# introduction to part i

Most students come to a class on science fiction (SF) believing they know what the genre is, and that any time spent discussing the subject is time wasted. However, this knowledge is often on the order of claiming to know human anatomy because we have observed that most people seem to have two arms, two legs, and a head. True, and generally good to know, but in no way conclusive. Sometimes, those claiming to be fans can be the worst in this respect, as they have spent the most time observing the two arms, two legs, and head of the genre without concerning themselves about the various "unmentionables" that lay outside their observation. To them, SF is *Star Wars* but not *Star Trek*, or *Halo* but not *Starcraft*, or *Ender's Game* but not *The Wild Shore*. Furthermore, when they encounter someone of the contrary opinion (SF is *Star Trek* but not *Star Wars*), they either have a memorized set of go-to points or they have no terms in which to relate their opinion; both strategies shut down discussion, which often degenerates to the level of "Uh-uh!" "Uh-huh!" while the rest of the class looks on in a mixture of confusion and horror.

None of the essays in this section really tell us what SF is. Instead, they give us detailed approaches through which a definition of SF might be made, terms under which we might discuss what we mean when we point to this thing we call SF. They bring up complications of history, economics, expectations of readers and publishers, even of the process of definition itself. When students have finished reading all the essays in this section, they will have acquired not only a language for discussing SF and critically analyzing their own experiences with the genre, but also a sense of the high stakes that rest on the question of definition.

Eric S. Rabkin provides us with an excellent starting place to begin our discussion, as he cuts directly to the heart of the question: how can we hope to come up with a successful definition for anything? Rabkin offers four different modes of definition: characteristic, prototypical, operational, and social, gives examples of each and argues their strengths and weaknesses, before confessing his own affection for the characteristic mode. He also alludes to the strategic nature of definitions, that

each one is made not in a value-neutral space but with the conscious or unconscious goal of achieving a political, social, or economic end.

H. Bruce Franklin gives us a historical definition of SF (what we might call a socio-prototypical definition to use Rabkin's terms). He traces its development as a genre through internal forces, and in relation to social forces, especially the rise of scientific thought and the resulting paradigm shifts with respect to space, time, and our place in them. Franklin is careful to note the long prehistory of SF, then casually dismisses many of these early texts as fantasy, not SF, a move that might seem redundant were it not that such arguments speak to strategies long used by critics of the genre to establish its primacy, legitimacy, and vitality. Perceptive students will be sensitive to the strong Marxist-critical undertones in the essay that strongly link SF as a cultural form with the economic forms that led to its production.

Brian Stableford defines SF in a characteristic fashion as a distinctive form of fantastic literature, which deviates from the folkloric tradition in meaningful ways, although without wholly achieving separation. While many proponents of globalization proclaim the world has gone flat, Stableford appropriately links the concept of a thin world with fantasy, arguing that SF presents us a world which is fuller and rounder than ever and likely to continue tumescing. Stableford shows how SF drew many of its narrative strategies from the folkloric tradition that was its original source, often in ways that undermine its ostensible goal as a forward-looking, future-oriented genre of change, and offers an increasingly sophisticated readership as a remedy for this internal contradiction.

Sherryl Vint and Mark Bould offer us a social-operational definition of SF. For them, SF is not a thing, but, rather, the result of a process of policing by individuals in positions of power over a series of historical moments. They stress that SF is not only a process of inclusion, but is also, and perhaps more importantly, a process of exclusion that defines not only the particular reading community of SF but also the types of representations possible by the genre. By presenting a case study of the story "The Cold Equations" by Tom Godwin, they hope to show that SF has never been a thing independent of the political vision of the discourse community, that is its editors, authors, and fans. Readers will note reference to Tom Godwin's "The Cold Equations" in several of the essays in this volume. James Gunn has called it a "touchstone" story, and it may still retain that quality some 50 years after publication, with hard-SF scholars focusing on the way in which the hard reality of space travel will not pardon human ignorance even when embodied in

innocence (the universe doesn't care), and humanist scholars focusing on the culture that condemns an innocent young girl to death by not taking proper precautions or even indulging anti-feminist tendencies by setting up a situation where an innocent young girl is sacrificed to patriarchal goals. The story has been frequently anthologized, including *The Road to Science Fiction Volume Three: From Heinlein to Here.*

Students should also pay close attention to the positioning of the genre with respect to other genres, such as "mainstream" literature or fantasy, and the value judgments that inform the author's explicit and implicit assertions of the usefulness and significance of each form of literary production.

# 1
# defining science fiction

eric s. rabkin

Even before classes started at the University of Iowa Writers' Workshop in 1967, acclaimed Philippine novelist Bienvenido ("Ben") Santos, in a welcome lecture, revealed some unexpected things about the "work" in "workshop." He reported the struggles of Kurt Vonnegut, Jr., recently of the Workshop faculty and author of such science fiction (SF) classics as *Player Piano* (1952) and *Cat's Cradle* (1963), to have editors consider his writing as "fiction" rather than "science fiction." Why? Because, Ben said, a typical word-rate for publication of "fiction" in a first-line magazine was about five cents; for science fiction two. Every time Vonnegut won that struggle, he increased his paycheck by one hundred-fifty percent. And every time he lost, well...

Life's complexities often drive us back to definition. (One avid webpage [http://www.panix.com/~gokce/sf_defn.html, accessed May 27, 2008] gathers fifty-two different, published statements that it counts as definitions of SF.) We seek by definition to find a bedrock on which to re-square and repair our foundations, a secure place to start.

When Ray Bradbury's gloriously lyrical composite novel, *The Martian Chronicles* (1950), received the first-ever front-page notice for a science fiction work in *The New York Times Book Review*, many struggling, self-defined SF authors groused loudly. Oh, sure, they'd hardly disparage the overdue notice to their genre, then called with loving irony by many of its writers, editors, and oh-so-active fans "the science fiction ghetto," but, damn it all, why Bradbury? He wasn't even a real science fiction writer! Just look at the "Green Morning" chapter of his book. Benjamin Driscoll, a silly Johnny Appleseed analog, wanders around Mars in its dry, thin atmosphere broadcasting seeds and hope, falls asleep on the ground to the sound of distant thunder, and wakes to the first drops of life-giving rain. Rain? On Mars!? And how did he walk around without a space suit anyway? This isn't SF. It's fairy tale! Heck, in the last

chapter, "The Million-Year Picnic," the father of a newly pastoral family that had barely escaped Earth's ultimate atomic war blows up the rocket ship by which they had reached Mars "so we can't go back, ever. And so if any of those evil men ever come to Mars they won't know we're here." Not only is this a fairy tale, it's an *anti*-science fiction fairy tale at that! Or so said those earning the lower word rate.

Today Bradbury ranks among the greats of science fiction, real science fiction. Did Bradbury change, or was it the definition?

There are four fundamentally different ways to construct a definition, which we can call characteristic, prototypical, operational, and social. Each has been applied to science fiction, and each serves—consciously or not—the purposes of the time, place, and person doing the defining. Including me.

