Science Fiction and the Future of Criticism

ERIC S. RABKIN

There is an extraordinary, exhilarating moment in Maureen F. McHugh’s novel China Mountain Zhang (1992) in which Zhang, at that point a “daoist engineer” in training (232), experiences what is to him a fundamentally new way of thinking. He is a student at China’s—and the world’s—leading technological institute. The institute’s vast computer system is pervasive. Once one truly jacks in, to inquire is to learn, to think is to do, to play is to create. Or so he is told, for Zhang, born and raised in America, cannot lose himself enough to experience the system fully. To get Zhang there, his mentor sets him the task of designing doors. By focusing on doors without number, doors of every shape and size and material and use and mechanism, Zhang comes to see the doors around him more vividly than ever before. There is an overwhelming power in the multiplication of perspectives. He notices that “China is obsessed with walls. The university is walled, every factory, every school, every office complex or hotel is surrounded by a wall. And so doors are very important because they represent vulnerability but also opportunity, which is a great metaphor for every endeavor” (228). But that realization is not the exhilarating moment, merely preparation for it. Zhang’s unwitting submission to the minds of a thousand others (door designers), and to the necessities of materials and to the realities of human needs, trains his mind so that when his mentor allows Zhang to design a beach house, suddenly something new happens.

And I reach. For a moment there is no perspective and I am on the edge of panic, but instead I give in, I let myself be swallowed by the emptiness and instead I expand, the system becomes my own memory. I fall through. I feel my mind’s boundaries, I know how little I can think about at one time, and then those boundaries become unimaginably huge and I
am myself, myself, but able to think and have the thing I think in my mind without holding it, without concentrating, because I am using the system to concentrate for me. The system is there for me, a part of me. . . . I feel whole, and now it is time to go home.  (234)

What Zhang feared, as we Westerners so often do, was losing his self through submersion in the system, dissolution in the mass. But the immense system becomes part of him, and he becomes more capable than ever.

Carl Freedman wrote that his “thesis about critical theory and science fiction is that each is a version of the other” (xv). In the voice of science fiction, McHugh urges us as readers to make ourselves something more capable than any individual can be alone. In the voice of critical theory, she asks us as critics, as she asks Zhang as designer, to make qualitatively more informed, imaginative, capacious judgments, judgments that in their formation draw on a vast, technologically mediated set of collective knowledge and experience—that is, on a system. This goal, nearly utopian to Zhang, is one we may never fully reach, but in my view it is the future of criticism.

Science fiction has the oldest active fandom of any literary genre. Hugo Gernsback, that hungry immigrant visionary, wrote and edited magazines, like Modern Electrics, that had some science fiction content even before the genre had a name. When he founded Amazing, the first science fiction magazine, in 1926, he sought to engage his readers in a community so that they would want to buy his magazine in order to discuss its contents. He promised, and delivered, active letters columns. In 1934 he and Charles Hornig used Wonder Stories to launch the Science Fiction League (Clute and Nicholls), a more and less successful attempt to give structure to that community. While the league ultimately failed as a commercial proposition for Gernsback and Hornig, fan clubs proliferated. Science fiction fandom runs over two hundred conventions a year in the United States alone; publishes fanzines, supports small presses; issues critical judgments in many forms, including the commercially crucial annual Hugo Awards; and generally enters into a compelling conversation with professional writers and editors even as it functions as a farm club for their ranks. In these regards, science fiction fandom is the exemplar for all later fandoms.

Among its many activities, science fiction fandom began to build resources for criticism. Pioneering fan enterprises, such as Advent Publishers, based in Chicago, brought out not only criticism by readers, writers, and editors in book form but also such groundbreaking works as The Encyclopedia of Science Fiction and Fantasy (1974–82), by Donald Tuck, an Australian science fiction aficionado. If one is to do science fiction criticism as fully as possible, like Zhang told to study doors, one must expand oneself by giving oneself up to these resources. The old model of literary criticism, in which the critic reads everything and issues a personal assessment, eventually had to contend with the collectivity of fan critics wielding fan resources, and it still does.

Just as the World Wide Web was born at CERN to serve the obvious collaborative needs of worldwide science, so the first extrascientific appropriations of the power of the Web served the obvious collaborative needs of worldwide science fiction. When the Web became available, the encyclopedic efforts of fandom were ready to be ported to digital form, the communities of collaborators extended, and the results made widely available. A fine current example is the Internet Speculative Fiction DataBase (von Ruff), a work dependent on volunteer labor that grew from earlier efforts of the New England Science Fiction Association to become a valuable scholarly tool.

