 7(2/3), 52-56.
- Ruble, D. N., Martin, C. L., & Berenbaum, S. A. (2006). Gender development. In W. Damon & R. M. Lerner (Series Eds.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol 3. Social, emotional, and personality development* (6th ed.) (pp. 858–932). Wiley.
- Rucas, S. (2015). Cooperation drives competition among Tsimane women in the Bolivian Amazon. In M. L Fisher (Ed.), *The Oxford Handbook of Women and Competition* (pp. 107-132). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199376377.013.10>
- Rudman, L. A., & Glick, P. (1999). Feminized management and backlash toward agentic women: the hidden costs to women of a kinder, gentler image of middle managers. *Journal of Personality and Social Psychology*, 77(5), 1004-1010. <https://doi.org/10.1037/0022-3514.77.5.1004>
- Rudman, L. A., & Glick, P. (2001). Prescriptive gender stereotypes and backlash toward agentic women. *Journal of Social Issues*, 57(4), 743-762. <https://doi.org/10.1111/0022-4537.00239>
- Rudman, L. A., & Phelan, J. E. (2008). Backlash effects for disconfirming gender stereotypes in organizations. *Research in Organizational Behavior*, 28, 61-79. <https://doi.org/10.1016/j.riob.2008.04.003>
- Ruigrok, A. N., Salimi-Khorshidi, G., Lai, M. C., Baron-Cohen, S., Lombardo, M. V., Tait, R. J., & Suckling, J. (2014). A meta-analysis of sex differences in human brain structure. *Neuroscience & Biobehavioral Reviews*, 39, 34-50. <https://doi.org/10.1016/j.neubiorev.2013.12.004>
- Ryan, L. V. (2017). Sex differences through a neuroscience lens: Implications for business ethics. *Journal of Business Ethics*, 144(4), 771-782. <https://doi.org/10.1007/s10551-016-3110-1>
- Ryan, M.K., Haslam, S.A., Morgenroth, T., Rink, F., Stoker, J. & Peters, K. (2016). Getting on top of the glass cliff: Reviewing a decade of evidence, explanations, and impact. *The Leadership Quarterly*, 27(3), 446-455. <https://doi.org/10.1016/j.leaqua.2015.10.008>
- Ryckmans, J., Millet, K., & Warlop, L. (2015). The influence of facial characteristics on the relation between male 2D: 4D and dominance. *PLoS One*, 10(11), e0143307. <https://doi.org/10.1371/journal.pone.0143307>
- Saad, G. (Ed.). (2011). *Evolutionary psychology in the business sciences* (Vol. 197). Springer. <https://doi.org/10.1007/978-3-540-92784-6>
- Saad, G. (2011). The Missing Link: The biological Roots of the Business Sciences. In G. Saad (Ed.), *Evolutionary Psychology in the Business Sciences* (pp. 1-16). Springer. https://doi.org/10.1007/978-3-540-92784-6_1
- Sackmann, S. A. (1991). *Cultural Knowledge in Organizations. Exploring the Collective Mind*. Sage Publications.
- Sackmann, S. A. (1992). Culture and subcultures: An analysis of organizational knowledge. *Administrative Science Quarterly*, 37(1), 140-161. <https://doi.org/10.2307/2393536>
- Sackmann, S. A. (2017). *Unternehmenskultur. Erkennen – Entwickeln – Verändern*. Springer Gabler.
- Sackmann, S. A., & Phillips, M. E. (2004). Contextual influences on culture research: Shifting assumptions for new workplace realities. *International Journal of Cross Cultural Management*, 4(3), 370-390. <https://doi.org/10.1177/1470595804047820>
- Sackney, L., & Mergel, B. (2007). Contemporary learning theories, instructional design and leadership. In J. M. Burger, C. F. Webber, & P. Klinck (Eds.), *Intelligent Leadership* (pp. 67-98). Springer. https://doi.org/10.1007/978-1-4020-6022-9_5
- Sadalla, E. K., Kenrick, D. T., & Vershure, B. (1987). Dominance and heterosexual attraction. *Journal of Personality and Social Psychology*, 52(4), 730–738. <https://doi.org/10.1037/0022-3514.52.4.730>
- Saenz, J., & Alexander, G. M. (2013). Digit ratios (2D: 4D), postnatal testosterone and eye contact in toddlers. *Biological Psychology*, 94(1), 106-108. <https://doi.org/10.1016/j.biopsycho.2013.05.010>

- Sagi, A., & Hoffman, M. L. (1976). Empathic distress in the newborn. *Developmental Psychology*, 12(2), 175-176. <https://doi.org/10.1037/0012-1649.12.2.175>
- Salonia, A., Nappi, R. E., Pontillo, M., Daverio, R., Smeraldi, A., Briganti, A., Fabbri, F., Zanni, G., Rigatti, P., & Montorsi, F. (2005). Menstrual cycle-related changes in plasma oxytocin are relevant to normal sexual function in healthy women. *Hormones and Behavior*, 47(2), 164-169. <https://doi.org/10.1016/j.yhbeh.2004.10.002>
- Sampson, E. E. (1975). On justice as equality. *Journal of social Issues*, 31(3), 45-64. <https://doi.org/10.1111/j.1540-4560.1975.tb00996.x>
- Sandberg, S. (2013). *Lean in*. Knopf.
- Sapadin, L. A. (1988). Friendship and gender: Perspectives of professional men and women. *Journal of Social and Personal Relationships*, 5(4), 387-403. <https://doi.org/10.1177/0265407588054001>
- Sapienza, P., Zingales, L., & Maestripieri, D. (2009). Gender differences in financial risk aversion and career choices are affected by testosterone. *Proceedings of the National Academy of Sciences*, 106(36), 15268-15273. <https://doi.org/10.1073/pnas.0907352106>
- Sapolsky, R. M. (1997). *The trouble with testosterone*. Scribner.
- Sasaki, I., & Yoshikawa, K. (2014). Going beyond national cultures—Dynamic interaction between intra-national, regional, and organizational realities. *Journal of World Business*, 49(3), 455-464. <https://doi.org/10.1016/j.jwb.2013.10.005>
- Savin-Williams, R. C. (1987). *Adolescence: An Ethological Perspective*. Springer.
- Savin-Williams, R. C. (1995). Social interactions of adolescent females in natural groups. In H. C. Foot, A. J. Chapman, & J. R. Smith (Eds.), *Friendship and social relations in children* (pp. 343–364). Transaction Publishers.
- Sawaguchi, T. (1997). Possible involvement of sexual selection in neocortical evolution of monkeys and apes. *Folia Primatologica*, 68(2), 95–99. <https://doi.org/10.1159/000157236>
- Schein, E. H. (1983). The role of the founder in creating organizational culture. *Organizational Dynamics*, 12(1), 13-28. [https://doi.org/10.1016/0090-2616\(83\)90023-2](https://doi.org/10.1016/0090-2616(83)90023-2)
- Schein, E. H. (1992). *Organizational culture and leadership* (2nd ed.). Jossey-Bass.
- Schein, V. E. (1973). The relationship between sex role stereotypes and requisite management characteristics. *Journal of Applied Psychology*, 57(2), 95-100. <https://doi.org/10.1037/h0037128>
- Schein, V. E. (1975). Relationships between sex role stereotypes and requisite management characteristics among female managers. *Journal of Applied Psychology*, 60(3), 340-344. <https://doi.org/10.1037/h0076637>
- Schein, V. E., & Davidson, M. J. (1993). Think manager, think male. *Management Development Review*, 6(3). <https://doi.org/10.1108/EUM00000000000738>
- Schein, V. E., Mueller, R., Lituchy, T., & Liu, J. (1996). Think manager - think male: A global phenomenon?. *Journal of Organizational Behavior*, 17(1), 33-41. [https://doi.org/10.1002/\(SICI\)1099-1379\(199601\)17:1<33::AID-JOB778>3.0.CO;2-F](https://doi.org/10.1002/(SICI)1099-1379(199601)17:1<33::AID-JOB778>3.0.CO;2-F)
- Schienze, A., Schäfer, A., Stark, R., Walter, B., & Vaitl, D. (2005). Gender differences in the processing of disgust-and fear-inducing pictures: an fMRI study. *Neuroreport*, 16(3), 277-280. <https://doi.org/10.1097/00001756-200502280-00015>
- Schindler, G. L. (1979). Testosterone concentration, personality patterns, and occupational choice in women. *Dissertation Abstracts International*, 40(3-B), 1411.
- Schipper, B. C. (2015). Sex hormones and competitive bidding. *Management Science*, 61(2), 249-266. <https://doi.org/10.1287/mnsc.2014.1959>
- Schneider, S. C., & De Meyer, A. (1991). Interpreting and responding to strategic issues: The impact of national culture. *Strategic management journal*, 12(4), 307-320. <https://doi.org/10.1002/smj.4250120406>
- Schonfeld, W. A. (1943). Primary and secondary sexual characteristics: study of their development in males from birth through maturity, with biometric study of penis and testes. *American Journal of Diseases of Children*, 65(4), 535-549. <https://doi.org/10.1001/archpedi.1943.02010160019003>
- Schreiber, C. T. (1979). *Changing Places: Men and Women in Transitional Occupations*. MIT Press.
- Schulte-Rüther, M., Markowitsch, H. J., Shah, N. J., Fink, G. R., & Piefke, M. (2008). Gender differences in brain networks supporting empathy. *Neuroimage*, 42(1), 393-403. <https://doi.org/10.1016/j.neuroimage.2008.04.180>
- Schwartz, H., & Jacobs, J. (1979). *Qualitative sociology*. Simon and Schuster.
- Schwartz, S. H., & Rubel, T. (2005). Sex differences in value priorities: Cross-cultural and multimethod studies. *Journal of Personality and Social Psychology*, 89(6), 1010-1028. <https://doi.org/10.1037/0022-3514.89.6.1010>
- Schwarz, S., Mustafic, M., & Hassabrauck, M. (2008). *Digit ratio (2D: 4D) and short-term mating orientation* [Paper presentation]. 29th International Congress of Psychology: Berlin, Germany. <http://hdl.handle.net/10993/19687>
- Schwartz-Ziv, M. (2013, May 2). Does the Gender of Directors Matter?. *Edmond J. Safra Working Papers*, 8. <http://dx.doi.org/10.2139/ssrn.2257867>
- Scott, K. A., & Brown, D. J. (2006). Female first, leader second? Gender bias in the encoding of leadership behavior. *Organizational Behavior and Human Decision Processes*, 101(2), 230-242. <https://doi.org/10.1016/j.obhdp.2006.06.002>
- Sekaquaptewa, D., & Thompson, M. (2003). Solo status, stereotype threat, and performance expectancies: their effects on women's performance. *Journal of Experimental Social Psychology*, 39(1), 68–74. [https://doi.org/10.1016/S0022-1031\(02\)00508-5](https://doi.org/10.1016/S0022-1031(02)00508-5)

