

# Where might it lead?

Scientists' professional aims should benefit from embracing the 'what if' mentality of science fiction.

Gregory Benford

In my experience, few working scientists read fiction. Typically, they usually read science fiction when young, and then become too busy.

Yet some disparage speculative ideas as "just science fiction", implying that such ideas lack the informing constraints that science can impose. Perhaps this stems from a professional culture that honours strict reporting of observations, conforming to accepted views, and seldom speaking of social impacts.

Speculation on where science might lead us can lurch into tabloid territory and the worst aspects of media fare, UFOs and all. Mega-movies exploit science's spectacles while ignoring its rigour. Technical plausibility and the niceties of proper procedure are roughly shoved aside by drama's drive. Hollywood seldom shows science's subtle pleasures and small victories.

Yet science could better convey much of its mystery and excitement if it paid attention to how writers view it. Ideas usually begin in literature and migrate to the visual media. To alter how science is perceived, we would do well to pay attention to the storytellers and dreamers who are our bards.

Science fiction is our biggest mirror, reflecting the literary imagery of science. Since Mary Shelley's *Frankenstein*, the prospects that science opens have played a significant role in our culture.

We should realize that such cultural currents run both ways. Often science-fiction writers get their ideas from science, whereas the dreams the professionals had when young can fuel their scientific efforts.

The Russian rocketry visionary Konstantin Tsiolkovsky wrote: "The first seeds of [my] ideas were sown by that great, fantastic author, Jules Verne; he directed my thought along certain channels, then came a desire, and after that, the work of the mind." The helicopter pioneer Igor Sikorsky, a compatriot of Tsiolkovsky, became interested in the concept by reading Verne's *Robur the Conqueror*, and cave explorer Norman Casteret was inspired by Verne's *Journey to the Centre of the Earth*. Talents as varied as inventors Guglielmo Marconi and Santos Dumont, explorers Admiral Byrd and Yuri Gagarin, and engineers Simon Lake and Lucius Beebe all paid tribute to Verne's inspiration.

Later science fiction proved to be no less powerful. Leo Szilard began work on

stimulated nuclear fission in 1932 after reading H. G. Wells's *The World Set Free* (1912). Werner von Braun was so addicted to science fiction that he had a subscription to the American science-fiction magazine *Astounding* sent through Sweden and on to him by diplomatic pouch into wartime Germany.

Many inventions first emerged as glints in the eyes of science-fiction authors. Karel Capek's 1921 play *R. U. R.* introduced the word 'robot', and although his creations were organically grown, the term soon came to describe humanoid machines, which populated stories expressing the anxieties of the machine age. Pulp stories of the 1920s anticipated lasers, and vast computers figured in utopian works. In the early 1940s, Robert Heinlein depicted plausible waterbeds and remote-controlled hands in *Waldo*, although his most notable anticipation was the strategic impasse caused by nuclear weapons. Half a dozen stories predicted that the moon landing would be seen on television. As Isaac Asimov once commented: "No one can say that science-fiction writers and readers put a man on the moon all by themselves, but they created a climate of opinion in which the goal became acceptable." More generally, they smoothed the way for science, in its implications and inventions alike.

Editor and critic David Hartwell remarked that "science fiction did not aspire to take over literature, but reality". It "outlasted all other counterculture or outsider literary movements of the century", and now seems to be a less diagrammatic art. Its authors see themselves more as conceptual gardeners, planting seeds for fruitful growth, rather than engineers drawing up blueprints for eternal, grey social machines.

Even now, thinking about ideas, inventions and their social consequences is virtually unknown in mainstream literature. Written science fiction thrashes through

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Mushrooming ideas: Jules Verne's novels, such as *Journey to the Centre of the Earth*, inspired many pioneering scientists, explorers and engineers.

thoughtful speculations long before they arrive in common culture.

Alas, few journalists or commentators mine this seam of imaginative experimentation. When Dolly the sheep made cloning a media event, the scientists involved did not notice that science fiction had discussed the issue extensively decades before. Why? Because cloning pokes into the murky realms of our own identity, a personal ground that is often too uncomfortable to discuss until scientists are forced to by events. We prefer abstractions. Both humanists and scientists should see that their professional styles could benefit from more cultural currents, not fewer.

Science captures our abstract wisdom, telling us that we are primates following complex genetic instructions. Writers know that such abstract knowledge does not shelter us from the hammering, immediate moment. Tensions in the lives of scientists, as they move from their day jobs of heady arabesques into their after-hours domestic swarm, are little remarked upon in literature. This largely untravelled territory reminds us that David Hume instructed us to "be a philosopher, but amidst all your philosophy be still a man".

Fiction brings us down to the intensely personal ground of the heart. "We are the music, while the music lasts," as T. S. Eliot put it. But science should also shed its illuminations upon our fevered passions, and should be better seen through fiction's magnifying lens. ■

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