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TOWARDS A THEORY OF SCIENCE FICTION

by John J. Pierce

INTRODUCTORY NOTE: This essay was written to supersede "Science Fiction and the Romantic Tradition," a position paper of the Second Foundation which appeared in the October, 1968 issue of Different, a fan magazine published by Sam Moskowitz. This new position paper is based both on that 1968 essay and on material which has appeared, in the Second Foundation's semi-official organ, Renaissance, and elsewhere, during the time since then. Its publication is in response to numerous requests for copies of the 1968 essay, which are exhausted, but for file copies; and to the author's desire to update and clarify his arguments.

At the crossroads

Science fiction often seems to be the most hated form of literature in history. Just as often, it seems to be the most loved. There is no contradiction involved, for the conflicting emotions are aroused among different groups. The loyalty towards science fiction shown by its readers -- expressed both in the continuing popular appeal of its classics long after those in most other fields have vanished from the scene, and in the unique phenomenon of organized Fandom, with its many conferences, conventions, publications and causes célèbres -- is matched only by the utter detestation of the genre by most mainstream literary critics and cultural arbiters.

The reasons behind this curious phenomenon certainly demand our attention, particularly when science fiction's home-grown critics are challenging the traditions of the genre, and when the advocates of the so-called "New Wave" or "New Thing" have proclaimed that the genre, as it has been traditionally understood, is either dead or never really existed, and must be succeeded by something called "speculative fiction" (alternately "speculative fabulation") or "street fiction" that, so they assure us, will be more "relevant" to our times -- and, incidentally, win more critical accolades. So widely accepted have become the arguments of the New Wavicles, as Groff Conklin once labeled them, that the very survival of science fiction as a medium of expression is in question. If science fiction is to survive, it is essential that a greater public understanding of its nature and purpose be fostered.

The problem of definitions

Science fiction began as a branch of popular fiction. It ought not to be frowned upon for that reason, for in fact all literature and indeed all forms of art grew out of popular forms in the beginning. As a form of popular fiction, however, science fiction never received much scholarly or critical attention -- until recently, at least. Even the definition of science fiction has largely been one of popular usage.

Popular definitions are adequate for most practical purposes, but they lack intellectual precision. When the average man says "bug," he may mean something from the order Hemiptera -- what entomologists know as "true bugs." On the other hand, he may mean some other variety of insect like a beetle (order Coleoptera), or a spider (which isn't an insect at all), or a bacterium, or even a virus.

In popular usage, the term "science fiction" has variously been applied to anything that appears on the newsstands, in book or magazine form, so labeled; to "that crazy Buck Rogers stuff" as represented by old movie serials and comic strips; to allegorical fantasies on today's moral issues like "The Prisoner" and many episodes of "Twilight Zone;" and, especially to the Japanese monster epics and other schlock horror films always billed as "science fiction" in TV listings.

Attempts by authors and critics within the field to arrive at a definition for the genre have often been frustrated by efforts to find a wording that would cover all of the things implied in popular usage of the label. Hugo Gernsback's dictum that science fiction ought to be "prophetic" in intent, and based only on patentable ideas, fell by the wayside long ago. Sam Moskowitz has gone to the other extreme, arguing for inclusion in the genre of anything in which "scientific" detail is used towards willing suspension of disbelief. Aggravating the problem is the fact that, for historical reasons, a considerable amount of both straight fantasy and science fantasy has come to be marketed through science fiction outlets. And as a result of this link between different genres, there are today organizations like the Science Fiction Writers of America and activities like the World Science Fiction conventions which, despite their names, actually include a great number of fantasy writers and/or fans.

Because the "science fiction" label has considerable commercial value, recent efforts to draw some distinction between science fiction and other forms of writing published under the label have usually been denounced as "arbitrary" or "restrictive." Yet, many of those who feel restricted by "arbitrary" definitions are united in the belief that the the genre -- whether under its old name or some variant ("speculative fiction" or "creative fantasy") -- must _exclude_ "inhuman" fiction that has anything to do with science or the future. Science fiction must be "about people" (As if any fiction weren't!), or consist of Freudian or Jungian allegories about the "human condition," or of social criticism of the contemporary Establishment, or messages about Vietnam, the race issue or some "new" religious concept like astrology.

In any case, it is argued, how much "hard" science ever existed in science fiction? There have been arguments over the use of concepts like faster-than-light travel, anti-gravity and matter transmission -- and even fiercer arguments over time travel and "psionics." Yet these ideas have been defended on the grounds that "established fact" is not the same as "prevailing theory," and that many of today's commonplaces were once considered theoretically impossible.

Perhaps a fresh approach is needed, one in which the problem of definitions is approached in terms of structure and function.

What _purpose_ does science fiction serve? How has the genre, as it has traditionally been understood, dealt with "science" and "human" problems? What does science fiction _do_ that other forms of writing do not?

Using this approach, it is possible to arrive at an operational definition of science fiction as _that branch of literature which deals with the human consequences of future technological and social changes brought about by, or made manifest by, the advances of science_.

This definition explains science fiction from a thematic point of view, rather than in terms of scientific background _as such_. There are sound reasons for this approach, as both a historical survey and an analysis of structure and function will bring to light.

The origin of the species

Science fiction was born in the Nineteenth Century. This was no accident, for it was only in the Nineteenth Century that the world was fully awakened to both the actualities and possibilities of change as revealed in the discoveries of science and the applications of technology. For the first time in history, constant change was recognized as the most critical factor in human existence.

This was the century, not only of the steamship, the telegraph and the railroad, but of Charles Darwin and the Theory of Evolution. There was a growing consciousness that the past had been utterly unlike the present -- and that the future might therefore be equally strange. There had been change before, to be sure -- but so gradual that it was barely noticeable within the span of a single lifetime. History before 1800 was largely repetition -- there might be new kings, or new wars — but no qualitative change. In the Nineteenth Century, it was different. The future became something to wonder about.

Now, long before the emergence of true science fiction, there had been ancestral forms resembling it in greater or less degrees. The history of the genre has been traced, by some, to Lucian of Samosata's "True History," Plato's "Atlantis" or even Aristophanes' "The Clouds." The "annexationists" among science fiction enthusiasts have insisted that these really are science fiction, and have traced the history of the genre through Ludovico Ariosto's "Orlando Furioso," Savinien Cyrano de Bergerac's "Voyage dans la Lune," Voltaire's "Micromegas," Jonathan Swift's "Gulliver's Travels," and more obscure works.

Some of these involved trips to the Moon and imagined societies or worlds; the later ones -- particularly de Bergerac's -- even had an element of scientific truth and speculation. But the "science fiction" elements in these works were really subordinate to themes having little or nothing to do with science or technology or their impact (which was minimal at the time) on society. "True History" was really a burlesque on the extravagant travel tales then current. "Atlantis" was a utopian philosophical argument, and "The Clouds" a satire on Socrates. In any case, there was no real concept of science until the Renaissance; and science was not clearly distinguished from magic for a while (Johannes Kepler was an astrologer as well as an astronomer). "Gulliver's Travels" is well known to have been satiric in intent (some editions even carry footnotes now to explain what the satire was about). So were "Voyage dans la Lune" and "Micromegas." As for "Orlando Furioso" -- well, if an incident of going to the Moon to recover a madman's wits can be called science fiction, then so can the nursery rhyme, "Hey Diddle Diddle."

The intent of the "annexationists," during a period when science fiction was first being Noticed by the general public, was to bring a greater degree of prestige to the genre by giving it deeper historical roots. But the effort has really backfired, for the fact that the above precursors of science fiction really differed from science fiction in structure and function served later only to reinforce the arguments of those who believe "science fiction" either (a) can't be defined or (b) must be defined as a "metaphorical" type of satire or social criticism of contemporary conditions. Even Arthur Koestler has made this argument and there are, of course, modern examples of what he has in mind, such as John Hersey's "White Lotus," Herman Wouk's "The Lokomone Papers" and Philip Wylie's "The Disappearance." Allegedly "avant garde" works like John Barth's "Giles Goat Boy" and William S. Burroughs' "Nova Express" fall into the same category -- hot to mention such obvious imitations of Swift as Pierre Boulle's "Planet of the Apes."

What, then, was the first true science fiction story? This is a hard question to answer. Literary evolution, like natural evolution, is is continual, although there are mutations. Mammals and birds diverged from their reptilian ancestors at some point -- but what point? There are borderline cases like the Platypus that seem to combine elements of both mammal and bird.

Mary Shelley's "Frankenstein" has been singled out by some as the first science fiction novel. Certainly it was inspired largely by Luigi Galvani's discovery of "animal electricity" -- but its emotional roots lay in the gothic tradition. Edgar Allan Poe, better known as the pioneer of detective fiction and the psychological horror story, was declared the "father" of science fiction by Gernsback on the basis of stories like "Hans Phaall" and "Mellonta Tauta," which rested on ideas of science and the future -- though written somewhat tongue-in-cheek. It is not certain whether Poe thought of himself as creating a genre, as in the case of the detective story -- or whether he made any sort of distinction between efforts like "Mellonta Tauta" and stories like "The Narrative of A. Gordon Pym," which are more in the category of the old travel tale or "lost race" fictions.

We are on safer ground if we date the emergence of the genre of science fiction (as opposed to isolated examples) from Jules Verne. He was the first writer to be conscious of writing in a new genre, and to therefore be in a position to establish some criteria for it. "I have just written a novel in a new form, one that is entirely my own," he wrote after completing "Five Weeks in a Balloon." "If it succeeds, I will have stumbled upon a gold mine. In that case, I shall go on writing and writing without pause."

Verne popularized the idea of science fiction for its own sake. "From the Earth to the Moon" was not a utopia or a satire, but a ouite serious attempt to project the possibility of space travel. It turned out later that Verne's "science" was woefully naive, but this does not detract from his achievement in dramatizing space travel, as well as other scientific and technological advances, as things that could be achieved through human effort and become a part of man's future. And it was his "voyages extraordinaires" that inspired the development of science fiction as a genre -- the "invention stories" that dominated a number of dime novels, the "voyages eccentriques" of Paul D'Ivoi, and a series of what came to be called "scientific romances" by the end of the Nineteenth Century. Science fiction became something separate from the satirical Utopia, the lost race novel of H. Rider Haggard, and the modern fantasy novel as it was being created by William Morris.

Thematic hierarchies in science fiction

The evolution of science fiction since Verne has been one of a striving towards greater sophistication, both in subject matter and in treatment. Sophistication in science fiction naturally includes -- but is not limited to -- the mainstream skills of plot, characterization, style and "insight." The important thing to remember is that all these must be reinterpreted and reshaped in relation to the thematic essence of science fiction. Science fiction is not, as some authorities such as Kurt Vonnegut would have it, merely mainstream fiction with "gadgets" thrown in. A lot of "science fiction" today is written as if Vonnegut's dictum were Holy Writ -- and it's bad science fiction at best.

Since science fiction deals thematically with the possibilities of change, the thematic sophistication of a science fiction story is a function of how deeply or broadly it explores the consequences of any

particular change or set of changes. A work of science fiction is based on a premise -- "What would happen if?" or "If this goes on...." -- and the premise is rooted either in known scientific possibility, or in a speculative scientific idea not inconsistent with known possibilities of science (i.e., a story involving faster than light travel must use some loophole in the Theory of Relativity, not deny Relativity).

It is the development of the consequences of change that is the sine qua non of science fiction, not the mere description of scientific devices or ideas. Before Hiroshima, there were any number of science fiction stories dealing with the unleashing of atomic energy, and the uses and misuses thereof (Wells wrote the first atomic bomb story, "The World Set Free," as early as 1913.). None of them got the details of the process quite right -- but the best, like Lester del Rey's "Nerves," anticipated the results. Isaac Asimov has no formula for constructing a humanoid robot -- much less for imposing on its psychology his Three Laws of Robotics. Nevertheless, both in his short stories and in novels like "The Caves of Steel," he has been able to explore the logical consequences of such developments. Developing the logical consequences of even "far out" ideas is no futile exercise, for mankind has often been surprised in the past about what turned out to be possible, and will be again without a doubt. Just recently, Gerald Feinberg, with his theory of tachyons, has reopened the possibility of faster than light travel.