- Seltzer, J., & Bass, B. M. (1990). Transformational leadership: Beyond initiation and consideration. *Journal of Management*, 16(4), 693-703. <https://doi.org/10.1177/014920639001600403>
- Selznick, P. (1957). *Leadership in Administration*. Row, Peterson.
- Sen, B., & Parhi, K. K. (2019, July). Predicting Male vs. Female from Task-fMRI Brain Connectivity. In *2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 4089-4092). IEEE. <https://doi.org/10.1109/EMBC.2019.8857236>
- Servin, A., Nordenström, A., Larsson, A., & Bohlin, G. (2003). Prenatal androgens and gender-typed behavior: a study of girls with mild and severe forms of congenital adrenal hyperplasia. *Developmental Psychology*, 39(3), 440. <https://doi.org/10.1037/0012-1649.39.3.440>
- Severance, L., Bui-Wrzosinska, L., Gelfand, M. J., Lyons, S., Nowak, A., Borkowski, W., Soomro, N., Soomro, N., Rafaeli, A., Treister, D. E., Lin, C. C., & Yamaguchi, S. (2013). The psychological structure of aggression across cultures. *Journal of Organizational Behavior*, 34(6), 835-865. <https://doi.org/10.1002/job.1873>
- Seyfarth, R. M., & Cheney, D. L. (1984). Grooming, alliances and reciprocal altruism in vervet monkeys. *Nature*, 308, 541-3. <https://doi.org/10.1038/308541a0>
- Shahrestani, S., Kemp, A. H., & Guastella, A. J. (2013). The impact of a single administration of intranasal oxytocin on the recognition of basic emotions in humans: a meta-analysis. *Neuropsychopharmacology*, 38(10), 1929-1936. <https://doi.org/10.1038/npp.2013.86>
- Shamay-Tsoory, S. G., Abu-Akel, A., Palgi, S., Sulieman, R., Fischer-Shofty, M., Levkovitz, Y., & Decety, J. (2013). Giving peace a chance: oxytocin increases empathy to pain in the context of the Israeli-Palestinian conflict. *Psychoneuroendocrinology*, 38(12), 3139-3144. <https://doi.org/10.1016/j.psyneuen.2013.09.015>
- Shapiro, R. Y., & Mahajan, H. (1986). Gender Differences in Policy Preferences: A Summary of Trends from the 1960s to the 1980s. *Public Opinion Quarterly*, 50(1), 42-61. <https://doi.org/10.1086/268958>
- Sharpe, R. (2000). As Leaders, Women Rule. New studies find that female managers outshine their male counterparts in almost every measure. *Bloomberg*. <https://www.bloomberg.com/news/articles/2000-11-19/as-leaders-women-rule>
- Shaw, J. B. (1990). A Cognitive Categorization Model for the Study of Intercultural Management. *Academy of Management Review*, 15(4), 626-45. <https://doi.org/10.5465/amr.1990.4310830>
- Shaw, A. Z., Kotowski, M. R., Boster, F. J., & Levine, T. R. (2012). The effect of prenatal sex hormones on the development of verbal aggression. *Journal of Communication*, 62(5), 778-793. <https://doi.org/10.1111/j.1460-2466.2012.01665.x>
- Sherman, G. D., Lerner, J. S., Josephs, R. A., Renshon, J., & Gross, J. J. 2016. The interaction of testosterone and cortisol is associated with attained status in male executives. *Journal of Personality and Social Psychology*, 110(6), 921-929. <https://doi.org/10.1037/pspp0000063>
- Sherriffs, A. C., & McKee, J. P. (1957). Qualitative aspects of beliefs about men and women. *Journal of Personality*, 25(4), 451-464. <https://doi.org/10.1111/j.1467-6494.1957.tb01540.x>
- Shields, S. (1975). Functionalism, Darwinism, and the psychology of women. *American Psychologist*, 30(7), 739-754. <https://doi.org/10.1037/h0076948>
- Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. Cambridge University Press.
- Sidanius, J., Pratto, F., & Bobo, L. (1994). Social dominance orientation and the political psychology of gender: A case of invariance?. *Journal of Personality and Social Psychology*, 67(6), 998-1011. <https://doi.org/10.1037/0022-3514.67.6.998>
- Sidanius, J., Pratto, F., & Brief, D. (1995). Group dominance and the political psychology of gender: A cross-cultural comparison. *Political Psychology*, 381-396. <https://doi.org/10.2307/3791836>
- Sidanius, J., Pratto, F., & Rabinowitz, J. L. (1994). Gender, ethnic status, and ideological asymmetry: A social dominance interpretation. *Journal of Cross-Cultural Psychology*, 25(2), 194-216. <https://doi.org/10.1177/0022022194252003>
- Sidman, A. H., & Norpoth, H. (2012). Fighting to Win: Wartime Morale in the American Public. *Electoral Studies*, 31(2), 330-341. <https://doi.org/10.1016/j.electstud.2012.01.008>
- Siever, L. J. (2008). Neurobiology of aggression and violence. *American Journal of Psychiatry*, 165(4), 429-442. <https://doi.org/10.1176/appi.ajp.2008.07111774>
- Silk, J. B. (2007). The adaptive value of sociality in mammalian groups. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 362(1480), 539-559. <https://doi.org/10.1098/rstb.2006.1994>
- Silva, R. P., Vilaça, A., Guerra, F. D., Mundim, A. V., de Agostini, G. G., de Abreu, L. C., Zhiguo, Z., Sorpreso, I. C., Valenti, V. E., & Penha-Silva, N. (2020). Sex Differences in Physiological Stress Induced by a Long-Lasting Adventure Race: A Prospective Observational Analytical Study. *Sportverletzung: Sportschaden*, 34(02), 84-95. <https://doi.org/10.1055/a-0928-0990>
- Silverman, D. (2013). *Doing qualitative research: A practical handbook*. Sage Publications Limited.
- Simner, M. L. (1971). Newborn's response to the cry of another infant. *Developmental Psychology*, 5(1), 136-150. <https://doi.org/10.1037/h0031066>
- Simpson, B., & Van Vugt, M. (2009). Sex differences in cooperation and prosocial behavior. In S. R. Thye & E. J. Lawler (Ed.), *Altruism and Prosocial Behavior in Groups* (Vol. 26) (pp. 81-103). Emerald Group Publishing Limited. [https://doi.org/10.1108/S0882-6145\(2009\)0000026007](https://doi.org/10.1108/S0882-6145(2009)0000026007)
- Sims, C. M. (2017). Do the big-five personality traits predict empathic listening and assertive communication?. *International Journal of Listening*, 31(3), 163-188. <https://doi.org/10.1080/10904018.2016.1202770>

- Sims, C. M., & Morris, L. R. (2018). Are women business owners authentic servant leaders?. *Gender in Management: An International Journal*, 33(5), 405-427. <https://doi.org/10.1108/GM-01-2018-0003>
- Sims, H. P., & Lorenzi, P. (1992). *The new leadership paradigm: Social learning and cognition in organizations*. Sage.
- Sinclair, A. (1998). *Doing leadership differently*. Melbourne University Press.
- Singer, T. (2006). The neuronal basis and ontogeny of empathy and mind reading: review of literature and implications for future research. *Neuroscience & Biobehavioral Reviews*, 30(6), 855-863. <https://doi.org/10.1016/j.neubiorev.2006.06.011>
- Singer, D. G., Singer, J. L., D'Agostino, H., & DeLong, R. (2009). Children's Pastimes and Play in Sixteen Nations: Is Free-Play Declining?. *American Journal of Play*, 1(3), 283-312.
- Singh, P., Nadim, A., & Ezzedeen, S. R. (2012). Leadership styles and gender: An extension. *Journal of Leadership Studies*, 5(4), 6-19. <https://doi.org/10.1002/jls.20239>
- Singh, V., Vinnicombe, S. & Johnson, P. (2001). Women Directors on Top UK Boards. *Corporate Governance: An International Review*, 9(3), 206-216. <https://doi.org/10.1111/1467-8683.00248>
- Skala, D., & Weill, L. (2018). Does CEO gender matter for bank risk?. *Economic Systems*, 42(1), 64-74. <https://doi.org/10.1016/j.ecosys.2017.08.005>
- Slaby, R. G., & Frey, K. S. (1975). Development of gender constancy and selective attention to same-sex models. *Child Development*, 46(4), 849- 856. <https://doi.org/10.2307/1128389>
- Slijper, F. M. (1984). Androgens and gender role behaviour in girls with congenital adrenal hyperplasia (CAH). In G. J. De Vries, J. P. C. De Bruin, H. B. M. Uylings, & M. A. Corner (Eds.), *Progress in brain research* (Vol. 61) (pp. 417-422). Elsevier.
- Slone, M., & Mayer, Y. (2015). Gender differences in mental health consequences of exposure to political violence among Israeli adolescents. *Children and Youth Services Review*, 58, 170-178. <https://doi.org/10.1016/j.childyouth.2015.09.013>
- Smith, P. B., Peterson, M. F., & Schwartz, S. H. (2002). Cultural values, sources of guidance, and their relevance to managerial behavior: A 47-nation study. *Journal of Cross-Cultural Psychology*, 33(2), 188-208. <https://doi.org/10.1177/0022022102033002005>
- Smuts, B. B. (1987). Gender, aggression, and influence. In B. B. Smuts, D. L. Cheney, R. M. Seyfarth, R. W. Wrangham, & T. T. Struhsaker (Eds.), *Primate Societies* (pp. 400-412). The University of Chicago Press.
- Smuts, B. (1992). Male aggression against women. *Human Nature*, 3(1), 1-44. <https://doi.org/10.1007/BF02692265>
- Snell Jr, W. E. (1989). Willingness to self-disclose to female and male friends as a function of social anxiety and gender. *Personality and Social Psychology Bulletin*, 15(1), 113-125. <https://doi.org/10.1177/0146167289151011>
- Snyder, J. K., Kirkpatrick, L. A., & Barrett, H. C. (2008). The dominance dilemma: Do women really prefer dominant mates?. *Personal Relationships*, 15(4), 425-444. <https://doi.org/10.1111/j.1475-6811.2008.00208.x>
- Sojo, V. E., Wood, R. E., Wood, S. A., & Wheeler, M. A. (2016). Reporting requirements, targets, and quotas for women in leadership. *The Leadership Quarterly*, 27(3), 519-536. <https://doi.org/10.1016/j.leaqua.2015.12.003>
- Solano, C. H., & Dunnam, M. (1985). Two's company: self-disclosure and reciprocity in triads versus dyads. *Social Psychology Quarterly*, 183-187. <https://doi.org/10.2307/3033613>
- Sosa, E. (1993). Putnam's pragmatic realism. *The Journal of Philosophy*, 90(12), 605-626. <https://doi.org/10.2307/2940814>
- Sparrow, J., & Rigg, C. (1993). Job analysis: selecting for the masculine approach to management. *Selection and Development Review*, 9(2), 5-8.
- Sparrowe, R. T. (2020). LMX and welfare trade-off ratios: An evolutionary perspective on leader-member relations. *The Leadership Quarterly*, 31(2), 101271. <https://doi.org/10.1016/j.leaqua.2018.11.001>
- Spector, B. A. (2016). Carlyle, Freud, and the great man theory more fully considered. *Leadership*, 12(2), 250-260. <https://doi.org/10.1177/1742715015571392>
- Spinrad, T. L., & Stifter, C. A. (2006). Toddlers' empathy-related responding to distress: Predictions from negative emotionality and maternal behavior in infancy. *Infancy*, 10(2), 97-121. https://doi.org/10.1207/s15327078in1002_1
- Spisak, B. R., Homan, A. C., Grabo, A., & Van Vugt, M. (2012). Facing the situation: Testing a biosocial contingency model of leadership in intergroup relations using masculine and feminine faces. *The Leadership Quarterly*, 23(2), 273-280. <https://doi.org/10.1016/j.leaqua.2011.08.006>
- Spurgeon, P., & Cross, V. (2006). Gender Differences in Management Behaviour and Leadership Style. *International Journal of Diversity in Organisations, Communities & Nations*, 5(6). <https://doi.org/10.18848/1447-9532/CGP/v05i06/39150>
- Stanworth, J., & Curran, J. (1999). Colas, burgers, shakes, and shirkers: Towards a sociological model of franchising in the market economy. *Journal of Business Venturing*, 14(4), 323-344. [https://doi.org/10.1016/S0883-9026\(98\)00019-6](https://doi.org/10.1016/S0883-9026(98)00019-6)
- Steele, C. M. & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69(5), 797-811. <https://doi.org/10.1037/0022-3514.69.5.797>
- Steffen, T. F., Rosenthal C., & Vöth A. (2004). *Gender Studies. Wissenschaftstheorien und Gesellschaftskritik*. Königshausen & Neumann.
- Stelter, N. Z. (2002). Gender differences in leadership: Current social issues and future organizational implications. *Journal of Leadership Studies*, 8(4), 88-99. <https://doi.org/10.1177/107179190200800408>
- Stenstrom, E., Saad, G., Nepomuceno, M. V., & Mendenhall, Z. (2011). Testosterone and domain-specific risk: Digit ratios (2D: 4D and rel2) as predictors of recreational, financial, and social risk-taking behaviors. *Personality and Individual Differences*, 51(4), 412-416. <https://doi.org/10.1016/j.paid.2010.07.003>