Most people's first idea of definition is characteristic definition, that is, a definition that lists the characteristics of the thing in question. Those things that have the characteristics are in; those that don't are out. Characteristic definitions provide clear lines, like the chalk markings in tennis. The *Oxford English Dictionary* (*OED*) defines tennis in "the usual sense" as "a game played with a ball and rackets on an unenclosed rectangular space on a smooth grass lawn or a floor of hard gravel, cement, asphalt, etc., called a court." If it's not a game—say you're trying to kill someone by smashing his head with a racket-driven ball—that's clearly not tennis. And if it is a game but the space is circular, that's not tennis either. I like this definition, especially because I'm not very good at tennis. After all, while the *OED*'s game can involve a variety of surface materials, it doesn't seem to involve a net. Even I could succeed if tennis lacked that characteristic.

The *OED* offers a characteristic definition for science fiction: "Imaginative fiction based on postulated scientific discoveries or spectacular environmental changes, freq. set in the future or on other planets and involving space or time travel."

This is a fine beginning, but would be a misleading end. What distinguishes "imaginative fiction" from "fiction"? Since all "fiction" involves imagination, here the *OED* implicitly suggests that science fiction is less restrained in its imagination than other types of fiction. What other types? Fairy tale? No, of course not. The unstated norm is realistic fiction. But each SF work provides its own alternative reality by "postulat[ing] scientific discoveries or spectacular environmental changes." This is often true. In *The Time Machine* (1895), H. G. Wells postulates a Time Machine and has his Time Traveler briefly visit the year 30,000,000 when "the tidal drag" had stopped the rotation of the

Earth, quite a spectacular environmental change. But Philip K. Dick's *The Man in the High Castle* (1962), which won the Hugo Award for Best SF Novel given by the fans at the annual World Science Fiction Convention, is an alternate history set in a 1962, years after the Axis counterfactually defeated the Allies in World War II. Dick postulates nothing to justify this setting, yet this was outstanding "science fiction" to the fans. They seem to want SF to include a wide range of the fantastic fictions they love, but "loved by the fans" doesn't fit conveniently into the *OED*'s characteristic definition.

A second type of definition employs prototypes. In *Jacobellis v. Ohio* (1964), U.S. Supreme Court Justice Potter Stewart, trying to match the facts of the case with a statute concerning "hard-core pornography," wrote that "I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it." "If it walks like a duck, talks like a duck, and quacks like a duck, it must be a duck." When people hurl that phrase into an argument, trying to cut past the question of definition, they are really trying to evade the requirement of a characteristic definition by saying "it's duck enough for me"; that is, they have a prototypical duck in mind and assert that for the matter at hand this thing is close enough to the prototype that we ought just to accept the identification and go on.

In April 1926, Hugo Gernsback (namesake of the award) launched *Amazing Stories*, the first self-described "science fiction" magazine. Actually, Gernsback promised to publish "scientifiction," a word of his own invention which he had first put in print in 1916 but which never caught on. In *Amazing* he explained that "by 'scientifiction' I mean the Jules Verne, H. G. Wells and Edgar Allan Poe type of story—a charming romance intermingled with scientific fact and prophetic vision" (3). Gernsback's prototypical definition asks us to think of works by authors we know and recognize that they have enough commonality that we can recognize some sort of ideal which they all more or less closely embody. We should be able to look at a fiction and say, "It's SF enough for me." While prototypical definitions are often the best we can do, as Potter Stewart understood, they have weaknesses as well as strengths.

We may well continue to argue a prototypical definition at the margins. "Once upon a time, long, long ago" certainly sounds like the beginning of a fairy tale. Is the first-released *Star Wars* movie (1977), which begins "A long time ago, in a galaxy far, far away," fairy tale (FT)

or SF? Can it be fairy tale and SF? What is at stake for those who want it to be one, the other, or both? What does the definitional debate tell us about either genre, or its devotees? In this case, I think the whack-a-mole debate between FT and SF suggests that SF, with its frequent clashes of good and evil, heroic protagonists, and indulgence of what Sigmund Freud called the illusion of central position, has strong roots in fairy tale. Although prototypical definitions keep us arguing at the margins and may be a weakness in advancing the discussion of a specific work, they are also a strength in considering the system of works from which it is drawn.

One weakness of prototypical definition is that it requires us to ignore potentially significant aspects of its designated exemplars. While Gernsback lumped Verne with Wells, Verne assuredly did not. "I make use of physics [Verne said, contrasting himself with Wells]. He invents. I go to the moon in a cannon-ball, discharged from a cannon. Here there is no invention. He goes to Mars in an airship, which he constructs of a metal which does away with the law of gravitation. *Ça c'est très joli* [that's very pretty], but show me this metal. Let him produce it" (1903; from Gary Westfahl, *Science Fiction Quotations*, 2005). Verne's concern for the legitimacy of invention should have been crucial to Gernsback, whose magazine, from its first issue, bore the slogan, "Extravagant Fiction Today—Cold Fact Tomorrow!" But Gernsback's interest ran more toward the commercial than the measured. His famous editorial concludes that "Posterity will point to [stories published here] as having blazed a new trail, not only in literature and fiction, but in progress as well" (3). Scientifiction provides not merely "charming romance" but the inspiration for real science, hard-driving, mind-expanding, world-changing science!

As prototypes go, Gernsback's isn't bad. But what about Verne's beef with Wells? In *The Invisible Man* (1897), Wells's protagonist must go naked to avoid detection by the rural folk he tries to dominate. They surround him and beat him to death, his body betraying his ambitions despite having gained the mythical power of invisibility. But in "The Plattner Story" (also 1897), Wells's protagonist, blown willy-nilly into another dimension, is both invisible and incorporeal, which he discovers when otherworld denizens casually walk through him. Clearly "invisibility" as an SF trope can be a more or less likely "invention" depending on the needs of the story. The charming romances of Poe make matters still murkier. In "The Facts in the Case of M. Valdemar" (1845), the narrator "mesmerizes" the bed-ridden title character "*in articulo mortis* [at the point of death]," an experiment recorded by a medical student

engaged for just that purpose. What could be more scientific? And there Valdemar lies, breathless and pulseless for seven months without decay, until the narrator "rapidly made mesmeric passes" with his hand to break the hypnotic trance. All in an instant, Valdemar crumbles and melts "[u]pon the bed... [into] a nearly liquid mass of loathsome—of detestable putridity." The onanistic implications of this impossible "science" fiction don't meet Gernsback's Horatio Alger vision of SF as the vanguard of shiny American progress, so his prototypical definition ignores it.

One of the strengths of a prototypical definition is that naming something often enables others to see it. Even Poe, Verne, and Wells did not think of themselves as writing "science fiction," but once the term existed, as Gernsback himself suggests, the genre's history snapped into view. Suddenly we can ask if the "Voyage to Laputa" in Jonathan Swift's *Gulliver's Travels* (1726), with its airborne island state ruled by scientists and held aloft by an anti-gravity mineral that Verne would scorn, is SF. A similar conceptual crystallization occurred when Thomas More named his political science fiction *Utopia* (1516), a Greek pun he invented meaning both "no place" (*ou-topos*) and "good place" (*eu-topos*), calling into consciousness a genre whose exemplars extend back at least as far as Plato's *Republic* (*c.* 380 BCE) and which, according to Darko Suvin (12), serves as the oldest tributary of the main stream of science fiction.