Science fiction has developed through four main levels or stages of sophistication, which can be referred to as "thematic hierarchies." The first was, and occasionally still is, the technological story, or "gadget story," as it is often called. Here, the central concern is with a particular scientific or technological development in itself. This is usually, but not always, an invention of some sort -- it can also be a biological mutation, an unprecedented natural or man-made disaster of some sort, or a scientific discovery. In "From the Earth to the Moon," the focus of attention is on the sheer possibility of space travel; in George O. Smith's "Venus Equilateral" series, on the technical problem of interplanetary communication, and so on. This type of story is rare today -- not because scientific ideas are not used, but because they are developed further.

Next there is the psychological or human interest level --- the impact of change on individuals, or individuals involved in change. In "Twenty Thousand Leagues under the Sea," Verne was able to reach this level -- not only in the portrayal of Captain Nemo, but in the depiction of the strange and novel way of life he and his crew create for themselves beneath the sea (one, incidentally, now being realized to a great extent by undersea pioneers like Jacques Cousteau). Robert A. Heinlein has been a great champion of the human interest story in the genre; whether in his juveniles like "Farmer in the Sky," or his adult science fiction like "The Man Who Sold the Moon," the focus is always on individuals involved in developing scientific or technological frontiers. Ursula LeGuin, in her excellent short story, "Nine Lives," does a brilliant job of conveying the psychological consequences of cloning, growth of identical individuals from a common gene pattern. Stanley G. Weinbaum, in "A Martian Odyssey," pioneered the development of alien psychology -- and of relationships between human and alien.

The sociological science fiction story was invented by Wells — "When the Sleeper Wakes" is his best example. This type of science fiction explores the consequences of a scientific change, or of an entire complex of changes, on society as a whole. Also -- but less commonly — it creates alien societies, as Wells did in "The First Men in the Moon," which was probably the first really successful science fiction story of

this alternate sociological variety. Sociological science fiction is often thought of as having been rare until the 1950's, but in fact has had a long and continuous history in the genre. "That crazy Buck Rogers stuff!" has often been used as a term of opprobrium against the field — yet the original Buck Rogers novellas, "Armageddon 2419 A.D." and "The Airlords of Han" (published in 1928 and 1929, before the comic strip and movie serial) showed a great deal of sophistication in developing the impact of advanced technology on guerrilla warfare, even though the devices were often pseudo-scientific and the style and plotting strictly pulp level. Heinlein's "If This Goes On...." and "Methusaleh's Children" (1940-41) were ahead of (and in some details, beyond) George Orwell in their shrewd grasp of psychosocial dynamics and the use of mass communications for propaganda and psychological warfare. More recently, the the sociological science fiction story has emphasized, as in Frederik Pohl and C.M. Kornbluth's "The Space Merchants," the satirical exploration of the consequences of social trends.

Finally, there is the eschatological level of science fiction — one which explores, not so much the consequences of particular changes brought about by science and technology (though these are frequently necessary vehicles), but rather the possibilities of human (or even more than human) evolution. The term "eschatological" was first applied to this "sub-species" of science fiction by the late C.S. Lewis, who gave such obvious examples as Wells' "The Time Machine" and Olaf Stapledon's "Last and First Men." Arthur C. Clarke's "Childhood's End" is a fairly recent example. This type usually requires novel length -- though there are exceptions, such as Asimov's overlooked "Eyes Do More than See." It often takes an allegorical form -- as in Wells' "The Food of the Gods," which was intended as a parable on the emergence of the evolutionary consciousness he saw as necessary to give positive direction and meaning to the future (and, in a sense, as an alternative to the future in "The Time Machine," which was the result of a failure by mankind to assume responsibility for its evolution.). "Future History" series nearly always have eschatological overtones, inasmuch as they follow a trend or direction in future historical evolution. The eschatological significance is obvious in "Future History" schemes as disparate as those of Heinlein and Cordwainer Smith. The recognition in science fiction that "the only constant thing is change" has led to the development of ideas of ethics and philosophy based on evolution.

Most science fiction, of course, integrates two or more levels of thematic development. Human interest-psychological science fiction, to have any validity, requires a solid background in those scientific or technological developments that create the emotional theme. And in sociological science fiction, one must still deal with individuals -- they are the characters, after all -- as well as science. Nor will the eschatological science fiction novel carry much conviction if it turns out to be idle speculation, unrelated to the dynamics and possibilities of technological and sociological change. Logical integration at all of the levels is essential. The future society in "Flesh," by Philip Jose Farmer, is convincing -- for all its bizarre sexual customs, fertility rites, matriarchal organization, and emphasis on biological science to the exclusion of technology -- because it logically results from disaster brought on through destruction of the land by misused technology. But Larry Niven's "A Gift from Earth" failed in plausibility because there was no logical reason given for widespread use of organ transplants to result in capital punishment for minor crimes (in order to obtain more organs) when blood transfusions did not. Creating a logical future and exploring the logical consequences of various changes are the most difficult tasks of any science fiction author.

The most ambitious works of science fiction try to cover all of the thematic levels. The fact that Mrs. LeGuin's novel, "The Left Hand of Darkness," has become an immediate classic depends in large part upon this four-fold approach. At the technological level, there is the idea of biological engineering -- which has created the androgynous inhabitants of Gethen and their peculiar sexual physiology. Human interest is created by the contrasting psychologies of Genly Ai, the "normal" human envoy of the interstellar Ekumen, and Estraven, the Gethenian noble who befriends his mission -- and by the relationship that develops between the two. At the sociological level, there is the impact of Gethenians' sexuality on their social and cultural development. And finally, at the eschatological level, there is the concept of the Ekumen itself, as an experiment in unifying disparate intelligent races through its ethic of evolution: "Material profit. Increase of knowledge. The augmentation of the complexity and intensity of the field of intelligent life. The enrichment of harmony and the greater glory of God. Curiosity. Adventure. Delight."

Another fine example of the four-fold approach is Clifford D. Simak's "Way Station." Here, a galactic system of matter transmission becomes Enoch Wallace's "window" into a community of worlds of truly Stapledonian grandeur -- and the plot involves his conflicting loyalties between his home planet and that community during a crisis which comes to assume cosmic significance, even though the physical action of the story rarely moves beyond the confines of the rural farmstead that is the site of Wallace's way station. Niven's epic "Ringworld," his finest novel thus far, combines the technological marvel of his alternative to the Dyson sphere with fascinating alien psychologies and societies, a human-interest treatment of the effects of prolonging life beyond our accustomed span and, finally, a thought-provoking commentary upon the possible hazards of experimenting with evolution. Yet Niven manages to structure all of these ideas into a unified whole.

The story of science fiction, in short, is the story of all the challenges and problems of change -- and the structure and function of plot, theme, characterization, style and every other literary element as used in the genre must be understood in this light.

Plot and story line

Plot, and an element called "story line" are used in particular ways in science fiction. Everyone is familiar with plot, but, in most other forms of writing, "story line" is either a synonym for plot, or non-existent. This is not so in science fiction.

Heinlein, in his essay for Lloyd Arthur Eshbach's symposium "Of Worlds Beyond," in 1947, stressed the function of plot in the genre as related to themes of change:

"1. The conditions must be, in some respect, different from the here-and-now, although the difference may lie only in an invention made in the course of the story.

"2. The new conditions must be an essential part of the story.

"3. The problem itself -- the 'plot' -- must be a human problem.

"4. The human problem must be one which is created by, or indispensably affected by, the new conditions.

"5. And lastly, no established fact must be violated and, furthermore, when the story requires that a theory contrary to present accepted theory be used, the new theory should be rendered reasonably plausible and it must include and explain established facts as satisfactorily as the one the author saw fit to junk."

In the technological science fiction story, the plot has to do simply with the use of a new invention, technique or idea. But Heinlein stresses the fact that, beyond that level, "The story is not about the new situation; it is about coping with problems arising out of the new situation."

This principle gives science fiction a great deal of freedom in its plotting; in fact, the genre can even wholly incorporate the plot structures of mainstream genres. Asimov, in "The Caves of Steel," combined science fiction with the detective story, without doing violence to either -- for while the plot conformed to all the rules of an honest murder mystery, the situation that created the mystery and on which the plot and theme alike depended was pure science fiction. Farmer, in his classic "The Lovers," created a tender and moving love story involving human and alien. Roger Zelazny incorporated the mythological tale into science fiction with "Lord of Light," in which the aristocracy of a new planet sets itself up as the Hindu pantheon to consolidate its power. Clarke's "The Deep Range" was an undersea western. And Simak, in "Rule 18," even came up with a science fiction sports story through the device of time travel. Many science fiction novels incorporate the techniques of the old-fashioned adventure story -- but in the hands of an author like Harry Harrison ("Deathworld," "Planet of the Damned") these are always solidly grounded in logical future situations.

Heinlein himself has remarked that there are really only three basic plots in all fiction -- Boy meets Girl, the Little Tailor and the Man who Learned Better. Be that as it may, the important point is that whatever kind of plot is used in a science fiction story, it must be a logical outgrowth of a science fictional situation, and have a thematic relation to that situation.

Harrison has theorized that science fiction is closer in intent to the historical novel than to any other mainstream genre -- with the difference, of course, that it is future tense instead of past tense. But whereas a historical novelist can research his background, science fiction authors must create it. There is no such thing as the future — not yet, anyway. The author must project a future society in which the plot will take place, unless the setting is in so near a future that a minimal amount of change has taken place, or the story is so short in length or limited in scope that the general background is not terribly important. This is where story line comes in.

Del Rey writes, in his essay, "Art or Artiness?" that, "A plot is a structure of related events happening to people before the reader. This should be based upon a fully-understood story line in the writer's mind, which is everything significant that leads up to, shapes and grows out of the events of the plot." Del Rey himself once spent years working out the social and economic history of a robot society -- just to provide the story line, referred to casually, in "Instinct." And in "Keepers of the House," he reversed plot and story line -- the plot is in the background and the situation in the foreground.

Stapledon's "Last and First Men" and "The Star Maker" illustrate the technique of story line in simon-pure form. There is no plot at all throughout most of each "novel," just an imaginative projection of the evolution of man and other intelligent species in the cosmos. Heinlein used a wall chart and notes in his study for the story line on which he based his Future History stories and novels. And Cordwainer Smith kept detailed notebooks on a future history scheme Stapledonian in scope, so that stories as varied as "Scanners Live in Vain," "When the People Fell," "The Dead Lady of Clown Town" and "Mark Elf" would each fall in their proper places and create a convincing reality.

Working the story line into the story is always a challenge for the science fiction writer. In the most primitive form of writing, the characters in a science fiction story would simply converse incessantly about the world they lived in and its workings -- which made about as much sense as people in our era talking about the workings of TV sets or atomic power plants in the midst of normal conversation. The future worlds of science fiction, from the viewpoint of the characters living in them, would be as normal and taken-for-granted as our own is for us.

Heinlein, in his classic short story, "The Roads Must Roll," got around this problem by having Larry Gaines, the protagonist, conduct a visiting minister of transport from Australia on an official tour of a road city which, combined with a brief interlude on the background of the Functionalist movement, gives the reader a compelling vision of the moving transport system and its origins, and of the significance of a strike to a society so utterly dependant on that system. Heinlein, in that story, was able to make the reader feel the situation -- from the point of view of the individuals involved in it.