- Stephens, L., Fuller, D., Boivin, N., Rick, T., Gauthier, N., Kay, A., Marwick, B., Armstrong, C. G., Barton, C. M., Denham, T., Douglass, K., Driver, J., Janz, L., Roberts, P., Rogers, J. D., Thakar, H., Altaweel, M., Johnson, A. L., Sampietro Vattuone, M. M., ... & Ellis, E. (2019). Archaeological assessment reveals Earth's early transformation through land use. *Science*, 365(6456), 897-902. <https://doi.org/10.1126/science.aax1192>
- Stevens, J. S., & Hamann, S. (2012). Sex differences in brain activation to emotional stimuli: a meta-analysis of neuroimaging studies. *Neuropsychologia*, 50(7), 1578-1593. <https://doi.org/10.1016/j.neuropsychologia.2012.03.011>
- Stogdill, R. M. (1963) *Manual for the Leader Behavior Description Questionnaire – Form XII*. Fisher College of Business, Ohio State University.
- Stogdill, R. M. (1977). *Handbook of Leadership: A Survey of Theory and Research*. Free Press.
- Storey, A., & Smith, H. K. (2012). Unique aspects of competitive weightlifting. *Sports medicine*, 42(9), 769-790. <https://doi.org/10.1007/BF03262294>
- Statham, A. (1987). The gender model revisited: Differences in the management styles of men and women. *Sex Roles*, 16(7-8), 409-430.
- Strayer, F. F., & Strayer, J. (1976). An ethological analysis of social agonism and dominance relations among preschool children. *Child Development*, 47(4), 980-989. <https://doi.org/10.2307/1128434>
- Stroebe, K., Ellemers, N., Barreto, M., & Mummendey, A.I. (2009). For better or for worse: The congruence of personal and group outcomes on targets' responses to discrimination. *European Journal of Social Psychology*, 39(4), 576-591. <https://doi.org/10.1002/ejsp.557>
- Strong, E. K. (1943). *Vocational interests of men and women*. Stanford University Press.
- Sudhakar, H. H., Veena, U. B., & Tejaswi, R. N. (2013). Digit ratio (2D: 4D) and performance in Indian swimmers. *Indian Journal of Physiology and Pharmacology*, 57(1), 72-76. <https://doi.org/10.1371/journal.pone.0089800>
- Sueda, K. (2018). Japanese Women Managers' Employee-Oriented Communication Styles: An Analysis Using Constructivist Grounded Theory. *International Journal of Business Communication*. <https://doi.org/10.1177/2329488418803659>
- Suh, E. J., Moskowitz, D. S., Fournier, M. A., & Zuroff, D. C. (2004). Gender and relationships: Influences on agentic and communal behaviors. *Personal Relationships*, 11(1), 41-60. <https://doi.org/10.1111/j.1475-6811.2004.00070.x>
- Swain, S. (1989). Covert intimacy: Closeness in the same-sex friendships of men. In B. Risman & P. Schwartz (Eds.), *Gender in intimate relations: A microstructural approach* (pp. 75-87). Wadsworth.
- Symons, D. (1979). *The evolution of human sexuality*. Oxford University Press.
- Szilagyi, A. D., & Keller, R. T. (1976). A comparative investigation of the supervisory behavior description questionnaire (SBDQ) and the revisited leader behavior description questionnaire (LBDQ-Form XII). *Academy of Management Journal*, 19(4), 642-649. <https://doi.org/10.5465/255797>
- Tahmasebi, A. M., Artiges, E., Banaschewski, T., Barker, G. J., Bruehl, R., Büchel, C., Conrod, P. J., Flor, H., Garavan, H., Gallinat, J., Heinz, A., Ittermann, B., Loth, E., Mareckova, K., Martinot, J., Poline, J., Rietschel, M., Smolka, M. N., & Paus, T. (2012). Creating probabilistic maps of the face network in the adolescent brain: a multicentre functional MRI study. *Human Brain Mapping*, 33(4), 938-957. <https://doi.org/10.1002/hbm.21261>
- Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. Cambridge University Press.
- Tajfel, H., & Turner, J. C. (1986) The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (2nd ed.) (pp. 7-24). Nelson-Hall.
- Tannenbaum, A. S., Bogdan, K., Menachem R., Mino V., & Wieser, G. (1974). *Hierarchy in Organizations: An International Comparison*. Jossey-Bass.
- Tate, G. & Yang, L. (2015). Female leadership and gender equity: Evidence from plant closure. *Journal of Financial Economics*, 117(1), 77-97. <https://doi.org/10.1016/j.jfineco.2014.01.004>
- Taylor, M. (Ed.). (2008). *Global economy contested: power and conflict across the international division of labour* (Vol. 14). Routledge.
- Taylor, S. E., Fiske, S. T., Etcoff, N. L., & Ruderman, A. J. (1978). Categorical and contextual bases of person memory and stereotyping. *Journal of Personality and Social Psychology*, 36(7), 778. <https://doi.org/10.1037/0022-3514.36.7.778>
- Taylor, S. E., Klein, L. C., Lewis, B. P., Gruenewald, T. L., Gurung, R. A., & Updegraff, J. A. (2000). Biobehavioral responses to stress in females: tend-and-befriend, not fight-or-flight. *Psychological Review*, 107(3), 411-429. <https://doi.org/10.1037/0033-295X.107.3.411>
- Teatero, M. L., & Netley, C. (2013). A critical review of the research on the extreme male brain theory and digit ratio (2D: 4D). *Journal of Autism and Developmental Disorders*, 43(11), 2664-2676. <https://doi.org/10.1007/s10803-013-1819-6>
- Tennie, C., Call, J., & Tomasello, M. (2009). Ratcheting up the ratchet: on the evolution of cumulative culture. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1528), 2405-2415. <https://doi.org/10.1098/rstb.2009.0052>
- Terborg, J. R. (1977). Women in management: A research review. *Journal of Applied Psychology*, 62(6), 647-664. <https://doi.org/10.1037/0021-9010.62.6.647>
- Terburg, D., & Van Honk, J. (2013). Approach-avoidance versus dominance-submissiveness: A multilevel neural framework on how testosterone promotes social status. *Emotion Review*, 5(3), 296-302. <https://doi.org/10.1177/1754073913477510>
- Terburg, D., Syal, S., Rosenberger, L. A., Heany, S. J., Stein, D. J., & Van Honk, J. (2016). Testosterone abolishes implicit subordination in social anxiety. *Psychoneuroendocrinology*, 72, 205-211. <https://doi.org/10.1016/j.psyneuen.2016.07.203>

