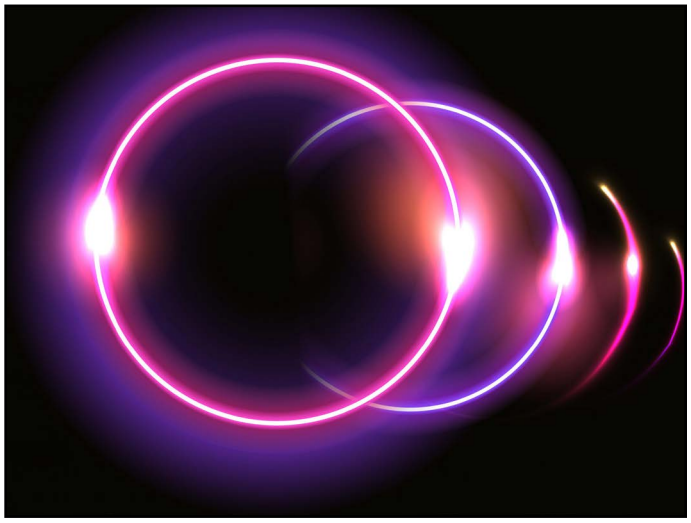
Center for Science and the Imagination
Arizona State University

Applied Sci-Fi Project
Event #1 Summary and Report

The Sci-Fi Feedback Loop: Mapping Fiction's Influence on Real-World Tech

May 12, 2022
Video of public event: https://youtu.be/d_Oz5ynsbdY



The Applied Sci-Fi Project at Arizona State University's Center for Science and the Imagination is an event series and research project that brings together science fiction writers, futurists, scholars, and technologists to survey how science fiction narratives can shape the development of real-world technologies.

In this first panel in the series held on May 12, 2022, "The Sci-Fi Feedback Loop: Mapping Fiction's Influence on Real-World Tech", we explore the past, present and future of sci-fi's influence with experts Michael Bennett, Tim Chang, Cory Doctorow, Malka Older and Sherryl Vint, moderated by Kevin Bankston.

Our Speakers

Michael G. Bennett (@MGBennett) serves as Director of Student Experiential Learning Programs for the Discovery Partners Institute at the University of Illinois, where he is responsible for overseeing the institute's growing portfolio of academic and informal learning programs, and leading a team that implements and manages them. He has extensive experience in curriculum development, with a particular emphasis on anticipatory governance, future scenarios, Afrofuturism, and science and technology policy.

Tim Chang (@timechange) co-leads Mayfield's Consumer investment practice and is an experienced investor and global executive. He has been twice named to the Forbes Midas list of Top Tech Investors and received the Gamification Summit award for Special Achievement. Tim's venture capital experience includes leading investments at Norwest Venture Partners and Gabriel Venture Partners. His operational experience includes working in product management and engineering across Asia for Gateway, Inc., and General Motors. Tim holds an MBA with honors from the Stanford Graduate School of Business, and an MS and BS in Electrical Engineering/System Engineering from the University of Michigan. Tim is an accomplished musician, a reformed biohacker, and passionate about Body/Mind/Spirit wellness. He serves on the non-profit boards of Reimagine Death and Gray Area Arts.

Cory Doctorow (@doctorow) is a science fiction author, activist and journalist. He is the author of many books, most recently Radicalized and Walkaway, science fiction for adults; How To Destroy Surveillance Capitalism, nonfiction about monopoly and conspiracy; In Real Life, a graphic novel; and the picture book Poesy the Monster Slayer. His latest book is Attack Surface, a standalone adult sequel to Little Brother; his next nonfiction book is Chokepoint Capitalism, with Rebecca Giblin, about monopoly and

fairness in the creative arts labor market (Beacon Press, 2022). In 2020, he was inducted into the Canadian Science Fiction and Fantasy Hall of Fame.

Malka Older (@m_older) is a writer, aid worker, and sociologist. Her science-fiction political thriller Infomocracy was named one of the best books of 2016 by Kirkus, Book Riot, and the Washington Post. The Centenal Cycle trilogy, which also includes Null States (2017) and State Tectonics (2018), was a finalist for the Hugo Best Series Award of 2018. She is also the creator of the serial Ninth Step Station and author of the short story collection ... and Other Disasters (2019). Named Senior Fellow for Technology and Risk at the Carnegie Council for Ethics in International Affairs for 2015, she has more than a decade of field experience in humanitarian aid and development. Her doctoral work on the sociology of organizations at Sciences Po Paris explores the dynamics of post-disaster improvisation in governments. Malka is also a faculty associate at ASU's School for the Future of Innovation in Society.

