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Science Fiction: 
Bridge Between the Two Cultures

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In the madness of the contemporary world, it is difficult to determine where science ends and where fiction begins. It is impossible for fiction to surpass the horrors of napalm or nerve gas, and the wildest fantasies of science fiction writers have a way of becoming scientific fact. There is a continuous interplay back and forth between science and fiction, for example in the film Ray Bradbury: Story of a Writer (Sterling), we see the writer visiting a telephone computer center to obtain information needed for a new short story. Because of this unique relationship, dominant for the first time in our prose tradition, science fiction can be viewed as the most accurately reflective literary genre of our time.

But science fiction has only recently entered the realm of respectability. Isaac Asimov divides the history of science fiction in the United States into four areas: (1) 1815-1926, (2) 1926-1938, (3) 1938-1945, and (4) 1945-to the present.1 Because “the concept of science fiction had been born . . . [but] . . . the basis for the support of science fiction writers did not yet exist. . . .” Science fiction was found only in the pulp magazines; it was considered a trashy and escapist form of literature which dealt with improbable things, such as space travel, death rays, and atomic energy.

In 1926, science fiction reached the second stage as a result of the establishment of a regular outlet for it through Hugo Gernsback’s magazine, Amazing Stories. This was the first magazine devoted exclusively to science fiction. Gernsback defined the genre as one in which scientific plausibility was the major factor. He was not concerned with literary techniques but only with scientific logic and consistency. Few of the writings of this period stand up today for readers other than science fiction historians.

The third period, dating from 1938, is that in which modern science fiction

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writing began through the leadership exercised by John W. Campbell, editor of the magazine, *Astounding Science Fiction*. He was not content with scientific accuracy only but established literary standards as well. The science fiction which had been appearing in the pulps was primitive and unsophisticated. He insisted on a higher level of sophistication both in the writing and in the ideas, and he emphasized indirection as part of the science fiction literary method. Campbell also broadened the subjects of science fiction to include politics, business, war, religion, and philosophy. He was the originator of the idea of "social science fiction" which is primarily concerned with the impact of technology upon human beings, and has opened the way to major writers of this era such as Clarke, Asimov, Bradbury, Heinlein, Blish, and others.

The fourth era in science fiction dates from 1945 when the atomic bomb was dropped on Hiroshima and the gap between life and science fiction began to close. This era is where we are today. And now science fiction is no longer defined as literature in which the major organizing focus is science but is, instead, regarded as "a literary response to scientific change . . . [which] . . . can run the entire gamut of human experience. Science fiction, in other words, includes everything."^2^  

Before World War II, science fiction writing speculated about the world of the future. Today, all a writer need do to qualify as a science fiction writer is to record the present with such details as napalm, self-cleaning ovens, pep pills, pollution, birth control pills, thought control, dream research, or tranquilizers. Science fiction reflects our world as accurately, spiritually, and factually, as the work of Charles Dickens reflected the Victorian world, or the work of Alexander Pope, the world of the eighteenth-century. It is not only a bridge between the two cultures of science and the humanities; it is a bridge between all cultures as it summarizes and expresses the nightmare fears, myths, and inescapable concerns of all people today.

Science fiction is a pessimistic genre, devoid of belief in the improvability of man, devoid of belief in the existential choice, devoid of the God and tradition of the Judeo-Christian tradition. The overwhelming tone is despair; the overwhelming emotion is fear. What are the concerns of contemporary life which are mirrored in science fiction?

The major one, hovering over all peoples, is the possibility of the destruction of the world; it is a repetition of the Biblical myth of Noah, but this time, without any hope of ultimate salvation.

