



The Medical Lessons of Science Fiction*

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What does science fiction have to say about the institution and practitioners of medicine? One might think that ever since 1818, when Mary Shelley's *Victor Frankenstein* reanimated charnel waste, science fiction has been especially drawn to that branch of science that most intimately holds human bodies, lives, and deaths in its hands. But, in fact, as an institution, science fiction has been unexpectedly reluctant to deal with matters medical, and when it has, it has consistently displayed ambivalence and distrust, views worth examining if one is to understand how society at large conceives of medicine and how medicine must adapt if it is to enjoy the support of society at large.

Since January 1998, the University of Michigan Genre Evolution Project (GEP) has been testing the hypothesis that cultural creations evolve in the same way as do biological organisms—that is, as complex adaptive systems that succeed or fail according to their fitness to their environment and, by their existence and success, modify their environment. As our initial test subject, we chose the twentieth-century American science-fiction short story. While our approach to this subject may seem thoroughly plausible to those trained in biology, it stands against

*The Genre Evolution Project (GEP) web site (<http://www.umich.edu/~genreevo>) includes a Team Roster that lists the names of all faculty and students involved in this work from its inception. I particularly want to thank my friend and collaborator Carl P. Simon, Professor of Mathematics, Economics, Public Policy, and Director of the University of Michigan Center for the Study of Complex Systems, for his constant and continuing support. I also want to thank my friend and collaborator Bobbi Low, Professor of Natural Resources, for her many insights into experimental design and her indispensable knowledge of statistics. Finally, I want to thank the host of bright, intelligent, and vigorous student researchers who have contributed to the GEP from its very inception. We work to explore our culture together and rely upon each other.

many of the assumptions and methods of traditional literary criticism, based as they typically are on the close analysis of a limited number of unusual works (for example, so-called masterpieces) or a focus on the works of one or a handful of especially valued authors (for example, Keats or Romantic poets). As part of the effort to test our hypothesis, we developed a series of fields for coding stories. Stories are read by teams of student researchers who post their common codings to a shared database. These researchers are assigned readings of whole issues of science-fiction magazines within the period from the first such magazine, April 1926, through the end of 1999. The assignments are made with the aim of generating a representative sample of science fiction. It is already agreed, as Paul A. Carter has noted, that science-fiction short stories are reflective of the field as a whole.¹

As of 18 December 2000, our database contained records for 1,836 unique stories of which many were reprinted for a total of 3,233 records. Each record contains a field for “dominant science”—that is, the science that dominates the story. Not every science-fiction story has a dominant science, of course, and, as is inevitably the case in large-scale research, not every record is complete. Filtering out records for which dominant science is either “Not applicable” or blank leaves a dataset of 1,094 unique stories.

Over the course of our first year, using a process we call Dialectical Database Design, we converged on a list of eighteen values for the dominant-science field that seem adequate for coding all science fiction and that are sufficiently distinguishable from each other that they can be used comfortably in making forced coding decisions. Those values are anthropology, astronomy, biology, chemistry, computer science, ecology, economics, engineering, geology, history, linguistics, mathematics, medicine, pedagogy, physics, political science, psychology, and sociology. If the stories were randomly distributed among these values, one would expect ~5.56% of the total to be coded for each science, or, for the 1,094 unique stories that were assigned a value, approximately 61 stories. Given how often one hears reference to the “art” rather than to the “science” of teaching, one might expect that pedagogy would rarely be treated as a science, and that is so (6 records among the 1,836 unique titles, or ~0.33%). Given the advertisements offering technical training in many science-fiction magazines, one might expect that physics would often be the dominant science, and that is so (171 records among the 1,836 unique titles, or ~9.31%). Given that medicine is so powerful a field emotionally, as Shelley’s *Frankenstein* makes clear, one might well expect that medicine would often be the dominant science, but that is

not so. In fact, even among the 1,094 stories for which a dominant science is designated, medicine occurs only ~3.75% of the time (41 stories), only two-thirds of the 61 stories expectable from such a random distribution.

Science-fiction stories by dominant science	N	% of 1,836	% of 1,094
Expected random distribution of 1,836 total unique texts	102	5.56%	
Expected random distribution of 1,094 science-designated unique texts	61		5.56%
Unique stories, dominant science = pedagogy	6	0.33%	0.55%
Unique stories, dominant science = physics	171	9.31%	15.63%
Unique stories, dominant science = medicine	41	2.23%	3.75%

Science fiction, in other words, seems to significantly underrepresent medicine. Why might this be so? In order to investigate this question, we can consider reprints. A reprinting of a story is, in a sense, an index of cultural success, just as reproduction is an index of biological success. Of the forty-one stories coded for medicine as the dominant science, only five were reprinted.

