



Metis

Study

Science fiction and foresight

No. 14 | October 2019

The views expressed in Metis Studies are those of the authors. They do not reflect the opinion of the Bundeswehr, the Federal Ministry of Defence, or the Bundeswehr University Munich. The primary target audience of Metis Studies are practitioners. Metis Studies are based on analyses of scholarly literature, reports, press articles and expert interviews with academics, think tank analysts and policy-makers. References are omitted. Inquiries about sources can be directed at the author(s) via email.

Institute for
Strategy & Foresight

Summary

Science fiction can be an important source of inspiration in the context of strategic foresight and a tool to prepare for what could – or should – lie ahead. In this study, a brief examination

of this connection will be followed by a closer look at the genre of science fiction and a number of specific examples before concluding with four recommended readings.

Dealing with uncertainty

The end of the East-West conflict, the 9/11 attacks, the election of Donald Trump and the result of the Brexit referendum – recent history is full of dramatic events that people just did not see coming at the time. The reasons may vary, from political scientists lacking the necessary theoretical perspective (as in the case of the sudden end of the East-West conflict) to opinion polls failing to reflect the views of the public (the Trump election and the Brexit referendum) and security agencies simply being unable to imagine that anyone would fly a passenger airplane into a skyscraper as a form of terrorist attack.

Tom Clancy had actually predicted the latter in his 1994 novel *Debt of Honour*, although this fictional attack was directed against the United States Capitol. It is thus not surprising that, since 9/11, US security agencies have increasingly approached fiction authors, especially those that deal in future-oriented science fiction.¹ In July 2019, the French armed forces also announced their intention to form a *Red Team* of four or five science fiction authors in order to explore scenarios regarding future threats to national security.

This study will identify the role that science fiction² may play in the context of strategic foresight before using

a range of examples to explain the different types of science fiction. It concludes with four recommended readings that are relevant to security policy.

Strategic foresight and science fiction

In an increasingly complex world, in which old certainties are unsettled, in which existing agreements and treaties are questioned and a new order is yet to be defined, basing decisions and actions on foresight becomes particularly important. In other words, a clear idea of what the future holds, of what can be expected and achieved, is essential for developing a strategic foresight capability. Otherwise, viable political objectives and priorities cannot be stipulated.

Against this background, strategic foresight attempts to facilitate a systematic approach to uncertainty, using various methods such as analyses of trends and scenarios. With an eye towards decisions that will have to be made in the future, assumptions are challenged, chances and risks are anticipated and weighed, and research objectives are determined.

But while extrapolating broad trend lines is helpful, it can also be misleading. In the 1960s, nuclear-powered cars were predicted, while forecasts in the 1970s saw cities emptied by mass migration to rural areas. In our volatile world, in which extreme and unexpected edge cases become ever more frequent and significant, conventional

¹ Some companies, especially in the technology sector, where innovation is particularly valued, have been doing this for years as well. Intel, IBM, Microsoft, Google and Apple, for example, employ their own in-house futurists.

² The study covers the entire spectrum of media used in the genre.

Unless otherwise specified, however, any titles mentioned refer to books.



instruments and powers of imagination can sometimes fall short. This is where science fiction can serve as a source of inspiration and a tool for thought experiments to prepare for what could – or should – lie ahead.

Anticipating and shaping the future

Unlike any other genre, science fiction provides a safe opportunity for the creative exploration of possible future scenarios and for anticipating future developments. The list of examples of visionary science fiction is long. Jules Verne already anticipated space travel in *From the Earth to the Moon* in the 19th century, while H. G. Wells predicted the nuclear bomb in *The World Set Free* in 1914. Stanislaw Lem predicted nanotechnology and virtual reality in *Summa technologiae* in 1964, and William Gibson envisioned cyberspace in *Burning Chrome* in 1982 and in *Neuromancer* in 1984. Isaac Asimov already devised the Three Laws of Robotics, frequently mentioned in current discussions of robotics and artificial intelligence, in 1942 – only to note their ambiguity already at the time.

