In this discussion I want to say something about where science fiction has been and where it is now and then comment on where I think it stands in relation to what we ordinarily call "good" literature. But as in all discussions of science fiction, it is necessary to start with some definition so you will know what I am talking about.

Definitions vary widely, and any one if taken literally will lead to some contradiction. Some go so far as to include Arrowsmith, ghost stories, or the Book of Revelation. I don't include any of these. My definition is pretty standard: fiction that has in it some reasonably logical extrapolation of the science of the time, usually coupled with intent. For example, I would exclude Dr. Jekyll and Mr. Hyde, even though it has some scientific trapping, because Stevenson intended to present an allegory, and I would also exclude Gulliver's Travels. But I would include Bishop Godwin's The Man in the Moone; a Discourse of a Voyage Thither, which was published in 1638, because it is an account of space travel even though highly impractical.

In general, I am opposed to the habit of some science fiction fans of claiming a great deal of imaginative literature as science fiction, even though the stories bear little resemblance to what we ordinarily think of as science fiction. For example, it is commonplace among many who discuss science fiction to call the 1800-year-old stories of Lucian, The Loftie Traveller and The True History, as about the first science fiction. In my judgment these are not science fiction stories nor are many others that are mentioned by such historians as J.O. Bailey, whose book Pilgrims Through Space and Time is still probably the best general review.

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You can find odds and ends of things that some people would call science fiction for several centuries back. During the nineteenth century, it became surprisingly widespread in a reasonably recognizable form, especially in the second half. I think the first modern science fiction story, and still good reading, was Edgar Allan Poe's story, "The Unparalleled Adventures of One Hans Pfall," which appeared about 120 years ago. (The story is marred some by a hint at the end that it was all a joke.) Notice what Poe said about other stories of voyages to the moon, and how closely his design approaches that of modern science fiction: "In none (of the former stories) is there any effort at plausibility in the details of the voyage itself... In Hans Pfall the design is original as regards an attempt at verisimilitude in the application of scientific principles to the actual passage between the earth and the moon."

Later in the century came Jules Verne, the first giant in the field, and almost at the end of the century the even greater H. G. Wells. But in between and round about there was a fair amount of science fiction. I am not scholar enough, or interested enough, to make a thorough search, but more or less by chance I have run across numerous examples of it in out-of-the-way places. Let me mention just a few in the magazines of the time to show that it was in the air.

In 1873, _Scribners_ carried a mathematical science fiction story called "The Tachypomp." In 1882, _Harpers_ magazine carried a story, "How Aluminium Won the Grand Prix," which told of the invention of a mechanical horse that won a horserace.

In 1897, a humorous magazine called "The Yellow Book" (not the literary Yellow Book, but a magazine named after the comic character the Yellow Kid) carried a little throw-away story called "A Boon to Humanity." This was an account of the bad state of the world in 1997 as a result of the development of the X-ray. It was of course intended to capitalize on the interest in 1897 in the new X-ray.

In 1891, a weekly called _Harpers' Young People_ ran a two-part story called "A Cruise in a Soap Bubble." It simplifies the idea of dimension; the first part takes place in a one-dimension land and the second part in a two-dimension land—and this was in a magazine for children. The story was probably derived from E. A. Abbott's classic _Flatland_, which came out in 1884.

I'm not really surprised at the dimension story being written for children, since science fiction for almost the last hundred years has had a strong juvenile section. In fact the
most widely read science fiction stories in the nineteenth century were juveniles. These were in the Frank Reade series of dime novels, which were written by Lu Senarens and probably by various other people on occasion. Frank Reade, whose adventures started in 1881, was a great young inventor, inventing a steam man, an electric airplane, an electric tricycle, a steam horse, and many other devices in perhaps fifty different stories. Another series followed that dealt with Frank Reade, Jr., and later there was one about Young Frank Reade, the grandchild. The stories are mostly adventure stories built around one gadget that Frank invented--really not too unlike much of our poorer present science fiction, Frank in his various reincarnations was not alone in the science fiction area of the dime novels. Among others, there was a series about another inventor called Jack Wright, and a surprisingly good story about space travel called Two Boys Trip to an Unknown Planet, which appeared in 1889.

Frank Reade was of course a direct forerunner of Tom Swift, whose stories were published from 1910 to 1941, and of the present series about a crew-cut smart aleck, Tom Swift, Jr. I think the stories have declined all along the way, but I admit that the science, which was poorly handled in the older stories, is slickly done in the modern Tom Swift, Jr. And, of course, many modern juveniles--Heinlein's and others--are pretty solid stuff.

