## PRACTICE 10

*Questions 1-7.* Read the following passage carefully before you choose your answers.
*This passage is taken from a contemporary book about the American "pro-space movement."*

Space travel has been a theme in fiction since the second century AD, when the Greek satirist Lucian of Samosata described a fictional voyage to the Moon.[3] Closer to the modern era, works of extrapolative fiction provided a medium for speculation about alternative futures. Both Jules Verne and H. G. Wells wrote stories of voyages to the Moon, as well as on other subjects involving scientific and technological wonders. As science fiction grew in popularity in the United States in the 1920s and 1930s to become an established field of American writing, space travel consistently remained one of its principal subjects.

During what is sometimes called the "Golden Age" of science fiction, roughly the 1940s and 1950s, many writers emphasized space themes. Robert A. Heinlein, Isaac Asimov, and Arthur C. Clarke are perhaps the most visible of the older generation of writers in this regard, but many others have followed in the "mainstream," technology-oriented approach to science fiction, often related to space. Such writers helped prepare American culture for the idea of space-flight. One critic went so far as to call Heinlein "perhaps more than any other person, responsible for the popularization in America of the concept of space travel and for the commitment to undertake it."[4]

Science fiction stimulated many of the pioneers and enthusiasts of spaceflight, both of the older generation and the younger. According to William S. Bainbridge, the men most responsible for the development of modern space rocketry had been inspired in adolescence by reading science fiction stories about spaceflight.[5] Several of the space activists described in this book explicitly recalled being "turned on" to space by reading science fiction, usually at an early age. Gerard O'Neill traces his interest in space to reading science fiction in his youth during World War II.[6]

[3] Lucian of Samosata, *A True History* (New York: Murray, Scribner, & Wedford, 1880).

[4] H. Bruce Franklin, as quoted by Curt Suplee in "In the Strange Land of Robert Heinlein." *Washington Post*, September 5, 1984.

[5] William S. Bainbridge, *Spaceflight Revolution* and William S. Bainbridge, "The Impact of Science Fiction on Attitudes Toward Technology," in Eugene M. Emme, ed., *Science Fiction and Space Futures* (San Diego: American Astronomical Society [Univelt], 1982), pp. 121-35, 121.

[6] Interview with Gerard K. O'Neill.

People outside the science fiction field sometimes describe it as a literature of prediction. Certainly, many technological developments were foreseen in science fiction. Isaac Asimov has pointed out that space colonies had appeared in American science fiction as early as the 1920s and that he described a solar power station in a story published in 1941.[7] However, *The Science Fiction Encyclopedia* calls this "literature of prediction" thesis a false belief.[8] A recent book entitled *The Science in Science Fiction* points out that, in fact, many science fiction stories have rested on faulty scientific premises.[9] What science fiction appears to do better than predict is to entertain, to stimulate interest in science and technology, and to stretch the mind, encouraging the reader to be more receptive to unfamiliar ideas and technologies. NASA planner Jesco von Puttkamer, who has had an on and off relationship with parts of science fiction fandom for many years, describes science fiction as "a strangely addictive medium for extrapolation and consciousness enlargement." He goes on: ". . . 'good' science fiction purports to popularize the technical problems of our time, to prepare the reader for the possibilities of the future, and to bring before his/her eyes the good that man really could achieve if only he would try. It stimulates his thinking and widens his horizon without boring him by being outright didactic; it warns man of the effects of his blunders without explicit exhortation, and it points him to new ideals. . . ."[10]

Indirectly, science fiction can help to create the futures it describes by preparing people's minds for them. The editors of *The Science in Science Fiction* wrote that "many of the Senators and Congressmen who voted money for the conquest of the Moon must have shared, in a sense, a childhood dream: the reaching of the Moon was the central, passionate symbol of the science fiction they had grown up with."[11]

[7] Isaac Asimov, "The Truth Isn't Always Stranger Than Science Fiction, Just Slower," *New York Times*, February 12, 1984.