A powerful expression of this idea is found in the novel, *Level 7*, by Mordecai Roshwald (*Signet*, 1959), in which self-contained underground levels have replaced Noah's Ark. Level 7, the deepest one, is four thousand feet away from sunshine and has been prepared for five hundred years of isolated self-sufficiency. All activities in this underground world are ordered by a loudspeaker God. Food consists of pulp and pills; the combination living and bedroom are small and look like tiny ship's cabins; people marry and die there. New myths are created in Level 7 to make life bearable and understandable:

High is bad, low is good. Open space is harmful; enclosed space is beneficial. Vast distances are the product of sick or perverse imagination; being content with the physical limits of one's level is normal and admirable. The quest for variety in life is wicked; sticking to one's job and being satisfied with little entertainment is good citizenship (p. 67).

Ironically, when atomic warfare begins, radiation seeps into Level 7, not

from the enemy bombs, but from its own atomic reactor which cannot be repaired. The dying narrator muses:

It is strangely ironical that we, PBX Command, should be killed by a gadget making a peaceful use of atomic energy. It does not seem fair. Divine justice, I always thought, was eye for eye, tooth for tooth. It should be bomb for bomb. Instead we are being killed by a piece of faulty machinery. Not really a warrior's death.

Perhaps God intends it as a sort of joke. "You killed with bombs," He says, "You will be killed by peaceful radiation" (p. 141).

In Nevil Shute's *On the Beach* (Signet, 1960), Australia becomes the doomed Ark, last refuge before total destruction by radiation. From the beginning, there is no question but that total destruction will come; the only question is how individuals will meet that final moment. In the Ray Bradbury short story, "There Will Come Soft Rains" (*The Vintage Bradbury*, Random, 1965), the fully automated house remains after man is destroyed (like the power station in *On the Beach*), but it, too, is finally destroyed because it can perform as it has been programmed to do, but it cannot think in times of emergency. Only man can do that and there are no men left.

A second major contemporary concern, a variant of the first, centers around what happens to the remaining people who are not destroyed by atomic holocaust. Roshwald sees no hope for survivors. But what of those writers who think people will go on? The post-atomic holocaust world they hypothesize is as horrible or more horrible than the world which caused the destruction.

George Orwell's dingy, depressed, ugly, sterile, loveless, totalitarian world of *1984* "hath really neither joy, nor love, nor light. Nor certitude, nor peace, nor help for pain..." On the contrary, in Orwell's world, the infliction of pain, the creation of misery, and the subjugation of the life spirit are the daily lot of most of the inhabitants. There is neither past nor future; only the nightmare world of drudgery and the senselessness of two and two make five.

John Wyndham, in his novel *Rebirth*, describes a world as punitive and repressive as that of Salem, in which the descendants of the holocaust survivors have invented a new theology to sanctify their fear of freaks and mutations. The maxims of this new theology are: KEEP PURE THE STOCK OF THE LORD; BLESSED IS THE NORM; IN PURITY OUR SALVATION; WATCH THOU FOR THE MUTANT; and, THE DEVIL IS THE FATHER OF DEVIATION.

"Offenses" in this world must be immediately destroyed, whether people, plants, or livestock. "Offenses were things that did not look right—that is to say, did not look like their parents, or parent-plants . . . however much or little was wrong it was an Offense, and if it happened among people it was a Blasphemy—at least, that was the technical term though commonly both kinds were called Deviations."

Walter M. Miller's novel, *A Canticle for Leibowitz* (Bantam, 1959), also takes place long after atomic warfare has ended, and the world has been plunged back into the ignorance of the Dark Ages. A few monks try to keep alive the tradition of pre-Deluge English. The theology of a new religion is developing and versicles from the Litany of the Saints graphically describe what the world has come to. Here is an excerpt:

> From the place of ground zero, O Lord, deliver us.

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3 Matthew Arnold, "Dover Beach."

From the rain of the cobalt,
O Lord, deliver us.
From the rain of the strontium,
O Lord, deliver us.
From the fall of the cesium,
O Lord, deliver us.

