Chapter Two

Science Fiction: A Reappraisal
Literature, especially Science Fiction, has tried to trace and analyse the development of science and technology and its impact on human society. In order to understand Science Fiction's focus on the debate between humankind and machines at an individual as well as the social level, let us try to establish the parameters of what constitutes Science Fiction.

According to the Columbia Encyclopaedia, Science Fiction is defined as, literary genre in which a background of science or pseudoscience is an integral part of the story. Although Science Fiction is a form of fantastic literature, many of the events recounted are within the realm of future possibility, e.g., robots, space travel, interplanetary war, invasions from outer space. ¹

Science Fiction or SF, as it is popularly known, became a part of popular culture in the beginning of the nineteenth century. Since its inception, it has been functioning as a chronicler of the human progress as a part of the mainstream literature. Nuclear weapons became an indelible part of the popular cultural psyche with the dropping of the atom bomb on Hiroshima on August 6, 1941. On that day when more than 200,000 people were killed instantaneously, humankind realized that it had reached a stage of evolution where it had acquired the power to destroy itself for good. The world realized that in its pursuit of development and power, it had unleashed the power of the basic elements of nature, the atoms.

The progress of human civilization can be said to consist of different epochs like the Agricultural age, which is symbolized by the plough, Industrial age by the steam engine and lastly the Information Age through computers and virtual reality in the last half of the twentieth century. The second half of the twentieth century saw the transition from the industrial to the information age. However, in spite of the transition, the social institutions, value systems,
political setups, economic systems remained largely unchanged. While moving to the twenty first century, the values systems that were being adopted belonged to the Industrial age.

The Industrial age consists of the setting up an industrial society based on technological development, supported by a capitalist system and was based on free market policy. Though initially believed to benefit all social sections, the system soon became monopolistic in nature and began to depend on aggressive technological advancement, which necessitated the use of violence to maintain high profit margins. As a result, the industrial age was filled with wars, along with social and economic conflicts. It was observed by most philosophers that with technological innovations, human propensity for violence also increased. The capitalist-industrial economy based on supply and demand chain is dependent on maintaining their technological superiority. The struggle to maintain technological and monetary supremacy leads to rivalry and conflict among the different stakeholders in the capitalist-industrial economy. The rivalry encourages the application and adaptation of technology for destructive purposes and with each technological advancement, there starts the struggle for technological superiority, development of destructive weapons, the threat of using weapons of genocide, the thought and willingness to use those weapons— all of which culminate in war for greater control of power over others. These precarious conditions form the basis of the background in which atomic weapons emerge as a symbol of a society that builds for its protection, the very things that can wipe out the entire species. Technological advancement in capitalist-industrial societies is controlled by large corporate entities that are intent on gaining and retaining control over every aspect of human life. This particular aspect is one of the main issues of Science Fiction works that examine imaginary human worlds that have been taken over by machines as evidenced by the presence of the clear and present danger of atomic weapons. Thus, constant technological innovation is dependent on
constant war. Or, in other words, capitalist-industrial economy thrives only by maintaining a
state of constant war and fear.

Technology that had the potential to benefit the masses was instead used to make greater
weapons of mass destruction. By the beginning of the twentieth century, wars were not limited to
battlefields but were extended to civilian areas as well. Soldiers were no longer the only direct
victims of war. With the outbreak of World War I, the world witnessed the beginning of war on a
scale that was till then unprecedented. At its end, it was thought that such global conflicts would
never take place any more. But the outbreak of World War II saw for the first time the use of
nuclear weapons that could annihilate large populations instantly. The developments of the
super-weapons led to the beginning of a new age of fear, a fear of humankind being wiped off
the surface of the earth and life as we know it coming to an end forever. One of the questions
that arose after Hiroshima bombing was what would be the impact of the nuclear threat on the
human psyche? Would the human mind be able to withstand the presence of a threat that had the
power to destroy not just the present but the past as well as the future?

Literature, especially the genre of Science Fiction, has attempted to function as a
chronicler of human civilization. Science Fiction arose as a genre that specifically focused on
technology and civilization as one of its primary concerns. Over the years, it has attempted to
examine the nature of relationship between man and mechanical machines and later even organic
machines by using terminology like robots and androids. One of Science Fiction’s grave
concerns is about civilization’s increasing dependence on machines in almost all aspects of life.
By carrying out extrapolative examinations on the basis of existing technologies and inventions,
it tries to finds answers to questions like the consequences of unfettered technological
advancement. It raises questions like whether the world would be altered in future, and if the
machines became better than humans and would begin to control the world. In short, it may be said that the major function of Science Fiction is its social criticism, from which Science Fiction derives its value.

Science Fiction writers like H. G. Wells (1866-1946), James G. Ballard (1930- ), Isaac Asimov, and Robert Anson Heinlein looked at these questions through the medium of literature. One of the first few critics to make a critical analysis of the genre was Kingsley Amis (1922-1995). In the foreword of *New Maps of Hell*, he lucidly defines Science Fiction: it is not a “tomfool sensation but neither is it a massive body of serious art”. But that does not prevent him from acknowledging the beneficial aspects of Science Fiction as a forum that encourages critical thinking about the present age through introspection. It gives the reader a chance to think of the impossible and that which has not been thought of until now.

Amis equates Science Fiction with Jazz music by presenting them as American products, which originated in between 1920s and 1930s and evolved during the 1940s. He defines Science Fiction as, “... that class of prose narrative treating of a situation that could not arise in the world we know, but which is hypothesised on the basis of some innovation in science or technology, or pseudo-science or pseudo-technology, whether human or extra-terrestrial in origin.” (Amis 18).

Ursula Le Guin, in her *Language of the Night*, lends support to Amis’s contention when she claims that technological societies are generally “afraid” of Science Fiction.

“So, Why are Americans afraid of dragons? ...it isn’t only Americans who are afraid of dragons. I suspect that almost all very highly technological people are more or less anti-fantasy...In wondering why Americans are afraid of dragons, I began to realize that a great many Americans are not only anti-fantasy, but also
anti-fiction. We tend, as a people, to look upon all works of imagination either as suspects or as contemptible". (LeGuin 31-32).