- Terrell, F., & Barrett, R. K. (1979). Interpersonal trust among college students as a function of race, sex, and socioeconomic class. *Perceptual and Motor Skills*, 48, 1194. <https://doi.org/10.2466/pms.1979.48.3c.1194>
- Thiessen, D., & Ross, M. (1990). The use of sociobiological questionnaire (SQ) for the assessment of sexual dimorphism. *Behavior Genetics*, 20, 297-305. <https://doi.org/10.1007/BF01067797>
- Thijssen, S., Ringoot, A. P., Wildeboer, A., Bakermans-Kranenburg, M. J., El Marroun, H., Hofman, A., Jaddoe, V. W. V., Verhulst, F. C., Tiemeier, H., Van Ijzendoorn, M. H., & White, T. (2015). Brain morphology of childhood aggressive behavior: A multi-informant study in school-age children. *Cognitive, Affective, & Behavioral Neuroscience*, 15(3), 564-577. <https://doi.org/10.3758/s13415-015-0344-9>
- Thompson, J. D. (1960). Organizational management of conflict. *Administrative Science Quarterly*, 389-409. <https://doi.org/10.2307/2390765>
- Thompson, C. A., & Blau, G. (1993). Moving beyond traditional predictors of job involvement: Exploring the impact of workfamily conflict and overload. *Journal of Social Behavior and Personality*, 8(4), 635-646.
- Thompson, T. L., Robinson, J. D., & Kenny, R. W. (2003). Gender differences in family communication about organ donation. *Sex Roles*, 49, 587-596. <https://doi.org/10.1023/B:SER5.0000003129.25173.ad>
- Tieger, T. (1980). On the biological basis of sex differences in aggression. *Child Development*, 51(4), 943-963. <https://doi.org/10.2307/1129534>
- Tinbergen, N. (1963). On aims and methods of ethology. *Zeitschrift für Tierpsychologie*, 20(4), 410-433. <https://doi.org/10.1111/j.1439-0310.1963.tb01161.x>
- Toledano, N., & Karanda, C. (2014). Leading self, teams and organizations from a female perspective: An exploration of the women leaders journey. *African Journal of Business Management*, 8(20), 972-980. <https://doi.org/10.5897/AJBM2014.7507>
- Tomasch, J. (1954). Size, distribution, and number of fibres in the human corpus callosum. *The Anatomical Record*, 119(1), 119-135. <https://doi.org/10.1002/ar.1091190109>
- Tooby, J., & Cosmides, L. (1990). The past explains the present: emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology*, 11(4-5), 375-424. [https://doi.org/10.1016/0162-3095\(90\)90017-Z](https://doi.org/10.1016/0162-3095(90)90017-Z)
- Tomasello, M., Kruger, A. C., & Ratner, H. H. (1993). Cultural learning. *Behavioral and brain sciences*, 16(3), 495-511.
- Tooby, J., & Cosmides, L. (2005). Conceptual foundations of evolutionary psychology. In D. M. Buss (Ed.), *The Handbook of Evolutionary Psychology* (pp. 5-67). John Wiley & Sons. <https://doi.org/10.1002/9780470939376>
- Torchia, M., Calabro, A. & Huse, M. (2011). Women Directors on Corporate Boards: From Tokenism to Critical Mass. *Journal of Business Ethics*, 102(2), 299-317. <https://doi.org/10.1007/s10551-011-0815-z>
- Tost, H., Kolachana, B., Hakimi, S., Lemaitre, H., Verchinski, B. A., Mattay, V. S., Weinberger, D. R., & Meyer-Lindenberg, A. (2010). A common allele in the oxytocin receptor gene (OXTR) impacts prosocial temperament and human hypothalamic-limbic structure and function. *Proceedings of the National Academy of Sciences*, 107(31), 13936-13941. <https://doi.org/10.1073/pnas.1003296107>
- Trahms, C. A., Coombs, J. E., & Barrick, M. (2010). Does biology matter? How prenatal testosterone, entrepreneur risk propensity, and entrepreneur risk perceptions influence venture performance. In *Frontiers of entrepreneurship research: Proceedings of the thirtieth annual entrepreneurship research conference* (pp. 217-229). Babson College, Arthur M. Blank Center for Entrepreneurship.
- Tranel, D., Damasio, H., Denburg, N. L., & Bechara, A. (2005). Does gender play a role in functional asymmetry of ventromedial prefrontal cortex?. *Brain*, 128(12), 2872-2881. <https://doi.org/10.1093/brain/awh643>
- Trapnell, P. D., & Paulhus, D. L. (2012). Agentic and communal values: Their scope and measurement. *Journal of Personality Assessment*, 94(1), 39-52. <https://doi.org/10.1080/00223891.2011.627968>
- Trivers, R. L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man, 1871-1971* (pp. 136-179). Aldine.
- Trivers, R., Manning, J., & Jacobson, A. (2006). A longitudinal study of digit ratio (2D: 4D) and other finger ratios in Jamaican children. *Hormones and Behavior*, 49(2), 150-156. <https://doi.org/10.1016/j.yhbeh.2005.05.023>
- Trzcinski, E., & Holst, E. (2012). Gender differences in subjective well-being in and out of management positions. *Social Indicators Research*, 107(3), 449-463. <https://doi.org/10.1007/s11205-011-9857-y>
- Tschan, F., Semmer, N. K., & Inversin, L. (2004). Work related and "private" social interactions at work. *Social Indicators Research*, 67(1-2), 145-182. <https://doi.org/10.1023/B:SOCI.0000007338.60393.bf>
- Tsui, A. S., Zhang, Z. X., Wang, H., Xin, K. R., & Wu, J. B. (2006). Unpacking the relationship between CEO leadership behavior and organizational culture. *The Leadership Quarterly*, 17(2), 113-137. <https://doi.org/10.1016/j.leaqua.2005.12.001>
- Tsuno, K., Kawakami, N., Inoue, A., Ishizaki, M., Tabata, M., Tsuchiya, M., ... & Shimazu, A. (2009). Intragroup and intergroup conflict at work, psychological distress, and work engagement in a sample of employees in Japan. *Industrial Health*, 47(6), 640-648. <https://doi.org/10.2486/indhealth.47.640>
- Turner, M. E., & Pratkanis, A. R. (1997). *Mitigating groupthink by stimulating constructive conflict*. In C. K. W. De Dreu & E. Van de Vliert (Eds.), *Using conflict in organizations* (p. 53-71). Sage Publications, Inc. <https://doi.org/10.4135/9781446217016.n5>
- Udry, J. R. (2000). Biological limits of gender construction. *American Sociological Review*, 65(3), 443-457. <https://doi.org/10.2307/2657466>

- Uehara, S., & Nishida, T. (1987). Body weights of wild chimpanzees (*Pan troglodytes schweinfurthii*) of the Mahale Mountains National Park, Tanzania. *American Journal of Physical Anthropology*, 72(3), 315-321. <https://doi.org/10.1002/ajpa.1330720305>
- Underwood, M. K. (2003). *Social aggression among girls*. Guilford Press.
- Unger, R. K. (1979). Toward a redefinition of sex and gender. *American Psychologist*, 34(11), 1085-1094. <https://doi.org/10.1037/0003-066X.34.11.1085>
- Unger, J. M., Rauch, A., Weis, S. E., & Frese, M. (2015). Biology (prenatal testosterone), psychology (achievement need) and entrepreneurial impact. *Journal of Business Venturing Insights*, 4, 1-5. <https://doi.org/10.1016/j.jbvi.2015.05.001>
- Van Anders, S. M., Vernon, P. A., & Wilbur, C. J. (2006). Finger-length ratios show evidence of prenatal hormone-transfer between opposite-sex twins. *Hormones and Behavior*, 49(3), 315-319. <https://doi.org/10.1016/j.yhbeh.2005.08.003>
- Van de Vliert, E. (2006). Autocratic Leadership around the Globe: Do Climate and Wealth Drive Leadership Culture?. *Journal of Cross Cultural Psychology*, 37(1), 42-59. <https://doi.org/10.1177/0022022105282294>
- Van der Meij, L., Almela, M., Buunk, A. P., Dubbs, S., & Salvador, A. (2012). 2D: 4D in men is related to aggressive dominance but not to sociable dominance. *Aggressive Behavior*, 38(3), 208-212. <https://doi.org/10.1002/ab.21422>
- Van der Meij, L., Schaveling, J., & Van Vugt, M. (2016). Basal testosterone, leadership and dominance: A field study and meta-analysis. *Psychoneuroendocrinology*, 72, 72-79. <https://doi.org/10.1016/j.psyneuen.2016.06.005>
- Van der Loos, M. J. H. M., Haring, R., Rietveld, C. A., Baumeister, S. E., Groenen, P. J. F., Hofman, A., de Jong, F. H., Koellinger, P. D., Kohlmann, T., Nauck, M. A., Rivadeneira, F., Uitterlinden, A. G., Van Rooij, F. J. A., Wallaschowski, H., & Thurik, A. R. (2013). Serum testosterone levels in males are not associated with entrepreneurial behavior in two independent observational studies. *Physiology and Behavior*, 119, 110-114. <https://doi.org/10.1016/j.physbeh.2013.06.003>
- Van der Voorn, B., Hollanders, J. J., Ket, J. C., Rotteveel, J., & Finken, M. J. (2017). Gender-specific differences in hypothalamus-pituitary-adrenal axis activity during childhood: a systematic review and meta-analysis. *Biology of Sex Differences*, 8(1), 3. <https://doi.org/10.1186/s13293-016-0123-5>
- Van Emmerik, H., Euwema, M. C., & Wendt, H. (2008). Leadership behaviors around the world: The relative importance of gender versus cultural background. *International Journal of Cross Cultural Management*, 8(3), 297-315. <https://doi.org/10.1177/1470595808096671>
- Van Emmerik, H., Wendt, H., & Euwema, M. C. (2010). Gender ratio, societal culture, and male and female leadership. *Journal of Occupational and Organizational Psychology*, 83(4), 895-914. <https://doi.org/10.1348/096317909X478548>
- Van Engen, M. L. & Willemsen, T. M. (2004). Sex and leadership styles: A meta-analysis of research published in the 1990s. *Psychological Reports*, 94(1), 3-18. <https://doi.org/10.2466/pr0.94.1.3-18>
- Van Honk, J., Montoya, E. R., Bos, P. A., Van Vugt, M., & Terburg, D. (2012). New evidence on testosterone and cooperation. *Nature*, 485(7399), E4-E5. <https://doi.org/10.1038/nature11136>
- Van Honk, J., Schutter, D. J., Bos, P. A., Kruijt, A. W., Lentjes, E. G., & Baron-Cohen, S. (2011). Testosterone administration impairs cognitive empathy in women depending on second-to-fourth digit ratio. *Proceedings of the National Academy of Sciences*, 108(8), 3448-3452. <https://doi.org/10.1073/pnas.1011891108>
- Van Lawick-Goodall, J. (1968). The behaviour of free-living chimpanzees in the Gombe Stream Reserve. *Animal Behaviour Monographs*, 1, 161IN1-311IN12. [https://doi.org/10.1016/S0066-1856\(68\)80003-2](https://doi.org/10.1016/S0066-1856(68)80003-2)
- Van Maanen, J. (2001). Afterword: Natives 'R'us: Some notes on the ethnography of organizations. In D. Gellner & E. Hirsch (Eds), *Inside organizations: Anthropologists at work*, (pp. 233-261). Routledge.
- Van Maanen, J. (2011). *Tales of the field: On writing ethnography*. University of Chicago Press.
- Van Maanen, J., & Schein, E. H. (1977). Toward a theory of organizational socialization. *Working papers* (pp. 960-77). Massachusetts Institute of Technology (MIT), Sloan School of Management.
- Van Maanen, J., Sørensen, J. B., & Mitchell, T. R. (2007). The interplay between theory and method. *Academy of Management Review*, 32(4), 1145-1154. <https://doi.org/10.5465/amr.2007.26586080>
- Van Staveren, I. (2014). The Lehman Sisters hypothesis. *Cambridge Journal of Economics*, 38(5), 995-1014. <https://doi.org/10.1093/cje/beu010>
- Van Vugt, M. (2006). Evolutionary origins of leadership and followership. *Personality and Social Psychology Review*, 10(4), 354-371. https://doi.org/10.1207/s15327957pspr1004_5
- Van Vugt, M. (2009). Sex differences in intergroup competition, aggression, and warfare. *Annals of the New York Academy of Sciences*, 1167(1), 124-134.
- Van Vugt, M., & Ahuja, A. (2011). *Naturally selected: The evolutionary science of leadership*. HarperBusiness.
- Van Vugt, M., Cremer, D. D., & Janssen, D. P. (2007). Gender differences in cooperation and competition: The male-warrior hypothesis. *Psychological science*, 18(1), 19-23. <https://doi.org/10.1111/j.1467-9280.2007.01842.x>
- Van Vugt, M. V., & Ronay, R. (2014). The evolutionary psychology of leadership: Theory, review, and roadmap. *Organizational Psychology Review*, 4(1), 74-95. <https://doi.org/10.1177/2041386613493635>
- Van Vugt, M., & Spisak, B. R. (2008). Sex differences in the emergence of leadership during competitions within and between groups. *Psychological Science*, 19(9), 854-858. <https://doi.org/10.1111/j.1467-9280.2008.02168.x>
- Van Vugt, M., & Tybur, J. M. (2015). The evolutionary foundations of status hierarchy. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 1-22). <https://doi.org/10.1002/9781119125563.evpsych232>