The Web provided us not only with resources for science fiction criticism but also with new fields for science fiction play. The same technology that supports democratic collaboration supports multiplayer gaming. Long before
the Internet spawned the Web, text-based games flourished. And most of these were marked by
the same tropes and elements that publishers associate with science fiction—techno-wizardry, fantastic
adventure, and, as Edgar Allan Poe called it, “ratioication” (299): figure out where
you are in an abandoned spaceship, collect strange and sometimes helpful objects, and
think your way to safety. When computer games became more visual, and bloody, they by and
large continued to feature science fiction elements, although now a twitching thumb is often
more valuable than a throbbing brain.

If we ask what science fiction is, we may find many answers. One that I have promulgated,
in The Fantastic in Literature, is that it is the branch of fantastic literature that claims plausibility
against a background of science. But that is a narrow definition, quite workable for the text-
minded but inadequate to a broader criticism, the sort of criticism that science fiction invites, because science fiction is not limited to texts.

In December 2001, the University of Michigan hosted the fourth international Wiesner
Symposium on science and policy. These symposia honor and were inspired by Jerome B.
Wiesner, a University of Michigan alumnus, a physicist, an adviser to United States presidents,
and president of perhaps the most prestigious technical institute in the real world, the Massa-
chusetts Institute of Technology, which is, not coincidentally, the home of the New England
Science Fiction Association. In 2001, a year with literary and filmic resonances around the
work of Arthur C. Clarke and Stanley Kubrick, the year in which the human genome was de-
clared known territory, the Wiesner Symposium theme was “Braving the New World: Benefits
and Challenges of Genetic Knowledge.” All the speakers save one, the kickoff speaker, were
renowned scientists. I was the kickoff speaker.

The organizers asked me to introduce a showing of the film Gattaca (1997). Their notion
of beginning the symposium with science fiction criticism and then with science fiction
was not only appealing to the public but also reflective of the modes of modern science, which,
unlike those of traditional criticism, are fundamentally networked and collaborative. They
hoped, like Zhang, to develop more fully their ideas by opening a door to another system. In ti-
tling the conference, the organizers alluded to Aldous Huxley’s Brave New World (1932), rec-
ognizing that one person’s utopia (unlimited sex) is another’s hell (love is forbidden). But did they recall that Aldous Huxley was a grandson of T. H. Huxley, Charles Darwin’s most famous
contemporary adherent? Did they know that T. H. Huxley, that great promoter of evolution-
ary thought, had for nearly two years a young lab assistant named Herbert George Wells? Did

---

*Fig. 1*

Waterwitch outboard motor
(Melih Selvili
Outboard Motor Collection, Rahmi M.
Koç Museum, Istanbul [http://www.mk-museum.org.tr/]).
Fig. 2
Poster for Them!
they notice that Huxley’s title in turn alluded to William Shakespeare’s *The Tempest*, in which social order can be restored only after Prospero drowns his books (5.1.57)? And did they recall that Shakespeare and Aldous Huxley each used the term “brave new world” with both irony and hope? The conference subtitle suggests that they were mindful of the ambiguity. But I know from conversation with them that they did not consider that the object of science fiction criticism might be not only film and novel and play but also nonfiction (like James D. Watson’s *The Double Helix: A Personal Account of the Discovery of the Structure of DNA* [1968]), biography (like Paul de Kruif’s *The Microbe Hunters* [1926]), policy studies (like Vannevar Bush’s *Science, the Endless Frontier: A Report to the President* [1945]), and even science itself (like Einstein’s famous gedankenexperiments). To this list we should add science fiction poetry, music, industrial design, city planning, architecture, politics, fashion, and world’s fairs. Science fiction, in other words, is no more limited to science fiction literature than love is limited to love letters. Science fiction is what I would call, adapting McHugh’s term, a cultural system, and the future of criticism lies in exploring cultural systems. Toward this future, science fiction should lead the way.

To suggest that science fiction is a system, something much larger than a genre, merely acknowledges that it fulfills an *Oxford English Dictionary* definition of *system*: “A set or assemblage of things connected, associated, or interdependent, so as to form a complex unity.” We recognize that assembled unity when we

---

*Fig. 3*

Catacomb nest in *Them!*
speak of Faustian bargains, Frankenstein experiments, Star Wars weaponry, and aliens who move faster than a speeding bullet. The streamlining of house trailers may have made some practical sense, although it smacks more of exoticism than of fuel conservation. The streamlining of dinky outboard motors makes no practical sense at all (fig. 1), unless one considers the design part of a cultural system in which the motor housing represents the fulfillment of a fantasy of speed in an alien element (water) and the practical impact of such streamlining is thus measured by the bottom line of the manufacturer.