Amis maintains that Science Fiction always does justice to the laws of nature. Science Fiction puts forward notions like spaceships that may be nonexistent at present. But it attempts to make it credible by basing it on developments in reality. He argues that Science Fiction works within a framework that is believable, unlike fantasy, which functions according to the author’s fancy. As evidence, he points to writers like Arthur Conan Doyle (1859-1930), who created grotesque worlds of the future, which were linear extensions of the existent science and technology like the hydrogen bomb, thus making plots that were not only believable but also possible. Based on the same argument he says that the Gothic tradition has also contributed to the genre through Mary Shelley’s (1797-1851) Frankenstein (1818). It has influenced the development of the generic scientist figure. He quotes L. Sprague de Camp (1907-2000), “all the shambling horde of modern robots and androids are descendants of Frankenstein’s sadly malevolent monster”. (Amis 33) He categorises the different types of ‘scientist figure’ that occur in Science Fiction. The ‘scientist’ occurs as the reclusive and eccentric researcher who conducts a secret research project that unleashes an uncontrollable machine or as a morally irresponsible investigator who is indifferent to the impact the invention can have on society. It may also take the form of the researcher who becomes a victim of his own creation. The type may also take the form of a megalomaniac scientist who might see the invention as a means to attain power.

Amis talks about Jules Verne (1828-1905) as one of the pioneers of Science Fiction. He is described as the first great writer of the genre, who made it free of extrapolation. His focus was on developing scientific ideas that reflected the thoughts of the contemporary world. The
question of technology surpassing its limits and trying to bring down humankind is one of the main issues that were constantly raised in his works.

Amis’s ‘other creator’ of Science Fiction, H. G. Wells (1866-1946) examined the question of how science would affect human life, his works providing the finest examples of Science Fiction as criticism of contemporary socio-cultural practices. His *War of the Worlds* (1898) and *The First Men in the Moon* (1901) raise questions regarding colonialism and the so-called rights of explorers/colonialists to carry out their actions. They warn that unfettered science may destroy entire life forms and would not spare even its creators. Wells made use of the scientific and technical developments of the period to create his alternate worlds.

Charles Darwin (1809-82) announced his theory of evolution with the publication of *On the Origin of Species* (1859). In 1896, Guglielmo Marconi (1874-1937) invented his wireless telegraph, an apparatus that was capable of sending signals to a point a few kilometres away. In 1876, the imperial expansion reached its peak with the crowning of Queen Victoria (1819-1901) as the ‘Empress of India’. Austrian psychologist Sigmund Freud (1856-1939) published his *Studies in Hysteria* (1896), which laid the foundation for modern psychology. By basing his novels on some of these developments, Wells tried to focus the attention of his readers to the plight of large sections of the London masses continued to live a life of penury and suffering while retaining the focus on the age’s technological development.

The juxtaposition of the advancements of science and poverty make the late Victorian period a time of great hope and despair, thus necessitating the creation of a new world that would bring to the fore the defects of the existent one. A Science Fiction writer and critic, Brian Aldiss suggests that, “Increasing industrialization brought increasing power into play into the
West. Much could be done that had never been done. Yet technology, or its misapplication, increased an ordinary citizen’s feeling of helplessness and alienation.” (Aldiss 117). 3

The current feeling at that time was that the human progress was “inevitable”. A widespread belief was that science and technology would take care of all aspects of life.

Anthony West (1914- ) too mentions the impact of the age on Wells.

My father took the view, I believe correctly, that the industrialized republic was an even more potent agency for the promotion of social progress than it had been when its influence was predominantly ideological. The logic of industrial development in a country that was perennially short of labour had done away with the proletariat of Marxist dogma. A fully industrialized society dependent for its prosperity on the efficient use of its machines and its energy supply simply could not afford the luxury of a poverty-stricken underclass made up of slow-witted illiterates. (West, 124).

With the publication of the works of Freud and the findings about mind-altering drugs, it was inevitable that the human mind would be the next frontier of literature. Roslynn D. Haynes (1929--?) is of the opinion that this change was subtly adopted by Wells in his works. She suggests that Wells changed his views in course of the time and tried to formulate his own ideas regarding a technological society and its potential to be solution for human sufferings. 4

The development of Wells’ attitude towards the machine and technology, from the traditional view that it was a dangerous and perhaps evil power but nevertheless inevitable, to the view that it could be entirely beneficial if controlled and directed towards the welfare of the society, was dependent on the further question whether, given the immense potential of modern technology for
destruction, it could be controlled in time to save mankind from self-inflicted disaster, even the total annihilation of the human race (82).

According to Brian Aldiss, Wells being aware of the potential for destruction in technological societies, tried to focus on the impending crisis in his works, “His first books appeared in 1895, when he was almost thirty. Around him, a raw new London was emerging, consciously the Heart of Empire -- an expanding capital trapped in the contracting housing Wells described with such hatred.” (Aldiss 118). The evidence can be found in Wells’ first book, The Time Machine that is openly critical of the dominant feeling about “Advancement of Mankind”, and the Time Traveller, in his talk to Hillier, voices this sentiment. The world of the future, according to the account of the Time Traveller, was one that was inhabited by two races: the Elois and the Morlocks. The Elois led an idyllic existence on the surface of the Earth during the day, while the Morlocks who lived in underground caves and led a nocturnal life preying on the Elois. This reminds the readers of the large projects undertaken in the 1869 to construct and operate underground railways and mines which were notorious for their lack of safety measures. By rooting his work firmly in the present, Wells postulates that if it is allowed to continue unrestrained, it could possibly evolve into two distinct worlds. The idyllic world of the Elois seems to offer things like unlimited leisure, freedom from physical labour and endless bliss, all of which was promised by Industrial Revolution (1780). But at the same time, it also reveals the sense of helplessness in a world fraught with dangers. In contrast, through the Morlocks, Wells casts an image of an imperialist society, as it may be perceived by the colonies. It also shows the levels to which humankind can degenerate into.