Although "scientifiction" faded, "science fiction" blazed. While the *OED* records a lone use of "science fiction" in 1851, it became standard once *Amazing* gave in, adopting it in a June 1929 editorial by Gernsback's managing editor (and later successor editor), Thomas O'Conor Sloane, a chemistry Ph.D. and Thomas Edison's son-in-law. The fans know what they want, and the magazines try to provide it.

An operational definition proposes an operation the result of which is the thing defined. According to the *OED*, the meter was "[O]riginally intended to represent one ten-millionth of the length of a quadrant of the meridian, and defined by reference to a platinum-iridium standard kept in Paris." That is, one measured the Earth from equator to pole through Paris, took that length, divided by 10 million, and *voilà*!, you had a meter. Operational definitions typically incite little definitional argument. The Genre Evolution Project (http://www.umich.edu/~genreevo.accessed May 27, 2008), a collaborative effort I co-lead combining qualitative and quantitative methods to study culture as a complex adaptive system, uses an operational definition of SF short stories. If a work is fiction, no more than 12,000 words, and published in a self-described SF magazine,

it is an SF short story. Are some of our materials really zombie stories? That depends on what you mean by "really." They seem to have sold SF magazines. Perhaps, using another type of definition, we ought to include zombies. Certainly the undead appear in "Valdemar."

Operational definitions, desirable for their simplicity, evade some larger social questions even while enabling others. George Hay, the British "futurologist," suggested that "[s]cience fiction is what you find on the shelves in the library marked science fiction." While this operational definition ("look on that shelf; what you find is it") avoids argument about specific books, it should make us question the role of librarians, folks who separate the "literature" of Nobel prize-winning authors like William Golding (*The Inheritors*, 1955) from the "young adult books" of Verne and the "science fiction"—or is it anti-science fiction?—of Bradbury.

The fourth type of definition is social. There exists no characteristic of plant physiology that marks a weed. There is no prototypical weed. And no operation, other than planting something unwanted in someone else's plot, can define a weed. But that operation requires learning about someone's desire, which implies that the only reliable definition of weed is social: an unwanted plant.

Defining it socially, science fiction is fiction that the world uses as science fiction. While this may sound tautological, it usefully invites study of the world and its desires. For much of its history, emerging as the prototype Gernsback named and published in pulp, SF was deemed low-class. Librarians and publishers recognized this. And so do those who say they love William Shakespeare's *The Tempest*, about a learned man who uses the knowledge in "my books" to command spirits that command the weather; who admire George Orwell's *Nineteen Eighty-Four* (1949) as a commentary on our times; who make best-sellers of Margaret Atwood's futuristic *Handmaid's Tale* (1985) and Kazuo Ishiguro's alternate history *Never Let Me Go* (2005); and yet won't see these as SF "because they're good." This social definition, like "an unwanted plant," includes a value judgment. "It's not just science fiction anymore" is a line we can read in the newspaper almost daily referring to computer science, medicine, warfare, government activity, agriculture, and culture in general. We must always ask, who has what at stake in suggesting that the once-fantastic has become real?

I have argued (beginning in *The Fantastic in Literature*, 1976) that the fantastic is a psychological affect generated during reading by the "diametric, diachronic [radically complete, through time] reversal of the ground rules of the narrative world." "Once upon a time, there

was a beautiful golden-haired princess" flips us out of our armchair world into one where animals *can* talk, magic *is* real. "And she fell deeply in love with an accountant name Myron Goldstein." That second line makes the story more fantastic not because there are no accountants named Myron Goldstein—there may well be—but because there are no accountants at all in the world of fairy tales. To admit one requires that we flip the ground rules again. Works that flip-flop their ground rules as exhaustively as possible, like Lewis Carroll's Alice books, without devolving into incoherence, are true Fantasies. But the publishing category of fantasy, which includes hobbits, magic, underworlds, and paranormal powers like those of Stephen King's *Carrie* (1974), is much broader. How does this fantasy relate to science fiction?

Consider *Frankenstein* and *Dracula*. The Gothic novel, like Horace Walpole's *The Castle of Otranto: A Gothic Story* (1765), thrilled readers with sex, death, curses, and apparitions in the haunted bowels of the title heap. As those thrills paled, writers like Ann Radcliffe in her *Mysteries of Udolpho* (1794) provided an additional fantastic twist with a final astonishing revelation that the apparently supernatural was natural after all. Call this the Scooby-Doo ending. Then, in *Frankenstein* (1818), Mary Shelley moved that naturalizing explanation to the very first lines of her Preface: "The event on which this fiction is founded, has been supposed, by Dr. Darwin [Erasmus, Charles's grandfather], and some of the physiological writers of Germany, as not of impossible occurrence." Thus science fiction was born.

In a famous scene in the 1931 film of *Dracula*, a woman in a peignoir sits before a triptych mirror brushing out her hair. The camera, pulling back, reveals the vampire stealing toward her. The camera moves toward her chair and we see her reflected face. The camera moves sideways, suggesting that the vampire is almost upon her. In the next instant he will be visible not only to us but finally to her, but—astounding!—he has no reflection! Why not? Ah, ha! Because vampires have no souls.

Then how can we see the chair?

*Dracula*, in the publishing sense of the term, is fantasy. Its rules are arbitrary. We can seek the power of those rules in our psyches, but not in science, the pursuit of organized knowledge. That would be *Frankenstein*.

Ultimately, among all possible definitions, I favor a characteristic one: Science fiction is that branch of the fantastic that seeks plausibility against a background of science. The sciences, of course, can vary, as can the degrees of plausibility, but the intellectual commitment is

always there, with Poe's medical student taking notes or Bradbury's recognition that the father's rocket ship may be one too many for the evolution of a better society. Alternate histories are not science fiction because they have ray guns or cancer cures but because, like utopias, they ask us to consider social forces with both intellectual discipline and imaginative freedom, a combination of mental activities that is perfect for our times. I write these thoughts on a personal computer using a word processor; I double-check certain information by broadband access to the World Wide Web. None of those four world-changing technologies existed when I was born. It seems to me that it matters very much how we define science fiction because, ready or not, we live it.

## suggestions for further reading

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Rose, Mark. *Alien Encounters: An Anatomy of Science Fiction.* Cambridge, MA: Harvard University Press, 1981.

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# 2
# what is science fiction—and how it grew

h. bruce franklin

Science Fiction (SF) is a defining feature of modern culture and society. It is central to how we modern humans imagine space, time, the macrohistory of our species, our future, and even our place in the cosmos. SF is an historical phenomenon, one that developed and continues developing as an essential component of technological-scientific-industrial society. When we read older SF, we are exploring the birth and childhood of modern consciousness, the consciousness of our epoch. When we experience contemporary SF—in print, movies, television, video games, virtual reality, and the myriad of other forms in modern society—we are participating in a cultural consciousness that is changing in tandem with our technology and science. As Frederic Jameson has put it, "SF marks the moment in which a society realizes that it has a future, and that it is itself in its very nature and structure becoming, a vast being in perpetual continual change and transformation" (15).

