How America’s Leading Science Fiction Authors Are Shaping Your Future

The literary genre isn’t meant to predict the future, but implausible ideas that fire inventors’ imaginations often, amazingly, come true.

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Stories set in the future are often judged, as time passes, on whether they come true or not. “Where are our flying cars?” became a plaintive cry of disappointment as the millennium arrived, reflecting the prevailing mood that science and technology had failed to live up to the most fanciful promises of early 20th-century science fiction.

But the task of science fiction is not to predict the future. Rather, it contemplates possible futures. Writers may find the future appealing precisely because it can’t be known, a black box where “anything at all can be said to happen without fear of contradiction from a native,” says the renowned novelist and poet Ursula K. Le Guin. “The future is a safe, sterile laboratory for trying out ideas in,” she tells Smithsonian, “a means of thinking about reality, a method.”

Some authors who enter that laboratory experiment with plausible futures—envisioning where contemporary social trends and recent breakthroughs in science and technology might lead us. William Gibson (who coined the term “cyberspace” and will never be allowed to forget it) is
well known for his startling and influential stories, published in the 1980s, depicting visions of a hyper-connected global society where black-hat hackers, cyberwar and violent reality shows are part of daily life. For other authors, the future serves primarily as a metaphor. Le Guin’s award-winning 1969 novel, The Left Hand of Darkness—set on a distant world populated by genetically modified hermaphrodites—is a thought experiment about how society would be different if it were genderless.

Because science fiction spans the spectrum from the plausible to the fanciful, its relationship with science has been both nurturing and contentious. For every author who meticulously examines the latest developments in physics or computing, there are other authors who invent “impossible” technology to serve as a plot device (like Le Guin’s faster-than-light communicator, the ansible) or to enable social commentary, the way H. G. Wells uses his time machine to take the reader to the far future to witness the calamitous destiny of the human race.

Sometimes it’s the seemingly weird ideas that come true—thanks, in part, to science fiction’s capacity to spark an imaginative fire in readers who have the technical knowledge to help realize its visions. Jules Verne proposed the idea of light-propelled spaceships in his 1865 novel, From the Earth to the Moon. Today, technologists all over the world are actively working on solar sails.

Jordi Kare, an astrophysicist at the Seattle-based tech company LaserMotive, who has done important practical and theoretical work on lasers, space elevators and light-sail propulsion, cheerfully acknowledges the effect science fiction has had on his life and career. “I went into astrophysics because I was interested in the large-scale functions of the universe,” he says, “but I went to MIT because the hero of Robert Heinlein’s novel Have Spacesuit, Will Travel went to MIT.” Kare himself is very active in science fiction fandom. “Some of the people who are doing the most exploratory thinking in science have a connection to the science-fiction world.”

Microsoft, Google, Apple and other firms have sponsored lecture series in which science fiction writers give talks to employees and then meet privately with developers and research departments. Perhaps nothing better demonstrates the close tie between science fiction and technology today than what is called “design fiction”—imaginative works commissioned by tech
companies to model new ideas. Some corporations hire authors to create what-if stories about potentially marketable products.

“I really like design fiction or prototyping fiction,” says novelist Cory Doctorow, whose clients have included Disney and Tesco. “There is nothing weird about a company doing this—commissioning a story about people using a technology to decide if the technology is worth following through on. It’s like an architect creating a virtual fly-through of a building.”

Doctorow, who worked in the software industry, has seen both sides of the development process. “I’ve been in engineering discussions in which the argument turned on what it would be like to use the product, and fiction can be a way of getting at that experience.”

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In the early part of the 20th century, American science fiction tended to present a positive image of a future in which scientific progress had made the world a better place. By mid-century, after several horrific wars and the invention of the atomic bomb, the mood of science fiction had changed. The stories grew dark, and science was no longer necessarily the hero.

The tilt toward dystopian futures became even more pronounced in recent decades, partly because of a belief that most of society has not yet reaped the benefits of technological progress. *Smithsonian* spoke with the eminent critic John Clute, co-editor of the *Encyclopedia of Science Fiction*, who quotes Bertrand Russell’s prophetic words from 1924: “‘I am compelled to fear that science will be used to promote the power of dominant groups, rather than to make men happy.’ The real fear today,” Clute continues, “is that the world we now live in was intended by those who profit from it.”

Kim Stanley Robinson—the best-selling author of the Mars trilogy, *2312* and *Shaman*—shares this fear, and sees it manifested in the popularity of Suzanne Collins’ novel *The Hunger Games*, in which a wealthy governing class uses ruthless gladiatorial games to sow fear and helplessness among the potentially rebellious, impoverished citizens. “Science fiction represents how people in the present feel about the future,” Robinson says. “That’s why ‘big ideas’ were prevalent in the 1930s, ’40s and partly in the ’50s. People felt the future would be better, one way or another.
Now it doesn’t feel that way. Rich people take nine-tenths of everything and force the rest of us to fight over the remaining tenth, and if we object to that, we are told we are espousing class warfare and are crushed. They toy with us for their entertainment, and they live in ridiculous luxury while we starve and fight each other. This is what *The Hunger Games* embodies in a narrative, and so the response to it has been tremendous, as it should be.”

