Timescape Short Guide

Timescape by Gregory Benford

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Characters

Timescape has an unusually large cast of important characters for a science fiction novel but each is so well differentiated that few readers will have trouble telling them apart. Of particular interest in the 1963 segment of the novel, which is mostly set at the University of California-La Jolla, is the physicist Gordon Bernstein, a lightly fictionalized version, one assumes, of Gregory Benford himself. Bernstein, like Benford, is an easterner who has never quite gotten used to the California lifestyle. A brilliant man, he is nonetheless a sort of permanent outsider, an aggravating yet endearing combination of cockiness and self-doubt. In the 1998 section of the novel, set primarily at Cambridge, England, Ian Peterson stands out. Peterson is a government bureaucrat of the sort who appears in simpler form as a villain in many of Benford's novels.

In Timescape he is in many ways a despicable person, a misogynist, a cynic, and a snob, but he's also a very competent and intelligent man, one who is capable of being caught up in the sheer joy of scientific research.

Social Concerns

Benford is a scientist and a technocrat; he truly believes science is the key to improving mankind. He is not, however, a simple-minded cheerleader in the manner of such science fiction writers as Jerry Pournelle and Ben Bova. The crisis upon which Timescape turns is one for which science is responsible, at least in part; it is a result of recombinant DNA research. A virus accidentally let loose into the environment in the 1990s interacts with diatom algae in the Atlantic Ocean with disastrous results. The mutated algae begins to grow out of control and to kill off most other forms of life. Quickly spread throughout the biosphere by the wind, it threatens with extinction a human race already on the ropes due to overpopulation, pollution, and food shortages. In 1998, trying to stop the crisis before it started, physicists working on tachyon emissions attempt to communicate a warning to earlier researchers in their field, circa 1963, hoping the data they send will be enough to change history and thus avert the disaster.

Techniques

Although Benford frequently uses heavily metaphoric and poetic language in some of his other novels, Timescape is written in the rather straightforward and not very flashy prose style which is more common to modern science fiction. His most obvious literary technique is to alternate chapters, moving back and forth between 1963 and 1998. This provides his narrative with a series of cliffhangers and heightens tension. It also allows him to show the effect of his characters' actions in one time period on the other period.

Since one of the basic premises of the novel is that the characters themselves are unable to know the effect their work is having on the other time period and, since they compulsively spend their time wondering about that effect, Benford is able to use this technique in a highly ironic fashion.

Themes

Timescape, however, is not simply another disaster novel. Benford offers no lantern-jawed scientists to singlehandedly save the day, no last-minute, jury-rigged miracle machines to zap the algae, no superhuman feats of heroism. Rather, he uses the crisis to present a penetrating look at the way real science is done. As one of the few working scientists to also write science fiction (David Brin, Robert Forward, Joan Slonczewski, and Charles Sheffield are others), Benford knows how research is actually conducted, and one of his purposes is to demolish the cliches about scientists that are found in so many science fiction novels. Benford's physicists, both those in 1998 and those in 1963, are complex men and women who, with very few exceptions, love their work, but whose lives are full of distractions.

Although they may yearn to spend their hours in the lab, much more of their time is devoted to paperwork, teaching, dealing with often exasperating students and even more exasperating bureaucrats, surviving university and lab politics, coping with family crises, and worrying about such mundane things as weight problems and stolen bicycles. Indeed, the day-today lives of Benford's scientists actually take up more room in the novel than do the book's science fiction elements and it is perhaps a tribute to the author's writing skill that these slice-of-life scenes are as interesting as the more conventional genre material.

Tied to this portrayal of the lives of working scientists is another theme of great importance to the author. Benford wants readers to understand how science gets done so that they will realize why it so often goes astray. Benford's physicists simply do not have a chance to consider many of the long-range implications of their work. Distracted by the complexity of their lives, they stumble through their experiments like punch-drunk boxers, never knowing whether their funding will come through or whether they will be allowed time to bring a long-term experiment to fruition. Bureaucrats and administrators with little scientific training constantly push for practical results, often to the neglect of supporting theory, good laboratory work, and long-range safety.

Much of what goes wrong, Benford suggests, is a direct result of organizational methods, and an obsession with putting men in control who are primarily interested in the bottom line.