Drawing on the works of Darwin and Thomas Henry Huxley (1825-1895), Wells tries to hypothesize the possible course of human evolution. In his work, The Trillion Year Spree (1973)
Brain W. Aldiss, describes this effort as an attempt of Science Fiction to “make reality clearer to us” (13). He suggests that the consequences of progress at the cost of moral and ethical considerations would lead to the creation of a world in which human race would degenerate into savage animals albeit having access to technological superiority. He maintained that any attempt to establish supremacy on the basis of power would result in misery for the sufferers as well as for the perpetuators.

In a way, the scenario depicted by the novel is one where the human race could evolve into that of an animal or plant life form. In either case, it is a world where freedom and imagination are destroyed. One’s identity is reduced from its unique position to that of either the hunted or the hunter. According to the protagonist of the Time Machine, life in the future becomes one of alienation and fear. The inability to break out of the existing pattern, as depicted by the Time Traveller’s visit to the Morlocks’ wells, portrays the impossibility of redemption. Wells makes use of the medium to make a critique of western imperialism in The War of the Worlds (1898) which deals with the invasion of London by Martians who arrive in cylindrical pods from outer space. The novel has a great bearing on the contemporary period, which witnessed widespread imperialist expansions of the European powers and their exploitation of the people in the colonies.

By citing the fact that in the eighteenth century the native population of Tasmania was almost completely destroyed by the British, Wells hints that what happened in the colonies could also happen in London, the ‘world capital’. What happened in the colonies was the complete routing of the local civilization by the superior technological might of the West. By comparing the British imperialism to the Martian invasion, Wells argues that any attempt to establish supremacy on the basis of power would result in misery and suffering of the masses. Wells tries
to speculate about the future of human evolution through the descriptions of the Martians' anatomy and tries to envisage the future of human race that gave paramount importance to the development of the intellectual powers, ignoring the need for moral scruples and ideals (Wells, 84).

An important question raised by Wells is whether the human race is worthy of continuing to rule the world. While the narrator is sympathetic to the condition of the human race, he is not without admiration for the highly methodical and intelligent Martians. Though initially repulsed by their anatomy, the narrator cannot help but admire the efficiency of an intelligent life form that had managed to evolve into entities as automaton-like as their machines of war. Their predatory instincts serve as a warning of what the human race could possibly degenerate into,

The greater part of the structure is the brain, sending enormous nerves to the eyes, ear and tactile tentacles. Besides this are the complex lungs, into which the mouth opens, and the heart and its vessels. Strange as it may seem to a human being, all the complex apparatus of digestion which makes up the bulk of our bodies, does not exist in the Martians... (Wells, 84).

And "I think that we should remember how repulsive our carnivorous habits would seem to an intelligent rabbit" (Wells, 84). The descriptions of the Martians' actions reveal the extent of the ruthlessness of the Western imperialists in their attacks on the colonies. Through the havoc wreaked by the Martians using their superior science and technology, Wells tries to give the imperial English a dose of their own medicine. By showing that what was inflicted on Tasmanians could very well be inflicted on the English themselves by a race that had greater scientific knowledge and technology for waging wars.
Wells tried to give a warning of the possible entropy involved in people becoming machines. Haynes voices a similar sentiment, "The same ambiguity recurs in *The War of the Worlds*, where, it is implied, the blindly ignorant and egoistical crowds fully deserve their defeat by the efficient and orderly Martians". (84).

In *War of the Worlds* Wells depicts the consequence of unsatisfied greed for power. Through the havoc wreaked by the Martians using their superior science and technology, Wells tries to give the imperial English a dose of their own medicine. By showing that what was inflicted on Tasmanians could very well be inflicted on the English themselves by a race that had greater scientific knowledge and technology for waging wars. Through the sudden death of the Martians due to the unexpected attack by Earth’s Bacteria, one is shown that wanton destruction does not differentiate between the perpetrator and the sufferer. In a bid to secure more wealth and power, the western industrial societies carried out ruthless exploitation and annihilation. And in due course, they themselves became victims of the dangers they had unleashed on the world. The lack of control on human destructive tendencies adds to the horrors of having to live in an industrial society based on exploitation and destruction. The never-ending cycle of exploitation and annihilation makes Wells' world a nightmarish one in which man is no better than an animal and is incapable of attaining salvation.

Social criticism is evident even in less well-known works like *The Space Operas*, which were similar to the Westerns, which came out through the works of H. P. Lovecraft (1890-1937), Algernon Blackwood (1869-1951), and Lord Dunsany (1878-1957). These included stories of heroes fighting with space-age weapons the bad men who were given the form of Bug-Eyed-Monsters, which were referred as the BEM types. These like A. E. Van Vogt's (1912-2000) *Voyages of Space Beagle* (1950) and Edgar Rice Burroughs’s (1875-1950) *A Princess of Mars*
(1912) depended on their ability to shock their reader. These works tried to make use of the elements in historical novels dealing with princes, ancient rulers, and wicked ministers, to recreate them as a contemporary fare. The phenomenon of BEMs and space operas can be looked at as a means of enabling the posterity to become aware of its intolerance to other cultures. The space crusaders’ effort to rid the galaxies of BEMs is in no way different from the colonialists’ efforts to force others confirm to their culture and way of life. To draw attention to the possibilities like that of humans being used or of robots going berserk, the writer dramatises the events in the stories. Another theme that occurs is the celebration of the rural culture, which is of good over that of the urban that is evil. These works voiced the need for more tolerance towards ‘other’ cultures. A strong underlying argument put forward in these works was that in spite of the presence of these conflicting ideas, it would be possible to have a world of multiple voices where differences can exist simultaneously. However, it must also be noted that while prophesying tolerance, these works usually had the BEMs being killed. One common factor in these works was the emphasis on empathy.

Works like The Invisible Man (1897) dealt with characters like Griffin who become an epitome of uncontrolled science or irresponsible scientist. Griffin or Bedford of The First Men on the Moon (1901) completely lack ethics, social or scientific. Thus, Haynes refers to Cavor as “a potential agent of destruction” (75). He becomes an epitome of the amoral scientist, similar to Griffin, who is described as, “The Invisible Man thus foreshadows a major anti-utopian theme: the need for ethical control over the use of science and its discoveries. And how perfect a symbol of a science without humanity is an invisible man without scruples” (Hillegas 39).