Story line is incorporated more implicitly still in some modern science fiction stories, such as "Scanners Live in Vain." Cordwainer Smith's classic focuses on the scanners, men surgically altered into cybernetic organisms to endure the perils of space. Yet the process is barely hinted at, as is the history of a humanity emerging from a new Dark Age and struggling to maintain its precarious hold on civilization. We see everything through the eyes of Martel, the protagonist who comes cranched to an emergency meeting of his guild -- and finds that he must betray the guild when it turns traitor to a humanity that has made the the ideals of its weird code of honor obsolete. One never learns what, precisely, the origins of idioms like "cranch" are, or the origin and nature of the Beasts and the manshonyaggers and the Unforgiven. But we can sense these as a part of the history and mythology of the world of Martel, just as we can sense the contrast in the states of consciousness between the Scanners and the normal Others. And when, in the climax of the story, Martel turns Parizianski's brainbox to Overload to end his threat to progress, we feel what he feels because we have become part of his world.

During more than 100 years of development, science fiction as a genre gradually built up a body of traditions that are often made part of many authors' story lines. Donald A. Wollheim, editor of Ace Books, has outlined these in his recent book, "The Universe Makers." Common stages in future history, as he categorizes them, include space travel and exploitation of the solar system, then first flights to the stars. and possible meetings with alien intelligences there; the rise, bloom, decline and fall of a galactic empire, an interregnum, establishment of a permanent galactic civilization, and finally the ultimate challenges of God or Evolution. This widely-adopted mythology of the future takes in the ideas of authors as varied as Wells, Stapledon, Edward E. Smith, Edmond Hamilton, Asimov and Heinlein, and is used -- with variations -- by ones as varied as Mrs. LeGuin, Gordon Dickson and even Andre Norton. Not all science fiction authors work within this mythology, of course. But those who do are able to concentrate on their individual approaches to the problems of the various stages of evolution -- the fact that a story takes place in one of the stages can be taken for granted.

The mythology of science fiction is not a prophecy, in the sense of a series a future events promised or fated. Rather, it is a projection of the possibilities of evolution insofar as they can be understood today. But the consciousness of these possibilities of evolution has a great deal to do with the framework of values in science fiction.

The new eschatology

The essential spirit of science fiction is something very hard to convey to those who have not read it with a passion for many years. The general public may be aware of some of its elements: space travel, alien contact and the like. But beyond that, it knows nothing.

This is not entirely the public's fault. Most popularizations of science fiction, in novels like "The Andromeda Strain" and movies and television shows like "The Thing" and "The Invaders," show very scant respect even for the plot ideas of the genre -- much less for science fiction's general philosophy.

Only once, in fact, has there been an explicit expression of the philosophy of science fiction in a form aimed at a general audience -- although a few other films and TV shows like "Destination Moon," and "Star Trek" have conveyed it implicitly. That explicit expression was in "Things to Come," produced in 1935 from a screenplay by Wells.

Wells' best novels and short stories had been written prior to World War I. By the 1930's, he was a literary celebrity on the basis of that fiction and his magnum opus, "The Outline of History." Not a year went by that he did not publish new volumes of fiction and non-fiction; but these had alike become tedious lectures on his political theories.

When Alexander Korda invited Wells to adapt one of these, "The Shape of Things to Come," for the screen, Wells quickly realized that the medium was imposing artistic economy upon him. "A film is no place for argument," he admitted. He was forced to take a visionary approach that alone could give the movie artistic merit.

"Things to Come" was deliberate propaganda for Wells' ideas of technocratic socialism. Civilization is destroyed by a world war, and an elite of airmen and engineers then appears to rescue mankind from an ensuing Dark Age and create a bright Utopia. Yet, throughout the film, the explicit propaganda for Wells' idiosyncratic brand of socialism is overwhelmed by the vision of science and evolution. And in what takes place after Utopia is established, Wells parts company with the typical Utopian.

For the typical Utopian, Utopia is the end. For Wells, it was a mere prelude. The climax of "Things to Come" centers on the Space Gun, by which the leaders of the future propose to send the first humans to the Moon. An artist named Theotocopulos organizes a mob to destroy the device and stop this misguided "progress" once and for all. He brushes aside the arguments of Oswald Cabal, the leader of Utopia, that common men who want nothing but security have been given all they need of it.

"We have a right to do what we like with our own lives -- with our sort of lives," Cabal tells him.

"But how can we do that?" protests Theotocopulos, "When your science is continually changing life for us? When you are everlastingly contriving strange things about us? When you make what we think great, seem small? When you make what we think strong, seem feeble? We don't want you in the same world with us. We don't want this expedition. We don't want mankind to go out to the Moon and the planets. We shall hate you more if you succeed than if you fail."

"Either life goes forward, or it goes back. That is the law of life," Cabal answers -- and the shot to the Moon is made just in time.

But Raymond Passworthy, whose son has been sent on the trip with

Cabal's daughter, still has his doubts. In the final scene, he and Cabal are watching the flight in the mirror of a giant telescope --

CABAL: There -- there they go! That faint gleam of light.

PASSWORTHY: I feel -- what we have done -- is monstrous.

CABAL: What they have done is magnificent.

PASSWORTHY: Will they return?

CABAL: Yes, and go again and again, until the landing can be made and the Moon is conquered. This is only a beginning.

PASSWORTHY: And if they don't return -- my son and your daughter? What of that, Cabal?

CABAL: Then presently -- others will go.

PASSWORTHY: My God! Is there never to be an age of happiness? Is there never to be any rest?

CABAL: Rest enough for the individual man. Too much of it and too soon, and we call it death. But for Man, no rest and no ending. He must go on, conquest beyond conquest. First this little planet, with its winds and ways, and all the laws of mind and matter that restrain him. Then the planets about him, and at last, out across immensity to the stars. And when he has conquered all the deeps of space and all the mysteries of time, still he will be beginning.

PASSWORTHY: But....we're such little creatures. Poor humanity, so fragile, so weak. Little....little animals.

CABAL: Little animals? If we are no more than animals, we must snatch each little scrap of happiness and live and suffer and pass -- mattering no more than all the other animals do, or have done..... (he points to the reflected image of the cosmos in the mirror) It is this, or that. All the universe -- or nothingness. Which shall it be, Passworthy, which shall it be?

In that one scene, Wells expressed the ultimate dream of science fiction, and those who cannot understand why the true science fiction fan is deeply moved by it will probably never understand the genre at all. The critics have had a lot of fun at Wells' expense, faulting the film for facile optimism (even though it begins with a war that kills off more than half the world's population) and attacking his political theories as simple-minded (though, oddly, some of them have come up with far sillier ideas, as witness Aldous Huxley in "Island"). For science fiction fans, however, the political argument wasn't the most important thing in "Things to Come" -- it was the <u>vision</u> they responded to.

The dream of science fiction, like science fiction itself, was a response to the knowledge of evolution. In times past, the meaning of human existence was defined by religion. If human life was to have any significance, it was only by the grace of God. If the Earth were a vale of tears, there could be fulfillment in Heaven -- for the believer, of course. History had no meaning -- except, perhaps, as a prelude to the Second Coming of Christ and the Last Judgment. Men should be humble and accept whatever lot they were given -- for did not the Lord see all and know all and justify all?

Then came the much-publicized Death of God, and with it -- so it seemed -- the end of all values and meaning. "Without God, all things are permissible," mused Fyodor Dostoyevsky, and the conflict of Good and Evil in his novels centered on that question. God or Nothing -- and

while a Henryk Sienkiewicz, in "Quo Vadis," might have no doubts about the answer, Dostoyevsky, in "The Brothers Karamazov," seemed unable to resolve the conflict convincingly in God's favor. Thereafter came Jean Paul Sartre, with his "existential void" -- he has made no secret of the fact that the pessimism of his brand of Existentialism is based on the Death of God and the resulting lack of Divine spiritual guidance. Now we have Samuel Beckett, with his "Waiting for Godot" -- nor is anyone surprised when Godot fails to appear.

For some, Communism became the new God. The dialectic of history was supposed to lead inevitably to an Earthly paradise, in the place of the Heavenly one promised by the church. Even pessimistic novels by the social realists could end on a positive note by looking forward to the Great Red Dawn. But when the Great Red Dawn came, it failed to create Paradise -- and while Communism is still the faith of millions who do not have to live in Russia, it has spawned within the supposed Heavenly Gates heretics like Aleksandr I. Solzhenitsyn, who are convinced they are really living in Hell.

For those who have lost faith in both Heavenly and Earthly ideas of Paradise, there is the cult of the Great God Now. Some follow the path of hedonism and sensation; others search for Nirvana -- and many seem to be striving for both at the same time. What Utopianism there is takes the form of primitivism -- a longing for the simpler tribal life of the past, for an age when no one had to worry about the "meaning" of life because nothing ever changed and everyone agreed on what cultural, moral and spiritual values should be. Civilization, for many, is much too complicated and insecure.

There has been insufficient attention paid to the fact that the worshippers of God, Communism and Now have had one trait in common -- a horror of Impermanence, a longing for something Eternal to relate to. There was the desire for personal immortality, and the idea of the Last Judgment and the Eternal Kingdom of Heaven. There was the dream of the Earthly Utopia -- whether created by evolution or revolution, it was to mark the end of history and usher in an Eternal Present. Proponents of Nirvana regard the external world of change as an illusion -- and seek the "inner world" of Pure Being. And sensual pleasures haven't changed much over the millenia; they too can offer certainties of a sort. The Utopians are nearly all stasis seekers, looking for a world that can be perfect, beyond change, beyond suffering and uncertainty -- and beyond any challenges or goals.

Yet the universe goes on, and the only eternal thing in it seems to be Evolution itself. If there is to be any ultimate meaning in human existence, it must therefore lie in Evolution. Science fiction, in its awareness of Evolution, has been very much involved with eschatology — defined in Webster's Third International Dictionary as "a science that deals with, or a doctrine or theory about the things of final importance to mankind."

In a universe of eternal change, the things of final importance to mankind are the eternal problems and challenges of change. Science fiction deals with the unending conflict of intelligence against nature and the quest for new knowledge and new frontiers. To the stasis seeker this must seem a pessimistic vision indeed; he would really _prefer_ a simple fate ordained by God or History. But science fiction regards the vision of unlimited change as an optimistic one. An infinite universe, in science fiction, offers infinite prospects and challenges. Science fiction takes Cabal's side against that of Theotocopulos.

Among the romanticisms

It was to a vision of change and evolution as something positive that the early fans of science fiction responded. D.D. Harriman, hero of Heinlein's "Requiem," described a real phenomenon: "We had science clubs, and basement laboratories, and science fiction leagues -- the kind of boys who thought there was more romance in one issue of the Electrical Experimenter than in all the books Dumas ever wrote."

Science fiction originated as part of the romanticist school of literature in the Nineteenth Century, when that school was dominant. It was, from one viewpoint, a historical accident. Verne, after all, was emulating the mainstream romanticists of his day, like Victor Hugo and Alexandre Dumas. But viewed from another perspective, this fusion of science and romance was something odd indeed -- something without any precedent.

There have been a number of definitions of romanticism -- and as C.S. Lewis noted in the introduction to "The Pilgrim's Regress," some of these are not only in disagreement, but apparently irreconcilable. Webster's dictionary defines the school as one "marked by the imaginative appeal of the heroic, adventurous, remote, mysterious or idealized characteristics of things, places and people." Nowadays, "romanticism" has connotations of sentimentality, or even banality -- as in the case of books and movies like "Love Story."

Actually, romanticism has stood -- and in some cases, still does stand -- for more than that. But the school is in poor critical repute now, inasmuch as the mainstream has long been dominated by such other schools as the realism of Gustave Flaubert, the social realism of Emile Zola, the surrealism and symbolism of James Joyce and Franz Kafka, and lately, even the anti-novel of Alain Robbe-Grillet and the "theater of the absurd" of Beckett, Edward Albee and the like. The intent of the original realism was to create absolutely objective descriptions of the miseries of life -- but soon developed into a doctrine that only misery should be written about. Its various successor schools generally took the pessimistic conclusions of the old realism for granted, in order to concentrate on new techniques to express them.