Therefore anyone who wants to comprehend human affairs in the nineteenth, twentieth, and twenty-first centuries needs some knowledge and understanding of SF. But what *is* SF? How does it differ from all the other forms of imaginary and fictive creations that are also part of modern culture?

There are some formal or abstract distinctions. On one side lies fantasy, the realm of the *impossible.* On the other side lie all the forms of fiction that purport to represent the *actual,* whether present or past. SF's domain is the *possible.* This is not a question of whether a fictive world is in reality impossible, actual, or possible, but, rather, how the text implicitly asks the readers to respond to its invented reality as well as the state of science and technology when and where the work was composed. For example, a nineteenth-century fiction set on a transatlantic luxury

dirigible (such as Edgar Allan Poe's 1849 "Mellonta Tauta") was written as SF because such a scene was then just a possibility and it remains SF forever, even after transatlantic luxury dirigibles came to be and after they ceased to be. Although much ink has been spilled trying to apply these formal boundaries, they seem to me of marginal usefulness. More helpful is an awareness that since SF explores the possible, its territory ranges from the present Earth we know to the limits of the possible universes that the human imagination can project, whether in the past, present, future, or alternative time-space continuums. Therefore SF is the only literature capable of exploring the macrohistory of our species, and of placing our history, and even our daily lives, in a cosmic context.

SF must be defined further, as an historical phenomenon. Though SF has antecedents that stretch back at least two thousand years, SF as a body of literature—and movies, graphic art, comic books, radio shows, futuristic exhibits, TV serials, video game machines, computer games, virtual reality, and so forth—is a new phenomenon. It is an expression of only modern technological, scientific, industrial society, appearing when pre-industrial societies are transformed by an industrial revolution. Indeed, industrial society creates not just the consciousness characteristic of SF but also the very means of physically propagating SF in its various cultural forms, even before it was beamed as images on movie and video screens. For even SF *literature*, like other forms of literature typical of industrial society, is propagated in mass-produced magazines and books, which require advanced manufacturing and distribution as well as a large literate audience.

All this is very recent. The word "scientist" appeared for the first time in 1840, as a deliberate coinage (Williams, Raymond: 234–235). The term "science fiction" was used first in 1851 (in Chapter 10 of William Wilson's *A Little Earnest Book upon a Great Old Subject*) "Science-Fiction, in which the revealed truths of Science may be given interwoven with a pleasing story which may itself be poetical and *true*" (emphasis in original).

We take for granted living in a world where technological change is so rapid that it is part of our lives—continually transforming the present and the future. But this epoch of rapid technological changes, dating from the Industrial Revolution in Europe, is a mere microinstant of cosmic time.

The Earth is approximately four and a half billion years old. The ice ages ended about 10,000 years ago. Thus the age of the Earth is 450,000 times the period since the last ice age. Let's make this more imaginable by picturing the age of the Earth equivalent to 45,000 feet, the altitude of a very high-flying jet airliner. In comparison, the time since the last ice age would be represented by 1.2 inches. The period of

modern science, technology, and SF, which began with the Industrial Revolution about 250 years ago, would then be equivalent on our spatial scale to 0.03 inches, about the thickness of a line made by a medium ballpoint pen.

Within that pen scratch of time, the rate of technological change has been exponential. Modern consciousness therefore is radically different from that of the peoples who inhabited the planet before the emergence of SF.

So after decades of teaching SF, I find this to be its most useful and meaningful definition: *SF is the major non-realistic mode of imaginative creation of our epoch.* Why? Because science and technology are continually changing the conditions of our existence. And because science—not magic or myth or religion—is the principal way modern culture locates us imaginatively in time and space.

Yet according to Einstein, "The whole of science is nothing more than a refinement of everyday thinking" (59). In explaining this statement, Einstein traces how we humans think about the evidence of our senses to form conceptions of "reality," and how science extrapolates from these conceptions of "reality" to theorems of the unknown. This process of "extrapolation"—projecting into the unknown from what we know or believe we know—is both the characteristic method of SF and the most distinctive aspect of human thought. What does distinguish human beings from all other life forms of which we are aware? Like other animals, we derive consciousness from the conditions of our existence. Being determines consciousness. But unlike other animals, we willfully use our consciousness to *change* the conditions of our existence, to make them meet what we perceive to be our needs and desires. As opposed to the birds and bees and even beavers, we consciously and with volition *choose* to change the material world in which we live. Thus creativity seems peculiar to our species and may therefore be said to be the essence of humanity. To engage in this creativity, we must go from our impressions of what *is* to imagining what *might be*. This is what SF is all about, the imagining of what *might be*. By consciously changing the conditions of our existence, we also change our own consciousness, which grows and transforms in an endless, dynamic dialectic between itself and the world with which it interacts.

* * *

SF has a long prehistory. Take, for example, the myths and epics of early Greek civilization. The superhuman beings who live on Mount

Olympus are headed by Zeus, who can transform himself into a swan or a bull capable of having sex and children with beautiful earth women (Leda and Europa). The war narrated in the *Iliad* features superweapons such as thunderbolts and impregnable armor. From the point of view of these Europeans, the known world was a small portion of the Mediterranean. So just as modern SF often locates thrilling adventures and encounters with improbable beings in distant space, the *Odyssey* narrates a marvelous voyage to far distant alien worlds on the other side of the Mediterranean, where the voyagers encounter one-eyed giants, a six-headed monster, a creature that swallows passing ships, and a woman who chemically transforms people into animals.

The first fictions about travel beyond the Earth were satires of such epic voyages and improbable warfare by the Syrian writer Lucian of Samosata in the second century AD. The hero of his *Icaromenippus* attaches wings and flies to the Moon. In *A True Story,* Lucian himself and a shipload of companions are wafted to the Moon, where men marry men and bear children, and the travelers participate in an interplanetary war fought, with many strange alien races wielding marvelous weapons, to determine whether the empire of the Moon or of the Sun gets to colonize Venus.

Although it anticipates many favorite themes of such modern cultural staples as *Star Trek* and *Star Wars,* Lucian's *A True Story* is not SF but fantasy. Lucian intended it to be read as a narrative not of interesting or thrilling possibilities but of ludicrous impossibilities. Similar works of fantasy would appear now and then for the following fourteen hundred years. As late as 1532, Ariosto's *Orlando Furioso* projected a trip to the Moon merely as a preposterous fantasy (to find and bottle his hero's lost wits). But just eight years after Ariosto's fantasy, came an earth-shaking book, *On the Revolutions of the Celestial Spheres,* Copernicus's demonstration that the cosmos is vast and does not revolve around the Earth.

By then the European concept of space was already being transformed. The magnetic compass and advances in shipbuilding made possible the voyages of so-called discovery in the late fifteenth century, leading to a "New World"—that is, new to Europeans. The voyages of Columbus had taken place almost half a century before Ariosto's lunar voyage.

As the European concept of space was being reshaped, the European concept of change, and of historical time itself, was also being transformed. To understand the profound conceptual transformation that separates our consciousness of time from that of feudal Europe, consider the Sistine Chapel, which was completed in 1512. Time there

is thoroughly ahistorical. Human history is entirely irrelevant to the picture of its beginning in the Creation on the ceiling and the picture of its end in the Day of Judgment on the far wall. All the popes exist simultaneously in figures above the frescoes depicting the story of Moses on the South Wall and the story of Christ on the North Wall. Human societies have no place in this story, and human history itself is irrelevant. For example, two of the frescoes about Christ show key events in his life occurring in front of a central image of the Arch of Constantine, which was actually constructed in AD 315. No human event, no human society, and no historical change have a place in this vision of the full span of time.

