

Imaginary Science

Science fiction is the premier art of modernity, becoming more and more central to our sense of what life means in our increasingly scientific, technologized age. SF gives us our myths that we use to make sense of our uncertain technoscientific future. It is, arguably, the most important form of art today, infusing our culture from advertising to scientific grants. Nevertheless, despite its real-world influence, science fiction is more *fiction* than *science*. As Csicsery-Ronay writes in “Fourth Beauty,” “Science is SF’s pretext. Every quantum-info-nono-bio-cyber-astro-xeno-socio-physical infodump pumps up the illusion that sf stories are dramatizations of scientific knowledge. But even in the hardest of hard SF, SF’s science is always figurative. It is an *image* of science, a poetic illusion disguising its illusionary status.”

SF writers “use the language and history of technoscience to evoke the coherence and correspondence of the scientific worldview—but always with the freedom to violate, stretch, ironize, and problematize it. If actual science intends to increase human beings’ freedom by augmenting their power over matter, SF makes both freedom and power the subject of play.” Science fiction “has always engaged scientific ideas and speculations in order to affirm the freedom of the artistic imagination. Even when it is written by professional scientists with established reputations, SF requires its science to violate scientific correctness, even plausibility. Writers take known, plausible, or just widely entertained scientific ideas and extend them speculative into the unknown, exceeding their contexts, revealing their fantastic dimensions.”

In short, science is science fiction’s playground. Indeed, writing science fiction—especially jargon-laden “hard SF”—is often called “playing the game” by SF authors. SF writers use “a particular form of rhetoric [H.G. Wells] called ‘scientific patter:’” words and ideas that sound scientific. But SF writers are not doing real science; they are making stuff up. Indeed, there is an implicit game played between SF readers and writers: “Readers match wits with writers in terms of two overlapping kinds of modeling: the fit of the imagined world to the know world described by science...and the fit of the details of the imagined world to its overarching design.” Playing this game, figuring out how SF stories match and differ from known science and testing the logical coherence of it’s author’s imaginary worlds, is much more important than “more traditional functions of literary narrative” such as character development or motivation. Setting trumps character and style in science fiction.

Science is inherently contradictory in SF. While rooted in real science, SF is speculative and necessarily warps today’s scientific reality. The presence of new scientific ideas in the warped future provides the “deep decor” that makes the counterfactual SF world feel

real. Because it warps and deviates from today's accepted science, "basically any conception of science entertained by culture can become pre-textual structure for SF." Science fiction can be rooted in Einstein's laws—or it can simply be filled with space ships and technobabble. "Much of SF's appeal is that it rationalizes highly romantic and fantastic stories by means of scientific ideas.... It engages the worldview of scientific materialism and supplements it with quasi-mythic narrative to make models relevant to cultures on the ground."

"In a scientific culture, people widely accept theories that they are unable to verify, or even to explain in a rudimentary fashion, on educated faith in the authority of scientists." This is where science fiction comes in. It provides the mythology—the big shared stories—that fills in the (often huge) gaps of our everyday scientific knowledge. "SF is *free myth*, entertaining belief in scientific explanations but demanding no commitment." These myths can then inspire real science and engineering, much as science fiction inspired the creation of rockets (Cyrano de Bergerac! and Verne...), the atomic bomb (H.G. Wells) and computer hacking (William Gibson).

Science fiction most resembles real science in the shared narrative form of the "thought experiment." Scientists often create ideal, impossible-to-perform-in-the-real-world experiments called "thought experiments," asking "what if" of things that can't really be. For instance, what would it look like to ride a photon at the speed of light? We can't test that—but we can perform a thought experiment, imagining what would happen if a person really were sitting on a speeding photon. These scientific thought experiments are really little stories.

Science fiction proceeds in a similar fashion, asking "what if" questions and finding scientific-seeming answers. What if a star passed close to earth? What if a woman were raised on poison? What if we could store computer data in our brains? Science fiction authors answer those questions using the language of *imaginary science*, a language rooted in real scientific terminology but with new, made-up additions to that real science.

Science fiction takes the form of the scientific thought experiment and fleshes it out with all the details of realistic fiction: people, settings, drama. "SF is the literature that takes thought-experiment as its given reality, which it then artistically and ludically [playfully] exaggerates and estranges.... SF differs from other forms in that it not only develops its ideas as thought-experiments, it makes this development a primary object of the narrative.... It draws the basic operations of science into the web of myth-like structures underlying narrative."

So, in a way, science fiction is really a great literary hoax. The language of imaginary science makes a made-up future look and feel real. “The science of SF must violate known science if it is to be science-fictional.” However, the language of science makes that violation acceptable, believable. “The science in SF is suspended science, configured in an aesthetic space where reverie and thought-experiment meet and enjoy the cultural authority of science.” SF goes where real science cannot, to the limits of the possible. “This category of the *not-impossible* is the homeless of SF’s imaginary science.”

As you continue to read SF, pay close attention to how their authors rely on imaginary science. Where do you see the jump from real science to play? What scientific ideas and devices are made-up? Are they novums, or part of the world that the novum creates? And how do the authors make those made-up things seem realistic? What neologisms and neosemes do they use? What familiar terms do they use to describe their imaginary sciences?