[8] Peter Nicholls, ed., *The Science Fiction Encyclopedia* (Garden City, N.Y.: Doubleday, 1979), p. 473.

[9] Peter Nicholls, ed., *The Science in Science Fiction* (New York: Knopf, 1983).

[10] Jesco von Puttkamer, "Reflections on a Crystal Ball: Science Fact vs. Science Fiction," in Emme, *Science Fiction and Space Futures*, pp. 137-50, 137.

[11] Nicholls, *The Science in Science Fiction*, p. 6.

Sociologist William S. Bainbridge examined the influence of science fiction in his paper "The Impact of Science Fiction on Attitudes Toward Technology." His surveys showed that there is unusual and overwhelming support for the space program among science fiction fans.[16] A sampling of students revealed a very strong positive correlation between preferences for the science fiction television series "Star Trek" and "Battlestar Galactica" and support for space program appropriations.[17] "Science fiction does have the expected propagandistic influence," writes Bainbridge, who adds that the evidence suggests that there is no "hidden global variable" making some people simultaneously favor space and science fiction.[18]

One might be tempted to link this to generalized pro-technology attitudes. Bainbridge looked at this question and concluded that "all things considered, the most reasonable interpretation of the data is that science fiction strongly promotes spaceflight, while having only the weakest capacity to prevent anti-technology attitudes, and no power to produce favorable attitudes toward technology in general."[19] This may be related to findings by Robert D. McWilliams [cited earlier in this book] that there seems to be little connection between the rise of pro-space opinion and attitudes toward technology in general. There appears to be something different about space.

[16] Bainbridge, "The Impact of Science Fiction," p. 124.
[17] *Ibid.*, p. 130
[18] *Ibid.*, p. 133
[19] *Ibid.*

1. Which of the following best states the subject of the passage?

   (A) The historical development of spaceflight
   (B) The relationship between science fiction and technology in general
   (C) The seeming ability of science fiction writers to predict the future
   (D) The impact of science fiction writing on attitudes toward space exploration
   (E) The development of and changes in science fiction over time

2. The structure of the paragraph beginning in line 24 can best be described as a

   (A) claim followed by supporting details
   (B) generalization followed by other generalizations
   (C) general hypothesis followed by more specific hypotheses
   (D) movement from the particular to the general
   (E) statement of an effect followed by a list of its causes

3. Which of the following is an accurate reading of footnote 5?

   (A) The article *Spaceflight Revolution* appears in a book edited by Eugene M. Emme.
   (B) The article "The Impact of Science Fiction on Attitudes Toward Technology" appears in the book *Spaceflight Revolution.*
   (C) William S. Bainbridge wrote an article that can be found in a book edited by Eugene M. Emme.
   (D) *Spaceflight Revolution* was pubished in San Diego in 1982.
   (E) The American Astronomical Society published two separate works by William S. Bainbridge.

4. The author's primary objection to the characterization of science fiction as a "literature of prediction" (line 35) is that this label

   (A) dismisses the impact of other types of literature on technological development
   (B) ignores the faulty science upon which much of science fiction is based
   (C) unduly emphasizes a relatively minor function of science fiction
   (D) limits the focus to the future without recognizing the importance of the past
   (E) refers only to the particular type of science fiction written by writers such as Isaac Asimov

5. The NASA planner quoted in lines 50-58 values "good" science fiction primarily for its

   (A) technological accuracy
   (B) affective qualities
   (C) moralistic tone
   (D) imaginative storytelling
   (E) diverting entertainment

6. The purpose of footnote 10 is to inform the reader that the quotation in lines 50-58

   (A) was cited in a book written by Jesco von Puttkamer
   (B) appears in an article included in the book *Science Fiction and Space Futures*
   (C) appears in an article about fortune telling
   (D) is attributed to two different scientists
   (E) shows that Jesco von Puttkamer and William S. Bainbridge were colleagues

7. In relation to the paragraph in which it appears, the final sentence of the passage (line 89) serves to

   (A) qualify
   (B) amplify
   (C) contradict
   (D) summarize
   (E) elaborate