Chapter I

Science Fiction: History and Critical Perspectives

1. Introduction

The idea of existence of life beyond Earth has been discussed for as long as mankind has existed. In different ways the idea has appeared in the form of gods and goddesses who peopled the heavens of ancient mythology. Appearance of aliens beyond the reach of human perception was probably part of early human attempts to understand nature. The Buddhist philosophy, for example, has accepted the idea of existence of life beyond known world. Likewise, many schools of thought of the ancient world understood that life came in many different shapes and races in the universe, and that the existence of extraterrestrial life was a matter of logic. All cultures and their ways of living have included life outside Earth in their folklore as they were part of their philosophical systems and history. The present chapter discusses the philosophical and literary developments of the Science Fiction genre that reinforced the idea and existence of life beyond Earth.

2. Plurality of Worlds: World Beyond

The idea and existence of life beyond Earth has taken various forms and the form of the alien or extraterrestrial world might have emerged in human consciousness long before it appeared in clearly recognisable form in the Greek cosmology of
the fifth century B.C. Such a view has a support of belief that ‘other worlds’ or ‘other beings’ were already present in the earliest scientific cosmological worldview. In cosmological world view, the concept of the other worlds was based on the physical principles of the cosmological system. The ‘world’ of Epicurus was the Greek *kosmos*, meaning an ordered system as opposed to chaos. The entire visible universe composed of one *kosmos*; with which Epicurus proposed the remarkable idea of *aperoi kosmoi*: an infinite number of worlds exist completely beyond the human senses but not beyond human reasoning. The cosmic pluralism was a corollary to notions of infinity and the purported multitude of life-bearing worlds were more akin to parallel universes than to different solar systems. After Thales and his student Anaximander opened the door to an infinite universe, a strong pluralist stance was adopted by the cosmologists, notably Leucippus, Democritus, and Epicurus. While these were prominent thinkers, their opponents—Plato and Aristotle—had greater effect. They argued that Earth is unique and that there can be no other systems of worlds.

Aristotle presented a structure of the universe as having perfect radial spherical symmetry. In his views, the world is arranged according to spheres and spherical shells around a center in which the simple movements along straight lines are along radii from or to the center. As Anton Pannekoek says,

All change of place which we call motion is straight or in a circle or a mixture of them….a circle is around the center…. Up means away from the center, down is toward the center. It follows that all center toward the center, or around the center.¹
In the Aristotelian world structure, Earth was at rest in the center of the universe. All heavy parts would tend towards the center and hence for Aristotle Earth remained the center of the universe. The spherical universe is a perfect being and other celestial bodies around the Earth are in sphere. At the outside spheres, there is ‘neither void nor place.’ This stance neatly dovetailed with later ideas in the Christian Middle ages. For the Aristotelians in the Christian middle ages, there were no living creatures except on Earth in the whole universe of geocentric spheres. However, the existence of other humankind was conceivable in the Middle ages because of the god’s infinite potentia. Neither the classical nor the Christian mind thought in terms of the alien. In their view, each being is unique, and each has its destined place in a great chain of being. On this chain, everything interconnects, but nothing overlaps. Thus man could ‘communicate’ with animal and angel alike, provided he respected the order of the connections. Even in the Renaissance, this vision has persisted. As Tillyard has put it, “there are no grotesque in nature; nor did anything frame to fill up empty cantons and unnecessary spaces”. If there were spaces in the structure, they were simply accepted as empty. If they were unnecessary, they would not have had any function in the system.

The new science with heliocentric world view of the universe, the belief that Earth and planets revolve around a stationary Sun at the center of the solar system, opened up new vistas towards nuanced understanding of the life beyond Earth. The new cosmological worldview challenged the Ptolemic-Aristotelian Earth- centric worldview that is known as the geocentric world
view. First scholastics and then, more seriously Copernicus and his followers superseded the geocentric world view that was dominant throughout the Ancient and the Middle Ages. In the Renaissance, Copernicus set forth the new basis of the universe in which, according to him, the world is spherical and that Earth too has shape of sphere. Unlike ancient philosophers, Copernicus observed that celestial bodies exhibit various different motions and Earth is not only at the center around which the celestial bodies exhibit their motions but there are other centers besides the center of the Earthly gravity. With this, the Copernican understanding opened the unfathomable depths of space that forever changed astronomy, and indirectly changed all of science and all of humanity's awareness of its place in the universe. The idea that Earth is fixed and it is at the centre was questioned by the new concept of plurality in the world structure. Later, in the sixteenth century, Giordano Bruno became the apostle of the Copernican world order. He boldly proposed that all the fixed stars and suns are surrounded by planets that are perhaps abodes of other worlds. The telescope appeared to prove that a multitude of life was reasonable. A thinker like Johannes Kepler was willing to admit the possibility of the pluralistic understanding without truly supporting it. In the first place, for him and his followers, it was an abstract belief, a matter of principle rather than speculation about the future. It did not occur to anyone that a travel between solar systems might become possible. It was assumed that mortals from one solar system could never have knowledge of the others, except perhaps in an afterlife. The ‘evidence’ on which belief in inhabited solar systems was based came entirely from religion. But now, with new vistas being
opened up, the older views were being challenged. In the Renaissance, the question ‘what is man?’ acquired totally new dimension and became more urgent than ever before. The Renaissance, as Karl Guthke observes, became “an inquiry, taking different forms over the centuries, into man’s status. Is he still the most perfect of all creatures, the most intelligent, the dearest to the god, the most fortunate?”