It has been a long time since the mainstream has produced any romanticists of the stature of Joseph Conrad. Even able writers like Antoine de Saint-Exupery usually receive short shrift from the critics, in comparison to the accolades given Philip Roth for a sad novel like "Portnoy's Complaint." Any fiction about the higher possibilities of of mankind is sure to be condemned as "escapist" (although, oddly, the critics usually object to "moral criticism"), and science fiction has shared this general opprobrium in the world of Academe.

Some science fiction authors, in turn, have taken a dim view of the state of the mainstream today. Heinlein, in his essay for the Advent symposium, "The Science Fiction Novel," objected to "autobiographical novels centered around neurotics, even around sex maniacs, concerning the degraded, the psychotic, or the 'po' white trash' of back country farms, portrayed as morons or worse; novels about the advertising industry, or some equally narrow area of human experience such as the personal life of a television idol or the experiences of a Park Avenue call girl."

Heinlein interpreted this trend as "a cultural lag on the part of many authors, editors and critics -- a return to the womb in the face of a world too complicated and frightening for their immature

spirits. A sick literature."

In similar fashion, L. Sprague deCamp, in an introduction to a heroic fantasy anthology, "The Fantastic Swordsmen," complained, "We have had studies of abnormal psychology thinly disguised as fiction. We have had stories that reduce human beings to animated sets of genitalia, with legs and other parts vaguely attached. We have had stories whose heroes are human zeroes -- dull, pathetic little jerks with neither brains, brawn nor character. We have had stories in which the words and sentences seem to be strung together at random, so that it would take a cryptographer to recover the meaning, if any." And Poul Anderson, in his short story, "The Critique of Impure Reason," satirized the critics who promote fiction consisting of "piddling little experiments in the technique of describing more and more complicated ways of feeling sorry for yourself.

Very few "serious" mainstream authors have resisted this trend, or offered explanations for the dominant pessimism in modern fiction, or proposed any alternatives to the literary theories underlying most mainstream writing. Three of the most prominent have been the atheist-turned Christian C.S. Lewis, the "Objectivist" novelist-philosopher Ayn Rand and the heretical existentialist Colin Wilson. All have defended, in general, literary romanticism -- but their theories have differed significantly.

Lewis, in so far as he set down a theory at all, did so in "The Pilgrim's Regress." His was basically a theological theory, founded on the idea of the emotional values in romanticism representing "immortal longings" sent as "messages" from God to give hope to the world. Lewis strongly defended the traditional system of human values, or the "Tao," arguing in "The Abolition of Man" that it is part of the natural order of things whether one believes in God or not, and that all alternatives to the "Tao" that have been proposed are really just fragments of it. Lewis became quite influential as the leader of the "Oxford Christian" group of writers, including Charles Williams, J.R.R. Tolkien and Dorothy Sayers. Author of several science fantasy novels, the best of which is "Out of the Silent Planet," he made valuable contributions to criticism of science fiction -- although his distaste for the "engineering" part of the genre, which he considered too materialistic, severely limited his scope. What Lewis most enjoyed was the modern "adult fantasy" that was pioneered by Morris and brought to its greatest development by his protege Tolkien in "The Lord of the Rings." He most admired in science fiction the aspects of the created world and the sense of wonder, as in "The First Men in the Moon," or the philosophical speculations (though he disagreed with them strongly) of Stapledon.

Miss Rand has developed a "metaphysical" theory of romanticism based on the premise that its distinguishing characteristic is the idea that men have freedom of choice, rather than being inevitably doomed by fate. Her rhetoric against the modern mainstream is reminiscent of that of Heinlein: "We are shown a line-up of murderers, dipsomaniacs, drug addicts, neurotics and psychotics as representatives of man's soul -- and are invited to identify our own among them -- with the belligerent assertions that life is a sewer, a foxhole or a rat race, with the whining injunctions that we must love everything, except virtue, and forgive everything, except greatness (from "For the New Intellectual")." But her underlying objection to the modern mainstream -- social realism and surrealism and all the rest -- is based on its deterministic attitude: the idea that men are helpless pawns of God, society or instinct, and can never control their own lives in even the slightest way. Acting on

this theory, she includes in the school of romanticism all fiction that presupposes human freedom of choice -- not only the obvious Nineteenth Century romantics like Hugo, Dumas, Sir Walter Scott, Rudyard Kipling, Conrad, Sienkiewicz and Jack London, but social dramatists like Henrik Ibsen and Terrence Rattigan, the psychological novelist Dostoyevsky, and others who are considered naturalistic by most other critics. Her philosophy aims at setting up a metaphysical system of human values to replace traditional ones, and she sets forth her ideas of the "Virtue of Selfishness" in "Atlas Shrugged," which bears the same accidental resemblance to science fiction as the "tomorrow fiction" of political novelists like Fletcher Knebel and Allen Drury (her novelette, "Anthem," comes closer). She appears to have no real interest in the genre, but some of her followers have picked up on Heinlein's "The Moon is a Harsh Mistress," much as the hippies adopted "Stranger in a Strange Land."

Wilson has championed the cause of the bildungsroman, or novel of moral and spiritual education. It is the "natural form of serious fictional art," he argues, because it deals with the fundamental issue of existence: "What shall we do with our lives?" Wilson grew up on the optimistic fiction of Wells, Bernard Shaw and G.K. Chesterton, and was appalled by the "hidden premise" in the writings of such moderns as Joyce, Sartre, William Faulkner and others: "....the sense of defeat, or disaster or futility that seems to underlie so much modern writing. It is not merely that contemporary authors seem to feel bound to deal with the 'ordinary man' and his problems; it is that most of them seem incapable of dealing with anything but the most ordinary states of mind (from "The Age of Defeat")." He is obsessed with the predicament of the "Outsider," the man who has lost faith in all traditional values -- and therefore considers life meaningless. Wilson agrees that the old values have failed -- but rejects the conclusion that it is impossible to find any new ones. He believes that phenomenology -- an investigation into the "structure of consciousness" -- can supply the answers. He admires science fiction for having escaped the general defeatism of mainstream fiction, has praised Weinbaum and Heinlein highly, and even written an existential science fiction novel, "The Mind Parasites." In line with his approach to values, however, he is most intrigued by A.E. VanVogt, because of that author's preoccupation with the "superman" problem.

It is often argued that the pessimism of modern literature is simply a response to social conditions, or the dangers facing modern civilization, or to the terrible truth about the Human Condition. But in fact, such relationships are purely coincidental. Social conditions have generally been better in this century than in the last -- and they were better then than in the Middle Ages. Modern times aren't the first to have known war -- and writers like Zola, Joyce and Kafka never knew of the atomic bomb or global pollution. Charles Dickens lived and wrote in the midst of all sorts of misery -- yet never gave up on the Human Condition as hopeless. Even in our own time, Anne Frank kept faith in humanity under circumstances far more harrowing than those facing the typical products of college writing courses who turn out testaments to their existential despair. In an age as dangerous as our own, there are certainly enough problems to worry about -- yet these have little to do with the predominant literary pessimism, which antedates nearly all of the conditions now used to justify it.

The pessimism of the mainstream really stems more from the loss of faith in old systems of value and meaning. Or, as Wilson observes, "The scientific method has discredited the churchman's eschatology, without even beginning to supply an eschatology of its own." When life is regarded as pointless, art becomes pointless as well.

Eschatological Romanticism

"Art must mirror life" is a cliche nearly everyone is taught in school. It has been reinterpreted in various ages -- first to justify classical tragedy, then social realism, then the psychiatric novel and lately even the nightmares of the latest avant-garde. Interpretations of life keep changing each generation, of course, so the old cliche has been amended to read "Art must reflect its time." This is convenient, naturally, not only for authors with no originality who must follow the artistic shibboleths of their time to gain recognition, but for those academics who seem to regard literature merely as something to compose learned theses about -- "Sexual taboos in Lower Slobbovia as reflected in the novels of Karl Klutz (1819-78)" and the like.

The fact is, art has never reflected anything but interpretations of life. What may have escaped general attention, however, is that art has tended, through the ages, to project man's evolving conception of human possibilities. Miss Rand is wont to justify romanticism by citing Aristotle's rule that art is supposed to show what "might or ought to be," rather than merely what is. But in fact, she dates the emergence of true romanticism from the end of the Eighteenth Century, when the classical form of tragedy based on fixed moral qualities and flaws in human character gave way to a form based on moral choice and conflict of values. Evidently, the conception of human possibilities had evolved considerably between the time of Aristotle and that of Johann Goethe.

Perhaps art can be anti-evolutionary at times too. This was, in essence, the complaint D.H. Lawrence against the sort of realism that became popular in this century: "Realism is just one of the arbitrary views man takes of man. It sees us all as little ant-like creatures toiling against the odds of circumstance, and doomed to misery..... It becomes the popular outlook, and so today we actually are, millions of us, little ant-like creatures toiling against the odds oc circumstance and doomed to misery; until we take a different view of ourselves. For man always becomes what he passionately thinks he is; since he is capable of becoming almost anything (quoted in a foreword to the collection "A Modern Lover")."

The Petronius of Richmond, Va., James Branch Cabell, expressed, in "Beyond Life," a theory that romanticism was a sort of evolutionary force in art which could create a new reality instead of reflecting an old one. "Man alone, of all the animals, can acquire a trait by assuming, in defiance of reason, that he already possesses it," he declared. And "'realism,' with its teaching that the mile-posts along the road are as worthy of consideration as the goal, has always figured as mankind's chief enemy," whereas "it is about tomorrow and about the day after tomorrow, that romance is talking by means of parable. And all the while man plays ape to fairer and fairer dreams, and practice strengthens him at mimickry."

It is hard to tell whether Cabell, with his air of very genteel cynicism, was more cynical about ideals -- or about cynicism itself. He gave his clearest fictional expression of his theory of the "demiurge" of romance in "The Silver Stallion." But his theory of man "playing ape to his dreams" has an obvious bearing on science fiction -- no matter how seriously Cabell himself took it, and notwithstanding the fact he never wrote science fiction, or had anything to do with the genre.

For science fiction does project men's dreams of the future, and men actually have played ape to them. Konstantin Tsiolkovsky, father of of the rocket research that eventually led men to the Moon, found his

inspiration in the works of Jules Verne. So did Simon Lake, developer of the first submarine to navigate successfully in the open sea; William Beebe, inventor of the bathysphere; and Admiral Richard E. Byrd, first man to fly over the South Pole. Asimov has reported that half of the most creative scientists he has met turned out to have been readers of science fiction. Clarke has noted the same phenomenon, stressing that science fiction's role is more inspirational than educational, opening young minds to the wonders of the universe. And Ray Bradbury, in Life, reported discovering in a 1967 visit to Cape Kennedy that the American astronauts were also fans: "We were all from the same school, we had all shared out the dream to the incredible new reality. Each and every one of us -- all were nephews of our dear French uncle Jules Verne, and honorable sons of H.G. Wells."

As Wollheim has pointed out in "The Universe Makers," the world today is, in large part, a world created by science fiction. In fact, science fiction writers were the first to take a serious interest in the shape of things to come and (aside from those whose concern was to preach some particular ideolcgy or utopian scheme) they have, until the recent advent of futurists like Alvin Toffler, been virtually the only ones to think seriously about the future. In a world of constant change like our own, it would seem a truism that thinking men should concern themselves with the impact of change. But this has not been so -- Wells put his finger on the problem in "When the Sleeper Wakes," in which his protagonist Graham, a Nineteenth Century humanist projected into the Twenty-second Century, realizes, "We were making the future, and hardly any of us troubled to think what future we were making."

If the central question of the bildungsroman is, "What shall we do with our lives?" the central question of science fiction is, "What sort of future should man make for himself?" This central question is one that permeates every serious work of science fiction, no matter what the specific plot or theme involved. The Nineteenth Century humanists tended to take "progress" for granted, and science fiction concentrated on technological dreams -- from submarines to space travel. Later, it came to be realized that "progress" was not automatic -- that it could be brought about only in so far as men made it their business to do so. Science fiction has become a testing ground for ideas about the future, for the dramatization of the conflict of progress and regress -- and of different conceptions of what constitutes progress. The genre has come to deal with the whole complex of changes in technology, psychology, sociology, ethics and philosophy.