A cultural system, as I mean the term, may coordinate a set of typical dramatic situations, recurring elements, even themes and styles, as science fiction does by including, for example, the encounter with the alien, time machines, wonderment about the definition of the human, and streamlining. Science fiction is quite naturally the most influential cultural system in a time like ours, in which dominant technological change constantly provokes hope, fear, guilt, and glory. But science fiction is not our only cultural system. The western offers us another, with its typical story so well articulated by John Cawelti and its characteristic landscape so well presented by Hollywood. Its typical values are embodied in figures fictional, semifictional, and more or less real, like Paul Bunyan, Davy Crockett, and John Wayne; in western clothing, western type fonts, western novels, and western movies; in country-and-western music; in western cooking; and in western customs, like rodeos, which attract camp followers during the rodeo season the same way science fiction con-

![Charlie Chaplin in Modern Times.](image-url)
ventions attract fans. Rock and roll is yet another cultural system, with its great attempt to capture its history, politics, music, and legends in its own hall of fame in Cleveland.

When we deal with a cultural system, even if we believe we are dealing only with a novel or a film, we must look widely. In a post-9/11 issue of the New York Times, Rick Lyman wrote about the way horror films deal with the fears of their ages. Here is his first example: "In [the] climactic scene from Them! (1954), the seminal giant-bug movie from the age of post-atomic anxiety, Dr. Medford . . . becomes the symbolic spokesman for all of the vague unease felt by a prosperous and complacent American public wrapping its mind around the new, terrifying concept of nuclear radiation" (fig. 2). It is true that America in 1954 was afraid of atomic radiation, but, more to the point, America was afraid of the bomb in the hands of the Soviet Union. Commies were everywhere, fifth columnists living among us, each one mindlessly following implacable orders from Moscow. It is no accident that the movie chose ants to be enlarged by radiation or that they nest underground. The movie poster’s term “catacombs” refers to the ants’ nest (fig. 3). Life for the ants is death for Americans. The poster makes clear that the conflict is a military one. The cultural system of science fiction here coordinates politics, technology, and more enduring symbolic concerns about gender (ants are female, nests are evil, but men have flamethrowers) and poetic space (aboveground is good; belowground is bad).
The image of the ant is worth consideration. In the Bible (Prov. 6.1: “Go to the ant, thou sluggard; consider her ways, and be wise”) and in Aesop, the industry of the ant is extolled. In science fiction, the ant represents one unit of a hive mind. Such minds, of which there are countless science fiction examples, such as the Martians in Olaf Stapledon’s *Last and First Men* (1930), are typically anathema: antihuman, evil. But if the minds, such as the symbionts in Stapledon’s *Star Maker* (1937), allow those involved with them to remain individuals, they are glorious, superhuman, good. To the extent that machine minds mimic this distinction—as with the vicious emergent consciousness in Harlan Ellison’s “I Have No Mouth, and I Must Scream” (1967), contrasting the computer system in McHugh’s novel—the distinction carries
across from the realm of the biological to the realm of the mechanical. We come to understand that in the science fiction system, individuality in community is to be prized, but unalloyed individuality or unalloyed community is wanting. The system supports an articulable ideology from Mary Shelley’s *Frankenstein* (1818) to the present.

Few of us would suggest that Charlie Chaplin was a science fiction auteur, but his *Modern Times* (1936) certainly participates in the cultural system of science fiction (fig. 4). The machine processes us, threatening to turn us into generalized pulp, the way telephone lines line us up (fig. 5) and eventually turn us into clones (fig. 6). In architecture, the homogenized reproduction of homes (fig. 7) homogenizes the reproduction of the family (fig. 8). More recently, the recognition that decoding our DNA is an important step toward controlling us suggests that heroism may lie in a paraplegic’s struggle to climb the double helix, as Eugene does in *Gattaca* (figs. 9 and 10).

As we become ever more connected, the cultural system that is science fiction will produce a criticism that is ever more collaborative, crossing the boundaries of individual contributors just as it crosses productive domains from household appliance to political debate. As the number of contributors increases, and as the body of shareable knowledge increases, criticism will inevitably add quantitative methods to its ever-more-capacious qualitative methods.

At the University of Michigan, Carl Simon, a mathematician; Bobbi Low, a population biologist; and I, working with about fifteen student researchers each semester since January 1998, have taken a combined qualitative-quantitative
approach to science fiction as part of our Genre Evolution Project (Rabkin and Simon). Allow me to give one result of this collaborative work.

We have been reading a representative sample of American science fiction magazine short stories. In developing categories for the genres (or subgenres) into which they fell, we found it indispensable to distinguish between genre form and genre content. With fourteen genre forms and sixteen genre contents, we were able to code at least ninety-seven percent of all stories encountered.

The initial examinations by the student researchers Adrienne Heckler and Zachary Wright of the possible associations between genre forms and genre contents led to provocative results that prompted Simon and me to explore further. When we consider all the stories (fig. 11), certain combinations of genre form and genre content stand out, particularly that of alien contact and
FIG. 9
Jude Law in Gattaca.