Key Questions

Although most science fiction writers do have some training in the sciences or engineering (one or more degrees or an extensive reading background), relatively few are actually working scientists. Others, like Isaac Asimov, did advanced work in science in the past, but then gave it up when they became full-time writers.

Benford is a working scientist, a physicist who sees writing fiction as a sideline, and one of his goals in Timescape is to demonstrate to the general reading public how real science gets done. An interesting discussion of Timescape might well center on this attempt at realism. The scientists whom Benford describes live very different lives from those found in most science fiction novels. Unlike the generally clear-sighted, single-minded scientistheroes of Robert Heinlein, Arthur C. Clarke, and Isaac Asimov, Benford's characters often seem to be wandering about in the dark, their primary attention fixed not on their latest experiment but on family problems. Book group members with an extensive reading background in science fiction might want to compare Benford's description of scientists at work with those of the writers listed above or others. Group members who actually work in the sciences themselves might want to discuss the accuracy of Benford's portrayal based on their own experience.

1. Timescape has been widely praised for its accurate portrayal of the way in which scientific research is really done. How did you react to this portrayal? Did it add to the book? Take away from it?

2. Benford spends a fair amount of time on the day-to-day life of his characters, on their lives outside of the laboratory. To what extent does this material add to the novel?

3. Writing in 1980, Benford imagines a worldwide crisis which originates in recombinant DNA research. Are Benford's fears more or less timely today? To what extent do they reflect current fears concerning DNA research?

4. Distracted by personal and professional problems, Benford's scientists rarely have time to consider the longrange implications of their work. Does Benford seem to be presenting any serious suggestions to improve the way in which science is done, and particularly the way in which it get funded?

5. Timescape was published in 1980 and the scientific information Benford presents on tachyons accurately reflects what was being said and theorized at that time.

Your local library should contain several recent works of popular science which discuss current tachyon theory. To what extent have new discoveries or theories in the field rendered Benford's ideas more or less likely?

6. Timescape has been widely praised for its razor-sharp portrayal of real scientists at work. Consider Gordon Bernstein and Ian Peterson. What kind of men are they?

What motivates them? It was suggested above that Bernstein is a lightly fictionalized version of Benford himself; how does that affect your attitude toward the character?

7. It has been suggested above that the way in which Benford cuts back and forth between his two time periods adds to the book's ironic effect. Can you come up with any specific examples of this?

8. Read C. P. Snow's famous essay "The Two Cultures," which discusses the problems that occur because of misunderstandings between scientists and nonscientists. To what extent are the problems described in this essay relevant to Timescape?

Literary Precedents

One of the most common plots in science fiction is one in which the world nears destruction due either to some out-of-control scientific experiment or some ecological disaster. Among the books which use this plot in a serious manner are George Stewart's Earth Abides (1949), John Brunner's The Sheep Look Up (1972), and Philip Wylie's The End of the Dream (1972). Frank Herbert's Dune (1965; see separate entry) also deserves mention as the first science fiction novel to deal seriously with the science of ecologyAlso worth mentioning is the long tradition of serious fiction about scientists. Sinclair Lewis's Arrowsmith (1925; see separate entry) is of some importance here. Perhaps the key novels on this subject, however, are those of C. P. Snow, including Strangers and Brothers (1940), The Masters (1951), The New Men (1954), and Pursuit of Reason (1968). Although not science fiction, Snow's novels are probably the best fictional introduction to the world of science. Snow's influential essay "The Two Cultures" (1959) pinpoints many of the problems which stem from the failure of scientists and nonscientists to understand each other's work.

Related Titles

Benford is a physicist by profession and, of all his novels, Timescape is the book that comes closest to showing what the life of a working scientist is really like.

Most of Benford's fiction, however, involves speculation based on real science. The Galactic Center novels, including Great Sky River (1987; see separate entry), Tides of Life (1989), Furious Gulf (1994; see separate entry), and Sailing Bright Eternity (1995), although in most ways closer to space opera than to the realistic near-future extrapolation of Timescape, grew directly from Benford's serious scientific research on the nature of matter and energy at the center of the Milky Way. Many of the pieces in Benford's short story collections, In Alien Flesh (1986) and Matter's End (1995), also involve speculations that developed directly from his research.

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