Four years after the completion of the Sistine Chapel came what is arguably the first European book with a modern conception of time, Thomas More's *Utopia* (1516). More here introduced a concept fundamental to modern consciousness and SF: change in the mode of production changes the conditions of human existence. As More argues, the cloth industry's growing demand for fine English wool had led to the enclosure of the common land, which caused massive unemployment and skyrocketing inflation, which forced many people into crime, which in turn led to wholesale capital punishment. These ominous conditions induced More to coin a pun and imagine a place with a mighty host of offspring in SF: *Utopia*, the good place (eutopia) which is noplace (outopia).

By the seventeenth century, feudalism was on the way out in Europe and capitalism was on the way in. Modern science developed as part of this revolution. Along with modern science, and closely related to it, came modern SF.

Francis Bacon, often called the father of modern science, used fiction to show the wonders that could be achieved using his inductive method of scientific experimentation. In his *New Atlantis* (published posthumously in 1627) he describes the discovery of a utopian society based on experimental science, including the development of "New Artificiall Mettalls," vivisection, genetic manipulation, telescopes, microscopes, telephones, beamed images, submarines, aerial flight, and factories. Written almost exactly a century after More's *Utopia*, the *New Atlantis* displays a dramatic shift in consciousness. The marvelous society in *Utopia* is simply created by order of King Utopos and is complete and changeless; the marvelous society in the *New Atlantis* is a work in progress continually flowing from science and technology.

With the development of the telescope in the early seventeenth century, the concept of "plurality of worlds" began to be taken seriously.

The Moon, planets, and stars became destinations for the imagination of the possible.

Johannus Kepler, who developed the basic laws of planetary motion, used them in *Somnium* (published posthumously in 1634) to imagine the geography of the Moon and possible life forms that could develop there. Bishop Francis Godwin carefully followed the then-current scientific theory in describing a voyage to the Moon and its utopian society in his *The Man in the Moone* (published posthumously in 1638).[1] Cyrano de Bergerac's *Comical History of the States and Empires of the Moon* (1659) and *Sun* (1687) include marvelous inventions such as solar energy converters and talking machines.

During the seventeenth century, technological and social change were accelerating so rapidly that they could be experienced within a person's lifetime. Thus some people began to imagine a future qualitatively different from the past or present. Prior to this, there had never been a fiction set in a future period of human history. The closest had been millennial imaginings that had pictured the replacement of human history by God's kingdom. The first known fiction set in future human time is Jacques Guttin's *Epigone, Story of the Future Century* (1659).[2] This kind of imagination was still so uncongenial, however, that almost three fourths of a century elapsed before the appearance in 1733 of another significant future-scene fiction, Samuel Madden's *Memoirs of the Twentieth Century*, consisting of manuscripts that have somehow been sent backward through time.

So now all the basic fields of SF had been opened to the imagination: space travel, marvelous inventions and discoveries, and the future.

As capitalism and modern science continued to develop each other, SF extrapolated from both the tremendous changes and their disturbing consequences. During the eighteenth century, while the idea of historical progress was beginning to change the world, some authors took a bleak view of the ever-accelerating technological and social change. In *Gulliver's Travels* (1726), Jonathan Swift presented both an extended parody of experimental science and a vision of a terrifying superweapon, a flying island used by its rulers literally to crush any earthly opposition to their tyranny. Voltaire took a similar stance in *Micromégas* (1732), notable as the first known story of visitors from other planets: two giants, one from Saturn and one from a planet of the star Sirius, who mock the follies of the diminutive earthlings.

But science was not to be halted by warnings and ridicule. The following year Benjamin Franklin reported to the Royal Society his experimental control of electricity. Within a few decades, quantitative

change would become qualitative; in other words, there would be a true Industrial Revolution. On the eve of the resulting political revolutions in America and France, Louis-Sébastian Mercier's remarkable *The Year 2440* (1771) foresees a marvelous society based on reason and science: each youth's first communion involves seeing the macrocosm through a telescope and the microcosm through a microscope. Both George Washington and Thomas Jefferson owned a copy of this extremely popular science fiction novel.

By the end of the eighteenth century and the opening of the nineteenth, the early forms of European capitalism—featuring merchants, bankers, and ruthlessly efficient organization of handicrafts—were being replaced by industrial capitalism, which was beginning its global conquest. Modern science was providing the technological means to develop large factories, rapid large-scale transportation, and new energy sources. The drive to find huge quantities of coal to power the steam engines of industrial capitalism led to a re-conception of time as profound as the Copernican re-conception of space. Coal, after all, consists of fossils from remote geological ages. To discover vast deposits in the Earth's geological strata, industrial society had to discard the dominant theory of cosmic time—Bishop Ussher's dating of the creation of the universe to 4004 BC—and recognize that the Earth's age must be measured in billions of years. Only on such a scale was it possible first to comprehend the time necessary for geological evolution and then to conceive of biological evolution.

This transformation also gave profound new meaning to the concepts of the *alien* and *alienation*, two themes central to modern SF. Under industrial capitalism, vast numbers of people were soon spending their lives working for a handful of capitalists who owned everything the people produced, including the factories, coal mines, railroads, and ships. Not only were the workers thus alienated from the means of production and their own products, but they also found themselves increasingly alienated from nature, from each other, and from their own essence as creative beings. Human creativity now appeared in the form of monstrous *alien* forces exerting ever-growing power over the people who had created them.

Thus it was not mere coincidence that the emergence of industrial capitalism was accompanied by a wave of "gothic" literature, focusing on the horrible, the weird, and the catastrophic. Reflecting social, economic, and psychological realities, gothic SF tended to indulge in the irrational and to speculate desperately about humanity's loss of control over its own vastly potent creativity and creations. In this

category we might even include Reverend Thomas Malthus's *On Population,* his 1798 pseudo-scientific fantasy of a disastrously overpopulated planet where there were not enough food supplies and other resources to support so many people. Malthus's prophecy so far has been proven false. Under capitalism, population does not grow faster than production but quite the reverse, for technology grows even faster. The endemic crisis characteristic of capitalism thus seems so irrational that even its name is absurd—overproduction, leading to continual economic crises and wars designed partly to destroy excess production. Here again, creations (products) face their creators (producers) as alien monsters.

From this matrix emerged what Brian Aldiss has so aptly labeled the "first great myth of the industrial age" (23) in the form of a novel that many now accept as the progenitor of modern SF: Mary Shelley's *Frankenstein; or, The Modern Prometheus* (1818). Then, less than a decade after *Frankenstein,* Shelley created one of the first SF visions of the end of the world; the title character of her *The Last Man* (1826) wanders alone over a planet ravaged by war and disease, sampling the useless achievements of all human society on a world with a population of one. Mary Shelley set this scene in the year 2100.