FIG. 10
Jude Law in Gattaca.
**FIG. 11**
Number of Each Combination of Genre Form and Genre Content in a Representative Sample of 1,959 Science Fiction Short Stories Published in American Science Fiction Magazines during 1926–2000

<table>
<thead>
<tr>
<th>Genre Form</th>
<th>Genre Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adventure</td>
<td>a: Alien</td>
</tr>
<tr>
<td></td>
<td>b: Alternative history</td>
</tr>
<tr>
<td></td>
<td>c: Capability shift, mental</td>
</tr>
<tr>
<td></td>
<td>d: Capability shift, physical</td>
</tr>
<tr>
<td></td>
<td>e: Dystopia</td>
</tr>
<tr>
<td></td>
<td>f: Eutopia</td>
</tr>
<tr>
<td></td>
<td>g: Exploration</td>
</tr>
<tr>
<td></td>
<td>h: Invention</td>
</tr>
<tr>
<td></td>
<td>i: Mad scientist</td>
</tr>
<tr>
<td></td>
<td>j: Monster</td>
</tr>
<tr>
<td></td>
<td>k: Postapocalypse</td>
</tr>
<tr>
<td></td>
<td>l: Psi powers</td>
</tr>
<tr>
<td></td>
<td>m: Surreal novum</td>
</tr>
<tr>
<td></td>
<td>n: Sword and sorcery</td>
</tr>
<tr>
<td></td>
<td>o: Time travel</td>
</tr>
<tr>
<td></td>
<td>p: Utopia</td>
</tr>
</tbody>
</table>

Note: Each genre form can be paired with any genre content, resulting in a diverse set of stories across different combinations.
Each story is assigned one genre form and one genre content. A $\chi^2$ test of these data shows that the combinations alien contact–alien, exploration–exploration, and domestic–surreal novum occur very far more often than they would in a random distribution and that alien contact–invention occurs very far less often ($p << 0.0001$).
FIG. 12
Number of Each Combination of Genre Form and Genre Content for the 159 Stories from the Set in Fig. 11 That Were Reprinted More Than Twice

<table>
<thead>
<tr>
<th>Number of Stories</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adventure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alien contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bildungsroman</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crisis escape</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Genre Contents
- a: Alien
- b: Alternative history
- c: Capability shift, mental
- d: Capability shift, physical
- e: Dystopia
- f: Eutopia
- g: Exploration
- h: Invention
- i: Mad scientist
- j: Monster
- k: Postapocalypse
- l: Psi powers
- m: Surreal novum
- n: Sword and sorcery
- o: Time travel
- p: Utopia
A $\chi^2$ test of these data shows that the combinations satire-dystopia; philosophical tale–capability shift, mental; and philosophical tale–exploration occur far more often than they would in a random distribution ($p < 0.005$).
alien. But when we consider the stories that received substantial reprinting (fig. 12)—a clear measure of marketplace success over time—other combinations thrive, such as satire and dystopia. It seems as if, to get a science fiction story printed at all, one is best advised to write an alien contact–alien story; however, if one hopes to make a lasting contribution, one is best advised to write a dystopian satire. Why is that?

I cannot in the scope of this argument pursue a detailed answer to that question, but I can suggest that the answer will lie neither in some quality of each story’s style or execution nor directly in what people like to read, since alien contact–alien first publications occur at the same time as satire-dystopia republications. We clearly need to know much more about the times, about what different modes of distribution and consumption mean, and in general about the cultural system of science fiction.

We do know this about the cultural system of science fiction: it is rich, broadly useful, and apparently self-contradictory, just as the God of the Bible sends both the flood and the rainbow covenant. Science fiction was born in part out of distrust of science, a distrust it continues to manifest in works like Gattaca, but it also bolsters a faith. As the pioneer editor F. Orlin Tremaine said, “We must so plan that twenty years hence it will be said that Astounding Stories has served as the cradle of modern science” (Carter 16). Science fiction text, in other words, consciously has been part of a larger cultural system almost from the moment in the early twentieth century when the genre was first named.

I believe that ultimately, as we see by comparison with critical writing about the western and about rock and roll, science fiction criticism, like one of Zhang’s doors, will open us to a more expansive criticism, one that will be more systemic, more collaborative, and more quantitative. Just as science fiction showed the way in almost every application of new cinema technology, and just as it has again shown the way in exfoliating many of the possibilities of the World Wide Web, it will show the way in criticism. This leadership is already apparent in the new attempt by the Oxford English Dictionary to use the Web to enlist readers in its citation research. In what field did the lexicographers begin this new sort of word study? Science fiction (Prucher and Farmer). Science fiction right now is the cultural system from which systemic criticism is being born (fig. 13).

Works Cited


FIG. 13
Launch of the first rocket from Cape Canaveral, July 1950 (NASA).