For his part, William Gibson believes that to divide science fiction into dystopian and utopian camps is to create a “pointless dichotomy.” Although his seminal 1984 cyberpunk novel, *Neuromancer*, depicts a gritty, scarcity-driven future, he does not consider his work pessimistic. “I’ve only ever wanted to be naturalistic,” he says. “I assumed I was being less than dystopian in the 1980s, because I was writing about a world that had gotten out of the cold war intact. That actually seemed unrealistic to many intelligent people at the time.”

The distinction between dystopian and utopian may often seem to hinge on whether the author personally has hope for a better future. Robinson, for instance, consistently has taken on big, serious, potentially dystopian topics, such as nuclear war, ecological disaster and climate change. He does not, however, succumb to despair, and he works out his solutions in complex, realistic, well-researched scientific detail. Of his own work, he says, “Sure, use the word utopian.”

Neal Stephenson—author of *Anathem*, *Reamde* and a dozen or so other wide-ranging novels—has had enough of dystopias. He has issued a call to action for writers to create more stories that foresee optimistic, achievable futures. Stephenson, who is also a futurist and technology consultant, wants realistic “big ideas” with the express intent of inspiring young scientists and engineers to offer tangible solutions to problems that have so far defied solutions. “People like Kim Stanley Robinson, Greg and Jim Benford and others have been carrying the torch of optimism,” says Stephenson. He agrees that the cyberpunk genre pioneered by Gibson “did a huge service for science fiction by opening up new lines of inquiry,” but, he adds, it also had unintended consequences in popular media. “When you talk to movie directors today, a lot of them seem stuck in a 30-year-old mind-set where nothing can be cooler than *Blade Runner*. That is the thing that we really need to get away from.”
In 2012, Stephenson partnered with the Center for Science and the Imagination (CSI) at Arizona State University to create Project Hieroglyph, a web-based project that provides, in its words, “a space for writers, scientists, artists and engineers to collaborate on creative, ambitious visions of our near future.” The first fruit will be an anthology, *Hieroglyph: Stories and Blueprints for a Better Future*, to be published this September by HarperCollins. It will include stories by both established and newer writers who have been encouraged to “step outside their comfort zone,” as Ed Finn, the director of CSI, puts it. The same goes for readers. Finn sees the core audience for *Hieroglyph* as people who have never thought about the issues these authors address. “I want them to place themselves in these futures,” he says.

The stories take on big, difficult problems: Stephenson’s story envisions the construction of a 15-mile-high steel tower reaching into the stratosphere that would cut down on the fuel needed to launch space vehicles; Madeline Ashby applies the mechanics of gaming to manage U.S. immigration; and Cory Doctorow’s story suggests using 3-D printing to build structures on the moon.

An underlying challenge to this approach is that not all problems lend themselves to tangible solutions—not to mention briskly paced storytelling. “Techno-optimists have gone from thinking that cheap nuclear power would solve all our problems to thinking that unlimited computing power will solve all our problems,” says Ted Chiang, who has explored the nature of intelligence in works such as *The Lifecycle of Software Objects*. “But fiction about incredibly powerful computers doesn’t inspire people the same way that fiction about large-scale engineering did, because achievements in computing are both more abstract and more mundane.”

At the MIT Media Lab, instructors Sophia Brueckner and Dan Novy were surprised to discover that many incoming students had never read science fiction. “I could guess it’s because they’re top students from top schools who have been told science fiction is a form of children’s literature, or it isn’t worth their time,” Novy says. “They’ve had to compete so much to get where they are. They may simply not have had time to read, beyond required humanities assignments.”
Last fall, Brueckner and Novy taught a course, “Science Fiction to Science Fabrication,” with a syllabus packed with science fiction stories, novels, films, videos and even games. The students were charged with creating functional prototypes inspired by their reading and then considering the social context of the technologies they were devising. For a project inspired by a scene in Gibson’s *Neuromancer*, students built a device that uses electrodes and wireless technology to enable a user, by making a hand gesture, to stimulate the muscles in the hand of a distant second user, creating the same gesture. The young engineers suggested real-world applications for their prototype, such as physical therapists helping stroke victims to recover use of their limbs. But, Novy says, there was also deep discussion among the class about the ethical implications of their device. In Gibson’s novel, the technology is used to exploit people sexually, turning them into remote-controlled “meat puppets.”

Brueckner laments that researchers whose work deals with emerging technologies are often unfamiliar with science fiction. “With the development of new biotech and genetic engineering, you see authors like Margaret Atwood writing about dystopian worlds centered on those technologies,” she says. “Authors have explored these exact topics in incredible depth for decades, and I feel reading their writing can be just as important as reading research papers.”

Science fiction, at its best, engenders the sort of flexible thinking that not only inspires us, but compels us to consider the myriad potential consequences of our actions. Samuel R. Delany, one of the most wide-ranging and masterful writers in the field, sees it as a countermeasure to the future shock that will become more intense with the passing years. “The variety of worlds science fiction accustoms us to, through imagination, is training for thinking about the actual changes—sometimes catastrophic, often confusing—that the real world funnels at us year after year. It helps us avoid feeling quite so gob-smacked.”