An important aspect of these above-mentioned scientists is their desire to keep the scientific knowledge gained by ensuring that they are kept secret in order to attain their
objectives. Griffin, the invisible scientist who comes to Iping village unleashes a wave of terror and has no qualms about stealing or hurting others in order to satisfy his needs. It is for this very reason that Adam Roberts refers to Griffin in *Science Fiction* (2000) as, “a concrete symbol of the dehumanisation of science” (19).

Bedford is introduced as a young speculator who has no scruples about amassing wealth. His recklessness is perhaps only matched by Cavor’s own indifference to factors other than his work. On being informed about Cavor’s work on a substance that defied gravity, his reaction was,

My first impulse was to apply this principle to guns and ironclads, and all the material and methods of war, and from that to shipping, locomotion, building, every conceivable form of human industry... I saw a parent company and daughter companies, applications to right of us, applications to left, rings and trust, privileges and concessions, spreading and spreading, until one vast, stupendous Cavorite company ran and ruled the world (Wells, 149).

An interesting observation is Cavor’s own reaction at this point, “...he had troubled no more about the application of the stuff he was going to turn out than if he had been a machine that makes guns” (Wells, 150).

Cavor’s description of the training of the Selenites into machine-parts on the basis of the needs of their society is a scathing attack on contemporary industrial society that treats human beings in the same fashion. “In the moon, says Cavor, “every citizen knows his place. He is born to that place, and the elaborate discipline of training and education and surgery he undergoes fits him at last so completely to it that he has neither ideas nor organs for any purpose beyond it” (Wells, 236). Cavor’s description of the ‘making’ of the Selenites by being “confined
in jars from which only the forelimbs protruded, who were being compressed to become machine
minders of a special sort” serves a reminder to the industrial society that left expelled employees
to “wander starving in the streets” (238). He assumes that the Selenites’ system of drugging
unwanted workers was better than the system of firing unwanted labourers. The world of the
Selenites is one of horror and loathing, with its complete destruction of free will and
imagination. It serves as a harbinger of what an industrial society bereft of moral, ethical and
sympathy could evolve into. It has in it a fascination for a man like Cavor who observes them
with admiration for their efficiency but not without a tinge of regret for the helpless Selenites.
“‘So also he [the Selenites] loves his work and discharges in perfect happiness the duty that
justifies his being. And so it is with all sorts of conditions of Selenites- each is a perfect unit in a
world machine” (236). In fact, the danger of human beings reduced to mere cogs in the industrial
society bereft of morals is also pointed out by Bernard Shaw’s (1856-1950) play Major Barbara
(1905). The Undershaft town has all the “provision for every want” the workers and their
families, so much, so that they fail to realize that they are building weapons of death and
destruction that can wreak havoc on the planet (Shaw 131). A severe critic of the capitalist
system, Shaw, creates a world that seems to offer salvation. By contrasting, the Salvation Army
that is funded by the military forces that are armed by Undershaft Armoury, he warns that the
formation of legions; whether in the name of religion or politics, can only lead to human
suffering.

Perivale St. Andrews, the industrial township built by Undershaft and Lazarus, a firm that
was “making millions by selling cannons”, becomes a symbol of tyranny. According to
Undershaft, it is a workers’ paradise with its nursing home, libraries, schools, insurance fund,
pension fund, and various applications of cooperation. But later he admits that it is also a place
where individual freedom is restricted and imagination curbed. The men are conditioned to think that which Undershaft wants them to think.

"I don't say, mind you, that there is no ordering about and snubbing and even bullying. The men snub the boys and order them about; the carmen snub the sweepers; the artisans snub the unskilled labourers; the foremen drive and bully both the labourers and artisans; the assistant engineers find fault with the foremen; the chief engineers drop on the assistants; the departmental managers worry the chiefs; and the clerks have tall hats and hymnbooks and keep up the social tone by refusing to associate on equal terms with anybody. The result is a colossal profit, which comes to me" (Shaw, 127).

The attempt to create an alternate world results in a world where progress becomes unidirectional and it also comes at the cost of other factors. The inordinate importance to science and technology while ignoring the ethical and moral considerations leads to the degeneration of human life into a mechanical entity or a bestial life from. Both consequences of a life over which no control can be exercised and free will becomes non-existent. The recurring nature of the state of helplessness becomes a regular feature of the utopias created in Wells' novels. Wells' vision of the future becomes a nightmarish one in which humankind, riding on the course of an industrial and scientific progress, falls victim to its own machinations. A vivid example of this state is given by Cusins in *Major Barbara*; he speaks about a man riding a tiger. On Barbara's question about a power that is greater than military technology, he says, "Yes; but that power can destroy the higher power just as a tiger can destroy a man: therefore Man must master that power first" (Shaw 150).
The theme of the suppression of freedom and the establishment of absolutism comes to
the fore in Wells’ *The Shape of Things to Come* (1933). Dr Philip Raven’s account of the future
of humankind tries to examine the question of individual freedom and development of the human
race. It may be inferred that Wells felt that if humankind continued to progress on the path that it
had adopted, it would inevitably lead to the extermination the human species. Though the order
set up as a solution to avoid conflict and conserve peace begins as a utopia, it eventually
degenerates into a dystopia. It becomes a place of horror and danger where dissenters are
attacked and gassed by the Air Supremacy by using the technological might of its airplanes. The
order set up by the dominant power on the basis of its monopoly over mechanical and industrial
resources, creates a new society where production would be carried out for the benefit of the
entire race. All those who refuse to accept the edicts issued by the Air Supremacy are
sequestered in order to die a natural and gradual death. The successive generations are adopted
by the state and trained to carry out the work of the new order with an almost puritanical
vehemence. In many ways, the new generation becomes more ruthless than the past generations
in routing out individuality and imagination.