- Van Vugt, M. & von Rueden, C. (2017). Call for papers - Evolution and Biology of Leadership: A New Synthesis. *The Leadership Quarterly*, 28(3), III-IV. [https://doi.org/10.1016/S1048-9843\(17\)30295-3](https://doi.org/10.1016/S1048-9843(17)30295-3)
- Van Wingen, G. A., Ossewaarde, L., Bäckström, T., Hermans, E. J., & Fernández, G. (2011). Gonadal hormone regulation of the emotion circuitry in humans. *Neuroscience*, 191, 38-45. <https://doi.org/10.1016/j.neuroscience.2011.04.042>
- Varma, A., & Stroh, L. K. (2001). The impact of same-sex LMX dyads on performance evaluations. *Human Resource Management*, 40(4), 309-320. <https://doi.org/10.1002/hrm.1021>
- Vecchio, R. P. (2002). Leadership and gender advantage. *The Leadership Quarterly*, 13(6), 643-671. [https://doi.org/10.1016/S1048-9843\(02\)00156-X](https://doi.org/10.1016/S1048-9843(02)00156-X)
- Vecchio, R. P., & Brazil, D. M. (2007). Leadership and sex-similarity: A comparison in a military setting. *Personnel Psychology*, 60, 303-335. <https://doi.org/10.1111/j.1744-6570.2007.00075.x>
- Vecchio, R. P., & Bullis, R. C. (2001). Moderators of the influence of supervisor-subordinate similarity on subordinate outcomes. *Journal of Applied Psychology*, 86(5), 884-896. <https://doi.org/10.1037/0021-9010.86.5.884>
- Veening, J. G., & Olivier, B. (2013). Intranasal administration of oxytocin: behavioral and clinical effects, a review. *Neuroscience & Biobehavioral Reviews*, 37(8), 1445-1465. <https://doi.org/10.1016/j.neubiorev.2013.04.012>
- Verba, S., Burns, N., & Schlozman, K. L. (1997). Knowing and caring about politics: Gender and political engagement. *The Journal of Politics*, 59(4), 1051-1072. <https://doi.org/10.2307/2998592>
- Vermeersch, H., TSjoen, G., Kaufman, J. M., & Vincke, J. (2008). 2d: 4d, sex steroid hormones and human psychological sex differences. *Hormones and Behavior*, 54(2), 340-346. <https://doi.org/10.1016/j.yhbeh.2008.02.017>
- Vernasco, B. J., & Moore, I. T. (2020). Testosterone as a mediator of the tradeoff between cooperation and competition in the context of cooperative reproductive behaviors. *General and Comparative Endocrinology*, 288, 113369. <https://doi.org/10.1016/j.ygcen.2019.113369>
- Vigil, J. M. (2007). Asymmetries in the friendship preferences and social styles of men and women. *Human Nature*, 18(2), 143-161. <https://doi.org/10.1007/s12110-007-9003-3>
- Vinacke, W. E., & Gullickson, G. R. (1964). Age and sex differences in the formation of coalitions. *Child Development*, 35(4), 1217-1231. <https://doi.org/10.2307/1126867>
- Vinkenburg, C. J., Van Engen, M. L., Eagly, A. H., & Johannesen-Schmidt, M. C. (2011). An exploration of stereotypical beliefs about leadership styles: Is transformational leadership a route to women's promotion?. *The Leadership Quarterly*, 22(1), 10-21. <https://doi.org/10.1016/j.leaqua.2010.12.003>
- von Hippel, C., Walsh, A. M., & Zouroudis, A. (2011). Identity separation in response to stereotype threat. *Social Psychological and Personality Science*, 2(3), 317-324. <https://doi.org/10.1177/1948550610390391>
- Von Rueden, C., Gurven, M., & Kaplan, H. (2011). Why do men seek status? Fitness payoffs to dominance and prestige. *Proceedings of the Royal Society B: Biological Sciences*, 278(1715), 2223-2232. <https://doi.org/10.1098/rspb.2010.2145>
- Vongas, J. G. (2009). Glass cliffs, empathy, and biology: a functional magnetic resonance imaging study in leadership. *Academy of Management Proceedings*, 2009(1), 1-6. <https://doi.org/10.5465/ambpp.2009.44261922>
- Vongas, J. G., & Al Hajj, R. (2015a). Competing sexes, power, and testosterone: How winning and losing affect people's empathic responses and what this means for organisations. *Applied Psychology*, 64(2), 308-337. <https://doi.org/10.1111/apps.12030>
- Vongas, J. G., & Al Hajj, R. (2015b). The evolution of empathy and women's precarious leadership appointments. *Frontiers in Psychology*, 6, 1751. <https://doi.org/10.3389/fpsyg.2015.01751>
- Vongas, J. G., Al Hajj, R., & Fiset, J. E. (2018, July). Leader emergence, testosterone, and empathy: Testing the dual-hormone hypothesis in men. *Academy of Management Proceedings*, 2018, 1, 18105. <https://doi.org/10.5465/AMBPP.2018.239>
- Voracek, M., & Schicker, K. (2010). Digit ratio (2D: 4D) and behavioral responses to everyday life and workplace-related interpersonal conflict. *Swiss Journal of Psychology*, 69, 31-37. <https://doi.org/10.1024/1421-0185/a000004>
- Vroom, V. H., & Jago, A. G. (1988). *The new leadership: Managing participation in organizations*. Prentice-Hall, Inc.
- Vroom, V. H., & Yetton, P. W. (1973). *Leadership and decision-making* (Vol. 110). University of Pittsburgh Press.
- Vukasović, T., & Bratko, D. (2015). Heritability of personality: a meta-analysis of behavior genetic studies. *Psychological Bulletin*, 141(4), 769-785. <https://doi.org/10.1037/bul0000017>
- Wade, L. (2013). The new science of sex difference. *Sociology Compass*, 7(4), 278-293. <https://doi.org/10.1111/soc4.12028>
- Wajcman, J. (1998). *Like a man: Women and men in corporate management*. Polity Press.
- Waldman, D. A., Balthazard, P. A., & Peterson, S. J. (2011). Leadership and neuroscience: Can we revolutionize the way that inspirational leaders are identified and developed?. *Academy of Management Perspectives*, 25(1), 60-74. <https://doi.org/10.5465/amp.25.1.60>
- Waldrop, M. F., & Halverson, C. F. (1975). Intensive and extensive peer behavior: Longitudinal and cross-sectional analyses. *Child Development*, 46(1), 19-26. <https://doi.org/10.2307/1128829>
- Waldström, C., & Madsen, H. (2007). Social relations among managers: Old boys and young women's networks. *Women in Management Review*, 22(2), 136-147. <https://doi.org/10.1108/09649420710732097>
- Walker, R. C., & Aritz, J. (2015). Women doing leadership: Leadership styles and organizational culture. *International Journal of Business Communication*, 52(4), 452-478. <https://doi.org/10.1177/2329488415598429>

- Wallen, K. (1996). Nature needs nurture: the interaction of hormonal and social influences on the development of behavioral sex differences in rhesus monkeys. *Hormones and Behavior*, 30(4), 364-378. <https://doi.org/10.1006/hbeh.1996.0042>
- Walton, K. D. (1997). UK women at the very top: An American assessment. In H. Eggins (Ed.), *Women as leaders and managers in higher education* (pp. 70–90). Open University Press.
- Walton, R., & McKersie, R. (1965). *A behavioral theory of labor negotiations: An analysis of a social interaction system*. Cornell University Press.
- Wang, G., Van Iddekinge, C. H., Zhang, L., & Bishoff, J. (2019). Meta-analytic and primary investigations of the role of followers in ratings of leadership behavior in organizations. *Journal of Applied Psychology*, 104(1), 70-106. <https://doi.org/10.1037/apl0000345>
- Watson, J. B. (1913). Psychology as the behaviorist views it. *Psychological Review*, 20(2), 158-177. <https://doi.org/10.1037/h0074428>
- Watson, T. J. (2011). Ethnography, reality, and truth: the vital need for studies of ‘how things work’ in organizations and management. *Journal of Management studies*, 48(1), 202-217. <https://doi.org/10.1111/j.1467-6486.2010.00979.x>
- Weber, J. & Dastin, J. (July 26, 2016). The identity crisis that led to Yahoo’s demise. Reuters. <https://www.reuters.com/article/us-yahoo-m-a-missteps-analysis/the-identity-crisis-that-led-to-yahoos-demise-idUSKCN1060DN>
- Weeden, J., Abrams, M. J., Green, M. C., & Sabini, J. (2006). Do high-status people really have fewer children?. *Human Nature*, 17(4), 377-392. <https://doi.org/10.1007/s12110-006-1001-3>
- Weinberger, M., & Leskin, P. (2020). The rise and fall of Marissa Mayer, the once-beloved CEO of Yahoo now pursuing her own venture. *Business Insider*. <https://www.businessinsider.com/yahoo-marissa-mayer-rise-and-fall-2017-6?r=DE&IR=T>
- Weisfeld, G. E., Omark, D. R., & Cronin, C. L. (1980). A Longitudinal and Cross-Sectional Study of Dominance in Boys. In D. R. Omark, F. F. Strayer, & D. G. Freedman (Eds.), *Dominance Relations: An ethological view of human conflict and social interaction*. Garland.
- Weisman, O., Pelphrey, K. A., Leckman, J. F., Feldman, R., Lu, Y., Chong, A., Chen, Y., Monakhov, M., Chew, S. H., & Ebstein, R. P. (2015). The association between 2D: 4D ratio and cognitive empathy is contingent on a common polymorphism in the oxytocin receptor gene (OXTR rs53576). *Psychoneuroendocrinology*, 58, 23-32. <https://doi.org/10.1016/j.psyneuen.2015.04.007>
- Welborn, B. L., Papademetris, X., Reis, D. L., Rajeevan, N., Bloise, S. M., & Gray, J. R. (2009). Variation in orbitofrontal cortex volume: relation to sex, emotion regulation and affect. *Social Cognitive and Affective Neuroscience*, 4(4), 328-339. <https://doi.org/10.1093/scan/nsp028>
- Wells, R., Ford, E. W., Holt, M. L., McClure, J. A., & Ward, A. (2004). Tracing the evolution of pluralism in community-based coalitions. *Health Care Management Review*, 29(4), 329-343. <https://doi.org/10.1097/00004010-200410000-00009>
- Wendt, H., Euwema, M. C., & Van Emmerik, I. H. (2009). Leadership and team cohesiveness across cultures. *The Leadership Quarterly*, 20(3), 358-370. <https://doi.org/10.1016/j.leaqua.2009.03.005>
- Werner, P. D., & LaRussa, G. W. (1985). Persistence and change in sex-role stereotypes. *Sex Roles*, 12(9-10), 1089-1100. <https://doi.org/10.1007/BF00288107>
- Wharton, A. S. (1992). The social construction of gender and race in organizations: A social identity and group mobilization perspective. In P. S. Tolbert & S. Bacharach (Eds.), *Research in the sociology of organizations* (Vol. 10) (pp. 55-84). JAI Press.
- White, R. E., Thornhill, S., & Hampson, E. 2006. Entrepreneurs and evolutionary biology: The relationship between testosterone and new venture creation. *Organizational Behavior and Human Decision Processes*, 100(1), 21-34. <https://doi.org/10.1016/j.obhdp.2005.11.001>
- White, R. E., Thornhill, S., & Hampson, E. 2007. A biosocial model of entrepreneurship: The combined effects of nurture and nature. *Journal of Organizational Behavior*, 28(4), 451-466. <https://doi.org/10.1002/job.432>
- White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66(5), 297-333. <https://doi.org/10.1037/h0040934>
- Whitehead, L. (1979). Sex differences in children's responses to family stress: a re-evaluation. *Journal of Child Psychology and Psychiatry*, 20(3), 247-254. <https://doi.org/10.1111/j.1469-7610.1979.tb00508.x>
- Whiting, B. B., Edwards C. P., & Edwards, C. P. (1992). *Children of different worlds: The formation of social behavior*. Harvard University Press.
- Whittle, A. (2005). Preaching and practising ‘flexibility’: Implications for theories of subjectivity at work. *Human Relations*, 58(10), 1301-1322. <https://doi.org/10.1177/0018726705059859>
- Wilkinson, J., & Blackmore, J. (2008). Re-presenting women and leadership: a methodological journey. *International Journal of Qualitative Studies in Education*, 21(2), 123-136. <https://doi.org/10.1080/09518390701470669>
- Williams, G. C. (1966). Natural selection, the costs of reproduction, and a refinement of Lack's principle. *The American Naturalist*, 100(916), 687-690. <https://doi.org/10.1086/282461>
- Williams, G. C., & Mitton, J. B. (1973). Why reproduce sexually?. *Journal of Theoretical Biology*, 39(3), 545-554. [https://doi.org/10.1016/0022-5193\(73\)90067-2](https://doi.org/10.1016/0022-5193(73)90067-2)
- Williams, J. E., & Bennett, S. M. (1975). The definition of sex stereotypes via the adjective check list. *Sex Roles*, 1(4), 327-337. <https://doi.org/10.1007/BF00287224>
- Williams, J. E., & Best, D. L. (1990). *Sex and psyche: Gender and self viewed cross-culturally*. Sage Publications, Inc.