Describing the aftermath of the “Flame Deluge,” Miller writes:

Cities became puddles of glass, surrounded by vast acreage of broken stone. While nations had vanished from the earth, the lands littered with bodies, both men and cattle, and all manner of beasts, together with the birds of the air and all things that flew, all things that swarm in the rivers, crept in the grass, or buried in holes; having sickened and perished, they covered the land, and yet where the demons of Fallout covered the countryside, the bodies for a time would not decay, except in contact with fertile earth. The great clouds of wrath engulfed the forests and the fields, withering trees and causing the crops to die. There were great deserts where once life was, and in those places of the Earth where men still lived, all were sickened by the poisoned air, so that, while some escaped death, none was left untouched; and many died even in those lands where the weapons had not struck, because of the poisoned air.

In Pierre Boulle’s novel, *Planet of the Apes* (Signet, 1963), after the holocaust, apes have become the rulers, and man, the creature responsible for the destruction, has become the despised and hunted species, viewed with as much disgust and distaste as snakes because of their legendary role in the downfall of Adam and Eve.

In a related short story, Stephen Vincent Benét’s “By the Waters of Babylon,” a post-holocaust young boy braves the ignorance and new taboos which have grown up concerning sources of radiation. He makes a long water trip and finds the remains of the New York City Treasury Building.

In Leo Szilard’s story, “Report on ‘Grand Central Terminal’,” space travellers spend ten years on a trip to explore Earth where all life is extinct. They theorize, ironically, that a war had been fought between the inhabitants of two continents, “in which both sides were victorious.” The humor of this story concerns the attempts of the space travellers to explain pay toilets in archeological terms, and it is one of the few science fiction stories which is funny despite its grim subject.

A third contemporary fear which is omnipresent is the one of overpopulation with its concomitant problems of starvation and pollution. Isaac Asimov reports that at a meeting of the American Association for the Advancement of Science, held in Boston in December 1969, the theme was “the need for science to face the gathering doom of the future.” Among the problems they agonized over were population, famine, pollution, and the stockpiling of weapons. He quips that this scientific meeting reminded him of science fiction writer meetings he attended in the 1930s.

A classic novel which deals with overpopulation is Pohl and Kornbluth’s, *The Space Merchants* (Ballantine, 1969), which carries to the furthest degree possible the abuses of contemporary advertising. This technique of extrapolating, or extending the variables beyond their established ranges is a familiar one in science fiction writing. Life in the world of the space merchants is extremely uncomfortable. “You set up the bed at night, you took it down in the morning, you set up the table for breakfast, you took it down to get to the door. No wonder some shortsighted people sighed for the spacious old days. . .”

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Another short story by Pohl, "The Census Takers," describes the new role of census takers. Instead of taking the census, they must select people for killing in order to keep down the world's population. (Note: This is somewhat reminiscent of Bradbury's Fahrenheit 451 in which firemen perform the opposite task of the one they perform in our society today.)

In the novel, The Dakota Project (Delacorte, 1968), the experimentation is concerned with making canned meat out of human beings in order to deal with the inevitable meat shortage which is resulting from overpopulation.

In James Blish's short novel, We All Die Naked, the world is being destroyed by the garbage of overpopulation. The period is referred to as "The Age of Waste." One character says, "We cannot 'dispose' of our wastes any longer. They have tipped up the geological scales against us. The planet is breaking up. The process has already started, and the world will be effectively uninhabitable before the next ten years have passed." The following description of the problem sounds more scientific than fictional. Blish writes:

Some kinds of wastes—weather, rust, decay—are metabolized or otherwise are returned to balance with the general order of nature. Others are not. Among those which are not are aluminum cans, glass bottles, and jugs, and plastic containers of all kinds. The torrent began in 1938, when in the United States alone about 35 million tons of these indigestible, unclaimable, nonburnable, or otherwise indefeasible objects were discarded. By 1969, the rate was three quarters of a ton per year for every man, woman, and child in the country, and was increasing by 4 per cent per year. That year, Americans threw away 48 billion aluminum cans, 28 billion glass bottles and jars, and uncountable billions of plastic containers of every conceivable size and shape... 140 million tons of indestructible garbage (p. 145).