The attempt to create an alternate world results in a world where progress becomes
unidirectional and comes at the cost of other factors. The inordinate importance to science and
technology while ignoring the ethical and moral considerations leads to the degeneration of
human life into a mechanical entity or a bestial life form.

The state of helplessness at the hands of dictatorial systems, which might be mechanical
or moral, becomes a recurring nature in Science Fiction. In it humankind, which rushes blindly
into the abyss of disaster in a frenzy to attain industrial and scientific progress, falls victim to its
own machinations.
Wells’ vision of the future becomes one in which humankind, riding on the course of an industrial and scientific progress, falls victim to its own machinations. The alternate worlds set out to be utopias but end up as recurring nightmares from which there is no escape.

Amis refutes the usual clichéd charge against Science Fiction that it is escapist by suggesting that flying into space in order to get away from one’s problems may also be seen as a criticism of such attempts. Instead, SF tries to look at space as the place where changes or transitions can be brought about. However, in the course of such efforts it has sometimes been reduced to “a literature of scepticism and deflation”. Amis maintains that in spite of the presence of these conflicting ideas, Science Fiction makes possible the concept of a world of multiple voices where differences can exist simultaneously. Eric S. Rabkin (1946- ) suggests a similar idea in his book The Fantastic in Literature (1976).

According to Rabkin, Science Fiction helps in changing accepted systems of learning and subordinating the use of technology. It offers the reader a chance to find solution to everyday problems and explain away unnatural events that lack explanation in the real world. Being a world that is driven by a system of rules, like the “Three Laws of Robotics”, it gives the reader solace of being able to enjoy a stable and ordered world. It becomes a world where even if things go wrong, they may be set right by using man or the scientist’s intelligence. The scientist takes over the role of the valiant knight. Science Fiction creates utopias that may be said to be of two kinds: one that is approved by the author and the other that is rejected. Both make use of extrapolation and reversal to create these alternate worlds, which may represent contemporary perspectives or an organized body of knowledge.

Rabkin argues that fantasy is primarily “a mode of human knowing” which has provided us with new perspectives and helped us to “break existing moulds”, thus helping to improve the
quality of our lives. It is a testimony to human desire to acquire solutions to its problems by examining new avenues of thought. It provides the reader a chance to carry out self-evaluation that is vital to the evolution of human thought. It might be noted that alternate worlds created by Science Fiction make use of technology to encourage individuals to lose their sense of reality for a state of limbo.

Amis discusses the utopias created by writers of Science Fiction using two categories: conformist utopias and comic inferno utopias. The former is an authoritarian state that enforces its diktats through corporate magnates armed with the latest technological and psychological weapons. Amis points out that these utopias are influenced by George Orwell’s (1903-1950) *1984* (1949). Amis suggests that these subsequent works dealt with the government using weapons against its own population in order to maintain a constant state of fear. “The rocket bombs which fell daily on London were probably fired by the government of Oceania itself, ‘just to keep the people frightened.’” This is a common feature that regularly occurs in Science Fiction as a critique of the capitalist economy, which uses violence to maintain its role as a war economy. The comic inferno type of utopia is a world where technology is used to encourage individuals to lose their sense of reality for a state of limbo. It serves as a satire on human pride in being able to acquire material wealth. *Space Merchants* (1953) written by Frederik Pohl (1919- ) and C.M.Kornbluth (1923-1958) brings out the absurdities of living in a world ruled by advertisers. It deals with the life of an advertising executive who sells property on Venus to unsuspecting citizens and makes them suffer the conditions of the uninhabitable planet. The world is described as a place where luxuries like chewing gums are easily available while bare necessities of life like protein foods are scarce. It also satirizes the political leaders who have become so corrupt that they no longer represent people’s interests but that of companies. About
this, Amis says that Science Fiction is a medium that can “treat as variables what are usually taken to be constants”. It offers the reader a chance to raise questions that may not be generally taken up in other forms of fiction.

In the genre, there is a recurring theme of comparing rural with that of the urban culture. A good example is Ray Bradbury’s (1920- ) Fahrenheit 451 (1953) where the rural area is depicted as a place of refuge from the oppression of the urban culture. The urban area does not tolerate any deviations from its diktats by using technology (with pyrotechnics) to destroy creative knowledge in the form of books which are deemed to be dangerous. Ray Bradbury is considered as one of the pioneers due to his ability to raise questions regarding human beings and the application of science and technology.

While an ardent admirer of human ingenuity, Bradbury seems to think that the same inquisitive nature, which has enabled humankind to understand the secrets of nature, may prove to be the means of their undoing. He insists that our knowledge of the world has advanced by leaps and bounds while our spiritual advancement has suffered serious setbacks. As a result, human knowledge is dangerously lopsided and therefore human beings are dangerously heading towards self-destruction. Any escape, if possible, may only be possible by virtue of individual human actions. What makes Bradbury’s works truly interesting is the fact that he was writing at a time when the world was reeling under repression in the name of democracy or communism and technology was being developed as tools for repression.

In Martian Chronicles (1950), Bradbury attempts to give a hypothetical account of human settlement on Mars. His focus is not on scientific knowledge or technology that would make possible the travel to Mars but rather on how it would affect humans. In the introduction to the work, Clifton Fadiman (1904-1999) comments that humankind should realize that, “the place for
space travel is in a book, that human beings are still mental and moral children who cannot be trusted with the terrifying toys they have by some tragic accident invented”.

It may be observed that a recurring feature in these novels is the human attempt to recreate Earth on the alien planet. This can be observed through instances like transporting tons of timber to construct towns consisting of log cabins. All human advancement is focused on recreating another earth. Bradbury suggests that any such attempts would lead to a repeating of mistakes of the past and would deprive human beings of any future chance of redemption. The old man in Night Meeting warns young Tomas Gomez that, “We’ve got to forget Earth and how things were. We’ve got to look at what we’re in here, and how different it is”.

While contrasting between the human and Martian life forms, a common factor that emerges is that both attempt to assert themselves as the dominant form by trying to negate the other as belonging to the past and hence as being decadent. Bradbury points out the folly of the enterprise by highlighting the fact out that both life forms, in spite of their civilizations, are trivial when compared with the universe of which they are a mere minuscule.