I think two points are clear about science fiction in the nineteenth century. One is that the genre was pretty active by the end of the century. The other is that practically none of it deserves consideration as literature. The material ranges from the crudest of sub-literature in the dime novels to stories by Wells that just about break into the lowest ranks of true literature. A real science fiction fan will find much of it entertaining and even well done as science fiction--but it doesn't have it as far as literature is concerned. By the same time, the detective story had already developed the incomparable Sherlock Holmes, in stories that are real literature by a master writer.

The growth in the twentieth century is too well known for me to comment much on it. I do want to remind you that a great deal was written before World War II. One of the important books, although I think it is very poor reading, was Hugo Gernsback's Ralph 124C41+, which was published in 1911, a half century ago. Gernsback started Amazing Stories magazine in 1926, and many others were started soon after. And a great deal of high-quality science fiction was published in the thirties,
including Olaf Stapledon's monumental works. After the war, the number of books and the number of magazines both increased rapidly. At present about one hundred books are published a year; they are about equally divided between hard cover and paperbacks and between new books and new editions. We have movies, television series, and comic books that deal with science fiction. It is definitely here.

Although the field was well developed before World War II, it didn't achieve general respectability until after the war. A major reason for the change, of course, was the shocking fact of the atomic bomb, and the realization by many people that these stories were not such wild-eyed improbabilities as they had believed. The fantastic outdating of many standard science fiction stories by the events of the last fifteen years has continued to bring respectability to the field.

Sensationalsisms in the magazines has declined. I can remember when I was literally embarrassed to buy and carry through the streets on the way home some of the early magazines with such names as Amazing, Weird, Wonder, or Astounding. The covers were garish and often sexy, with pictures of large-bosomed unclothed young women being hooked up to elaborate scientific apparatus by a mad scientist or being on the verge of rape by ugly monsters in strange landscapes. The implication of sex was grossly unfair of course, since science fiction has always been known for its lack of interest in the subject. The inside paper of the magazines was coarse and the drawings were crude. One read the magazines in private, as though they were indecent.

Before World War II it was a little embarrassing to try to get such books from the libraries. Wells and Verne had age in their favor, so they were acceptable to librarians. But when one found some of the others (and they were hard to find because many libraries ignored such sensational writing), one took them up to the charge-out desk almost apologetically, as one did Rabelais and Boccaccio. After the war this changed, as you know well.

As it became more respectable to read such books, so it became more respectable to write them. The greater acceptability attracted a broader audience, and a broader audience permitted more variety in development. Consequently some better writers were attracted to the field, and many of the stories were more serious and more complicated than they had been. Standard space operas and bug-eyed monsters (BEM's as they are affectionately called by the real fans) gradually vanished. Not as many of the current stories are simply
adventure stories with a scientific basis. Many stories now are concerned with sociology as the science rather than with one of the physical sciences.

Along with the respectability has come the development of literary criticism of science fiction. I find much of the criticism uninteresting and unreadable, but some of it is pretty good. I think it is a point of considerable interest that the Modern Language Association now has a sectional meeting on science fiction at its annual meeting. It is now publishing a semi-annual newsletter called Extrapolation, edited by two professors of English, which will be indexed in the PMLA.

Many of the articles unfriendly to science fiction have been written by people who seem not to have known the subject very well. Gilbert Highet, for example, in one of his essays writes: "Most of us rather despise science fiction. In fact, most of it is despicable. Why are nearly all science fiction books so childish?" He decides that it is because they lack moral and intellectual content. But the books he discusses are books that many of us do not consider science fiction, such as C. S. Lewis's Perelandra.

Some of the criticism and comment strikes me as pompous. An article in The Bulletin of the Atomic Scientists in 1953 said that science fiction expresses an "essentially metaphysical symbolism." Another article in the Bulletin in 1957 said that scientists read science fiction for three reasons: It glamorizes them; it expresses their protest against the use of knowledge for anti-human ends; and it reaffirms the basic humanistic values of the scientists' creed. Notice that there is no suggestion here that the stories might be written for the pleasure of telling an entertaining story, or that scientists might read them for the fun of it, as most of us do.

Some of the criticism is written by science fiction writers or editors in a glib sort of way, without much profound thinking. It often shows a lack of checking of details, and sometimes reflects some pretty casual reading.