Sherryl Vint is Professor of Media and Cultural Studies and Chair of the Department of English at the University of California, Riverside, where she directs the Speculative Fictions and Cultures of Science program. She was a founding editor of Science Fiction Film and Television and is an editor for the journal Science Fiction Studies and the book series Science in Popular Culture. She has published widely on science fiction, including, most recently, Biopolitical Futures in Twenty-First Century Speculative Fiction (2021) and Programming the Future: Speculative Television and the End of Democracy (2022, co-authored with Jonathan Alexander).

Kevin Bankston, @KevinBankston, is a Fellow at ASU's Center for Science and the Imagination, where he researches the relationship between sci-fi and real-world innovation. Kevin is also an accomplished executive leader in the arena of technology law and policy, having spent nearly 20 years working in the public interest sector as an attorney and advocate at organizations like the ACLU, the Electronic Frontier Foundation, and the Center for Democracy & Technology, most recently serving as the Director of the Open Technology Institute at New America. He is now a Director of Privacy Policy at Meta Platforms, Inc., where he leads Meta's AI Policy Team in developing policies and processes for ensuring responsible AI development.

Five Powerful Insights and Examples

In the workshop, one participant described how the Sci-Fi Feedback Loop doesn't just operate for products or technological artifacts – critiques of technologies also move in a feedback loop between fictional narratives and real-world discourses. A historical example of Mary Shelley's Frankenstein: arguably, the most durable input into the feedback loop from the novel isn't creating artificial life by electrifying dead body parts, but rather the novel's critique of scientific ambition and unintended consequences.

In the workshop, one participant mentioned two pieces of fiction that arguably had significant feedback-loop influence, but are not often included in canonical histories and lists: first, Jean Merrill's 1948 children's novel The Pushcart War, which describes the process of humans organizing to subvert an emerging technology, and Asimov's Foundation series (1942-1953), but particularly the notion of psychohistory. The participant also cited Cory Doctorow in observing that the concept of psychohistory, in Asimov's rendering, has had a huge influence on the careers of economists.

In the workshop, one participant described how a major institutional player in the feedback loop, for decades, is DARPA, but since much of their work is classified or otherwise kept from the public for years, we only see their influence much later, and sometimes indirectly. And DARPA plays both sides of the loop, supporting and commissioning both technologies and prototypes but also sketches, blueprints, plans, and other fiction-esque descriptions of possible technological futures. The rise of wearable sensors and computational technologies is a major example of DARPA's influential thinking.

In the workshop, one participant argued that irony does not survive the feedback loop, citing the naming of the company "Meta" despite the rather cynical and gloomy future world of its inspiration, Snow Crash. Much of science fiction, along with design fiction and other kinds of futures work, includes skepticism about technological change, irony, humor, and critique. But in the feedback-loop process, there is often a focus on the technological artifact that erases the social relations, aesthetics, and cultural complexities that surround it and give it meaning.

In the workshop, one participant described the strange case study of the widely panned 2014

science fiction film Transcendence as an example of the close entanglement between the cultures of Silicon Valley and Hollywood. Stephen Hawking, Stuart Russell, Max Tegmark, and Frank Wilczek wrote an essay in the British newspaper The Independent tagged to the film's release, drawing public attention to the film and using their discussion of it to advance their vision for the future of AI research. The film was based loosely on Russell's research, and Elon Musk, a major player in the development of AI has a cameo in the film. The film features aerial shots of the campus of UC Berkeley, and the university hosted a discussion between the film's director, Wally Pfister, and Jose Carmena and Michel Maharbiz, researchers at Berkeley on brain-machine interfaces.

Key Takeaways

The panel discussions on the intersection of science fiction and design provided several key takeaways:

1. The purpose of storytelling, narrative, and sci-fi is to help overcome significant barriers that organizations face in times of radical change and disruption.
2. Science fiction can be used as a tool to anticipate and rehearse the future, exercising and stretching organizations' future literacy and imagination muscles.
3. There is a need for a precise and unique type of science fiction that wrestles with constraints in order to help organizations overcome barriers to change and meaningful innovation.
4. The association of science fiction with technology has faced challenges due to negative valence around technology, but there is a recognition of the importance of science fiction as a resource for understanding and thinking about future action.
5. Clients may have reservations about the association with sci-fi, which could potentially hurt the credibility of foresight exercises, but there is a need to find a positive valence in engaging clients in this work

These takeaways emphasize the potential of science fiction as a valuable tool for envisioning and shaping the future, despite the challenges and reservations that may exist.