The nineteenth century was the first in which life was continually being metamorphosed by technological change. The century began with the first experimental locomotive in 1801, advanced through the airship in 1852, and ended with the first experimental airplane in the late 1890s. In that century came the first practical steamboat, the screw propeller, the bicycle, and the automobile. Agriculture was being revolutionized by the invention of the harvester, the disc cultivator, the reaper, and the mowing machine. The electric battery appeared in the opening year of the century; the electromagnet, the cathode ray tube, and the magnetic tape recorder mark the successive quarters. The history of capitalism can be traced in the inventions of the adding machine, the calculating machine, the punch time clock, the cash register, the stock ticker, and punch-card accounting. Basic commodities such as industrial steel, vulcanized rubber, and portland cement were all nineteenth-century innovations. There appeared those special hallmarks of modern times: dynamite, the rapid-fire pistol, the repeating rifle, barbed wire, and the machine gun. The means of communication and artistic creation changed with the introduction of photography, the phonograph, the fountain pen (and the ballpoint), the typewriter, the telegraph, the telephone, radio, and the movie machine. Before the end of the century appeared several brief SF movies.

America proved especially hospitable to SF, even before the genre acquired a name. Many of the leading figures of antebellum fiction—including Washington Irving, James Fenimore Cooper, Nathaniel Hawthorne, Edgar Allan Poe, and Herman Melville—made important contributions to the form. How then did SF get its bad name as "sub-literary"?

With the triumph of industrial capitalism in the Civil War, there emerged a newly literate mass audience of boys and young men intrigued by the opportunities of fame and fortune in science and technology. Aimed directly at this readership was the science fiction "dime" novel, with its teenage boy genius as hero, first presented in Edward Ellis's seminal *The Steam Man of the Prairie* (1865). Between the Civil War and World War I, the most popular form of literature in America was the dime novel, and its SF versions were to have a formative influence on American culture. Only when it became an influential form of mass entertainment did SF come to be disdained as vulgar and puerile.

But it is precisely at this point that the story of SF becomes central to the story of contemporary culture in industrialized societies. The contemporaries of the science fiction dime novel are formative science fiction writers such as Jules Verne, Edward Bellamy, Mark Twain, and, most influentially, H. G. Wells, whose works form a prominent bridge into the twentieth century. After all, it was Wells who not only coined the term "atomic bomb" in his 1914 novel *The World Set Free* but also described how it could work, both technically and politically.

After these early years, the story of twentieth century and then twenty-first-century SF becomes ever more rich, complex, vital, and contentious. For struggling in all the varied print, visual, and electronic forms of SF are cultural forces whose dynamic is shaping the present and the future of the human species.

## notes

1. Robert Philmus argues that this "is the first work that can properly be called" SF.
2. For a detailed discussion of the remarkable *Epigone*, see Paul Alkon's insightful history and analysis of fictions set in the future.

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# 3
# narrative strategies in science fiction

brian stableford

There is an important sense in which the heterocosmic (that is to say, analogies between creating art and creating the universe) constructions of science fiction stand in crucial and fundamental opposition to those of folkloristic fantasy. Folkloristic fantasy imagines heterocosmic motifs as things that existed "once upon a time" but have now been eroded away by thinning. Science fiction, by contrast, imagines heterocosmic motifs as innovations: things that have not yet been discovered or invented, but might be. Unlike folkloristic fantasy, science fiction does not assume that our thin world has long been and still is getting perennially thinner—in the sense defined by John Clute in *The Encyclopedia of Fantasy*—but the reverse: that our world may be fatter than it seems, because it is pregnant with all manner of new possibilities, and will certainly get fatter in times to come.

Science fiction has its intrusive fantasies, in which the known world is disrupted by a technological innovation or an alien incursion of some kind. It has its portal fantasies, in which the protagonist sets off in a spaceship, or a time machine, or travels through some kind of interdimensional gateway, to arrive in a different world. It has its immersive fantasies, which plunge the reader directly into an imagined future, alien world, or alternative history, whose characters are native to it.

Intrusive fantasy and portal fantasy both have a "natural" story-arc built into them. The heterocosmic element in intrusive fantasy functions according to an obvious chaotic method to bring closure to such a story: the chaotic must be banished again, and normality restored. The characters who dealt with the intrusion may or may not be richer for the experience but the chaotic must be put away regardless. Similarly, the "natural" conclusion to a portal fantasy is the return home; far travelers have to return to tell their stories, just as all visionary dreamers must eventually wake up. The characters in portal fantasies

are almost always expected to be richer for their experience, no matter how relieved they are to have returned, but that wealth is usually the sort that has to be cashed in at home.

The fact that the natural tendency of both these kinds of story is towards closure is very convenient for storytellers, not only because it helps to keep the stories neat and tidy, but because storytellers' audiences have always loved satisfactory closure. A concluding "and they lived happily ever after" was once as standardized as an opening "once upon a time"; although its explicit formulation has grown tired, it is still the most convenient and popular way to end a story.

In folkloristic fantasy, the normalizing closure of the story-arc has a built-in propriety. Because the intrusion comes from the mythic past, and the milieu preserved in the portal fantasy is a relic of that past, there is a fundamental sense in which they do not *belong* in the thinned-out world. No matter how life-enhancing an intrusion may occasionally be, or how valuable the education may be that the world beyond the portal provides, their imaginary time is over; the world no longer has space to accommodate them, and never will again. In science fiction, by contrast, the opposite is true; the normalizing story-arc is intrinsically opposed to the notion of a world whose thinness is temporary and remediable, and the removal from stories of the heterocosmic innovations of science fiction is inherently inappropriate.

In early clashes between this inherent lack of propriety and the convenience of the normalizing story-arc, the normalizing story-arc was bound to win. Mary Shelley's *Frankenstein* (1818) is no different from other Gothic novels, all of which—whether their dénouements "rationalized" their supernatural apparitions or merely subjected them to ritual exorcism—tended towards normalizing endings. Victor Frankenstein, however, discovered his resurrection technology by means of the scientific method; even though he and the "monster" he creates are both destroyed, the logic of the situation is that the technique will be rediscovered and applied repeatedly, until the resurrected dead are as significant a human population as the naturally born. In order to preserve the immense convenience of the normalizing story-arc, however, that logical consequence had simply to be ignored—as similar consequences have been in countless *Frankenstein* clones in which inventions or alien incursions prove troublesome and are destroyed, often along with their facilitators.

Although this kind of "Gothic science fiction" is logically flawed, the majority of works that warrant description as science fiction—including almost all of those in the fringe subgenre of "technothrillers"—are

intrusive fantasies in which every technological innovation and every alien incursion is conceived as a horrid monstrosity crying out to be put away by the deadly-but-satisfying thrust of a normalizing story-arc.

One consequence of the convenience of the intrusive fantasy formula, with its built-in normalizing story-arc is, therefore, that if science fiction is seen as a collective entity then its dominant voice loudly proclaims that all technological innovation, and everything not yet discovered, is inherently evil. This opinion, while by no means unrepresented in the real world, runs directly contrary to the fundamental assumptions of scientific and technological endeavor, one of which is that the world can be, might be, and routinely is improved by new discoveries and technological innovations. Writers ambitious to employ fiction as a means of celebrating the intellectual achievements of science and the life-enhancing potential of technology have therefore found themselves in an embarrassing situation.