The list of developments predicted in science fiction which did *not* materialise, however, is probably much longer. That is because the future is not just anticipated but also constantly being shaped. Only those visions that come true become predictions in hindsight.

Science fiction can thus also be instrumental in developing future scenarios that are then actively pursued. The ideas of science fiction effect the future they describe. They provide inspiration, impulses, sometimes even road maps for people and societies to (more or less deliberately) follow (more or less directly) on the path toward the future. Examples often cited in support of this theory include the US Strategic Defense Initiative (SDI)³ of the 1980s, aptly nicknamed *Star*



Fig. 1 "The future is already here – it's just not evenly distributed." – William Gibson

Wars and largely based on wishful thinking, the flip phone inspired by the *Star Trek* communicator, and the Apple iPad, which may have been modelled on a prop in Stanley Kubrick's *2001: A Space Odyssey*. People are already trying to dazzle facial recognition systems with clothing and accessories in an attempt to restore privacy in public spaces under constant surveillance. Should these efforts be ramped up, the scramble suit as featured in Philip K. Dick's *A Scanner Darkly* will likely be added to this list.

The utopias described in science fiction serve to inspire not just technological achievements but especially the pursuit of better systems of economy, politics and

³ The SDI was initiated by US President Ronald Reagan as a shield against intercontinental ballistic missiles and included space-based systems.



(Source: Andy Kelly on Unsplash)

society. One of the most popular examples is the *Star Trek* universe. In this version of the future, material hardship and disease have largely been overcome. Money is a thing of the past; humankind is peaceful and rational; society is secular, tolerant and pluralistic. Humanity as a whole is devoted to self-improvement. Any problems or dangers usually come from outside.

Science fiction can also show us a future to be avoided, however. Dystopias urge us to recognise and avert disaster, from nuclear Armageddon (*On the Beach*, *A Canticle for Leibowitz*) to totalitarianism (*Fahrenheit 451*, *1984*, *Brave New World*, *The Handmaid's Tale*). The

dystopian concept of losing control over advanced machines and artificial intelligence, as famously popularised by the *Terminator* films, is more relevant than ever. Finally, in climate fiction, climate change has become the subject of its own dystopian sub-genre.⁴

Science fiction always reflects the current zeitgeist. What is considered dystopian or utopian is thus subject to change. When radioactivity entered the zeitgeist at the turn of the last century, it was associated with a future that “radiated” hope and promised medical and technological miracles. Today, however, any mention of radioactivity is more likely to evoke fear and images of reactor accidents or nuclear war.

The level of actual science in a work of science fiction determines its place in a genre without sharp delineations. The *Star Wars* universe, for example, with its fantastical and quasi-magical elements, belongs more in the fantasy genre than in science fiction, while the *Star Trek* universe, which adheres much more closely to the laws of physics, is once again a more straightforward example of science fiction. Jules Verne already pondered the issue of genre, claiming to be bound by the laws of physics and technical feasibility. He accused fellow author H. G. Wells of dealing merely in fantasy and thus not being a writer of true science fiction at all.

Today, the lack of sharp delineations notwithstanding, it is common to distinguish between hard and soft science fiction in that sense. Hard science fiction has a strong focus on

natural science and technology and aims to root stories in a scientifically sound basis. Liu Cixin’s *The Three-Body Problem* is a relevant example of the genre. Soft science fiction, on the other hand, focuses more on matters of philosophy or social science and considers science and technology to be secondary, as evident in Frank Herbert’s *Dune* series, for example.

⁴ See “Inhospitable – A Short Story”, Metis Study No. 11 (May 2019).