Reprinted stories, dominant science = medicine	# of Reprints
"Flowers for Algernon" (Keyes)	19
"Of Mist, and Grass, and Sand" (McIntyre)	17
"The Planners" (Wilhelm)	8
"The Last Flight of Dr. Ain" (Tiptree)	7
"The Miracle of the Broom Closet" (Norbert)	2

What do these stories have in common? What might be key characteristics that lead to success for medicine stories in a genre that generally tends to resist them?

At first glance, one sees that in every reprinted story but the last, the physician figure is the most powerful individual in the narrative world. In addition, in every story the physician figure is intermittent in the narrative world, either having people come and go to him or coming and going himself, something like the Lone Ranger. A comparison with the American Western is instructive.

In the standard American Western story, as John Cawelti has made clear, we have a well-developed set of common synchronic and diachronic elements.² There is an in-group (which, for example, may be the townspeople, the sheep herders, or the wagon train) and an out-group (which, for example, may be, respectively, the outlaws, the cattle ranchers, or the Indians). Typically the in-group has values and institutions more associated with the civilized East (law, schools, marriage) and the out-group has values and institutions more associated with the feral West (rugged individualism, survival skills, single-sex associations). There is animosity between the two groups, the in-group obviously representing the future as civilization unrolls across the landscape but the out-group, with its harsh ways and skills, obviously representing a threat to that in-group. Into this conflict comes a hero, typically either alone (like Owen Wister's *Virginian*) or with a sidekick (like Natty Bumppo's Chingachgook in James Fenimore Cooper's *Leatherstocking* tales) who typically indicates the hero's connection with the land. For whatever reason, the Western hero shares the values of the in-group and the skills of the out-group. He proceeds to settle the conflict in favor of the in-group. At that point, however, he becomes the most powerful—and hence most dangerous—individual in the world of the in-group. In order for civilization to continue to unroll, the hero must either ride out of town, as the Lone Ranger does, or, like the *Virginian*, hang up his guns.

Unfortunately for fearful humanity, we cannot ask the physician to hang up his guns—that is, to put his power on the shelf—because unlike the conflict with the out-group, which can be tamed or sent packing, the conflict of humanity with accident, disease, and death is never-ending. We always need the physician, and we are always in the position of entrusting ourselves to this individual who has more power over our bodies than we do ourselves. It is no wonder such indispensable individuals elicit ambivalence and distrust. Indeed, one motive for medicine stories in science fiction seems to be to allow the imagination

and confirmation of these fearful attitudes. In Shelley's original novel, Victor Frankenstein is a seventeen-year-old college student. In James Whale's famous 1931 film starring Boris Karloff, Frankenstein (unaccountably renamed Henry, the name of Victor's best friend in the novel) is a somewhat older young man, but still known only by his name. But by the time Whale makes *The Bride of Frankenstein* in 1935, the character has been given a title and a profession, "Doctor Henry Frankenstein." Having seen that the public resonated to the archetypal power of Frankenstein to grant or destroy life, the filmmakers understood that this man was most properly a physician.

Daniel Keyes's "Flowers for Algernon," the most reprinted of our five science-fiction medicine stories, according to William G. Contento's compilation (<http://www.umich.edu/~genreevo/TopReprints.htm>), is among the elite group of very most frequently reprinted of all science-fiction stories. As I would code the twenty-nine stories on Contento's list (not all of which are, in fact, in our more randomly generated database), only one, "Flowers for Algernon," has medicine as its dominant science. As is well known, this story, told in diary entries, tells of someone of subnormal intelligence given an experimental treatment that, over time, allows him to become even more intelligent than the doctors who use him as a subject, but, unfortunately, the treatment is temporary and he reverts and may even, like the lab mouse Algernon, die of it. Readers can see much of the implicit value system of the story in its opening section:

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Dr. Strauss says I shud rite down what I think and evrey thing that happins to me from now on. I dont know why but he says its importint so they will see if they will use me. I hope they use me. Miss Kinnian says maybe they can make me smart. I want to be smart. My name is Charlie Gordon. I am 37 years old and 2 weeks ago was my birthday. I have nuthing more to rite now so I will close for today.³