Romanticists as diverse as C.S. Lewis, Miss Rand and Wilson seem to agree that romanticism generally deals with questions of choice and human values -- their arguments are over whether values are to be derived from religious tradition, inductive reasoning or psychological introspection. And they tend to make the neo-romanticist schools which they advocate -- theological romanticism, romantic realism and existential realism -- into demonstrations of their particular ideas. Wilson does this deliberately, while Lewis and Miss Rand both insist that the story comes first -- but the message is clear enough in "Out of the Silent Planet" or "Atlas Shrugged." Their fictional realities are created so as to express their ideas to the best effect.

Science fiction takes a somewhat different approach. Science is a combination of hypothesis and experiment, after all; science fiction therefore follows the same approach. Human values, whether derived from tradition, induction, psychology or some other source, must be tested against the challenges of space and time -- just as all other ideas in science fiction are so tested.

Psychologist Abraham Maslow believes he has developed a science of values through experimental psychology -- they are tested according to how they help or hinder "self actualization." Science fiction takes the same concept and extends it to humanity as a whole -- values are tested according to their impact on the evolution of mankind. This is not, of course, to deny the problems of the individual; for mankind in any age is represented only in the individual men of that age, and the science fiction stories -- with rare exceptions -- are about activities of individuals. But science fiction realizes that the impact of ideas can continue, and create new effects, beyond the life spans of any of the particular individuals they initially affect -- and that it is not sufficient for ideas of human values merely to make individuals "feel good," if they fail to meet the tests of survival, growth and adaptation in the universe.

Science fiction considers questions of values in an evolutionary context. It is less a demonstration of any particular system of values than a test of what values will meet the possible challenges or problems of the future.

In del Rey's "The Eleventh Commandment," for example, a church of the future has imposed the commandment to "be fruitful and multiply" on the populace of a post-atomic war Earth -- with the result that the problems of overpopulation, malnutrition, disease and poverty create a living Hell. Yet the position of the church turns out to be justified, for the atomic war has so severely damaged the genetic potential of the human species that only by unlimited reproduction and ruthless struggle for existence can mankind hope to breed out the weaker strains and have any chance for further evolution -- instead of extinction. What seems "evil" in the short run may be "good" in the long run.

Conversely, what seems "good" in the short run may be "evil" in the long run. In Cyril M. Kornbluth's "The Marching Morons," humanity has carried the welfare ethic to an extreme -- with the result that the least intelligent and capable people reproduce themselves until most of the world's population consists of morons whom the few intelligent men left try desperately to keep alive. In Cordwainer Smith's epic of the future, the Instrumentality of Mankind has set up a blissful utopia in which all men are made happy -- but are so overprotected they have no reason to be happy, or anything else; until the old evils are brought back in the Rediscovery of Man. In Clarke's "The City and the Stars," virtual immortality for the inhabitants of Diaspar has brought stagnation -- for "the end of death is the end of birth."

These are extreme cases, to be sure, but they all illustrate a a fundamental principle of science fiction: the impact of change must be considered in long-range terms, not simply in terms of immediate and possibly transitory effects. And the values expressed in the genre must be values relevant to the long-term survival and evolution of mankind, not those which seem immediately satisfying. Perhaps the most famous "last words" in human history are: "It seemed like a good idea at the time."

Science fiction best takes a form of eschatological romanticism in that it creates dreams to which man can aspire, and an evolutionary consciousness of both the practical problems and the ethical and philosophical issues facing mankind as it confronts the future. Wells was right when he said we are "making the future" -- the value conflicts in science fiction are conflicts involving the course of evolution itself. The fusion of science and romance is no accident after all, but rather a response to the necessity of thinking about the issues of the future.

Human values in science fiction

There is an ironic scene in George R. Stewart's novel "Fire," in which a press photographer is looking for "human interest" pictures in a town being evacuated under the threat of a forest fire. "A few miles away many hundreds of men fought with the heat of the fire on their faces. The axes swung, and the cats plunged back and forth and the power-saws ate swiftly through the tree-trunks, and the smoke towered up against the sky." But the photographer is unmoved -- he knows what "human interest" is: a shot of a sexy dame on someone else's porch full of furniture waiting to be removed, with somebody else's baby sitting on her lap.

"Fire" wasn't a science fiction novel, of course -- but Stewart had a viewpoint akin to that of science fiction (in fact, he also wrote an end-of-civilization novel, "Earth Abides," that respects the forms of science fiction far better than 90 per cent of the efforts made by mainstream writers to enter the genre). Readers who can appreciate that the photographer was looking for "human interest" in the wrong place will, at any rate, be better able to understand the "human interest" -- and human values -- in science fiction.

Science fiction readers often rhapsodize about the "sense of wonder" they find in the classic stories of the genre. Moskowitz cites a well-known definition of the emotion from "Man's Search for Himself," by Rollo May:

"Wonder is the opposite of cynicism and boredom; it indicates that a person has a heightened aliveness, is interested, expectant, responsive. It is essentially an 'opening' attitude -- an awareness that there is more to life than one has fathomed, an experience of new vistas of life to be explored as well as of new profundities to be plumbed."

Wilson, in "The Strength to Dream," contrasts the esthetic aims of science fiction with the "cathartic" purpose of classical tragedy as defined by Aristotle: "Science fiction is not an attempt to 'purge,' but to liberate the human imagination; it achieves this effect, not by pity and terror, but by attempting to evoke wonder and amazement."

He cites VanVogt's "Far Centaurus," a story about the experience of the first interstellar flight, as one example:

"The story jars the reader's imagination to a new viewpoint. Our imaginations are anthropocentric, earthbound; they prefer to deal with emotions with which they are familiar -- human love and hate. In this sense, a story like VanVogt's can be considered a new departure for the human imagination..... At its best, science fiction has the effect of jerking the imagination out of its anthropocentric prison yard and stirring it into a new kind of perception."

Perhaps the only point on which a science fiction reader might disagree with Wilson would be in interpreting the sense of wonder as less "human" than everyday love and hate -- the science fiction reader might consider it <u>more</u> human, or at any rate more expressive of human potentialities.

The sense of wonder in science fiction works on two levels. The first has to do with expansion of consciousness -- not in the sense of the acid head's LSD dreams, but in the sense of stretching the human imagination to encompass the possibilities of space and time. Wells was a master at this, whether in giving his readers a perspective of eons, as in "The Time Machine," or of a strange and alien world, as in "The

First Men in the Moon." This aspect of wonder had its roots in the more exotic forms of mainstream romance -- Conrad's novels of the sea and of the Mysterious East, Haggard's tales of lost races beyond the explored frontiers of Africa like "She" and "King Solomon's Mines," William H. Hudson's "Green Mansions. By the end of the last century, nearly all Earthly frontiers had been explored -- the later "lost race" fictions of A. Merritt were written and read more as science fantasy, like the Martian novels of Edgar Rice Burroughs.

In science fiction, the wonder of the exploration of frontuers became combined with that of technological frontiers and the works of intelligence. The road cities of Heinlein's "The Roads Must Roll," and the self-contained environment of the starship in his "Universe;" the leviathan-like machines of "Things to Come" and the mammoth underground constructions in "Forbidden Planet" (which to mainstream eyes seem to be "dehumanizing"), the tower of Earthport in Cordwainer Smith's "The Ballad of Lost C'Mell," and the inertialess planets and other feats in E.E. Smith's "Lensman" series are, to science fiction readers, objects of wonder.

Closely allied to the wonders of science and technology in the classics of science fiction is a distinct approach to characterization of human (and even alien) protagonists. Algis Budrys, in commenting on Moskowitz' "Three Stories" (an anthology of early science fiction tales selected as examples of the "sense of wonder") for Galaxy, noted that the stories "share a spirit of rational nobility which has been quite lost from most popular fiction (and which may have more to do with the sense of wonder than one might at first suppose)."

This second level of wonder in science fiction is one rarely found in mainstream fiction -- the most immediate examples that come to mind are Sir Arthur Conan Doyle's "Sherlock Holmes" and the heroes of aviation in Saint-Exupery's "Night Flight." Rational nobility is more than simple heroism -- though it involves that. It is the heroism of of the visionary -- but of the visionary whose dreams are those of the possibilities of human intelligence extending the frontiers of human achievement and experience, the visionary who believes that the mind and the achievements of the mind are all that ennoble mankind.

The concept of rational nobility has even been extended to other forms of intelligent life that may exist in the universe, and led to the belief that all intelligent species are brothers because they share the problems and challenges of the universe and must also share in the vision of science as a means of understanding and overcoming the common obstacles to the evolution of civilization. Science fiction, like the mainstream forms of romanticism, often deals with the conflict between Good and Evil, and there is much heroic action in space opera. But in science fiction, these things are part of a larger conception of what should properly concern mankind -- and other species.

Del Rey, in a foreword to "...and Some Were Human," observed: "To me, the real villains of life are stupidity and the unconquered limitations of that life, or the blind whims of a savage environment that is as yet only partially tamed. The real victories are those that contribute to the advancement of intelligence over its weaknesses and the tempering of character in the heat of adversity. Real satisfaction comes from the sense of having done a good job and done it well, rather than from having finally beaten some worthless human villain to a pulp."

Science fiction tends to express the values and attitudes of science because, quite simply, these are the values and attitudes that

have historically contributed to the advancement of mankind -- and the only ones that offer mankind any chance for further advancement or even survival amid the complexities of a technological age. The mainstream tends to take a sentimental approach to values, and to regard those of science as "cold" and "inhuman." Yet science is as natural to man as the curiosity about the workings of the world, and about his own goals and purposes, that gave rise to both science and art.

Heinlein has written, in his Advent essay:

"All our lives we are more deeply concerned with what we are going to do than with what we are now doing or have done. This process is time-binding, the most human of all activities; observing the past in order to make plans for the future. It is the scientific method itself, and it is the activity that most greatly distinguishes man from other animals. To be able to grasp and embrace the future is to be human."

The heroes and heroines of science fiction, whatever else they may be, are always men and women (or even alien creatures) who "grasp and embrace the future" -- Verne's Captain Nemo, the idealistic captain of the Nautilus; Wells' Graham, who dies fighting to save London from the boss Ostrog; Weinbaum's Margot of Urbs, the fiery co-ruler ("like a black flame blowing cold across the world") of a future world empire; E.E. Smith's Worsel of Velantia, who stands beside his (to him, alien) human comrades of the Galactic Patrol in defense of all civilization; Heinlein's D.D. Harriman, the spirit of the Space Age, who looked into the heavens "as Moses must have looked, when he gazed out over the promised land;" Cordwainer Smith's Lord Jestocost, the leader of the Instrumentality who seeks justice for the underpeople; Simak's Enoch Wallace, who achieves his maturity while defending the interests of his way station; Ursula LeGuin's Estraven, who befriends the cause of the Ekumen he barely understands; and even the "ordinary men" like Mario Rioz and Ted Long of Asimov's "The Martian Way," who manage to secure the economic independence of their planet.

Science fiction protagonists are not all scientists, engineers, and the like. Sometimes, scientists can even be villains. But science fiction generally, and most of its heroes, express the essential _spirit_ of science. "It represents a new, aggressive policy towards nature on part of human beings," Wilson notes in "The Strength to Dream" -- "A policy completely opposed to the animal acceptance of defeat in the face of confusion."

And Heinlein continues, in his Advent essay:

"Science fiction preaches the need for freedom of the mind and the desirability of knowledge; it teaches that prizes go to thise who study, who learn, who soak up the difficult fields such as mathematics, engineering and biology.....The prizes of this universe go only to those able and equipped to reach out for them. In short, science fiction is preparing our youngsters to be mature citizens of the galaxy..... as indeed they will have to be."