Bradbury was writing this at a time when the world was witnessing widespread repression of humanity in the name of Democracy or Communism. Being a staunch critic of repression in any form, he postulated that given the changes that were taking place at that time it was just a matter of time before individual thought and imagination would be suppressed as depicted in Fahrenheit 451. This theme is explored in the ‘Usher II’, where a bibliophile takes revenge on the members of Establishment who repress imagination by destroying books as well as any other form of creativity under the pretext of making the world safe for the future from the dangerous influence of the past. The destruction of life on Earth is brought about by human
actions that destroy the past as well as the present in a bid to protect the future. Bradbury points out the absurdity of such a line of action that would render such a future futile for the posterity.

Bradbury's world is one in which human follies are responsible for the annihilation of the Earth as well as the destruction of the Martian landscape. He believes that the restricting influence of civilization would repress human imagination and that under its influence human beings would destroy their own world in order to satisfy their own desire for power. According to Bradbury, hope for any redemption is slight and it may be possible only through individual acts of kindness and mercy.

An interesting point to be noted is that the horrors in Science Fiction have increasingly shifted from the realm of the external to that of the internal, from the desolate landscape of planets to that of the human mind. One of the keen observer of this approach was James Graham Ballard (1930- ) who focussed on catastrophic Science Fiction. He is best known for his short stories that examine the condition of contemporary man in a highly advanced industrial and consumerist society. The physical and mental degradation of the modern society along with its environment become the prime focus of Ballard's works. He is known for dealing with human civilization that has been destroyed by its technological society and the survivors' failed attempt to recreate the lost life in a world laid waste, like that of a post-nuclear world.

Ballard continues to be one of the chroniclers of the contemporary age and explains why it is necessary to have catastrophic fiction, when he says to Jeremy Lewis in an interview,

You'll no longer be an external spectator to fiction created by others, but an active participant in your own fantastic dreams/dramas. Obviously these things could lead to all sorts of (one can imagine) nightmarish outcomes, but one might as well
be aware of the them and not try to fight against them, maybe do something positive with them. (Lewis 27-40). 7

One of the main achievements of Ballard was that he focussed on mapping the contemporary human psyche by maintaining that “the only alien planet is Earth” and that the space that was to be explored was the “inner” space of the human mind and not “outer” space. He makes his fiction a forum for examining contemporary problems like dangers of nuclear weapons, depletion of energy reserves, pollution, and destruction of the environment. One of his prominent critics, David Pringle (1950- ) suggests that, “He offers no definite answers to man’s problems: he does not spur to action. He simply presents us with the experience of being alive today...” By comparing himself to a scientist who “has no moral stance” and maintains his neutrality while examining a new specimen, Ballard argues that the writer does not pass any judgment but devises various situations and tests the phenomenon against known facts. To address the questions regarding the transforming nature of science and technology on the conditions of modern urban life, he places his characters in impossible situations and tries to find out human reaction to disasters that are products of their own making.

In his short story collections like The Voices of Time (1962) and The Terminal Beach (1964) and novels like The Drowned World (1962), The Drought (1965), and The Crystal World (1966), he looks at the devastation of the civilization and the survivors’ failed attempt to recreate the lost life. The survivors’ journey becomes a journey into the inward recesses of their mind where they discover that the creative power of their imagination is no match for their instinctive penchant for destruction.

One of his early novels is Crash (1973), in which cars symbolise the mechanisation of the world and man's capacity to destroy himself with the technology he creates and the characters
become involved in a violent obsession with the psychosexuality of car crashes. It dealt with the modern man’s loss of the ability to feel or empathize with fellow beings and the world around them. Ballard coined the term “Death of Affect” to describe this particular condition of the modern world. High Rise is about the sterility of modern urban life and the degeneration that can happen to it. It deals with a large luxurious housing complex containing every possible comfort for its inhabitants who are sophisticated professionals. The leisurely lives of the inhabitants degenerate into debauchery due to the isolation and impassivity created by the technological advanced complex. Under the influence of the highly systematic and mechanical life in the apartments, the inhabitants desperately try to bring about a change in their lives and end up developing deviant social tendencies. Tribalism, Barbarism, and violence become the order of life in the high-rise.

Ballard's latest novels, Cocaine Nights (1996) and Super Cannes (2000) are further expansions of the themes that have been raised in the past. They examine the modern man’s obsession with work and leisure that are largely the results of the conspiracies carried out by multinational corporations. The socialisation of the soul is replaced by increasing influence of business corporations and it leads to a shift from sanity and meaningful relationships to psychosis and sterility. It is pointed out that the desire to attain immortality may lead to a life of living dead.

...the successful landing on the Moon, after some half-dozen fatal attempts—at least three of the luckless pilots were still orbiting the Moon in their dead ships—was the culmination of an age-old ambition with profound psychological implications for mankind...(If the sea was a symbol of the unconscious, was
space perhaps an image of unfettered time, and the inability to penetrate it a tragic exile to one of the limbos of eternity, symbolic death in life?) (Voices 9).

It can be said that Ballard makes use of his works to shock the audience out of their complacency.

"The Illuminated Man" deals with the role of time as impending doom. The work deals with time as an expanding force that engulfs and assimilates the protagonist. Here Ballard questions contemporary thought and value systems, which he feels, is responsible for the present condition of human beings who have become victims of their own machinations. According to David Pringle, Ballard talks about the fallibility of human pride in their technology in "Terminal Beach" which is about a pilot called Traven who stays in Eniwetok, an island that served as an atomic testing site.