Charlie is a complex character, despite his obvious intellectual shortcomings. Like most people, he wants to please his teacher (Miss Kinnian) and himself by developing intellectually; unlike most people, he knows when to shut up. Charlie, again like most people, wants knowledge, the Latin word for which is *scientia*, as in science fiction. The word *doctor*, like science, is also related, but more communally, to notions of knowledge: it derives from the Latin for *teacher*. In genre

science fiction, where stereotypes often rule, it is not coincidental that Miss Kinnian, the teacher who winds up disappointing but not actually harming Charlie, is female but the physicians are male. It is Miss Kinnian who singles out Charlie for possible help. It is through her that he is "used." Charlie's desire to be used is understandable but ultimately pathetic. The term *patient*, from Latin, refers to one who suffers (as in "the passion of Christ"), the one on whom something is done; the doer is the agent. Charlie knows he is an ineffective agent in his own behalf and so confers trust in other, smarter people, presuming the teacher and doctor would use him as a patient only for ends of which he himself would approve. What readers learn, however, is that the physicians are less concerned with Charlie the man than with Charlie the experimental subject, the patient, the used thing.

As the progress reports proceed, and as they become more articulate, readers see not only Charlie's development but also the abuses that both ignorant people, like his erstwhile co-workers in the factory where he swept up, and smart ones, like the physicians, heap on him. As his intelligence soars, he almost becomes as haughty as the latter, but then he sees another mentally challenged young man, also a menial, and realizes his moral error, recognizing that to break the bond of common humanity is wrong no matter how much special knowledge one has. In that moment, Charlie's thoughts are an implicit critique of his physicians.

At the very end of the story, after having proved theoretically that the medical goal the physicians sought is unattainable by their chosen route, and now deep into his reversion, Charlie writes one last time:

I dont know why Im dumb agen or what I did wrong maybe its becaus I dint try hard enuff. . . . I bet Im the first dumb person in the world who ever found out something important for science. . . . I gess its like I did it for all the dumb pepul like me.

Good-by Miss Kinnian and Dr Strauss and evreybody. And P.S. please tell Dr Nemur not to be such a grouch when pepul laff at him and he would have more frends. Its easy to make frends if you let pepul laff at you. Im going to have lots of frends where I go.

P.P.S. Please if you get a chanse put some flowrs on Algernons grave in the bak yard. . . .⁴

Whether dumb or smart, Charlie consistently shows a feeling for the importance of others, a willingness to absorb even abuse if need be for

the sake of others. While doctors from Faust to Frankenstein are overpowering egotists, separating themselves from the moral bonds of the community, Charlie never is. These stories suggest that we fear the physicians among us because their very knowledge may turn us into patients, acting on us whether for our own good or not.

In "The Last Flight of Dr. Ain," another of the reprinted medicine stories, James Tiptree, Jr., gives readers a title character who realizes that humans are destroying the planet. He develops a new, virulent, rapid-acting vector for a special type of leukemia that can wipe out all higher primates but nothing else. His last flight is by commercial aircraft around the world as he silently spreads his creation. Looking down, he apostrophizes the earth: "Blue, blue and green until you see the wounds. Oh my girl, Oh beautiful, you won't die."⁵ The story ends thus: "'Have you ever thought about bears? They have so much . . . funny they never came along further. By any chance were you saving them, girl?' And he chuckled in his ruined throat, and later, died."⁶

In "The Planners," Kate Wilhelm's main character is a physician whose funding depends on society believing that he is trying to find ways to increase human intelligence, albeit his ostensible research subjects are chimpanzees. In fact, he is doing that research, but he is surreptitiously also drawing blood from a severely retarded teenage boy, whom he is supposedly trying to help, in order to see if his theory works to cripple as well as enable intelligence. He uses the preparations from the youngster's blood to experiment with three unsuspecting convicts who hope only that their cooperation will win them early release. Few besides the Society for the Prevention of Cruelty to Animals seem to realize that something may be amiss. But at least the doctor does: "Darin didn't want to think about Mrs. Driscoll's reaction if ever she learned how they had been using her boy."⁷ One other person, a lab assistant, senses what is going on and, at the story's end, disapproves explicitly:

"But you can always console yourself that your motives were pure, that it was all for Science, can't you, Dr. Darin?" Rae asked mockingly.

He looked at her. "Go to hell," he said.