In Robert Silverberg's short story, "A Happy Day in 2381," cities are built vertically and are called "urban monads." One constellation of houses contains fifty urban monads, or 40,000,000 people. Earth has a population of 75,000,000,000 and monads have as many as a thousand floors in order to clear enough land for agriculture. The typical space allotted to a family of six is ninety square meters of floor space. "The sleeping platform deflates; the children's cots retract; the furniture can easily be moved to provide play area. Most of the room, in fact, is empty. The screen and the data terminal occupy two-dimensional areas of walls that once had to be taken up by television sets, bookcases, desks, file drawers, and other encumbrances..."

There is no privacy in this world. In this "post-privacy culture," privacy shields are provided for visitors from other planets who like to excrete in private. All adults share a single sleeping platform, and, the narrator explains to a guest, "My wife is available to you, as am I. Avoidance of frustration... is the primary rule of a society such as ours..."

People spend their entire lives within one monad. For travel, a resident on the 750th floor will go down to a lower one. Doors are not locked because there is no personal property. "Flippos," those who are unable to adjust to life in this society, are calmly dropped down the elevator shaft. Couples having intercourse are a regular part of the scene, as ordinary as the sight of couples dining together in our world. The closest approximation in the contemporary world was the mob scene at Woodstock. Perhaps it was prophetic, not of future festivals but of future lifestyle.

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A fourth fear which is gradually seeping into our consciousness is the fear of thought control. Richard Condon first explored this in *The Manchurian Candidate* (Random House, 1939), and recent books theorize that both Lee Harvey Oswald and Sirhan Sirhan were controlled and led to their deeds by post-hypnotic suggestion.

In the short story, "The Analogues," electrodes establish analogues in the minds of patients which keep them from actions deemed destructive by the state. What begins as an effort to help patients to control impulses such as drinking, results eventually in the control of all opposition to the state. The analogue is an authority figure, or a fantasy situation, which makes people happy by persuading them that they are accomplishing what they want or by placing them in an inhibitory fear situation. A doctor, in the story, describes it in the following way:

He's got an analogue... In the classical sense, he is even less sane than he was before. He has auditory, visual, and tactile hallucinations—a complete, integrated set. That's enough to get you entry to most institutions, crowded as they are. But, you see these hallucinations are presocial. They were put there deliberately. He's an acceptable member of society, because he has them.9

Damon Knight has written another short story concerned with this topic, "The Country of the Kind," in which a creature, hated by man, has electrodes implanted which stop him from any actions hostile to man.10

Donald E. Westlake in the short story, "The Winner" (see the Harry Harrison collection), has created a prison without walls. Each prisoner has a tiny radio receiver surgically implanted into his body. If the prisoner moves beyond a certain radius, "the black box inside his skin would begin to send messages of pain throughout his nervous system. This pain increased as the prisoner moved farther from the transmitter, until at its peak it was totally immobilizing."

A recent off-Broadway play by Dennis J. Reardon, *The Happiness Cage*, deals with an experiment to control brainwaves electrically and to induce fabricated happiness in human beings who are in situations, such as the army, in which it is logical to be unhappy. The play takes place in a veteran's hospital in which the neurosurgeon tries to persuade patients to have their skulls shaved, steel filaments inserted into their brains and then plugged into banks of machinery, and their minds in this way subordinated to impulses managed from a master panel. The one holdout is, as you might have guessed, an enlisted intellectual, who takes a doomed stand against the mechanized happiness offered to him.