In the world of Liberalism, the idea of plural world was championed by philosophers such as John Locke, a widely known British philosopher and astronomers such as William Herschel and even politicians, including John Adams and Benjamin Franklin. As greater scientific skepticism and rigour were applied to the question, it ceased to be simply a matter of philosophy and theology and was properly bound by astronomy and biology. Benjamin Franklin was a firm believer both in other worlds and in the superiority of their inhabitants to humankind. In Poor Richard’s Almanac, 1749, he wrote, ‘It is the opinion of all the modern philosophers and mathematicians that the planets are habitable worlds’ and further he said that “Superior beings smile at our theories, and at our presumption in making them.” Thomas Jefferson and John Adams made brief references to extra-solar worlds and their inhabitants in their writings. Thomas Paine included a long description of other solar systems in Age of Reason, which, since it was addressed to the general public, spread the idea beyond the intellectual circles in which it had long been common. Unlike the majority, Paine felt that the idea of plurality of worlds was incompatible with Christianity and was therefore it should be considered as an evidence against religion.
Immanuel Kant wrote extensively about other solar systems and introduced ideas about them that were extremely far-sighted for his time. The two major relevant concepts that Kant introduced were the idea that not all planets are inhabited even if some are, and the possibility that celestial bodies which are not yet inhabited will be hereafter, when their development has reached a late stage. These ideas were far too advanced to gain acceptance, and they had little influence on the views of his 18th century contemporaries. It was far later in 1977 that brought a change when the Roman Catholic priest and a theologian, Kenneth J. Deleno published, with the imprimatur of his bishop, a book entitled *Many Worlds, One God*. He attempted to break down the theological parochialism of one world and one human on the basis of the modern scientific worldview while nevertheless leaving the church’s central teachings intact. Meantime, in 1968, the first images showing Earth as a whole taken by the crew of the Apollo 8 spacecraft broke new ground in the history of human consciousness in one specific sense that, as Guthke writes “through the mass medium of television they opened the eyes of a vast number of people to the Copernican and post-Copernican view of the cosmos.” The Apollo 8 mission brought the process of, as the American astrophysicist A G W Cameron has said, ‘completing the Copernican intellectual revolution.’ Interestingly, one of the Apollo 8 astronauts, in the television interview wondered what a traveler from another planet would think of Earth as he looked back at the Earth floating in space. With growth in scientific discoveries from the 1960s onwards, the question of the existence of extraterrestrial intelligence and of ways and means of discovering it has been one
of the most intensively debated issues of modern science, with astrophysicists and biochemists working equally hard toward a solution. The conscious efforts were begun happening in the process of understanding the ‘world beyond’: what would they think of us, and we of him? And how would this affect the way we see ourselves?

2.1 Biological Cosmology

In attempting to characterise such a broad period and vastly discussed world views, we are careful in not drawing too rigidly the boundaries of science, literature and philosophy. In fact, for many centuries these disciplines were inextricably intermixed; indeed, what we today call ‘science’ emerged from natural philosophies. So, the debate on the alien or extraterrestrial existence has kept moving from the physical cosmology to the exploration of philosophical implications, to more empirical investigations. It is important to note here that the philosophical view is never banished completely and that the cosmological is always present in the background. Further, from the ancient Greek world of Democritus to the eighteenth century European world of Immanuel Kant, the cosmological thinking underwent a revolution that transformed a dead celestial world into a living universe, a transformation, no less dramatic than the well-known move from closed geocentric world to the infinite universe of the heliocentric view. Steven Dick has argued with his opinion that that “These two revolutions- from the closed world to the infinite universe and from the physical world to the biological universe- are not unrelated.”