... He hoped she would stay away for a long time.⁸

The invocation of hell is not random here. There is a deep connection in the popular imagination between the workings of physicians and the realm of god. To say that physicians are often sought as

gods, treated as gods, and sometimes demand to be taken as gods is a truism. But in science fiction, people who aspire to godhood, who cut themselves off from community, are seen as dangerous at best, evil at worst. This is not a twentieth-century turn for science fiction. Christopher Marlowe's sixteenth-century Doctor Faustus is consigned to hell. In Nathaniel Hawthorne's mid-nineteenth-century science fiction, the physician is often the egotist whose operation harms us. In his story "The Birthmark" (1843), Aylmer has a wife nearly flawless in feature and character, but he is obsessed with a need to "improve" Nature by removing a small red mark of a hand from her cheek. Despite her belief that this meddling is wrong, she submits to his experimentation. He achieves his goal, removing the mark of Nature from her, but in that instant she dies. Call it Nature or call it God, there are spiritual realities that science fiction consistently suggests humans must not challenge. To do so is to die.

In Hawthorne's story "Dr. Heidegger's Experiment" (1837), the title character, an elderly man unhappy because he failed to seize love when as a youth he had the chance, gathers for dinner some of his old cronies. He explains to them that he has obtained from Florida an elixir that restores youth, and he puts a withered flower into a glass filled with the elixir. The flower miraculously revives. Dr. Heidegger then offers the elixir to his cronies. They quickly become young and randy and seek raucous pleasure almost immediately. He, however, does not partake. Rather, he watches the flower wither again, like Charlie Gordon's reversion, and then watches his horrified dinner guests decline again to their aged selves. But, readers are led to understand, now the guests will spend the rest of their lives seeking desperately for a source for this elixir, their old ages blighted by a hope that they had previously learned to resign. Dr. Heidegger's experiment, like Dr. Darin's, is on unsuspecting people. The patients of the world, science fiction suggests, have much to fear. Their doctors are overdeveloped intellects unrestrained by the directives of god or the wisdom of common humanity.

Since the time of the ancients, medicine, concerned as it is with life and death, has been associated with the gods. Anthony S. Mercatante tells that the Greek god Hermes had a magic wand that opened and closed the eyes of mortals.⁹ According to legend, Hermes threw the wand at two fighting snakes who became entwined with it ever after, forming the symbol known as the caduceus, the symbol of the medical profession. Snakes are symbolically complex. As Jack Tresidder points out, on the one hand, capable as they are of shedding their skins and

arising again, they stand for life; on the other hand, capable as they are of poisoning us, tempters to harmful knowledge from Eden onward, they stand for death.¹⁰ The caduceus, of course, contains two fighting snakes, held in permanent balance by the magic of the gods, caught in a fight the outcome of which, for us all, may be in doubt. Despite the associations of death with the serpent (Genesis 3), in Numbers 21:8 "...the Lord said unto Moses, Make thee a fiery serpent, and set it upon a pole: and it shall come to pass, that every one that is bitten, when he looketh upon it, shall live." And Moses does so. In other words, snakes may bring death into the world and yet they also may bring life. They are the symbol of the medical profession and in Numbers, according to Christian readings, a prefiguration of the redemption offered humanity by the suffering of Jesus. The snake on the caduceus is an analog of the dying god on the cross.

Doctors are often seen as godlike in fiction, science fiction and otherwise. In Franz Kafka's "A Country Doctor," the title character is called out on a stormy night to heal a patient of indeterminate suffering who seems at times to have a deep wound, perhaps like Jesus', in his side. The doctor lies down beside him but loses patience (is not willing to let others act on him) and stomps his way out of the house hearing behind him the "faulty song of the children" which he does not heed:

O be joyful, all you patients,
The doctor's laid in bed beside you!

This liturgy has no bearing on this country doctor, a man who rejects his community and his divinity, damning his own life in his last thought: "A false alarm on the night bell once answered—it cannot be made good, not ever."¹¹

Unlike Kafka's character, Vonda N. McIntyre's healing woman called Snake in "Of Mist, and Grass, and Sand," another of the reprinted science-fiction stories, wants to help the community she visits although she understands herself to be separated from it by their fear of her special knowledge and the special resources she uses to heal, magical snakes. It is out of their fear that the people kill one of the snakes, not realizing they are disabling their healer. She has failed her own teachers and so must, she decides, leave.