- Williams, M. J., & Tiedens, L. Z. (2016). The subtle suspension of backlash: A meta-analysis of penalties for women's implicit and explicit dominance behavior. *Psychological Bulletin*, *142*(2), 165-197. <https://doi.org/10.1037/bul0000039>
- Willingham, W., & Cole, N. (1997). *Gender and Fair Assessment*. Erlbaum.
- Wilson, D. W., & Kahn, A. (1975). Rewards, costs, and sex differences in helping behavior. *Psychological Reports*, *36*(1), 31-34. <https://doi.org/10.2466/pr0.1975.36.1.31>
- Wilson, G. D. (1983). Finger-length as an index of assertiveness in women. *Personality and Individual Differences*, *4*(1), 111-112. [https://doi.org/10.1016/0191-8869\(83\)90061-2](https://doi.org/10.1016/0191-8869(83)90061-2)
- Wilson, N., & Altanlar, A. (2009, September 22). *Director Characteristics, Gender balance and Insolvency Risk: An Empirical Study*. <http://dx.doi.org/10.2139/ssrn.1932107>
- Wolfram, H., Mohr, G., & Schyns, B. (2007). Professional respects for female and male leader: Influential gender-relevant factors. *Women in Management Review*, *22*(1), 19-32. <https://doi.org/10.1108/09649420710726201>
- Wood, W., & Eagly, A. H. (2002). A Crosscultural Analysis of the Behavior of Women and Men: Implications for the Origins of Sex Differences. *Psychological Bulletin*, *128*(5), 699-727. <https://doi.org/10.1037/0033-2909.128.5.699>
- Wood, W., & Eagly, A. H. (2012). Biosocial construction of sex differences and similarities in behavior. In J. M. Olson & M. P. Zanna (Eds.), *Advances in experimental social psychology* (Vol. 46) (pp. 55-123). Academic Press. <https://doi.org/10.1016/B978-0-12-394281-4.00002-7>
- Woodburn, J. (1982). Egalitarian Societies. *Man*, *17*(3), 431-451. <https://doi.org/10.2307/2801707>
- Woolard, K. A. (1997). Between friends: Gender, peer group structure, and bilingualism in urban Catalonia. *Language in Society*, *26*(4), 533-560. <https://doi.org/10.1017/S0047404500021047>
- Worley, C. G., & Lawler, E. E. (2010). Agility and organization design: A diagnostic framework. *Organizational Dynamics*, *39*(2), 194-204. <https://doi.org/10.1016/j.orgdyn.2010.01.006>
- Wrangham, R. W., Clark, A. P., & Isabirye-Basuta, G. (1992). Female social relationships and social organization of Kibale Forest chimpanzees. In T. Nishida, W. C. McGrew, P. Marler, M. Pickford, & F. B. M. de Waal (Eds.), *Topics in primatology: Human origins* (Vol. 1) (pp. 81-98). University of Tokyo Press.
- Xie, J. L., & Whyte, G. (1997). Gender differences among managers and nonmanagers: An analysis of assessment data. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, *14*(3), 340-353. <https://doi.org/10.1111/j.1936-4490.1997.tb00140.x>
- Xie, Z., Page, L., & Hardy, B. (2017). Investigating gender differences under time pressure in financial risk taking. *Frontiers in Behavioral Neuroscience*, *11*, 246. <https://doi.org/10.3389/fnbeh.2017.00246>
- Xu, W., & Leffler, A. (1992). Gender and race effects on occupational prestige, segregation, and earnings. *Gender & Society*, *6*(3), 376-392. <https://doi.org/10.1177/089124392006003003>
- Yaffe, T., & Kark, R. (2011). Leading by example: the case of leader OCB. *Journal of Applied Psychology*, *96*(4), 806-826. <https://doi.org/10.1037/a0022464>
- Yammarino, F. J., Dionne, S. D., Uk Chun, J. & Dansereau, F. (2005). Leadership and Levels of Analysis: A State-of-the-Science Review. *The Leadership Quarterly*, *16*(6), 879-919. <https://doi.org/10.1016/j.leaqua.2005.09.002>
- Yang, J., Zhang, S., Lou, Y., Long, Q., Liang, Y., Xie, S., & Yuan, J. (2018). The increased sex differences in susceptibility to emotional stimuli during adolescence: an event-related potential study. *Frontiers in Human Neuroscience*, *11*, 660. <https://doi.org/10.3389/fnhum.2017.00660>
- Yang, Y., Glenn, A. L., & Raine, A. (2008). Brain abnormalities in antisocial individuals: implications for the law. *Behavioral Sciences & the Law*, *26*(1), 65-83. <https://doi.org/10.1002/bsl.788>
- Yaxley, K. J., & Foley, R. A. (2019). Reconstructing the ancestral phenotypes of great apes and humans (Homininae) using subspecies-level phylogenies. *Biological Journal of the Linnean Society*, *128*(4), 1021-1038. <https://doi.org/10.1093/biolinnean/blz140>
- Yildirim, B. O., & Derksen, J. J. (2012). A review on the relationship between testosterone and the interpersonal/affective facet of psychopathy. *Psychiatry Research*, *197*(3), 181-198. <https://doi.org/10.1177/017084068901000204>
- Young, E. (1989). On the Naming of the Rose:* Interests and Multiple Meanings as Elements of Organizational Culture. *Organization Studies*, *10*(2), 187-206. <https://doi.org/10.1177/017084068901000204>
- Youssef, F. F., Bachew, R., Bissessar, S., Crockett, M. J., & Faber, N. S. (2018). Sex differences in the effects of acute stress on behavior in the ultimatum game. *Psychoneuroendocrinology*, *96*, 126-131. <https://doi.org/10.5465/amp.2012.0088>
- Yukl, G. (2002). *Leadership in organizations*. Prentice-Hall.
- Yukl, G. (2012). Effective leadership behavior: What we know and what questions need more attention. *Academy of Management Perspectives*, *26*(4), 66-85. <https://doi.org/10.5465/amp.2012.0088>
- Yukl, G. (2013). *Leadership in organizations* (8th ed.). Pearson Education India.
- Zaccaro, S. J. (2007). Trait-based perspectives of leadership. *American Psychologist*, *62*(1), 6-16. <https://doi.org/10.1037/0003-066X.62.1.6>
- Zaccaro, S. J., Kemp, C., & Bader, P. (2004). Leader traits and attributes. In J. Antonakis, A. T. Cianciolo, & R. J. Sternberg (Eds.), *The nature of leadership* (pp. 101-124). Sage.
- Zahn-Waxler, C., Radke-Yarrow, M., Wagner, E., & Chapman, M. (1992). Development of concern for others. *Developmental Psychology*, *28*(1), 126-136. <https://doi.org/10.1037/0012-1649.28.1.126>

- Zahn-Waxler, C., Robinson, J. L., & Emde, R. N. (1992). The development of empathy in twins. *Developmental Psychology*, 28(6), 1038-1047. <https://doi.org/10.1037/0012-1649.28.6.1038>
- Zaki, J., & Ochsner, K. N. (2012). The neuroscience of empathy: progress, pitfalls and promise. *Nature neuroscience*, 15(5), 675-680. <https://doi.org/10.1038/nn.3085>
- Zanna, M. P., & Pack, S. J. (1975). On the self-fulfilling nature of apparent sex differences in behavior. *Journal of Experimental Social Psychology*, 11(6), 583-591. [https://doi.org/10.1016/0022-1031\(75\)90009-8](https://doi.org/10.1016/0022-1031(75)90009-8)
- Zenger, J. & Folkman, J. (2012, 15. März). Are women better leaders than men? *Harvard Business Review*. <https://hbr.org/2012/03/a-study-in-leadership-women-do>
- Zhang, Z., Zyphur, M. J., Narayanan, J., Arvey, R. D., Chaturvedi, S., Avolio, B. J., ... & Larsson, G. (2009). The genetic basis of entrepreneurship: Effects of gender and personality. *Organizational Behavior and Human Decision Processes*, 110(2), 93-107. <https://doi.org/10.1016/j.obhdp.2009.07.002>
- Zhou, W. X., Sornette, D., Hill, R. A., & Dunbar, R. I. (2005). Discrete hierarchical organization of social group sizes. *Proceedings of the Royal Society B: Biological Sciences*, 272(1561), 439-444. <https://doi.org/10.1098/rspb.2004.2970>
- Zickar, M. J., & Carter, N. T. (2010). Reconnecting with the spirit of workplace ethnography: A historical review. *Organizational Research Methods*, 13(2), 304-319. <https://doi.org/10.1177/1094428109338070>
- Zitek, E. M., & Tiedens, L. Z. (2012). The fluency of social hierarchy: the ease with which hierarchical relationships are seen, remembered, learned, and liked. *Journal of Personality and Social Psychology*, 102(1), 98-115. <https://doi.org/10.1037/a0025345>
- Zuckerman, H., & Cole, J. R. (1975). Women in American science. *Minerva*, 13(1), 82-102. <https://doi.org/10.1007/BF01096243>
- Zyphur, M. J., Narayanan, J., Koh, G., & Koh, D. (2009). Testosterone–status mismatch lowers collective efficacy in groups: Evidence from a slope-as-predictor multilevel structural equation model. *Organizational Behavior and Human Decision Processes*, 110(2), 70-79. <https://doi.org/10.1016/j.obhdp.2009.05.004>