Portal SF stories are not as restrictive as intrusive SF stories, but they are more difficult to contrive, especially in respect of futuristic scenarios. The necessity of returning from the expedition through the portal reduced all futuristic fantasies to the status of dreams before H. G. Wells invented a time machine, and that was a device which soon generated a whole spectrum of new corollary problems, in terms of opportunities to change past history and the hazards of so doing. The necessity of the final return tends to rob all portal fantasies of the dynamic element crucial to progressive imagery; singular trips in spaceships also tend to resemble visionary dreams. As with intrusive SF, the logic of the situation is that once a demonstration has been made by a portal fantasy of what the scientific method can reveal and produce in other circumstances, the mortality of the present's "normality" becomes obvious, and its entitlement to function as a privileged situation to which all story-arcs must lead is lost.

The problem of adapting the narrative strategies of intrusive and portal fantasy to science fiction could have been avoided if writers had been more easily able to write immersive science fiction, because immersive fantasy is not cursed with the same "natural" story-arc as intrusive and portal fantasy. The readability of immersive fantasy had, however, always depended on the fact that readers were at least as familiar with the mythic past as they were with the historical past and the experienced present. Science fiction stories set in hypothetical futures, alien worlds or alternative histories had no such recourse. Writers and readers of folkloristic fantasy could bring to bear a coherent series of assumptions about the likely contents and dynamics of a heterocosmic creation

with a simple narrative formula like "once upon a time"—but those assumptions were not merely useless but actively antipathetic to what writers of immersive science fiction needed to do.

Immersive science fiction stories written before 1900 invariably came equipped with a "metanarrative preface": an introductory essay explaining to readers what the writer is about to do, and providing a kind of imaginative "handle" that readers could use to get their bearings within the story. Writers of such stories routinely assumed that the ideative apparatus required by readers for the navigation of the heterocosmic milieu would also require continual supplementation by authorial intrusion. In effect, the metanarrative preface that every nineteenth-century example of immersive futuristic fantasy carries serves the same function as a portal in a portal fantasy. It starts readers off in the familiar world and then leads them by the hand into an unfamiliar one. Because a manifest authorial voice is required to do the leading, however, such stories cannot take full advantage of the narrative techniques that had been developed by novelists for encouraging reader identification with characters, which had made authorial devices far more discreet, tending gradually towards invisibility. A metanarrative preface is, by necessity, a massive expository lump.

As the twentieth century began, therefore, writers of immersive futuristic fiction found themselves at odds with broader patterns in the evolution of fictional technique. Writers of fantasies using the apparatus of the mythic past were not as far out of step, because they were free to develop intrusive and portal fantasies without running into any logical problems, but SF writers found that it was intrinsically easier to write about futuristic heterocosms from the distanced viewpoints of hypothetical historians or satirical commentators than to display them through the innocent eyes of its native inhabitants.

The formal metanarrative preface began to fade away after 1900, as writers increasingly attempted to embed the informational substance of such prefaces within the story rather than presenting it as something essentially extraneous. No matter how adroitly the "back-story" of the heterocosmic world within the text was woven into the narrative, however, the problems of initial introduction and periodic supplementation remained. Even readers who were tolerant of expository lumps of background information could not help having difficulty in orientating themselves within science-fictional heterocosms; the principal costs of their being provided with the necessary guidance were awkward narrative flow and characters with whom it was difficult to identify.

The necessity of getting over the hurdle of the metanarrative preface was the principal reason for the unusually immense importance within the history of labeled science fiction of the science fiction magazine. The title of such a magazine functioned as a device to inform readers of what to expect—or, at least, what not to expect—when they began the immersive fantasies contained within their covers. The act of reading is intrinsically akin to stepping through a portal, and the packaging of books plays an important role in assisting readers to orientate themselves within the texts they contain; such packaging is more important with respect to heterocosmic texts than with simulative ones, and much more important with respect to heterocosmic texts that cannot rely on universal assumptions about the mythic past. The portals provided by early SF magazines were decorated with illustrations and blurbs that helped enormously to point readers in the rough direction of each heterocosm they were about to enter. Such stepping-stones were invaluable in the tacit quest of those early SF magazines, which was the rough outlining of a "mythic future" that could take the place, to the extent that was possible, of the mythic past of folkloristic fiction.

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It was probably inevitable, although there is a certain perversity about it, that many aspects of the nebulous "mythic future" which came to be assumed by the writers and readers of early SF magazines are straightforward transfigurations of the mythic past. The groundwork for such transfigurations had already been laid by the late nineteenth-century occult revival, which had relabeled many varieties of magic in order to clothe them more respectably for a post-Enlightenment world. The new jargon of telepathy, teleportation, precognition, and other items of "parapsychology," was avidly adopted into science fiction, such "wild talents" being represented as evidences of a latent superhumanity whose flowering was yet to come rather than mythic relics sieved out of everyday experience by thinning.

Of all the futuristic technologies that early magazine SF writers imagined and attempted to integrate into a consensus view of the likely course of the future, one particular image gained a unique priority: the spaceship. Magazine science fiction rapidly developed an intimate relationship with the idea of space travel, and—more importantly—the idea that space travel was likely to provide the central theme of future history. Within a decade of the appearance of the first SF magazine in the USA, the fundamental "mythic future" on whose ready-made understanding much

magazine SF depended was the myth of a coming Space Age, in which the central story of the future would be the expansion of the human species to other worlds.

The myth of the Space Age became a handy container for other oft-used elements in science-fictional futures. Earthbound futures, especially repressive ones, were routinely provided with literally uplifting endings by the iconic image of a "cosmic breakout." The notion that a galaxy-spanning society of Earth-clone worlds might ultimately be established—and often then withdrawn so as to re-isolate the imagined worlds—became a handy framework for all manner of exotic human and alien societies. Space travel became a kind of infinitely, elastic portal connecting all manner of possible worlds, so that stories beginning in relatively simple and familiar futuristic scenarios could make rapid progress into the unknown.

There were important parallel developments in magazine SF—the most significant involving the investigation of potential corollaries of the idea of time travel, whose ultimate extrapolation was the notion of an infinite array of alternative histories packaged in a multiverse of parallel worlds—but such developments never threatened the dominance of the Space Age as a mythic future. The multiverse of alternative histories was much more extensively used for retrospective analyzes of the logic of past history than as a device for the projection of alternative futures.

The association of science fiction with the idea of space travel now seems so intimate and intrinsic that it is hard to imagine alternative histories in which it never happened. The European subgenre of scientific romance, however—which retained an independent existence and evolution until the end of World War II—always regarded space travel as a peripheral issue of little significance to the future of humankind. To the extent that scientific romance had a consensual image of the future, that consensus saw the future in terms of social and physical evolution, intrinsically earthbound, at least unless and until the uninhabitability of the Earth might face a desperate interplanetary migration. There is not the least trace of a Space Age future in scientific romance. Far from being the obvious and inevitable development that hindsight makes it seem, magazine science fiction's development of the mythic future of the Space Age actually requires closer examination and more detailed explanation.