He contrasts the attitude of science fiction to the alienation, expressed in A.E. Housman's famous lament, "I am a stranger and afraid in a world I never made," of the contemporary mainstream:

"Not true! 'I am not a stranger and I am not afraid in a world I am helping to make'.....and I am 'damned from here to eternity' only if I abandon my human intelligence and, sheepishly, give up the struggle! That is the answer of science fiction; that is why it is alive when most of our current literature is sick and dying."

Science fiction and fantasy

Science fiction and fantasy are closely linked in the popular imagination, particularly since the same publishers -- and often, even the same writers -- specialize in both fields. Mrs. LeGuin, author of science fiction novels like "The Left Hand of Darkness," has written also "A Wizard of Earthsea" -- a pure fantasy novel. But Ace reprinted it in paperback as a "science fiction special." The Science Fiction Writers of America went so far as to include Tolkien's "The Lord of the Rings" in a list of all-time science fiction classics.

Nevertheless, the genres have distinct origins, and they still are distinct in their purest forms.

Tolkien and C.S. Lewis have both written essays on the origin, nature and purpose of modern fantasy. Tolkien's "On Fairy Stories," an exposition originally printed in "Essays Presented to Charles Williams" and revised for inclusion in "The Tolkien Reader," is without a doubt the most important expression of the theory of fantasy.

Briefly put, fantasy is an act of "sub-creation," a re-weaving of the myths and legends of mankind into a sort of "secondary universe" that is intended both as an object of beauty in itself and as a setting for an adventure of some sort. The secondary universe of fantasy is a timeless place, and the values expressed in stories set therein are, or are assumed to be, timeless as well. There is nothing of extrapolation or speculation in fantasy, as there is in science fiction; and for that matter, the leading theoreticians of fantasy are hostile to the ideals of science fiction. Change, in fantasy, tends to be devolution, rather than evolution: a fall from grace analogous to that in Eden. The world of fantasy is usually a medieval one, and magic replaces science. What fantasy aims at is evoking the traditional values of the Good, the True and the Beautiful.

Fantasy, like science fiction, has its subdivisions; but these have to do with emphasis more than theme.

Epic fantasy, the sort exemplified in "The Lord of the Rings," was invented by William Morris, who published "The Wood beyond the World" in 1895 and "The Well at the World's End" a year later. Before Morris, fantasy consisted either of sagas or legends widely believed to be true and certainly set in "our" world, or allegorical fantasies, like "The Pilgrim's Progress," "The Faerie Queene," and George MacDonald's dream novels, "Phantastes" and "Lilith." The "worlds" of these stories were not supposed to be "real" even in the literary sense; they existed for moral or symbolic purposes. Such relatively recent works as "Voyage to Arcturus" by David Lindsay, the "Titus Groan" trilogy of Mervyn Peake, and Patrick McGoohan's television program, "The Prisoner," are really allegorical fantasies.

Baird Searles of WBAI set forth, in an introduction to Fletcher Pratt's "The Well of the Unicorn," some basic criteria of epic fantasy:

"1. The milieu and cast of the story should have nothing to do with any recognizable time or place. However:

"2. The setting should be physically recognizable as our own world.

"3. The created world should have an ordered political and/or social structure.

"4. The main point of the tale should be action or adventure."

Epic fantasy includes such works as Eric Rucker Eddison's "The Worm Ouroboros" and "Mistress of Mistresses," Cabell's "Jurgen" and the other novels of Poictesme (which has only a vague resemblance to what we know of medieval France), Evangeline Walton's "The Virgin and the Swine" (which has just as vague a resemblance to the real history of Wales), Merritt's "The Ship of Ishtar," Pratt's "The Blue Star," Clark Ashton Smith's "Zothique" (supposedly set in the far future, but in a completely imaginary world, nonetheless), and perhaps Austin Tappan Wright's "Islandia" (set in an imaginary country on a continent that supposedly exists in the Indian Ocean; unlike most fantasy worlds, it can be reached by steamship from "our" world, rather than only through magical means. Yet it is not a mainstream novel in the sense of Conrad's "Nostromo;" Costaguana is a "typical" South American country, whereas Islandia makes Ruritania seem plausible by comparison.).

The "heroic fantasy" or "swords-and-sorcery" fiction of the pulp magazines is really a form of epic fantasy, differing from the Morris variety in that the emphasis is more on physical action than on world creation as such, the setting typically barbaric rather than medieval, short story length more typical than novel scope, and the themes less "epic." Robert E. Howard's "Conan" stories are the best known of this variant form of epic fantasy; other practitioners have included Henry Kuttner, who was also a science fiction writer of the first rank; and John Jakes ("Brak the Barbarian").

Lyric fantasy is a sub-genre developed by Edward John Moreton Drax Plunkett -- or Lord Dunsany, as he is better known to the world. Lyric fantasy emphasizes mood rather than the "physical" reality of the fantasy world, and is nearly always written in short story form. Often the plots are slight, and often the setting is on the fringes between the world of Faerie and "the fields we know" -- one world impinges on the other. Typical Dunsany stories are "In the Land of Time," "The King Who Was Not," and "Idle Days on the Yann." Even in his novel, "The King of Elfland's Daughter," however, the emphasis is on mood -- the realm of Elfland has no reality in the geographical or political sense. H.P. Lovecraft, initially a follower of Dunsany's, brought to fruition the variant of lyric fantasy, supernatural horror. For Dunsany's mythos of Pegana, with its wistfulness and nostalgia for Faerie lands unforlorn, Lovecraft substituted the Cthulhu mythos of fear and superstition. The field of supernatural horror had its antecedents in the macabre stories of Ambrose Bierce, Algernon Blackwood and William Hope Hodgson -- but it was Lovecraft who made these into part of lyric fantasy.

Rational fantasy reached its peak of expression in the pages of Unknown, a magazine published in the early 1940's, although it too had antecedents -- whimsical tales like Wells' "The Man Who Could Work Miracles," Thorne Smith's "Topper" stories and, especially, certain of John Collier's stories. Rational fantasy takes a fantastic premise and plays games with it -- strictly according to logic. Del Rey has given as a typical example the case of a vampire dropped into our world, and taking a job in a blood bank. One of del Rey's own stories of rational fantasy is "Hereafter, Inc.," the tale of a Puritan who wakes up one day in Heaven -- and can't adjust because it turns out to be a rather hedonistic Heaven in which his masochistic impulses don't belong. Some modern individuals are propelled into the world of the Norse sagas and "The Faerie Queene" in deCamp and Pratt's "The Incomplete Enchanter" -- more often, however, it is a denizen of the world of Faerie who enters our own -- as in del Rey's "The Pipes of Pan," wherein the Greek god ends up becoming a jazz musician, or Fredric Brown's "Armageddon," in which the devil's attempt to take over our world is unwittingly foiled

by a boy who shoots at him with a water pistol recently filled from a font of Holy Water. Rational fantasy is nearly always whimsical, with a strictly humorous intent -- but sometimes deals with emotional themes, as in del Rey's "Forsaking All Others," in which an oak dryad gives up immortality to marry a human.

The foregoing sub-genres of fantasy are all obviously distinct in nature and intent from science fiction. What created the link was a genre now called science fantasy. Science fantasy has been described as a genre that has "the trappings of science, but not the substance." It first became clearly distinguishable from science fiction in 1911 when Edgar Rice Burroughs wrote "A Princess of Mars." No doubt there are a number of earlier examples; some of Wells' stories -- "The Invisible Man," for example, have to be classified as science fantasy, strictly speaking (but most earlier examples that come to mind are nothing but incompetent attempts at true science fiction).

Burroughs was an action-adventure writer. It didn't matter a bit to him whether it made sense to create a world in which "radium rifles" are used side-by-side with swords, nor did he care whether the "Eighth Ray of Barsoom" that provided the air for Mars' atmosphere plant made any scientific sense. But the term "scientific romance," which had been previously applied to the works of Verne and Wells (the latter called his genre works "pseudo-scientific fiction") was taken over lock, stock and barrel by the new brand of Burroughs extra-planetary adventure. At the time, Wells had moved on to other fields, and little true science fiction was being written anyway. The burgeoning field of the "pulps" came to be dominated by Burroughs and his imitators.

Science fantasy is more a spectrum of fiction lying between the extremes of science fiction and fantasy than a genre with well-defined standards of its own. At one point, it borders on rational fantasy, as in Jack Williamson's "Darker than You Think," which gives werewolves a deliberately pseudo-scientific justification. At another, it borders on epic fantasy, as in Christopher Stasheff's "The Warlock in Spite of Himself," with its setting on a supposed planet where magic works, and even ghosts are real -- although the hero (and some of the villains as well) are representatives of interstellar society. C.S. Lewis used the form of science fantasy for his theological messages -- which tended to be diametrically opposed to those of science fiction. Ray Bradbury has used "a mythical planet, which he insists on calling Mars" (to borrow a quote from Frederik Pohl) for moral parables and social criticism. Yet many of the stories of A.E. VanVogt, who admits to being a writer of science fantasy inasmuch as he doesn't know much about science, are in subject and theme science fiction for all practical purposes (i.e. "The Weapon Shop," "Far Centaurus," "Cooperate or Else," "Black Destroyer," and even "Slan.").

Writers like Murray Leinster, in "Mad Planet," and Ralph Milne Farley, in "The Radio Man," tightened up the scientific background of the Burroughs-type "scientific romance" after World War I to develop the science fiction adventure story -- which has a relationship to the main body of science fiction identical to that between the mainstream adventure story and "serious" mainstream fiction. Even Burroughs tried this in "The Master Mind of Mars," and Edmond Hamilton specializes in it yet.

Science fantasy and the collapse of traditional fantasy markets led to the publication of much non-science fiction in "science fiction" outlets -- and to a number of borderline cases: literary slime molds or euglenas. There was also a cross-fertilization in literary techniques. But the basic concerns of science fiction and fantasy remain distinct.

Science fiction and mainstream

No branch of literature, not even pornography, has been subject to more constant prejudice on the part of the mainstream than science fiction. To an extent, the genre has simply shared the disdain of the academic establishment for "popular fiction" -- but other branches of popular fiction have rarely excited the attacks routinely focused upon science fiction. Bernard DeVoto, stumbling across the genre in 1936, warned New York Times readers against such "besotted nonsense," which he considered "idiotic beyond any possibility of exaggeration" and an obvious expression of "paranoid phantasies." One might conclude that this sort of thing was merely a reaction to the "pulp" standards of the 1930's -- yet as late as 1957 (a few months before Sputnik) one Robert Plank had an article in Partisan Review, "Space Travel and Psychotic Fantasy." The title was an accurate reflection of the contents.

The mainstream might look down on murder mysteries and westerns, but at least they were not regarded as "psychotic" (Plank was far from being the only one to level this charge, back in the days before R.D. Laing convinced the mainstream that psychosis is somehow more sane than sanity.). Even today, after the landing on the Moon, science fiction is frequently the target of sneering attacks in the mass media. CBS TV's "The Twentieth Century," for example, ran a program implying the genre never had anything more serious to say about the future than was seen in the "Flash Gordon" serials and -- to add insult to injury -- blaming science fiction for the naive predictions made by city planners at the 1939 World's Fair. Despite the superficial interest on the genre that has been generated by current headlines, true science fiction has less acceptance today than any other branch of literature. Mysteries may be reviewed regularly in the Times -- but never science fiction.

This was not always so. Before World War I, science fiction was generally accepted as literature whenever its literary quality merited such acceptance. Wells was not a "ghetto" writer, and even mainstream authors felt no shame at writing in the genre. Kipling's "As Easy as A.B.C." was an excellent example of sociological science fiction by a mainstream writer -- one all the more remarkable for the fact that no long tradition of sociological science fiction then existed for Kipling to draw upon. E.M. Forster's "The Machine Stops" respected the form, if not the spirit of science fiction. London's "The Scarlet Plague" was a disaster story that showed a real understanding of the techniques of the genre. Conan Doyle wrote a number of science fiction stories under the influence of Wells.