The relevance of Reardon's play can be noted in the recent news reports from New Haven about Dr. Jose M. R. Delgado's experimentations with the implantation of electrodes in the brains of chimpanzees which establish two-way radio communication between an animal's brain and a computer. It is called E.S.B., Electrical Stimulation of the Brain, and Delgado says of it:

The possibility of scientific annihilation of personal identity, or even worse, its purposeful control, has sometimes been considered a future threat more awful than atomic holocaust... The prospect of any degree of physical control of the mind provokes a variety of objections: theological objections because it affects free will, moral objections because it affects individual responsibility, ethical objections because it may block self-defense mechanisms, philosophical objections because it threatens personal iden-

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Delgado is not disturbed by the possible results of his experiments, but, apparently, other science fiction writers are. The film CYBORG 2378, describes a future man who is completely controlled by others through implanted electrodes. With the aid of a time machine he returns to this century to stop the kind of research reported by Dr. Delgado, so that men of his century will be able to live as free men.

Ralph Blum, in a fine science fiction novel published this year, The Simultaneous Man, extrapolates further to the scientific ability to remove an entire personality through chemicals, electrodes, etc., and to replace it with a new personality from birth up.

Kurt Vonnegut, Jr., prophetic humanist and science fiction writer, also dealt with the horrors of this possibility in his novel, The Sirens of Titan (Dell, 1959), "a true story from the Nightmare Ages, falling roughly, give or take, a few years between the Second World War and the Third Great Depression." In the Vonnegut novel, a United States army division assigned to Mars, is completely controlled through brain waves:

At the hospital they even had to explain to Unk (after removal of his memory) that there was a radio antenna under the crown of his skull, and that it would hurt him whenever he did something a good soldier wouldn't ever do. The antenna also would give him orders and furnish drum music to march to. They said that not just Unk, but everybody had an antenna like that—doctors and nurses and four-star generals included. It was a very democratic army, they said. . . . At the hospital they gave Unk a small sample of the pain his antenna would stick him with if he ever did anything wrong. The pain was horrible. Unk was bound to admit that a soldier would be crazy not to do his duty at all times . . . (pp. 102-3).

The fifth and last concern is the fear that the machine will take over and man will become its servant. In the same way that all of the survival epics can be viewed as the Noah myth brought up to date, fear of the infernal machines invented by man can be related to two myths: the myth of Pandora and the myth of the Tower of Babel. The story of Faust, as well as the science fiction we will now look at, is a derivative of these myths, in which man has tampered with the forbidden and there is no way to get the genie back into the bottle.

This Pandora's box guilt is the concern of the scientist in Mary Shelley's Frankenstein (1818), who created a monster he cannot control. It is also the concern of J. Robert Oppenheimer, who, in the recent play—based on his own words and writings—says, in the curtain speech:

Now we find ourselves living in a world in which people regard the discoveries of scientists with dread and horror, and go in mortal fear of new discoveries. And meanwhile there seems to be very little hope that people will soon learn how to live together on this ever smaller planet. We, the physicists, find that we have never before been of such consequence, and that we have never before been so completely helpless. . . . We have spent years of our lives in developing ever sweeter means of destruction, we have been doing the work of the military, and I feel it in my bones that this was wrong. We have been doing the work of the devil. . . .

(An interesting metaphor for a scientist.)

One of the best made science fiction films, The Forbin Experiment (later re-

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titled *Colossus*), 1970, deals with the take-over of all power by "Colossus," the super-computer built by the Americans to defend them from the Russians. What they have neglected to plan for is defense against this machine. By the end of the film, Forbin, the scientist, has been denigrated to the role of Speer, Hitler's architect. He is a prisoner, permitted only to build more and more Colossi. The film closes with a worldwide television program in which the machine assures mankind that they are now entering an era of peace and will be able to lead good lives as long as they are docile and obey him (I mean, "It"), completely.

Symbolically, of course, man is already enslaved by his machines. The automobile kills more people every year than have been killed in Vietnam, and it is the major pollutant of our air. Man lives under the threat of the atomic bomb and machines are used to wiretap and classify him. It is a cliché to speak of the "war machine" as controlling man. We have managed to do this with a variety of "peace machines."