Women have gradually entered science fiction, both as authors and as characters in the stories. I haven't decided whether this is good or bad or perhaps immaterial. It is a fact though that there are several competent women writers in the field right now, whereas I imagine that there were none in the earlier days of science fiction. The stories reflect this; some are concerned more with ordinary family life under extraordinary conditions than they are with the science that caused the extraordinary conditions. The stories are usually well written, but they don't seem to be quite as exciting as the science fic-
tion I used to know.

The writing has become more self conscious. As science fiction has become more respectable, some of the practitioners have decided that it has a special serious purpose, that it must become adult, and that it can be good literature just as well as anything else--so let's write it that way. The principle is probably all right, but literature isn't written by saying, "Now I am an adult and I will write as an adult and not as I did." The change must grow naturally and inevitably out of the author's abilities. In my opinion this self-consciousness has taken away a lot of the charm of the old stories. The result has been to put the science in the background, and sometimes to go so far as hardly to describe it. This is a little like detective stories being printed without a crime in them; that is all right in itself, but then they aren't detective stories.

The things that first made science fiction popular were space ships, other worlds, alien monsters (BEMS if you wish), mad scientists, dangerous extrapolations of scientific knowledge, that sort of thing. Perhaps these things were used too widely, but our authors are almost afraid to include an alien monster that looks scary; they think they will be convicted of being naive. It is not good form to have much excitement. The mad scientist, a delightful character really, is as dead as a doornail. Even our old friend Astounding Science Fiction changed its name recently to Analog Science Fact and Fiction. Nothing flamboyant about that title.

In their belief that the genre is something special with a real special message, some science fiction writers and editors have made some silly statements. H.L. Gold about ten years ago in Galaxy said: "Few things reveal so sharply as science fiction the wishes, hopes, fears, inner stresses, and tensions of an era or define its limitations with such exactness." It seems obvious to me that a really good history or a good straight novel will do it better. Editors are fond of pointing out that science fiction is the only literary field now where social criticism is permitted. There is some justification for their statement, though not as much as they claim, but the social criticism is likely to be expressed as petulant indignation rather than as reasoned criticism. Others are always claiming for science fiction the gift of prophecy. One of the best of the present science fiction writers, Robert Heinlein, points out that much that has been claimed to be prophecy has been no more than the ability of a scientist-writer to see how a particular experiment might come out, when the conditions are already set up, or his ability to comment on something that he knows about
because it is right under his nose but which an outsider might not know about. I think if you go back and examine science fiction stories, you will find that after you exclude those prophecies that are simply logical extensions of information at hand and consider only those that require intuition and vision, the prophecies of science fiction writers are no better than those that you or I might make.

The self-consciousness of present science fiction (and there are fortunately a great many exceptions) has resulted in approaches to writing that the hero of *The Catcher in the Rye* would immediately recognize as "phonies." They avoid explanations; they assume that exciting adventure is bad taste, they ascribe the same precision to research in sociology, psychology, and other imprecise sciences, as they do to research in chemistry, for example; they develop mannerisms, such as insisting that the author's name always be written in lower case. In literature as in all the arts, I am annoyed at those who are not forthrightly honest and at those who hesitate to do the natural thing because someone may think them unsophisticated.

In spite of my enjoyment from reading the stories and in spite of the development that has taken place since the war, I have come to the conclusion that science fiction, generally speaking, is not going to achieve the status of good literature, as we usually consider the term. Of course, some stories legitimately claimed as science fiction are also good literature—such as *The War With the Newts* by Capek, *Brave New World* by Huxley, and *The Lost World* by Doyle—but these are exceptions. But why not? Is it the fault of the authors, the public, or the subject matter? I think the answer is yes to all three.

To consider the author first, I think we might note what Robert Heinlein, a good practitioner, has to say. He says that good speculative fiction calls for both intensive scientific training and intensive literary training, and that unfortunately most of the scientists who write it (and the best is written by scientists) are self-taught in writing and the teaching shows. The clever hacks who have tried science fiction have usually done badly. Almost any competent writer can do a story with a bit of science in it, but such stories don't fool the real fans. Real science fiction has real science in it.

Of course, not all science fiction is badly written, but compared with works of real literary skill little of it measures up. Dialogue is likely to be either choppy and breezy or pompous and long-winded. Emphasis is obtained by shouting, rather than by careful word-by-word development of an effect. Grammar is frequently shaky, and the writing is often cliche-ridden.
Few, if any, of the real writers of science fiction are skilled enough in their writing to rank even moderately high in literature, setting aside the scientific background of the work.