But following World War I, the domination of the mainstream by literary ideologies that were both anti-romantic and anti-rational had become final and absolute. Literature had become the "slice of life" -- and in the decades that followed, the slices grew thinner and thinner as authors wrote more and more about less and less. "Innovation" often was stressed -- but only in regard to techniques, not subjects or, far less, ideas. Commenting on the cult of the anti-novel, Wilson wrote in "The Age of Defeat," that "None of these avant-gardistes even felt the need to apologize for devoting their full attention to literary techniques and the discussion of triviality. The defeat was too ingrained; what else could literature mean, if not technique?" And in "The Strength to Dream," he elaborated, " A literary mystique has developed: literature has no need of general ideas; it is a pouring of words on paper in the hope of catching the indefinable 'smell' of literature. If whole pages of the (avant garde) are apparently meaningless, it is the business of the literary critic to study them until they 'communicate.'"

Yet the lack of form and order in the mainstream was itself the reflection of a preconception that there could be no form or order in life -- or, at best, that only a passive and static artistic approach could capture the elusive "meaning" in existence.

"The avant-garde writers have performed a neat conjuring trick," Wilson complained. "They profess to be completely uninterested in ideas and yet their whole technique is dictated by a pessimistic Weltanschauung."

Science fiction, as a literature of ideas, as a literature that took a basically optimistic view of the possibilities of mankind and a fundamentally rational approach to the universe, could not hope for any acceptance by the mainstream -- as long as the mainstream was dominated by the opposite philosophy. Still less could science fiction, with its evolutionary viewpoint towards the technological, social and philosophical problems of mankind, hope for understanding by the mainstream as long as the mainstream remained obsessed with the Moment.

Even Wells' science fiction, which can scarcely be described as subliterate, now seems to be an embarrassment to some of the mainstream critics, who would rather recognize him for his less original Dickensian mainstream novels like "Kipps." And the literary quality in the science fiction works of Heinlein, Catherine A. Moore, Cordwainer Smith, Ursula LeGuin and Poul Anderson has brought them no more recognition from the mainstream than that accorded writers of lesser talents -- or even the pulp hacks whose efforts are held up to condemn the genre.

Generally speaking, only two science fiction ideas are accepted by the mainstream as legitimate vehicles for "serious" literature: the disaster story (usually atomic war) as in Nevil Shute's "On the Beach" or Philip Wylie's "Triumph;" and the anti-utopia, as in Huxley's "Brave New World" or Orwell's "1984." Often, such novels use authentic science fiction techniques, which their authors either discovered from science fiction, or re-invented for themselves. More often, however, the works resembling science fiction that are approved by the mainstream are but social satires and allegories of the Voltaire or Swift variety -- with gadgetry thrown in. And when a mainstream writer tries something a bit more ambitious, the results are usually disastrous -- as in Shute's "In the Wet."

Even the popular authors who reject the philosophy of "serious" literature usually do not bring an authentic science fiction viewpoint to the "tomorrow fiction" they write. Novels like Allen Drury's "Advise and Consent," Irving Wallace's "The Man" and Fletcher Knebel's "Seven Days in May" project contemporary issues a few years into the future; and if these works sometimes include space travel, it is only because space travel has become contemporary. Contemporary scientific problems even figure in "thrillers" like Ian Fleming's "Thunderball" or Alistair MacLean's "The Satan Bug."

Mainstream "philosophical" novels sometimes take on elements of science fiction, yet retain a static viewpoint. Hermann Hesse's "Magister Ludi" projects as utopia a cloistered intellectual society, where even artistic innovation is frowned upon. And even Ayn Rand, for all of her architectural modernism in "The Fountainhead," shows little sense of the future in "Atlas Shrugged:" it would never occur to her to make Dagny Taggart vice president of Skyblast Freight, or for her heroes to dream of a renaissance going much further than restoration of the Great Age of Railroads (with a few added technological fillips like a "static electricity" engine as used by Verne 80 years ago).

Science fiction was exiled to a pulp ghetto for philosophical as

as for literary reasons. It might not have the advantages of critical recognition -- but it could develop literary traditions appropriate to its form and function.

Science fiction was little Noticed by the mainstream after it went into its ghetto -- until Hiroshima. Then the genre was suddenly an Object of Attention. Some newspapers -- for a few years -- ran science fiction review columns. Even so, most mainstream publishers refused to handle science fiction. The classics of Weinbaum, Heinlein, Asimov and others first saw print through specialty publishing houses financed by fans. Eventually, mainstream publishers realized science fiction could be a profitable market -- but critical interest in the genre waned.

That science fiction had been Noticed by the mainstream created a certain self-consciousness in the genre -- especially among the ranks of budding critics like Damon Knight, James Blish and Judith Merril. And these critics were torn two ways. On the one hand, they had absorbed the traditions of science fiction, and were familiar with its values. But on the other hand, they had also absorbed the literary ideologies of a declining mainstream: they believed in the New Criticism, in the use of "real" characters, in literature as an instrument of social protest, in Freudian and Jungian symbolism.

Both through reviews and through the activities of the Milford Science Fiction Writers' Conference (also called the "Milford Mafia"), the critics began -- with the best of intentions -- the indoctrination of new and old science fiction writers in the mainstream ideologies. It was not that they could not recognize good science fiction when they saw it -- Knight once observed that the essence of science fiction is the belief that man has the power to change himself and his environment. But they hungered for acceptance by the mainstream, and thought that an application of mainstream standards to the themes of science fiction would lead to such acceptance.

The search for acceptance led in several directions. There were writers like John Christopher and Mrs. Merril who believed in diluted science fiction: just a little more watering down of elementary science fiction themes with humdrum "characterization" and humdrum "human conflict," as in "The Possessors" or "The Tomorrow People," might lead to Recognition. A concern for "social criticism" led to some worthwhile works like Pohl and Kornbluth's "The Space Merchants" (an attack on the destruction of the environment, before such attacks became fashionable) which took an authentic science fiction viewpoint. More often, however, writers like Robert Sheckley and William Tenn came up with very routine satires on contemporary war, racism or the battle of the sexes. Fritz Leiber, author of the classic "Gather, Darkness" (an extrapolation on the uses of religion for political power), even descended to "The Night He Cried," a trivial take-off on Mickey Spillane. Philip K. Dick mixed social criticism with rather paranoid conceptions of the Unreality of Reality borrowed from the mainstream (it sometimes seemed as if he were really afraid of turning into a pumpkin at midnight). And Kurt Vonnegut made quite a reputation with "The Sirens of Titan," a novel notable for its metaphysical nihilism.

Classic authors of science fiction's "Golden Age" like Heinlein and Asimov, continued to produce good work. And they were joined by a number of fresh talents like Anderson, Gordon Dickson, Edgar Pangborn, Cordwainer Smith and Philip Jose Farmer. But the ambivalent attitude of the critics, combined with the continual sniping at the traditions of science fiction by men like Robert Bloch, and even Kornbluth (who made vicious attacks on E.E. Smith and Kuttner) resulted in science fiction losing touch with its roots -- and with any sense of direction.

Anti-science fiction: the 'New Wave'

The literary history of the mainstream in this century has been that of what Wilson calls a "series of rejections" of its roots:

"A new set of literary forerunners had to be chosen. Instead of Ibsen and T.H. Huxley, it was now Baudelaire and Flaubert and Laforgue. Instead of humanism and optimism, the new basis was authoritarianism and tragedy."

During the early 1960's, Mrs. Merril -- by then a key figure in the "Milford Mafia," a leading anthologist, and critic for Fantasy and Science Fiction, began preaching the imminent merger of science fiction and the mainstream. She apparently realized -- as Knight and Blish did not -- that the effort to gain recognition by the mainstream for any of the essential values of science fiction was a fool's errand. She made it clear that the "merger" must be on the mainstream's terms.

Several events in 1964 seemed to crystalize the "merger."

First, there was the takeover of the British science fiction magazine New Worlds by Michael Moorcock, a close associate of the then little-known author J.G. Ballard. Ballard was a specialist in disaster stories -- in fact, he thought that "life is a disaster area." He also believed in "surrealism" and the avant-garde, and it was the intention of himself and Moorcock to make New Worlds an "avant garde" organ.

Second, there was the emergence of Harlan Ellison as the creator of "dangerous visions" -- social protest nightmare stories that took a view of humanity rather like that of Cotton Mather. Ellison began with "Paingod" and advanced to "The Prowler in the City" and "I Have no Mouth and I Must Scream." Not only was he an effective politician, who could win four Hugo awards by vigorous campaigning, but a truly indefatigable propagandist and promoter, who in 1967 was able to bring out an entire anthology of "Dangerous Visions" to serve as the basis of his own sort of literary "revolution."

Third was the publication of "Nova Express" by the mainstream avant-garde writer William S. Burroughs ("Naked Lunch"), who proclaimed that he was really writing science fiction (previous attempts to enter the genre on the part of mainstream writers were never billed as such). Burroughs was an ex-drug addict with insane ideas (such as that heroin has nutritional value and that women are the cause of evil in the world) and an equally insane literary technique (cutting and pasting parts of unrelated sentences together) -- together with such profound insights as "the whole fucking shithouse is going up."

Christopher Priest, a Moorcock ally, was the one who christened this budding movement the "New Wave," but Mrs. Merril soon took charge as its principal spokesman. She tied together the threads of the British New Worlds group, the Ellison school, and William S. Burroughs. Science fiction had come of age, she argued; it had been assimilated into the mainstream avant-garde. Symbolism and surrealism were the order of the day, and the genre must shed its pulp traditions and "technocratic primitivism" to "go the Zen Route."

Naturally, Mrs. Merril had to choose a new set of literary forerunners, just as the mainstream had. Heinlein, Asimov and even Wells were displaced by avant-gardistes like Jorge Luis Borges, Alfred Jarry, and others more obscure. Science fiction was rechristened "speculative fabulation" to take in such oddments as poetry by the Fugs.

But Mrs. Merril's chief hero was Ballard, the daring explorer of "inner space," the "controversial stylist."

Algis Budrys, in a 1966 issue of Galaxy, had a very perceptive analysis of Ballard:

"A story by J.G. Ballard, as you know, calls for people who don't think.

"One begins with characters who regard the physical universe as a mysterious and arbitrary place, and who would not dream of trying to understand its actual laws.

"Furthermore, in order to be the protagonist in a J.G. Ballard novel, or anything more than a very minor character therein, you must have cut yourself off from the entire body of scientific education. In this way, when the world disaster -- be it wind or water -- comes upon you, you are under absolutely no obligation to do anything about it but sit and worship it.

"Even more further, some force has acted to remove from the face of the world all people who might impose good sense or rational behavior on you, so that the disaster proceeds unchecked and unopposed, except by the almost inevitable thumb-rule engineer who for his individual comfort builds a huge pyramid (without huge footings) to resist high winds, or trains a herd of alligators to help him out in dealing with deep water.

"This preconception is at the root of every important J.G. Ballard creation, and is so fundamental to it that it does not need to be put into words. Being buried as it is, it does not call attention to itself, and permits the author's characters to produce the most amazing self-destructive reactions while making reasonably intelligent and somewhat intellectual mouth noises."

"Oddly enough," as Budrys put it, he was reviewing Thomas Disch's "The Genocides" -- another favorite of Mrs. Merril's. But that really didn't matter; as Budrys realized, the preconceptions of both disaster novelists were identical. "The Genocides," or Ballard's "The Drowned World," stand apart from traditional science fiction -- even from the science fiction warning or disaster story. Blish's "We All Die Naked," for example, takes a rational approach and warns against a real danger; John Wyndham's "The Day of the Triffids" developed its crisis logically and the protagonists tried to cope with it rationally. But the Ballard approach is deliberately anti-rational; it represents total rejection of science and intelligence.