In Jack Williamson's short story, "With Folded Hands," the machine has taken over in the form of humanoids, perfect mechanicals designed to "serve and obey and guard men from harm."13 (The symbolic ramifications are also seen in H. G. Wells' *The Time Machine*.) In the story, humanoids are advertised in the following way:

In a series of richly colored before-and-after pictures, a chesty blonde girl was stooping over a kitchen stove, and then relaxing in a daring negligee while a little black mechanical knelt to serve her something. She was wearily hammering a typewriter, and then lying on an ocean beach, in a revealing sunsuit, while another mechanical did the typing. She was toiling at some huge industrial machine, and then dancing in the arms of a gold-haired youth, while a black humanoid ran the machine.

NORMAN Mailer, in his famous report on the moon shot notes the difference between the way the humanist and scientist view the machine. To Mailer, "the machine seemed a functional object . . . an instrument whose significance was that it was there to be used—as a typewriter was used for typing a manuscript," but to the scientist, "it was communication itself which was functional. The machine was the art."14

It is not only the machines, but products mass-produced by machines which frighten us, as well. It took science to manufacture thalidomide and LSD. Robert Silverberg, in a fine short novel entitled, *How It Was When the Past Went Away*, describes the effects of dumping of an amnesiac drug into the water supply of San Francisco. A new religion, which arises after this event, sanctifies this scientific answer to the search for peace that man has always sought in drugs and liquor. This religion preaches: "Take . . . drink . . . forget. Blessed is sweet oblivion. Sweet it is to lay down the burden of one's soul. Joyous it is to begin anew. Blessed are those who are able to forget."15

Two recent articles from *The New York Times*, related to this concern, sound like the beginnings of science fiction stories. The first, from August 17, 1970, begins: "Three days of legal maneuvering to stop the Army from sinking 418 concrete vaults full of deadly nerve gas into the sea collapsed here this afternoon."

The three paragraphs which follow are from a story published on August 21, 1970:

Pink Hill, N. C.: After he planted his

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nine acres of tobacco this spring, Clarence Lee Boyette came to a store here to buy pesticides. He wanted something to kill the worms that can riddle tobacco leaves—something like DDT which he had used for more years than he could recollect.

The man at the store suggested para-thion because DDT could not be used on tobacco if a farmer wanted to qualify for Government price supports. Para-thion went by the local trade name of "Big Bad John" and all the farm experts said it was a "sure-fire killer."

And so it was. No budworms or hornworms "worried" his crop, Mr. Boyette said. But his youngest son, Daniel, seven years old, is dead. Another son, eleven-year-old Curtis, barely escaped death. They were poisoned by para-thion.

This article has been but a brief introduction to the ways in which science fiction relates all cultures, and reflects the contemporary world with Cassandra-like accuracy. Harlan Ellison, a fine young writer, describes his science fiction writing in the following way:

I have drawn my parallels, have sighted down the gun, have sounded the clarion call. To what end? Perhaps to finally codify for myself what my stories have been saying for the last few years; that man is building for himself a darkness of world that is turning him mad; that the pressures are too great, the machines too often break down, and the alien alone cannot make it. We must think new thoughts, we must love as we have never even suspected we can love. . . .

Many of Ellison's stories seem irrational and impossible fantasy. But his stated goal is to record the growing darkness of the world. When we read them they seem only like stories. But a classic tale in the history of science fiction is of the time in 1944 that Federal agents walked into the offices of John W. Campbell at the magazine, Astounding Science Fiction, and asked who had leaked the information about the Manhattan Project which seemingly, was accurately reported in one of the "stories" published in the magazine. It wasn't until over a year later that the "fruit" of the Manhattan Project, the atomic bomb, was dropped on Hiroshima.

Only stories we might say; but mankind has never listened to prophets until it was too late.

"A planet doesn't explode of itself," said drily
The Martian astronomer, gazing off into the air—
"That they were able to do it is proof that highly
Intelligent beings must have been living there."

The voices of prophets, reporting the present and the future. And we had better stop and listen.

17 Lines by John Hall Wheelock.