One reason that science fiction fans praise Ray Bradbury so highly is that he writes like a writer, achieving his effects with economy and creating moods that are convincing. But I don't think he is a real science fiction writer, since he is willing to ride brutally over scientific fact if it interferes with the effect he wants to make. However, I too like to read Bradbury, and I keep him on the shelf with the other science fiction books.

As to the public, those of us who read science fiction regularly certainly must share any blame for its low rank among literary works. Unfortunately we don't go to science fiction for slow and careful plot development, brilliantly considered characters, beautifully constructed paragraphs and sentences, and words chosen with wonderful precision. It is not that we would not like these also, but we go to it primarily for excitement, for escape, if you want to use the term. We read it for the action and for the author's ingenuity in working out the scientific details. We want most of the story to be directly related to the science in it. Until science fiction fans change their ideas of what they want, the stories aren't going to change much. Of course, there is no particular reason why the stories should change, if the fans like what they are getting.

But the major reason why science fiction will probably never achieve the status of good literature lies in the fact that it is science fiction. To be good literature it must have characters that come alive and in which the reader can find something of himself; the plot must move naturally yet inevitably; the setting must be clearly and economically delineated; the writer must have a fine sense of the right word and the right phrase, and the work must show the touch of the artist; the theme and events of the story must have universality; and the story should be subject to being read at more than one level.

Science fiction writing suffers from the hard fact that there is something else it has to do--it must bring in the science and it must make it a major part of the work. Consequently other considerations get jostled aside. Let's consider just a few of the ways this fact interferes with the novel as an art form.

In most great novels we feel that the action moves forward naturally, inevitably, and yet unpredictably, as life itself does. But you can predict that the science fiction novel will be scientific throughout, and although you may not be able to predict the precise way the story will end, you know that the docu-
nouement will turn on the science. Otherwise, by definition, it
is no longer a science fiction novel.

Characters in science fiction stories are definitely sub-
ordinate to the action, and probably for this reason most of
them are two-dimensional. As Kingsley Amis says in New
Maps of Hell: A Survey of Science Fiction the characters are
usually representative of the species rather than the individual,
and the idea is the hero. In a great many of the stories we find
an individual hero in battle with the big brass of the enemy; we
can not identify ourselves with him because the situation is so
unlikely for us. Donald Adams in the New York Times once
said that the chief weakness of science fiction is character
creation. When compared with the detective story, science fic-
tion has nothing to balance Sherlock Holmes, Dr. Watson, Lord
Peter Wimsey, or Monsieur Dupin.

The settings in most science fiction stories are not of
our world here and now; consequently the author has to spend
a part of his space and effort in making us familiar with an un-
familiar world. This is not a natural thing to do in fiction. In
conventional fiction, the author knows that there are many
things he can mention that require no particular space to bring
to our understanding --Chicago, elephants, a state university,
Highway 66.

Plot development is often strained and mechanical, again
because of the restrictions imposed. Regardless of how one's
literary judgment says the story should go, he finds that the
requirements of science fiction mean that everything must turn
on the scientific points.

I admit that a great writer could work under these and
other limitations and still produce great literature. But he does
not need to do so. It is surely much more rewarding to turn his
talents toward the creation of three-dimensional characters in
a real world in a story of universal truths. About the only time
that the best writers turn to science fiction is when they want to
use it as a vehicle for social criticism or satire. If naturally
gifted writers do not turn to writing good science fiction, the
question then is whether competent writers will arise in the
genre itself. No one knows, of course, but I think it doubtful.
Frankly, I don't think many of the present writers believe they
are writing literature.

By this time perhaps I have given you the impression
that I don't think much of science fiction. If so, I have misled
you. I don't think it is particularly to the discredit of science
fiction that it may not gain high rank as literature. It has an-
other job to do, which it does very well for the most part. It
tells exciting stories that are fun to read. I have read science fiction off and on for thirty years and still find myself admiring the ingenuity of the authors and still can be absorbed in the stories, wondering how things are going to work out.

Science fiction has much more to offer to readers than westerns or detective stories, yet there is no comparison in the number of books in each class that libraries offer to their readers. As a minimum I think a library should have several of the anthologies, of which there are many, a solid supply of the novels, three or four of the current standard magazines, and a few of the critical reviews or histories of science fiction.

I think that librarians should encourage people of all ages to read science fiction, but its greatest appeal, because of its imagination and its science, is probably to the young readers. It won't hurt them and may do them some good. They will learn a little science—-not much maybe, but a little--and they will see man's imagination taking flight.