As we have seen above, shattering of the ancient world of nested spheres opened the way for a greatly enlarged and interrelated universe by removing Earth from its central status. In addition, it opened up new question of the uniformity of physical law, as Dick argues, that might also be applied to “the uniformity of biological law producing, not only planets, stars and stellar systems but also plants, animals and intelligence.”

In the Prologue to his book of essays *Ever Since Darwin* (1980), Stephen Jay Gould quotes from the essay in which Freud argues that the implications of Darwin’s theory of evolution, as set forth in *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, represented one of the three fundamental ‘blows’ or ‘wounds’ that man has suffered to his ‘self-love’. The first of these, the cosmological blow, Freud assigns to Copernicus, a result of undermining the dominant view of the universe with Earth at the centre; the ‘third blow, which is psychological in nature’, he reserves for his own work, a consequence of the revelation that ‘the ego is not master in its own house’. It is the second blow, ‘the biological blow to human narcissism’, that Freud attributes to Darwin’s theory for putting “an end to this presumption on the part of man” that he is “a being different from animals or superior to them”. Whether or not one agrees with the wider claims of Freud’s (far from humble) assessment, it is undeniable that this implication of Darwin’s work – the decentering, or demoting of man from his position of superiority – was a major cause of the outcry over the *Origin of Species* on its publication and a factor in
the subsequent one hundred and fifty year backlash against the theory and its successors.

The planetary view and existence of bodies in the outer world provide the meeting of two models of looking at the universe: cosmological and biological world views. As Steven J Dick comments, given its scientific components, the idea of the universe filled with life is in fact a cosmology of its own, incorporating the physical and the biological, which we may term ‘biological cosmology’. Dick’s view of ‘biological cosmology’ strengthens questioning of uniqueness of human existence in the universe. In other words, when science removed Earth successively from the centre of the solar system and the centre of the Galaxy and, left it bereft of any unique physical position in the universe and as a result, the reflection on whether human species are biologically unique in the universe takes the central position. We do not consider this reflection in the narrow sense of form and function but in the general sense of mind and intelligence and it has become pertinent for theorists, philosophers and imaginative writers.

As we are going to see, Science Fiction is one such form of expression that has primarily focused on life beyond Earth. It has reigned over several discourses on the human history and the words of H G Wells that “minds that are to our minds as ours are to those of the beasts that perish” ponder the mysteries of the universe. Basically, reflections starting from geocentric world view to Dick’s biological cosmology are a story of the transformation of human thought from the closed world to the plural world as well as from the physical world to the biological universe that science has
been documenting. For our particular discussion on the theme of alien, the transformation of human thought is important as it has shaped the human understanding of the world of aliens. In the light of this discussion, particularly, the idea of biological universe allows us to reflect on human existence within the vast system of universe.

3. Modern Myth of Science Fiction

The quest for the life in other worlds in the universe has extended debates on the status of ‘human discourse’ within the universe. T H Huxley in *Man’s Place in Universe* presents an interesting observation on the debate saying,

The question for mankind-the problem which underlies all others, and is more deeply interesting than any other is the ascertainment of the place which Man occupies in nature and of his relations to the universe of things.”

Not surprisingly, the dynamic of man’s occupation in nature and his relations to the universe of things has remained one of the major areas for imaginative artists and writers in creating ‘the myth of the modern age.’ Guthke’s use of the term ‘myth’, in the broad sense, allows one to define how human beings understand themselves. He writes,

Myths have also come into being within the historical period and are still springing up spontaneously in widely differing societies today. Such modern myths (in the sense of images that help to clarify our
understanding of ourselves and of the world) need not imply a leap into the unconscious, possibly as a result of manipulation by special interest groups. These myths may equally well be elements of what Schelling called a ‘mythology based on reason’ (*Mythologie der Vernunft*), and of this there is perhaps no better illustration that what I call ‘the myth of the modern age’ the myth about our neighbors in the universe.\(^{17}\)

A suggestive note in creating ‘the myth of the modern age’ is that an imaginative writer depends on “the poetic myth as the means of unifying his vision and affirming his faith, whatever it may be”\(^ {18}\) and it is his/her way forward in the direction of solving the riddles of the universe, and of positioning human being within it. While existence of the alien is arguable at the empirical level (and it is not the subject of enquiry in this research), the ‘poetic myth’ will takes us forward ‘to achieve a momentous broadening of human horizons to a ‘cosmic’ perspective.’\(^ {19}\) Against this background, for the present research, existence of the alien is “essentially a philosophical one and one that invests man’s reflections on himself with amazement and wonder.”\(^ {20}\) A literary form that has an ability to create modern myth and ignite human imagination and inspire human beings to see the ‘world beyond’ is Science Fiction. It provides us with a number of possibilities of creating myths while offering new ways of seeing things.