Einwetok is a symbol of the danger that is looming over earth in the form of nuclear weapons. Tavern bids goodbye to it and adds Los Alamos, Hiroshima and other places that have seen nuclear testing. The list goes on to include Moscow, London, Paris, and New York- a clear indication of the apocalypse into which humankind is rushing into. The island is a mirror reflecting the reality of a contemporary world. "The island is state of mind", remarks one of the scientists, commenting on the artificial landscape that had been made by human actions in a bid to control the vast powers of nature. The impact of an unbridled science and technology on human condition is questioned here “…if primitive man felt the need to assimilate events in the external world to his own psyche, 20th century man had reversed this process; by this Cartesian yardstick…”, especially the reductionist tendency of science that seeks to reduce everything down to smallest possible factor and through it reach at generalisations regarding the universe.
"The actual and potential destructiveness of the atomic bomb plays straight into the hands of the Unconscious. The most cursory study of the dream-life and fantasies of the insane shows that ideas of world-destruction are latent in the unconscious mind...Nagasaki destroyed by the magic of science is the nearest man has approached to the realization of the dreams that even during the safe immobility of sleep are accustomed to develop into nightmares of anxiety" (136).

Human conception of technology comes into the story through the concrete blocks that litter the island. For Traven, they represent the ‘block’ between him and his acceptance of life on Earth. The blocks take on the form of the bomb, which is conceived as, “For me, the hydrogen bomb was a symbol of absolute freedom. I feel it’s given me the right –the obligation, even—to do anything I want.” and also that “After all, in effect we are men raised from the dead”. Traven believes that the contemporary man carries the guilt of having created the instruments of his own destruction in a bid to attain immortality, as “carrying a full load of cosmic guilt”. According to Nick Perry and Roy Wilkie, Traven has,

“...rejected the “normal” world of work and play; but to move towards the right response to a world represented by Eniwetok is difficult and can only be achieved by drawing upon the experience and wisdom of ways of life not normally accepted by technological society” (Nick Perry 98-105).

The inherent problems in the technological society results in the creation of men like Tavern, who is unable to form meaningful relations with the world around them. This is clear from Traven’s inability to relate to the biologist but feeling comfortable with the plastic models that abound in the island. The only other ‘person’ with whom he is able to relate to is Yasuda,
the Japanese corpse. As a solution to Traven’s inability to ‘feel’, Yasuda ‘suggests’ to Traven to adopt a philosophy of acceptance,

“You can’t accept the plurality of the universe—ask yourself why, Traven. Why should this obsess you? It seems to me that you are hunting for the white leviathan, zero. The beach is a dangerous zone. Avoid it. Have a proper humility, pursue a philosophy of acceptance” (136-7).

Nick Perry and Roy Wilkie support this view: “Ballard’s stories repeatedly advise us to “invert” our logic which presumably represents for Ballard, Western technological thinking and values.”

The mind of Traven is vividly described through the description of the island’s desolate landscape,

“The dune lay fifty yards in front of him. Beyond it, bearing the shadow like a screen, was a ridge of limestone that ran away among the hillocks of the wasteland beyond this point of the atoll. The remains of an old bulldozer, bales of barbed wire and fifty-gallon drums lay half-buried in the sand. (151).

Traven maintains that the world of reality is one of constant change unlike the world of Eniwetok, which is a place where things are ‘crystallised’ like the sand that has been exposed to repeated radiations. The crystallization of characters in the space and time of the island makes them attain a state of permanence. “Each of us is little more than the meagre residue of the infinite unrealized possibilities of our lives.” And also that, “Here among the blocks you at last find an image of yourself free of the hazards of time and space.” indicate that instead of “switching off” from the external environment and retiring into a private world, one should be encouraged to develop an understanding of the dangers of the path along which mankind seems to be hurtling along ignorant of what lies ahead.
‘Deep End’ describes a desolate Earth that has been abandoned in the face of the environmental degradation. The planet is reduced to a rotting planet by humankind through exploitative mining processes that have made it unable to sustain life any longer.

The frantic mining of the oceans in the previous century to provide oxygen for the atmospheres of the new planets had made their decline swift and irreversible and with their death had come climatic and other geophysical changes which ensured the extinction of Earth itself. (161).

This serves as a warning that the past and present may be destroyed in humankind’s mad rush to attain a ‘better’ future. This is indicated through,

“What does it matter whether you’ve made your mind or not? The only thing that counts now is to get together enough courage to head straight for Canaries and take off into the white blue yonder. For, Heaven’s sake, what are you staying for? Earth is dead and buried. Past, present, and future no longer exist here.” (160).

Ballard makes use of the symbol of water on the planet to represent the destruction of the past by human actions and finds a voice through Granger who argues that water is the repertoire in which human experiences since its beginning is stored,

“In draining them we deliberately obliterated our own pasts to a large extent our own self-identities…we have become nothing more than ghosts of memories, blind and homeless, flitting through the dry chambers of a gutted skull.” (162).

In The Drought (1965) Ballard presents an apocalyptic world where rains have stopped due to radioactive waste dumping and water becomes a symbol of the past in the absence of which the civilization begins to degenerate into savagery. He adds that in the absence of a unifying bond with the world around, individuals begin to become sequestered into a private
world and lose connection with fellow beings. They become indifferent to the world outside, “Nonetheless, Ransom was certain that the absence of this great moderator, which cast its bridges between all animate and inanimate objects alike, would prove of crucial importance. Each of them [the survivors] would soon literally be an island in an archipelago drained of time.” (12). Ballard points out that often individuals become victims of the very factor that are fleeing from. A case in this point is “The Overloaded Man” which is about a Professor Faulkner who attempts to fight the insanity of reality by “switching-off” from the external world and retiring to the inner realm of the mind. The picture of his confused state of mind is depicted through the landscape of the area he lives in. Build to serve as a “model for the corporate living”, the structures ended up as being “hell on earth”. The character Faulkner attempts to challenge the world of consumer goods and materialistic comforts, one that he had been “imprisoned” in by a technological and consumerist society. According to him, the main objective of such a society is to reduce the imaginative power of individuals and force them to confirm to its standards. In other words, to make machines out of human beings so that they might continue to be subservient “consumers” through devices like advertising.