Recommended reading

(1) "Ghost Fleet"

Novel by P.W. Singer and August Cole⁵

Within the genre of hard science fiction, the novel *Ghost Fleet* takes the form of the techno-thriller to its extreme by including a catalogue of endnotes to underpin its dramatic extrapolation of documented current research and developments in military technology. Featuring several protagonists, *Ghost Fleet* portrays the events of a fictional third world war between China and the US. The story begins with China launching a massive cyberattack against the United States, crippling many technologically sophisticated systems, including the F-35 Lightning jets, the supply chain of which had previously been compromised with infected microchips. Important elements in *Ghost Fleet* include fully autonomous weapon systems, robots, anti-satellite weapons, railguns and 3D-printing technology. In 2009, one of the novel's authors, Peter W. Singer, had published the bestselling *Wired for War*, the most important popular-science book on robotics in the military. In the US, he is considered a distinguished forward thinker on the nexus between society, technology and warfare in the 21st century.

(2) "The Red Trilogy"

Novel series by Linda Nagata⁶

The series belongs to the hard science fiction genre but contains many elements of a techno-thriller, particularly its focus on military technology and action sequences. Protagonist Lieutenant James Shelley has a seemingly inexplicable sixth sense for imminent danger. He commands a US specialised unit that operates in a conflict in the Sahel. The members of his unit are permanently interfaced with each other and with a remote system that escorts them with a drone and commands and controls them from afar. Their futuristic equipment includes brain-computer interfaces and exoskeletons with automatic target acquisition systems. The universe of *The Red* is also populated

by profiteering defence companies, corrupt politicians, a media landscape in which the line between facts and propaganda is blurred, and an out-of-control artificial intelligence.

(3) "Mad Scientist Laboratory"

Web resource of the US Army⁷

The US Army considers its *Mad Scientist Laboratory* blog an initiative through which it "shapes future multi-domain (i.e., Land, Air, Sea, Cyber and Space) operations in its role as a thought leader in the future of warfare.". The website serves as an interface between academia, industry and government. The texts published on the blog range from science fiction short stories and essays to excerpts from conference reports. A monthly post titled *The Queue* lists relevant new articles, books, podcasts, videos and films. The multimedia section of the site includes videos of lectures and talks.

(4) "War Stars"

Treatise on US military history and culture by H. Bruce Franklin⁸

War Stars is an interdisciplinary scientific examination on the concept of "the superweapon" in American military history and culture. Over five chapters, the book examines the fascination with the idea of superweapons through the centuries. It traces its evolution from the first submarines of the 18th century to the industrialisation of warfare, the invention of air warfare and the SDI to the nuclear superweapons of the 20th and 21st centuries. The author, cultural scientist H. Bruce Franklin (professor emeritus, Rutgers University in Newark, New Jersey), has always had a research interest in science fiction. *War Stars* was also informed by Franklin's time spent serving in the US Air Force in the 1950s, including a posting at the Strategic Air Command, which at the time was responsible for intercontinental ballistic missiles and nuclear-armed bombers. 🐛

⁵ Peter W. Singer/August Cole 2015: *Ghost Fleet*. A Novel of the Next World War. Eamon Dolan/Mariner.

⁶ Nagata, Linda (2015): *The Red: First Light (#1), The Trials (#2), Going Dark (#3)*. Gallery/Saga Press.

⁷ URL: <https://madsciblog.tradoc.army.mil/>; 28 Oct 2019.

⁸ Franklin, H. Bruce (2008 [1988]): *War Stars: The Superweapon and the American Imagination*. University of Massachusetts Press.

IMPRINT**Publisher**

Metis Institute
for Strategy and Foresight
Bundeswehr University Munich
metis.unibw.de

Author

Dr. Frank Sauer
metis@unibw.de

Creative Director

Christoph Ph. Nick, M.A.
c-studios.net

Cover image

Joshua Sortino auf Unsplash

Original title

Science Fiction und Vorausschau

Translation

Federal Office of Languages

ISSN-2627-0609

This work is licensed under the Creative Commons
Attribution 4.0 International License.