APPENDIX

Filiale 1, Tag 1

Die erste Filiale meiner Untersuchung befindet sich in [*]. Man sagte mir, ich solle um 9:00 Uhr dort sein. Ich erreichte die Filiale pünktlich um 9:00 Uhr. Tatsächlich stellte ich fest, dass ich dort bereits einmal gewesen war. Die Filiale wirkte von außen sehr groß. Ich betrat die Filiale und beschloss einen der Mitarbeiter anzusprechen um herauszufinden bei wem ich mich melden muss. Eine junge Frau in [*] Uniform ging vor der Theke entlang, an der bereits einige Gäste standen um Essen zu bestellen. Ich sagte ihr ich seit dort um ein Praktikum zu beginnen worauf hin sie sagte, sie würde einem Manager Bescheid sagen. Als ein Mann hinter der Theke auftauchte, von dem ich vermutete, dass er der genannte Manager sei, lächelte ich ihn an, woraufhin er mich sehr freundlich zurück anlächelte. Ein weiterer Mitarbeiter hinter der Theke zwinkerte mir aufmunternd zu, nachdem er erkannt hatte, dass ich ein neuer Mitarbeiter bin. Der Manager kam vor die Theke um mich abzuholen und führte mich in die Räumlichkeiten, die dem Gast normalerweise nicht zugänglich sind. Er stellte sich mit seinem Vornamen vor, J. Er führte mich durch die Küche und durch einen Flur durch eine Tür in eine Art Aufenthaltsraum. Dort nahmen er mir die Unterlagen ab, die ich für mein Praktikum mitgebracht hatte: den Praktikumsvertrag und die Gesundheitsbelehrung. Zugleich begann er meine Kleidergröße zu schätzen, um nach geeigneter Arbeitskleidung für mich zu suchen. Ich wunderte mich da man bereits in der Verwaltung nach meiner Kleidergröße gefragt hatte und ich davon ausging, dass Kleidung in der richtigen Größe bereits bereit läge. In dem Aufenthaltsraum befand sich noch eine Frau, eine weitere Mitarbeiterin, die gerade [*] Frühstücksprodukte konsumierte. Während ich kurzzeitig mit ihr alleine war, fragte sie mich, ob ich eine neue Mitarbeiterin sei. Ich antwortete, dass ich für ein kurzes Praktikum in der Filiale sei. Ich sagte ihr auch, dass ich ein wenig nervös sei und Angst davor hätte zu viele Fehler zu machen. Sie lächelte aufmunternd und sagte in einem Befehlston der offensichtlich als Spaß gedacht war: „mach dir keine Sorgen!“. Außerdem erwähnte sie, dass in dieser Filiale häufig Praktikanten seien und diese Filiale wie eine Art „Trainingsplatz“ gehandelt wäre. Praktikanten sind in dieser Filiale offensichtlich keine Seltenheit. Dies wurde mir auch im weiteren Verlauf des Tages bestätigt, als Herr Kovac, Der Restaurantleiter, erzählte, dass am Ende der Woche noch zwei weitere Praktikanten ihren Dienst in dieser Filiale aufnehmen würden (Nachtrag: Damit meinte er dann glaube ich doch „nur“ die beiden Frauen der Verwaltung, siehe Tag 4). Als J. mit der versprochenen Kleidung zurückkehrte, war die Mitarbeiterin bereits wieder zurück an ihren Dienst gegangen, so dass wir alleine waren. J. sagte, er würde mir gleich zeigen wo ich mich umziehen könnte, ich solle aber keine Wertsachen in der Umkleide lassen, sondern sie ihm geben, damit er sie sicher verstauen könne. Ich fragte neugierig: wieso nicht? Seine Antwort lautete: „weil ich es sage.“ Obwohl er dabei lachte, empfand ich die Aussage als relativ harsch. Ich hatte das Gefühl, dass er nicht aussprechen wollte, dass bereits Wertsachen in der Umkleide gestohlen worden sind. Stattdessen erzählte er etwas davon, dass Sachen auch schon mal weggeschmissen worden seien. Ich beließ es dabei und folgte J. eine Treppe hinunter in einen Keller. Während wir die Treppe hinunter gingen, fragte mich J., ob ich rauchen würde. Ich beschloss mich als Raucherin auszugeben, da sich so vermutlich Gelegenheiten ergeben würden, mit Leuten informelle Gespräche zu führen oder mir Notizen zu machen. Als ich bejahte, ließ seine Reaktion darauf schließen, dass dies die Antwort gewesen war, die er erhofft hatte. Offensichtlich ist ein Großteil der Mitarbeiter in der Filiale Raucher (zu meiner Überraschung fand ich später heraus, dass es doch einige Mitarbeiter gibt, die nicht rauchen, wie z.B. Herr Kovac, S., der nette T., K., Frau C., so dass es sich wohl doch eher darauf bezog, dass auch in der Filiale wie im „wahren“ Leben die Raucher und die Nichtrauchergruppen formieren, so dass J. froh war, dass ich zu ‚seiner‘ Gruppe gehörte). Ebenso wie der Aufenthaltsraum war der Keller rein funktional, eher ungemütlich und nicht

zum längeren Aufenthalt eingerichtet. J. führte mich zu einer Damenumkleide, wo ich mich umziehen sollte. Er sagte, ich solle mich umziehen und danach zu ihm kommen, er würde mir dann erste Aufgaben geben. Nachdem ich meine Arbeitsuniform angezogen hatte, in der ich mich erstaunlicherweise recht wohl fühlte, suchte ich meinen Weg zurück in das Erdgeschoss der Filiale. Bereits unterwegs merkte ich, dass ich nicht genau wusste wo ich hingehen musste. Somit ging ich durch die nächstbeste Tür, die ich nicht zuordnen konnte. Zufällig hatte ich einen Volltreffer gelandet, ich betrat nämlich eine Art Lieferraum, indem palettenweise [*] gestapelt waren, und in dem J. und die Mitarbeiterin aus dem Aufenthaltsraum gerade rauchten. Ich wurde gefragt, ob ich auch eine Zigarette rauchen möchte. Ich bejahte unter der Prämisse, dass man mir dafür eine Zigarette borgen müsse, da ich meine nicht dabei hätte. Ich erhielt eine Zigarette, die ich anzündete, und unterhielt mich mit J. und der Frau aus dem Aufenthaltsraum. Ich erfuhr, dass J. der Schichtführer in der Filiale war und bereits seit fünfeneinhalb Jahren dort arbeitete. Auch die Frau aus dem Aufenthaltsraum war schon seit mehreren Jahren Angestellte in der Filiale. Ich wurde gefragt, ob ich Deutsche sei. Da ich bereits an den Akzenten der Mitarbeiter hören konnte, dass die meisten derer, die ich bisher getroffen hatte, einen Migrationshintergrund haben, beschlich mich das Gefühl es sei besser mir die Tatsache zu Nutze zu machen, dass ich keine reine Deutsche bin, da meine Mutter Ungarin ist. J. sagte, er sei Grieche und auch, dass er, könne er im Ausland genauso viel Geld verdienen, er nicht länger in Deutschland bleiben würde. Außerdem machte er Bemerkungen, die so wirkten, als sei GOFFCO nur ein X beliebiges Unternehmen für ihn. Des Weiteren erfuhr ich, dass J. 20 km von der Filiale entfernt wohnte und somit eine verhältnismäßig lange Anfahrt täglich in Kauf nahm. Direkt nachdem die letzte Zigarette, nämlich meine, ausgemacht worden war, führte mich J. zurück in den Küchenbereich. Auf uns zu kam gerade ein Herr, den J. freundlich aber nicht schleimig begrüßte und mit „Chef“ ansprach. Somit konnte ich nun schließen, dass es sich bei dem Herrn um den Filialeiter handelte, nämlich Herrn Kovac. Er streckte mir auch sogleich die Hand hin, die ich nahm und schüttelte. Ich sagte „Hallo, ich bin Regina Palmer. Ich mache jetzt hier das Praktikum.“ Herr Kovac antwortete „ich weiß.“, was mich überraschte. Überhaupt wunderte ich mich ihn bereits anzutreffen, da er laut Dienstplan, der mir vorliegt, wusste, dass seine Schicht eigentlich erst um 12:00 Uhr mittags beginnen sollte. Auch wunderte ich mich darüber, dass er anscheinend sofort wusste wer ich war. Bisher hatte ich eigentlich eher das Gefühl gehabt (durch die nicht vorhandene Kleidung, den nicht vorhandenen vorherigen Kontakt, etc.), dass man sich nicht besonders auf mich ‚freute‘. J. führte mich aber bereits weiter um mir zunächst einmal zu zeigen wo und wie ich mir die Hände zu waschen hatte. Während ich das tat, verschwand J. wieder, so dass ich kurzzeitig etwas verloren vor dem Damenklo stand und nicht wusste, was ich tun sollte. J. entdeckte mich kurze Zeit darauf in meiner Hilflosigkeit und gab mir die Aufgabe nach vorne in den Kassenbereich zu gehen, wo die Kunden ihre Bestellungen aufgeben. Ich hatte eigentlich gehofft, nicht sofort mit den Kunden in Kontakt kommen zu müssen, da die anfängliche Hilflosigkeit bei einer neuen Tätigkeit noch unangenehmer wird (zumindest in meinen Augen) wenn es vor den Augen ungeduldiger Kunden passiert. Ich bekam den Auftrag zuzuschauen, was meine Kollegen dort vorne taten. Ich stellte mich an die erstbeste Kasse, an der eine junge Frau (vielleicht etwas älter als ich) routiniert die Kunden bediente. Dabei kam ich mir jedoch ziemlich nutzlos vor, da sie so schnell in die Kasse tippte, dass ich gar nicht erkennen konnte, was sie eigentlich angetippt hatte und was dies für Konsequenzen hatte. Nachdem sie einige Kunden bedient hatte nahm sie sich auf liebenswürdige Art meiner an. Sie drehte sich zu mir, gab mir die Hand, und stellte sich als Alicia vor. Daraufhin fing sie an mir zu erklären welche Produkte es bei GOFFCO gibt und wann ich welche Tasten zu betätigen hatte. Dabei ließ sie den ein oder anderen Kunden auch mal ein paar Sekunden warten, aber nie solange, dass es als unhöflich empfunden wurde. Im Gegenteil, die meisten Kunden die bemerkten, dass ich mich in einer Einweisung befand, lächelten mir aufmunternd zu. Ein Kunde, dem

CASE 1: VIKTOR KOVAC'S FLAGSHIP STORE

The store leader of the first store was Viktor Kovac. Kovac was born and raised in Croatia, where he studied a business-related subject. At the time of the study he was 38 years old. He was married with children and had been leading the store for four years. His employees were very fond of him and told me that he was doing a very good job as restaurant manager.

The Kovac's store is labelled as the "Flagship Store" in the study, because it was the largest of the four stores included in the study (0.1062; 0.267) and used as model store by the GOFFCO Germany headquarters. Whenever the headquarters expected visitors, who were supposed to see the GOFFCO operations, they brought them to Kovac's store. Furthermore, the store was described as "training center" for interns and other GOFFCO employees (0.275; 0.276; 0.277; 0.429). A second reason for the store being labeled as "Flagship Store" was its outstanding overall performance – at the time of the research the store had had a top position for at least two years in the GOFFCO store ranking (0.1040). Kovac was well aware of the store's outstanding position and his share in the store's success. His every action as a store manager aimed at keeping the store's top position.