In Ballard’s catastrophic worlds, tyranny and repression that are perpetuated in the name of maintaining an order. The perpetuated fear results in the isolation of people and prevents them from feeling for others or making meaningful relationships with fellow beings. Ballard urges for the preservation of individuality and imagination in an increasingly consumerist culture and conformist technological world. The plight of characters who refuse to perceive their own plight and make changes, Ballard warns, would end up in a situation described by Chalmers the scientist in “Thirteen to Centaurus”. The story deals with a group of individuals who spend their lives in a ‘spaceship’ that is grounded in Earth as a part of an experiment to ensure human
survival in an alien planet. In many ways, their plight is similar to the inmates of the apartments in High Rise. They begin to become isolated and in their unconscious level begin to develop suicidal tendencies. “All spent at least 2-3 hours each day bathing in the UV light flooding through the recreation lounge, but pallor continued, perhaps an unconscious realization that they had been born and were living in what would also be their own tomb.” (99). And Chalmers speaks about their true condition as, “Don’t you realize you’re entombing yourself in a situation that’s totally unreal? You’re deliberately withdrawing into a nightmare, sending yourself on a non-stop journey to nowhere!” (111).

At the end of the work, the characters on the spaceship ‘decide’ to continue living in the artificial world that in many ways serves as an extension of their minds. In Ballard’s works, spaceships generally end up being wrecked or objects of doom. Here, it becomes the grave of its travellers who prefer to stay within it for life instead of coming out and facing reality. The apocalyptic tradition followed by Ballard was later taken up subsequent writers to re-examine the questions raised by Science Fiction. Ballard’s vision is summed up by David Pringle,

[Ballard is] one of the few contemporary writers...who has a voice authentically his own. Ballard is an Original but he is not a Sport, which is to say he has his own voice but it is a voice, which echoes certain earlier voices, and it is a voice, which has much to say to modern readers. Ballard’s fiction connects with the world of today; it draws strength from a literary and artistic tradition, but it also reflects and comments upon the non-literary reality, which surrounds us all. (Earth 7-8).

And the same sentiment is voiced in the following lines,
He is a writer whose subject matter and imagery are always unerringly relevant to the concerns of the contemporary world. It is his ability to choose the correct subjects which gives him his “charismatic” quality as a writer. From the atom bomb to the automobile, from prison-camps of the World War II to the high-rise blocks of today, he has filled his fiction with images of our world, our times. (7-8).

Ballard explores the plight of individuals who are caught up in apocalyptic worlds and are unable to cope with the pressures of constantly living in a world containing nuclear weapons or any of its variants. The constant threat leads to a situation where they are not even able to carry out a conversation or connection with other individuals. The individuals are seen to be adopting numerous defence mechanisms to come to terms with the threat from which there is no escape. Like Professor Faulkner, the characters attempt to “switch off” from the world around them. Some others like Chalmers put up different personas or act as if they have nothing to do with the other ‘self’ in order to ease their transitions between reality and their private world.

Far from being flights of fancy inspired by the desire to escape the harsh realities of existence in contemporary society, the best of Science Fiction is marked by the attempt to understand contemporary reality as a process whose evolving possibilities have to be identified in order to prevent/face possible threats to humanity.

Within Science Fiction, apocalyptic fiction focuses on the issue of nuclear holocausts with a specific objective, not merely to provide thrills or to titillate. While there are writers within the sub-genre who indulge in using the theme “just for thrills”, the more serious ones aim at, what Paul Brianscalls,
... using fiction as a mirror of cultural attitudes toward the dangers posed by the nuclear arms race, this book aims at a better understanding of those attitudes. Nuclear war creates such anxiety in most people that they are prone to all manner of strategies of avoidance in discussing it: despair; unwarranted confidence that "the government" or "the scientists" will take care of the problem; simple selective ignorance of the problem.

One of the prominent writers who focussed on the issue of nuclearism was Philip Kindred Dick (1928-1982) or Philip K. Dick created apocalyptic worlds and through the medium of common working people who inhabited these worlds tried to understand the shifting nature of reality and humanity. In Stanislaw Lem's words, Dick is a "visionary among the charlatans" and his apocalyptic worlds are depressing but they are crucial for the understanding of the essential destructive nature of humankind:

The impossibility of civilization's returning to Nature, which is simply equivalent to the irreversibility of history, leads Dick to the pessimistic conclusion that looking far into the future becomes such a fulfilment of dreams of power over matter as converts the ideal of progress into a monstrous caricature. This conclusion does not inevitably follow from the author's assumptions, but it constitutes an eventuality, which ought also to be taken into account. By the way, in putting things thus we are no longer summarizing Dick's work, but are giving rein to reflections about it, for the author himself seems so caught up in his vision that he is unconcerned about either its literal plausibility or its non-literal message... Dick has presented us not so much with finished accomplishments as with fascinating promises. (54-67).
The apocalyptic fiction of Dick that focuses on nuclearism deserves special attention since there very few writers who focus on the issues of nuclearism due to the depressing nature of the apocalyptic world. In David Dowling’s words, “As for the blast itself, only a few supreme feats of imagination such as the passages in the novels by Wylie, Bradbury, and Dick have been able to suggest simultaneously the vastness of the destruction and the personal sense of stunned horror of the observer.” (Fictions of Nuclear Disaster 50).

He adds that the one of the functions of nuclear fiction is to shock the audience out of their complacency using its creative power of their imagination. 9

Nuclear disaster fictions attempt to hasten not the horror but the enlightenment, thus- paradoxically- to put off the day. They help us to know ourselves by giving us a new perspective on ourselves, capitalising on the ‘nuclear threat’ to ‘defamiliarize’ ourselves, a strategy which F. Jameson argues is common to all fiction but more particularly to speculative and Science Fiction. We can then engage in restructuring our own experience and our own future in the present and out of the womb of the future. (50).
Notes and References


9 Dowling puts forward the idea that Science Fiction dealing with nuclear disasters makes use of the literary device of presenting the familiar in an unfamiliar manner in order to get the
attention of the readers in order to sensitise them to the nature of the impending doom. He argues that sometimes it is necessary to jolt the readers from their complacency by creating an atmosphere of shock and awe in fiction. Dowling, David. Fictions of Nuclear Disaster. Iowa City: University of Iowa Press, 1987.