"If things were different, I might have stayed."
"They were frightened—"

“I told them Grass couldn’t hurt them, but they saw his fangs and they didn’t know he could only give dreams and ease dying.”
 “But can’t you forgive them?”
 “I can’t face their guilt. What they did was my fault, Arevin. I didn’t understand them until too late.”¹²

What readers see in McIntyre’s story is a doctor willing to endure loss and guilt for her patients, not a person of anger and ego but of concern and humility. But this doctor fails.

The archetypal science-fiction physician appears in W. Norbert’s “The Miracle of the Broom Closet,” the last of the reprinted stories. The Boss is a North American scientist running an experimental laboratory in Mexico. The Boss is clearly more concerned with his scholarly reputation and with securing funding than he is with helping people. His funding is in jeopardy, it happens, because of two factors. First, his own egotism prevents him from seeing the error of his ways in his experiments. Second, some metal from a Mexican junkyard has been stored in a broom closet that shares a wall with a key piece of equipment. The implied intervention of St. Sebastian, a relic of which, an arrowhead, is among the junk, and the unwitting piety of the janitor are preventing The Boss from pursuing ends that may ultimately harm humanity. Here the conflict between medicine and religion is made explicit, with religion the winner. As Norbert (a pseudonym for Norbert Wiener, the so-called father of cybernetics) writes, “It is the part of the ideal scientist to keep a magnificent impartiality in his decisions; but although this is so, in a long career extending over 40 years and three continents, I have never met the ideal scientist.”¹³ It is perhaps not random that the career here is forty years, the same religiously powerful number that defines Noah’s flood, the Hebrews’ wandering in the desert, and Jesus’ temptation. It is the Biblical number of death, transformation, and rebirth. But Norbert has never seen the ideal emerge. No wonder funding is in jeopardy.

Many people have argued that once upon a time there was general trust in medicine but that that trust was undermined, indeed reversed, by the behavior of those who set the norms for the medical establishment. Paul Starr speaks of the “end of a mandate”:

Medicine, like many other American institutions, suffered a stunning loss of confidence in the 1970s. Previously, two premises had guided government health policy: first, that Americans needed more medical care—more than the market alone would provide; and

second, that medical professionals and private voluntary institutions were best equipped to decide how to organize those services. Until the 1970s the first of these premises had not yet undermined the second. Increased federal aid initially did not much enlarge the scope of public regulation. Practitioners, hospitals, researchers, and medical schools enjoyed a broad grant of authority to run their own affairs.

In the 1970s this mandate ran out. The economic and moral problems of medicine displaced scientific progress at the center of public attention. Enormous increases in cost seemed ever more certain; corresponding improvements in health ever more doubtful. The prevailing assumptions about the need to expand medical care were reversed: The need now was to curb its apparently insatiable appetite for resources.¹⁴

Into this environment steps Marcus Welby, M.D. True, his name alone (“Make us be well”) is a giveaway of our underlying desire for a fairy tale of selflessness in the era when the house call became extinct. But *Marcus Welby, M.D.* was more than that. Aired from September 1969 to May 1976, it was the biggest hit to that time in the history of the ABC television network, being the first ABC show that ever was number one in the ratings of all programs and marked the first time ABC ever had the largest overall network viewership for an entire season. A few points about Dr. Welby are worth noting. First, he had virtually no life of his own: no wife, family, nonprofessional involvements. He was there to serve the community, and he did so whether or not it cost him time, sleep, or money. Second, he was played by Robert Young, “one of the few actors in television history to be closely identified with two highly successful and long-running roles—that of kindly family man Jim Anderson on *Father Knows Best* in the 1950s (8 years) and that of kindly Dr. Marcus Welby in the 1970s (7 years). The 62-year-old Young came out of a seven-year retirement to originate the role of Welby.”¹⁵ In other words, just when, according to Starr, we needed him most, television gives us an image of a father figure willing to suffer for us. To see Kafka’s country doctor and Young’s as opposing Christ figures seems inevitable.

But Kafka’s character and Marcus Welby, although they may inhabit the world of parable, do not figure directly in science fiction. The stories that succeed in the science-fiction marketplace are typically of physicians who do not suffer for us but rather confirm our fears of the too knowing or, in the case of McIntyre’s Snake, suffer for us unintentionally and thereby lose their powers and cease to feel like threats.