KOVAC'S LEADER BEHAVIOR

In comparison with the other store leaders observed in this field study, Kovac was the one with the most distinctive leadership style. This leadership style comprised almost exclusively male strategies to establish and maintain a dominance hierarchy. More than every second of his codings represent a form of dominance behavior.

DOMINANCE BEHAVIOR

Emphasizing rank. Kovac emphasized the formal hierarchy in the store and at GOFFCO by openly accepting the authority of the headquarters and his direct superior, the district manager, as well as by highlighting his own position within the store. For example, his acceptance of the overall hierarchical structure and his own position within it became visible to me when he referred to the district manager as "boss" during his absence:

I noticed that in front of the cash registers, or more on top of the cash registers, there were boxes of... [a certain GOFFCO dessert]... Apparently there was a promotion... [for this particular dessert]. On the one hand, I understood the idea of trying to discreetly suggest to the customers ... that they could order... [that dessert] with their meal, but at the same time I thought that the boxes [made the counter] look a bit untidy, the way they were lying there, and that somehow that didn't quite fit the store. I asked Mr. Kovac whose idea it had been to put the boxes ... there. Mr. Kovac replied that it was the "boss's" idea, i.e. Mr. P.'s idea. (1.322)

Both the fact that Kovac referred to the district manager as "boss" and that he eagerly complied with Mr. P.'s suggestion to display the cardboard boxes of the specific GOFFCO dessert demonstrate that Kovac accepted his superiors' authority and the overall hierarchy at GOFFCO. Similarly, he once told me while reading his e-mails on the computer screen that e-mail from the headquarters office were "very important" and that "they ... [had] to be read" (1.327).

When talking to his employees, however, Kovac left no doubt about his supremacy. For instance, when he treated a couple of customers to a complimentary meal, he told the cashier to "charge it on *the boss's account*" (1.338). Instead of directing her to charge it on his (i.e., "my") account, he used *illeism* to emphasize his rank in the store hierarchy in front of both the employee and the guests he was inviting.

Kovac sometimes struggled with emphasizing the shift supervisors' authority in front of the employees. It happened twice that I asked him what task I was supposed to execute next and he sent me to ask

However, exactly like Velitchkov, she granted me one hour only and cut our conversation off afterwards.

After about an hour, at 1:30 p.m., she suddenly broke off the conversation with the words "well, let's get on with it". She was about to get up from her chair. But then she asked me about my shift schedule for this week She said that we would have time to talk again on Friday then, but added "in case you have any questions left". I mentioned again that I would be interested to hear what her background was like. (3.186)

During the hour she granted me before abruptly ending the meeting, I had asked her about her vita at GOFFCO and in becoming a store leader. She had not answered that question by the end of that hour. Despite my repeated attempt to obtain that information from her, she put me off until Friday. Since it was, putting me off until Friday felt like Solberg trying to adjourn a second meeting with me for as long as possible. When it became Friday, Solberg never sought me out in order to keep her promise.

VELITCHKOV'S FEMALE STRATEGIES

INTIMACY

Emphasizing equality. Solberg had her employees and shift supervisors address her on a formal basis (3.20), which rather highlights social distance between individuals than equality. However, Solberg's restrained demeanor and unobtrusive way of helping out during rush hours made her appear as one of the regular employees instead of the leader of the store. Hence, her behavior diminished the gap between her position and her subordinates' positions. Additionally, Solberg was the only store leader I encountered, who worked night shifts (3.77). Especially when alternating between night shifts and day shifts, workers are physically and mentally challenged by night shifts (3.222). For store leaders, working the night shift was even more impractical since they needed to be in contact with the headquarters, suppliers, craftsmen, etc. during the day (3.221). By working the night shift despite those disadvantages, Solberg enforced equality between herself and her subordinates.

Intimate information exchange. Intimate information exchange often occurs in dyadic interactions. Due to the lower traffic in the City Center Store as compared to the GOFF Corp stores, Solberg's general reluctance to expose herself in visible positions, and her shift schedule, which only marginally overlapped with mine, opportunities to observe what she was doing were limited. Nevertheless, I saw her talking to one or more employees more often than Kovac and Velitchkov (e. g., 3.189; 3.263). Although I usually did not hear what those conversations were about, other incidents indicated that they were probably not merely work-related, but also broached small talk topics and personal information.

Due to her excessive distrust towards me and her tendency to avoid me, I had expected Solberg to not share any personal information whatsoever with me. However, she did share personal information as well as expressed interest in personal information about me. Furthermore, she remembered personal information and picked it up during subsequent conversations. For example, I had told her once which one of GOFFCO's recurring promotion campaigns was my favorite. The next afternoon, she came to the service area where I was working as cashier. She brought a GOFFCO prospect for store leaders and pointed out to me that the respective promotion campaign was about to take place again (3.204; 3.205). In the meeting we had about her job as store leader, Solberg and I drifted off to non-work-related topics several times. She had just told me that as a GOFFCO store leader she had been invited to go to a global meeting in Dubai, which triggered her to share more intimate information:

On the subject of Dubai, Ms. Solberg said that she had been happy when she got off the plane as soon as it landed in Dubai and that the distance to Thailand, where her parents used to go on a regular basis, would be twice as long and much too far for her. Since I am a bit afraid of flying, I

SOCIAL STRUCTURE IN THE FAMILY STORE

The social structure that I observed in the Family Store during my stay was neither a stable dominance hierarchy as the one in the Flagship Store, nor an egalitarian community. In fact, intimacy and nurturing behaviors were less common than in all other stores. Although there were signs of typical dominance behavior and coalition building, the store was also characterized by open conflicts, ineffective cooperation, and acts of counter dominance that prevent the store from developing a cohesive coalition with a clear dominant hierarchy.

DOMINANCE BEHAVIOR

Emphasizing rank. The hierarchy in the Family Store was shaky and far from the invulnerableness of the hierarchy in the Flagship Store. Employees and supervisors demonstrated acts of counter dominance and challenged the authority of their superiors. In fact, dominance interactions including counter dominance were more frequent in the Family Store than in any of the other stores. After Velitchkov had openly criticized D., the aspiring shift supervisor, for not operating the frying station properly (2.136), D. sought me out to complain about the store leader:

Not long after Mrs. Velitchkov had spoken so rudely to D., I was standing at the release station and D., ... told me that Mrs. Velitchkov was in a very good mood He said this ironically. I replied, "this morning, Mrs. Velitchkov had really been in a pretty good mood". To which he said, "she is always in a good mood in the morning. There's nothing going on yet then". To which I asked, "she is not very stress-resistant, is she?". And D. replied: "no wonder, when you have 15 people walk all over you". I asked for more details and D. explained that one could see here that Mrs. Velitchkov's instructions were not carried out. He pointed out that the instruction had just come from her that empty drawers (in the warming station for... meat) should not be left in their place but be put away. Apparently, this had not been done. It was the same with Mrs. Velitchkov 's instruction to produce according to screen. (2.138)

D. described how people in the store deliberately ignored her instructions as acts of counter dominance. Workers disregarded her instructions on purpose and did not submit to her instructions. Although D.'s statements might have been biased by his unpleasant encounter with Velitchkov earlier, Velitchkov's own account of employee behavior, which she gave me several days later, was congruent with D.'s assessment:

I asked her what had happened, as she did not seem satisfied. Mrs. Velitchkov explained that she was bothered by the fact that the kitchen staff were not doing certain things, or were not doing them properly, although she had explained often enough how to do it correctly. I asked what kind of things she was talking about. She said that some of them were just little things, but they were many and she was annoyed that they happened despite her instructions. I asked her again to be more precise and she mentioned the frying station as an example, which a staff member who has been here for a long time should know by heart. Apparently, the reason was that there were either fries missing or too many fries that had to be thrown away... Then she also told me that she was annoyed about W., because he was walking around all day and wasn't where he was needed, namely at the trays [to distribute orders], as she confirmed on my request. (2.249)

As D., Velitchkov described that employees in the store were not following her directives. Other than D., she interpreted employees' behavior as incompetence rather than counter dominance. However, in informal conversations during food and cigarette breaks, employees' accounts implied that they were dissatisfied with Velitchkov as store leader.

I also wanted to ask about Mrs. Velitchkov. I started this by asking about her predecessor When Me. mentioned him, she looked a little longingly into the distance and praised him, at my request, as a good boss. I tried to ask as casually as possible whether she considered Mrs. Velitchkov as a good boss, too. Then Me. said "yes", but her voice lacked conviction, as if she felt she had to say

Although K. had at first implied that A. might leave early in case they could manage without him at 6 pm, he later seemingly decided that A. could not leave early, because he assumed that there would be too much traffic at that time of day. A.'s reaction was remarkable. Instead of complaining about K. not letting him go home early, he explained to me calmly that it was just not possible for him to leave, because his help was needed. A. demonstrated coalitional thinking by taking the perspective of the store leaders and adapting it as his own.

Conflict avoidance. Personal conflicts were not common in the store. I never observed people arguing or making negative comments about others. During critical incidents, when people accidentally or deliberately misbehaved there was no escalation of the conflicts. When people commented on misbehaviors, the person criticized either apologized or stopped the misbehavior without any further comment, which usually terminated the looming dispute.

INTIMACY STRUCTURES IN THE HIGHWAY STORE

Emphasizing equality. Equality between staff members of the Highway Store was promoted by both shift supervisors and employees. In particular, they ensured that tasks were distributed evenly among the employees, especially the less popular ones, and joked with each other within and across hierarchical position.

Shift supervisor B. once explicitly demonstrated that it was important to him that all employees in the store were treated equally:

Once B. also came to us behind the service counter and asked us... whether one of us would voluntarily go to do the lobby. A tall girl I had met in the break room immediately said that she would do it. She left and B. explained to me that he didn't always want the same staff member (before that it had always been the same...) to go to the lobby. (4.158)

B. had realized that it had always been the same employee, who went to clean the lobby, although all people at the service counter were equally responsible to keep it clean. He came to the service counter and by asking whether one of the employees there would clean the lobby voluntarily. That way he raised awareness for the necessity to clean the lobby and demonstrated that if no one went to clean the lobby voluntarily he would assign the task to someone based on his superior position. At the same time, by explicitly asking for someone who did it "voluntarily", he subtly criticized that most of the workers had not executed that task voluntarily before. Although B. alluded to his superiority, he made no use of his authority and hence did not highlight the gap between his position and his subordinates' position. That way he enforced equality between staff members and at the same time did not highlight any inequality between him and the regular employees.

The employee's immediate willingness to volunteer in that example indicated that the inequality that had developed with respect to cleaning the lobby had not been consciously intended by the employees. Other incidents confirmed that impression. For example, after mentioning to an employee that to my frustration the tray carts that I had just finished cleaning were once again almost full, he interpreted my comment as a demand for him to clean the lobby.

I said to E., after I had finished a long tour of the lobby, that the tray carts were already quite full again. He said something like that I could do that or asked if I wanted to do it. I said "nope" and that I had been working in the lobby for an hour before. He seemed to take this the wrong way, ... and he said that he would do that all the time. (4.94)

E. emphasized that he cleaned the lobby "all the time", so that I could not base my alleged demand on any inequality between the two of us. Since he had cleaned the lobby at least as many times and for as long as I, he felt it was not his turn to clean it now.