What is the Sci Fi Feedback Loop?

The "Sci-fi Feedback Loop" describes the historical and continuing relationship between speculative fiction about the future and real technological development, or the mutual influence between science fiction and science fact. The concept suggests a continuous cycle where ideas and concepts from science fiction influence technological development, and in turn, technological advancements inspire new science fiction narratives, creating a feedback loop of inspiration and innovation. Participants also described it as a tool for innovation and foresight, aiming to better leverage science fiction in service of creating more diverse and sustainable futures.
Ways In Which Science Fiction Can Influence Technological Innovation

Science fiction has had a significant influence on technology development in various ways. Some examples mentioned in the panel include:

1. **Inspiration for inventions:** Science fiction literature and films have often inspired real-world inventions. For instance, the concept of video calling, as seen in science fiction stories, eventually became a reality with the development of technologies like Skype and FaceTime.
2. **Conceptualization of futuristic technology:** Science fiction authors and creators often imagine futuristic technologies that push the boundaries of what is currently possible. These imaginative concepts can inspire researchers and engineers to work towards making them a reality.
3. **Ethical and societal considerations:** Science fiction often explores the ethical and societal implications of advanced technologies, prompting real-world discussions and considerations in the development and deployment of new technologies.
4. **Visualization of future scenarios:** Science fiction provides visual and narrative representations of potential future scenarios, which can influence the direction of technological research and development by offering compelling visions of what the future could look like.

These examples demonstrate how science fiction has served as a source of inspiration, ethical reflection, and visionary thinking, contributing to the advancement of technology in the real world.

Using Storytelling for Sci Fi innovation Today

Storytelling and science fiction can be used as tools for innovation in several ways:

1. **Envisioning future scenarios:** Science

fiction can help us imagine potential future scenarios, including both positive and negative outcomes, which can inform innovation efforts and help us prepare for the future.

2. **Inspiring creativity:** Science fiction can inspire creativity and imagination, encouraging people to think outside the box and come up with innovative solutions to complex problems.
3. **Identifying potential risks and ethical considerations:** Science fiction often explores the potential risks and ethical considerations associated with new technologies, which can help innovators anticipate and address these issues in their work.
4. **Communicating complex ideas:** Storytelling can be a powerful tool for communicating complex ideas and making them more accessible to a wider audience, which can help to build support for innovative ideas and technologies.
5. **Fostering collaboration:** Science fiction can bring together people from different disciplines and backgrounds, encouraging collaboration and cross-pollination of ideas, which can lead to more innovative solutions.

Overall, storytelling and science fiction can be valuable tools for innovation, helping us to envision the future, inspire creativity, identify potential risks and ethical considerations, communicate complex ideas, and foster collaboration.

Positive or Negative Impact?

The panelists provided insights into how science fiction can have a positive influence on technological innovation. It discusses the ways in which sci-fi storytelling can be applied as a tool for innovation and foresight, and how it has influenced the course of tech development . Additionally, the panelists discussed the intersection of science fiction and design, highlighting the relationship between science fiction and fields like industrial and product design. Science fiction can also popularize narratives of meaningful change, and drive the development of new workstreams, products, and services, and changing organizational culture .

Panelists acknowledged the complexity and nuance of science fictional representations of the future, which always incorporate both positive and negative elements. Compelling stories inevitably include tensions between different perspectives on what may seem positive or negative to different characters. The panel also touched on the challenges of getting clients to engage in scenario or speculative narrative projects and pay for such work, suggesting that there is a need to emphasize the positive impact of science fiction on technology and innovation.

Overall, the panelists suggested that science fiction can indeed have a positive influence on technological innovation.

They also brought up some of the negative aspects of sci-fi influence, where innovator ignore the dystopian elements within science fiction stories to focus only on technology, gloss over or fail to anticipate likely societal implications of new technologies. A prime example of this was the Metaverse, which was represented in two very popular but dystopian novels, Snow Crash and Ready Player One, and yet has been adopted by many entrepreneurs and technologists as an unquestioned positive goal for technological development.

Workshop

After the public event, we had a private workshop with 19 practitioners/consultants, experts, and science fiction writers that delved into this topic in more detail. Findings from the workshop are being incorporated into extended synthesis documents that will be released in the coming year.

Editorial Note

An initial draft of this summary was generated using ChatPDF from the transcript of the public event, and then significantly edited by the Applied Sci-Fi project team.