According to the GEP database, the overall fraction of science-fiction stories written by women begins in the 1920s as negligible and rises more or less steadily:

Decade	% Female authorship
1920s	0.00%
1930s	2.19%
1940s	3.23%
1950s	8.04%
1960s	11.27%
1970s	13.10%
1980s	14.62%
1990s	22.11%

Even in the 1990s, however, the fraction just approaches a quarter. Yet in the sample of reprinted science-fiction stories in which medicine is the dominant science, the situation is completely different. Daniel Keyes and Norbert Wiener are men, but Kate Wilhelm and Vonda N. McIntyre are women. And so is James Tiptree, Jr., a pseudonym for a strong, loving woman named Alice Sheldon, who euthanized her beloved, suffering husband whom the medical establishment could not help and then, paying the price, took her own life.

Science fiction is in many ways a literature of stereotypes. Often it does not so much praise science as show when and how to fear it. Science is fearsome when it puts power in the hands of someone who feels too little obligation to subordinate him- or herself for the community, someone who feels unrestrained by the dictates of god or needs of humanity. It is not too false a stereotype to see women much more than men as sacrificing for others. How many Noras have fled their doll's houses compared to the number of men who just couldn't be bothered raising their children? Women tend to stick, to nurture, to suffer, not inevitably, of course, but often in reality and very often in stereotype. They answer the night bell even if it is sometimes false; they put their power at the service of others, children, the weak, the sick. Louis Pasteur is an icon of intellect, Florence Nightingale of selfless compassion. This is a matter that science fiction typically does not want

to address, but when it does, it is disproportionately women who show us the way, who make clear that the only good doctor is the doctor who puts his (or, in McIntyre's exemplary case, her) welfare after that of the patient. The science-fiction exploration of medicine, in Keyes and Wiener and Wilhelm and Sheldon, makes us feel that we are misspending our funds by supporting such people.

If I were to read science fiction about medicine out of my common humanity, it would put me on my guard. If I were to read it as a physician, I would draw one clear lesson: learn humility and service or society will abandon you; the pursuit of medicine, even for the ostensible good of others, will be crippled. The future of medicine, science fiction tells us, will be molded not only by the minds of doctors but by their characters.

NOTES

1. Paul A. Carter, *The Creation of Tomorrow: Fifty Years of Magazine Science Fiction* (New York: Columbia University Press, 1977), 3–5.
2. John Cawelti, *The Six-Gun Mystique*, 2d ed. (Bowling Green, Ohio: Bowling Green State University Popular Press, 1984).
3. Daniel Keyes, "Flowers for Algernon" (1959), in *Science Fiction Hall of Fame*, vol. 1, ed. Robert Silverberg (New York: Avon, 1970), 605.
4. *Ibid.*, 635.
5. James Tiptree, Jr., "The Last Flight of Dr. Ain" (1969), in *The Road to Science Fiction*, vol. 4, ed. James Gunn (Clarkston, Ga.: White Wolf, 1982), 312.
6. *Ibid.*, 313.
7. Kate Wilhelm, "The Planners" (1968), in *The Road to Science Fiction*, vol. 4, ed. James Gunn (Clarkston, Ga.: White Wolf, 1982), 282.
8. *Ibid.*, 285.
9. Anthony S. Mercatante, *The Facts on File Encyclopedia of World Mythology and Legend* (New York: Facts on File, 1988), 153.
10. Jack Tresidder, *Symbols and Their Meanings* (London: Duncan Baird, 2000), 50–51.
11. Franz Kafka, "A Country Doctor" (1919), trans. Willa Muir and Edwin Muir, in *The Complete Stories*, ed. Nahum N. Glazer (New York: Schocken, 1971), 225.
12. Vonda N. McIntyre, "Of Mist, and Grass, and Sand" (1973), in *Women of Wonder: Science Fiction Stories by Women about Women*, ed. Pamela Sargent (New York: Vintage, 1974), 284–85.
13. W. Norbert, "The Miracle of the Broom Closet" (1952), in *The Expert Dreamers*, ed. Frederik Pohl (Garden City, N.Y.: Doubleday, 1962), 186.
14. Paul Starr, *The Social Transformation of American Medicine* (New York: Basic Books, 1982), 379. I thank Jane Aikin for bringing Starr's work to my attention.
15. Tim Brooks and Earle Marsh, *The Complete Directory to Prime Time Network TV Shows 1946–Present*, 5th ed. (New York: Ballantine, 1992), 553.