The popularity of the spaceship as an iconic image of American SF was not so much a result of its likelihood as an actual technological development—although the first US-launched moon landing did take

place a mere 40 years into the genre's history—but its resonance with more recent and more localized "mythic past" than the elastic fabrication of folklore.

As soon as history became the substance of naturalistic fiction, the tendency to distort it for literary as well as political reasons subjected it to the same pressures of intrinsic narrative form and audience appeal that had previously been exerted by storytellers on mythic history. History, in large measure, became a narrative in itself—or, more accurately, a series of narratives. The tentative mythic futures that are discernible in European scientific romance do not differ very much between Britain, France, and Germany; in those nations, the history of the future is seen as a continuation of a long past history rooted in Classical Greece and Rome, extrapolating clearly perceptible social and technological progress continually blighted and hindered by the tendency of neighboring nations to fight and invade one another. The USA, on the other hand, saw its own past very differently: as something recently started, after a bold and conclusive break with European history, in which social and technological progress had been quite spectacular, relatively uninhibited by local conflicts. Although the USA had been involved in numerous wars since its founding in the War of Independence, such internecine conflicts as the Civil War and the Indian Wars had been easily construed as instruments and aspects of progress, while international conflicts had been (and still are) construed as attempts to spread progressive American Enlightenment to various dark continents.

Because the USA was a recently founded nation on a recently discovered continent, the USA had no residual folklore of its own; the folklore imported by immigrants from Europe had been set aside with other redundant aspects of the European heritage, and Native American folklore had been put away in a more definite fashion. The USA's "mythic past" was, therefore, derived from—or, rather, imposed upon—its historical past, and its central narrative thread was a stirring tale of westward expansion, of pioneering and frontiersmanship, in which the magic of the European mythic past was largely replaced by weaponry, especially the talismanic Colt revolver.

Given all this, it is hardly surprising that American science fiction, unlike European scientific romance, developed a consensus image of a future of expansion, shaped by pioneers and frontiersmen, who would colonize the solar system and the galaxy as American immigrants had colonized the West. On the "final frontier" of space, the spaceship replaced the covered wagon, Mars and Earth-clone worlds orbiting

other stars replaced Texas and California, the blaster replaced the Colt revolver, and all wars were wars of progressive social enlightenment.

In much the same way that magazine writers transfigured ancient myths into SF, they also transfigured Westerns—indeed, they routinely conflated the two processes, spaceships becoming not merely the constituents of interplanetary wagon trains but also chariots of the gods. Many writers felt embarrassed about this, much as they had felt embarrassed about yielding to the pressure of normalizing story-arcs, but their protestations often rang hollow.

* * *

The USA was not the only twentieth-century nation that conceived of itself as the product of a recent, radical, and irrevocable historical break; the USSR also represented itself as a post-Revolutionary cauldron of progress. It did not develop science fiction of the same sort but it did invest heavily enough in actual space technology to launch Sputnik into orbit in 1957, thus provoking the USA into a "space race," which was inevitably construed by American SF writers and readers as the first phase of a Space Age.

The early phases of the space race seemed to many SF enthusiasts to constitute a justification of the majority decision taken by their own founding fathers, but it was not without cost. When the actual moon landing took place, it quickly proved to be an end rather than a beginning, a small step after which no further step, let alone any giant leap, was practicable. Although euphoria clouded judgment, at the time, the revelation that the moon landing was not the beginning of a Space Age at all provoked a crisis in the history of subgeneric science fiction, by making it glaringly obvious that its mythic future had little or nothing to do with potential patterns of technological and social progress, and had not, after all, escaped the fanciful toils of the broader genre of fantasy.

Although the exposure of the mythic future of the Space Age as a naked emperor seemed to its most fervent adherents to be a terrible tragedy, there remains a sense in which the dependence of science fiction on any kind of mythic future had always been a regrettable handicap. In much the same way that the sum total of normalizing intrusive science fiction stories suggests that all innovation is evil, so the sum total of stories set in the mythic future of the Space Age suggests that some such future is at least the most desirable, and perhaps the inevitable, shape that the future might take.

Various strategies have been tried since 1969 to find new mythic futures, whose basic assumptions might assist readers to navigate a course through texts affiliated to such myth-sets. The most loudly touted was cyberpunk mythology, which found a new final frontier in the wilderness of cyberspace, where nerds could become super-powered cowboys and to which artificial intelligences could provide bespoke pantheons. Almost as soon as they were manifest, however, the basic suppositions of cyberpunk were plundered to prove a rescue package for a New Space Age, hastily revamped as a post-human project whose principal protagonists would be AIs and genetically engineered cyborgs, the latter being conveniently freed from the unfortunate frailties of flesh that made a human Space Age no longer imaginable. Both of these developments, however, were able to take considerable advantage—in their variety as well as their rate of evolution—of the education that half a century of labeled SF had laid on for its readers.

Although the ability of a large population of readers to draw upon a ready-made understanding of a mythic past or a mythic future is a considerable asset to a writer desirous of drawing readers into a heterocosmic construction and assisting them to navigate comfortably within it, it is not an absolute necessity. Just as many nineteenth- and twentieth-century readers became gradually more adept at responding to the devices used by naturalistic novelists to create a sensation of synthetic experience, so some twentieth-century readers of SF became gradually more adept at responding to the devices used by SF writers to figure out exactly what kind of heterocosm, out of all the multitudinous possibilities, they might be dealing with. Writers and habitual readers of the subgenre quickly cultivated an expertise in the extrapolation of various standard premises, which allowed them to enter into increasingly complex collaborative explorations.

The initial effect of this process was to make science fiction into an esoteric subgenre accessible only to initiates, resulting in the growth of a manifest society of SF fans, whose communications were mediated through fanzines and conventions. As time went by, though, the relevant skills became far more generalized, especially when the imaginative produce of magazine SF began to be adapted for TV and the cinema in the 1960s. As the number of viewers capable of understanding immersive science fiction narratives on TV increased steadily, the number of readers capable of handling heterocosmic materials in text form with consummate ease became so large that the boundaries between genres and subgenres began to disintegrate, not only at the

literary end of the marketing spectrum but in the sturdiest strongholds of genre marketing.

Few habitual SF readers are nowadays in need of the crutch provided by a mythic future, and the number of genre fantasy readers who require the crutch of a mythic fantasyland is also in steep decline. Habitual readers are in general much more adept than they once were at following the logic of heterocosmic modifications of naturalistic scenarios, although the privilege afforded to dogmatically faithful simulacra has too much historical inertia to die easily. On the other hand, the number of habitual readers is steadily declining in Europe and the USA, largely because it is not being renewed in the lower deciles of the demographic spectrum.

The principal reason for the gradual erosion of the reading habit is competition from other media. The phenomenon is undoubtedly exaggerated, however, by the fact that reading fiction is nowadays a more difficult business than it used to be, simply because the skills it routinely requires are more elaborate. It is not surprising that many young people despair in advance of their ability to cultivate the skills required for the full appreciation of modern fiction, just as many adults despair in advance of their ability to cultivate the skills required to make full use of mobile phones. Although simple texts—especially simple heterocosmic constructions reliant on the mythic past or the mythic future of the Space Age—are by no means as difficult to obtain as simple mobile phones, the direction of the trend is obvious.

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