There is a parallel between the attitude of the "New Wave" as it is exemplified by Ballard and Disch, and the attitude of the "science fiction" movie as discussed by John Baxter in his "Science Fiction in the Cinema:"

"Science fiction supports logic and order, sf film illogic and chaos. Its roots lie not in the visionary literature of the Nineteenth Century, to which science fiction owes most of its origins, but in older forms and attitudes, the medieval fantasy world, the era of the masque, the morality play and the Grand Guignol."

Baxter quotes Knight to the effect that novels like "The Power," and movies like "The Incredible Shrinking Man" were anti-science fiction: a rejection of the values and attitudes of science. They are a product of a mainstream culture that regards science and intelligence as the root of all evil. The mainstream's thinking is dominated by men like Lewis Mumford, who believes that the Middle Ages were Paradise and that Galileo was the serpent (the peasants who revolted in the time of Martin Luther apparently didn't think they were living in Eden -- but Mumford isn't answerable to them, of course). In any case, Mumford and others like him agree, science has never done anything but "dehumanize" man, and destroy "human values."

There had been anti-science fiction before, but never before had the critical establishment in science fiction embraced it. Even Knight and Blish eagerly curried favor with the "New Wave," and Knight used his influence as president of the Science Fiction Writers of America to promote the movement. For the "New Wave" was an effort to bring science fiction to the mainstream by sacrificing its values and traditions and substituting those of the mainstream -- the same antipathy to science as expressed in movies like "The Creature from the Black Lagoon" and "Alphaville," the same "hidden premise" Wilson exposed, and the same "belligerant assertions" Miss Rand decried.

In "New Wave" fiction, science always leads only to disastrous results; humanity is always presented as evil, helpless and insignificant; the universe is always a nightmare beyond rational comprehension; and the philosophy is always nihilistic or deterministic. The "New Wave" writers claim to be individualistic, but this is merely a question of style and approach: The followers of Ballard take a cold and detached view towards their subject matter; the followers of Ellison tend to a hot and emotional stance. But the philosophy is the same. Stapledon, in "Odd John," had his superman take a penetrating view of the same sort of phony individualism among mainstream intellectuals -- "They can be 'daring' only within the limits of their convention. They have a sameness of intellectual and moral taste which makes them fundamentally all alike in spite of their quite blatant superficial differences."

"New Wave" writers pretend to be breaking "conventions," but in fact they merely ape mainstream conventions. Ballard apes Dadaism, and surrealism. Disch imitates social realism, symbolism, Sartrean nausea and other cliches. Brian Aldiss, a convert to the "New Wave," imitated Robbe-Grillet in one novel and Joyce in another. New Worlds is full of pastiches of Kafka and Beckett. Ellison and some of his followers even incorporate the elements of supernatural horror. True, science fiction writers have borrowed styles before -- but their plots and ideas were their own. Weinbaum, Heinlein, Asimov, Clarke, Dickson, Anderson, Simak, Cordwainer Smith and Mrs. LeGuin have all taken individual approaches to the problems of science and evolution. But in the "New Wave" fiction everything is borrowed -- styles, ideas, characters, messages. There is not a trace of original thought -- or, as Weinbaum's Twer-er-eel would put it, "No one-one-two, no two-two-four."

"Commercial" standards of science fiction are something the "New Wave" prides itself on rejecting. But in fact, "New Wave" writers use the science fiction label solely for commercial purposes. The science fiction market was created and maintained by men and women who set high standards for science fiction -- and the classics that have been best sellers over the years have generally been works that met those high standards. The "New Wave" is merely trading on the reputation built up for science fiction by the Heinleins and the Asimovs. Its writers may claim to reject the "science fiction" label -- but have their fiction published as science fiction, in science fiction formats, with science fiction covers and distributed through science fiction outlets, all for commercial gain (New American Review and the "little" magazines do not pay as much) -- except in rare cases like that of Kurt Vonnegit who can make enough connections with the mainstream establishment to reach best sellerdom there (for some reason, this is not "commercial").

Meanwhile, "New Wave" advocates deliberately misrepresent the history and traditions of science fiction: to read some of their arguments, one would believe nothing existed before 1964 but gadget stories and pulp adventure with cardboard characters, naive utopianism and the like -- that science fiction was devoid of serious ideas and problems. Science fiction has become a genre without honor in its own house.

Conclusion

It should not be imagined that science fiction has been totally overwhelmed by the "New Wave." Hugo awards have continued to go to novels like Heinlein's "The Moon is a Harsh Mistress," Zelazny's "Lord of Light" and Mrs. LeGuin's "The Left Hand of Darkness," even during the height of the publicity generated for the "New Wave" by Ellison and Mrs. Merril -- and Ellison himself has been the only major beneficiary of that publicity in the awards competitions.

Nevertheless, the influence of the "New Wave" has led to a general collapse of critical standards for science fiction. Mrs. Merril may have dropped out of sight, Ballard may be having trouble turning out any more of his "condensed novels" (verbal montages that have succeeded his catatonic disaster novels), New Worlds may barely manage to survive from one issue to the next, and the former spokesmen for the "New Wave" may deny all connection with the movement. But the damage has been done. There is a mystique among critics and editors to the effect that science fiction cannot have any standards of its own, but must be used only as a "vehicle" or even as a "vocabulary" for some other art form. Most arguments today are not about what science fiction should stand for -- only about what it should be used for.

Ellison, now busily assembling "Again, Dangerous Visions" for publication in 1972, is teaching college writing courses and promoting the use of science fiction for social protest with a New Left slant: "street fiction for days of blood." Robert Silverberg disagrees; he feels that the real purpose of science fiction is to communicate existential visions of the Dark Spirit of our Times. Alexei Panshin, after "Rite of Passage," has abandoned science fiction in favor of something he calls "creative fantasy" but which he can't quite define -- but insists on promoting it in a magazine column called "Science Fiction in Dimension," and insists the new genre, whatever it is, must replace science fiction.

Knight, once the sternest critic in the genre, now edits Orbit, a periodic anthology of the "best" new science fiction. But he has given up trying to impose any standards -- other than stylistic. Small wonder, as his wife, Kate Wilhelm (always a contributor) has decided science fiction has nothing to do with science and is really about "Mystery." So Orbit is usually made up of trite social satire, allegorical fantasy, pastiches of Sartre and Beckett, Ellisonian nightmare -- and an occasional nugget of science fiction. Thus too with most anthologies and magazines.

The pressure for conformity to mainstream standards of "relevance" led to the rejection of writers like Zelazny, who had at first won kudos from the critics. It led Leiber to turn out "A Specter is Haunting Texas," an ephemeral satire of the Johnson administration. It led Farmer to write "Image of the Beast," a novel full of the sado-masochistic sex typical of mainstream pornography (which was as much a product of Puritanism as the sexless Victorian fiction it pretends to oppose). John Brunner, who had shown startling originality in "The Totally Rich," won his Hugo for "Stand on Zanzibar," which applied the "new" techniques of John Dos Passos to a standard and unimaginative future. Silverberg had the talent to create "Nightwings" -- but more often turns out novels like "The Man in the Maze" and "The Tower of Glass" that twist ancient Greek myths or contemporary issues into unconvincing future situations.

It is time for science fiction writers and editors to reassert the independence and integrity of the genre. If science fiction is to survive it can do so only by a commitment to standards of writing and criticism that will enable it to fulfill its unique functions.

Appendix

The following list is intended as a representative sample of works that have created, maintained and built upon the best values and traditions of science fiction. It deliberately excludes science fantasy and pure fantasy, and is limited to two works (usually, a novel and a shorter work) by each author (except in the case of Heinlein, that his juvenile fiction may be singled out for recognition). This is by no means intended as a definitive list of classics (although it contains many), but rather as a demonstration of the breadth and range of the genre. Most -- but not all -- of the works listed are examples of eschatological romanticism.

Anderson, Poul: Brain Wave, The High Crusade; Asimov, Isaac: The Caves of Steel, The Martian Way; Benford, Greg: Deeper than the Darkness; Bester, Alfred: The Demolished Man, Fondly Fahrenheit; Blish, James: A Case of Conscience, Surface Tension; Brunner, John: "The Totally Rich; Budrys, Algis: Rogue Moon, Between the Dark and the Daylight; Campbell, John W.: Who Goes There? Twilight; Capek, Karel: R.U.R.; Clarke, Arthur C.: The City and the Stars, The Songs of Distant Earth; Clement, Hal: Mission of Gravity; DeCamp, L. Sprague: Rogue Queen; Del Rey, Lester: Nerves, Helen O'Loy; Dickson, Gordon: Dorsai, Soldier Ask Not; Farmer, Philip Jose: The Lovers, Flesh; Godwin, Tom: The Cold Equations; Gordon, Rex: The Yellow Fraction; Guin, Wyman: Beyond Bedlam; Gunn, James: The Listeners; Hamilton, Edmond: City at World's End, Doomstar; Harrison, Harry: Deathworld, The Planet of the Damned; Heinlein, Robert A.: Methusaleh's Children, The Roads Must Roll, (Farmer in the Sky); Herbert, Frank: Dune, Dragon in the Sea; Keyes, Daniel: Flowers for Algernon; Kipling, Rudyard: As Easy as A.B.C.; Kuttner, Henry: Fury, Mimsy Were the Borogoves; LeGuin, Ursula: The Left Hand of Darkness, Nine Lives; Leiber, Fritz: Gather, Darkness, Coming Attraction; Leinster, Murray: The Forgotten Planet, First Contact; Miller, Walter A.: The Darfstellar; Moore, Catherine A.: Judgment Night, No Woman Born; Niven, Larry: Ringworld, Death by Ecstasy; Nowlan, Philip Francis: Armageddon 2419 A.D.; Orwell, George: 1984; Pangborn, Edgar: West of the Sun; Piper, H. Beam: Space Viking; Pohl, Frederik, and Kornbluth, Cyril M.: The Space Merchants (both), The Little Black Bag (Kornbluth), What To Do till the Analyst Comes (Pohl); Roberts, Keith: Pavane; Russell, Eric Frank: Dear Devil; Saberhagen, Fred: Berserker (collection); Schmitz, James: The Demon Breed, Balanced Ecology; Shaw, Bob: The Light of Other Days; Silverberg, Robert: Nightwings (short version); Simak, Clifford D.: Way Station, Huddling Place; Smith, Cordwainer: Scanners Live in Vain, The Ballad of Lost C'Mell; Smith, Edward E.: Grey Lensman, Children of the Lens; Stapledon, Olaf: Last and First Men, Odd John; Sturgeon, Theodore: More than Human, Thunder and Roses; Tiptree, James: The Snows Have Melted, the Snows Have Gone; Vance, Jack: To Live Forever, The Dragon Masters; VanVogt, A.E.: The Weapon Shop, Black Destroyer; Verne, Jules: Twenty Thousand Leagues under the Sea, Eternal Adam; Weinbaum, Stanley G.: The Black Flame, A Martian Odyssey; Wells, H.G.: The Time Machine, When the Sleeper Wakes; White, James: The Watch Below; Williamson, Jack: With Folded Hands, Nowhere Near; Wylie, Philip: When Worlds Collide, Triumph; Wyndham, John: The Midwich Cuckoos, Consider Her Ways; Zamyatin, Yevgeny: We; Zelazny, Roger: Lord of Light, The Graveyard Heart.

See also: Heinlein, Robert A.: "Science fiction: Its Nature, Faults and Virtues" (In "The Science Fiction Novel," Advent); Eshbach, Lloyd A. (ed): "Of Worlds Beyond," Advent; Del Rey, Lester: "Art -- or Artiness?" (Famous Science Fiction, fall 1968); Wollheim, Donald A. "The Universe Makers," Harper & Row; Lewis, C.S.: "Of Other Worlds" Harcourt, Brace & World; Wilson, Colin: "The Strength to Dream," Houghton Mifflin Co.; Rand, Ayn: "The Romantic Manifesto," World.