### 4. What is Science Fiction?

Science Fiction as a literary form refers to as many definitions as there are movements or types of Science Fiction. The difficulty with identifying Science Fiction—and proceeding from
that to definition—is that Science Fiction is not just one thing. It has no recognisable action, like the murder mystery, or recognisable relationship, like the Romance. Therefore, no single definition of Science Fiction is arrived at though some consideration is given to the specific ingredients of Science Fiction that distinguish Science Fiction from other types of fiction; and some critical standards are set up whereby these characteristics can be evaluated as useful contributions to literature. However, when it comes to specifying what exactly Science Fiction means, it creates long discussed disagreements. In addition, because of the lack of general agreement on definition of Science Fiction, confusion is widespread among publishers, editors, Science Fiction writers and critics as well.

We will begin with the *Oxford English Dictionary* (OED) that defines Science Fiction as “imaginative fiction based on postulated scientific discoveries or spectacular environmental changes, frequently set in the future or on other planets and involving space or time travel.”

In this definition, the basic term in deciding Science Fiction in that Science Fiction is ‘imaginative literature’ and what informs ‘imagination’ in Science Fiction is ‘postulated scientific discoveries’ or ‘spectacular environmental changes’ set in ‘future or other planets’. The OED definition points at the twofold directions for looking at Science Fiction. The first direction asserts that Science Fiction is a much broader category of ‘imaginative fiction’ than it is usually admitted and, it should be used to describe a wide range of fantasy literature. The second assertion would not believe in this argument stressing distinction of Science Fiction on the basis of ‘scientific discoveries’. In this
argument, Science Fiction has been considered fundamentally different from the genres like fairy tales, horror stories in the sense that they are all not concerned with the ‘scientific discoveries’.

We would like to extend the twofold understanding of Science Fiction that is implicit in the above mentioned definition by looking at the western literary tradition that has shaped the Science Fiction genre we have proposed to study. Although the term ‘Science Fiction’ was coined in 1929 by Hugo Gernsback after he founded his pulp magazine *Amazing Stories* in 1926, the genre complex characteristics of Science Fiction could be located within the long tradition of western literature. Therefore, at this stage, it is important to take a brief overview of the western literary tradition that supported shaping the genre characteristics of Science Fiction. Over and above, the proposition in considering the literary tradition is that, as Mark Rose determines, “It is…useful to think of [a genre] as a tradition, a developing complex of themes, attitudes, and formal strategies that, taken together, constitute a general set of expectations.”

### 4.1. Literary Tradition of ‘real’ - ‘non-real’

The western literary tradition has emphasised need of ‘real’ in imaginative literature. The traditional approach to literature assumes necessity of having presence of ‘real’ in the story of fiction. Robert Scholes holds up this observation in *Structural Fabulation* as,

> It is customary in our empirically based Anglo Saxon criticism to distinguish between two great schools of fiction according to the
In its early days, the western literature encouraged ‘non-real’ through mythic avatars of the winged horse, chimera, enchanted castles and flying horses. However, the tradition did not give importance to the presence of ‘non-real’ literature. It was reasoned, primarily, on basis of morality. Plato and Aristotle, though different in their approaches, insisted on the mimetic representation as an essential aspect of relation between text and real world. It was assumed that a writer takes set/sets of action/s from real world and converts it/them into a sequence of words in specific space and time relations on the basis of seeming to be ‘life like’. The basic premise in this would be that literature should be representing the ‘life like’ actions to narrate them in the world we know. Plato had banned literature of fantastic from his Republic because the element of fantastic made the literature ‘a shadow of a shadow’. Aristotle too judged literature as to how probable its events and characters were: realistic plays he held to be better than those using fantastic gimmicks like the deux ex machina. As Kathryn Hulme points out, “At most, acknowledged fantasy was tolerated as nugatory entertainment, but it received no separate, positive status, with the result that fantasy continued to seem fringe phenomena.”

Hulme has observed two approaching towards fantasy in the early western literary tradition. Firstly, according to Hulme, it was
distrust towards fantasy and secondly, it was an acceptance in favour of moral voice of Christianity. In that formative period of literature, the religious myths of culture and privileged fantasies were held to be true. They were the spiritual axioms from which a society worked out its priorities and values, be they to celebrate and exercise one’s physical and mental powers to mould oneself to the rules that define chosen people or, to subordinate oneself to the discipline and hierarchy that promise salvation. However, a point should be noted here that these traditional societies did not recognise myths as we talk of reality in our own time. The aim in traditional society was to imitate ‘godly’ acts and not worldly day-to-day activities. There, the modern sense of individuality had hardly any scope. The individuality was to identify oneself with community, beliefs, totems, ritual etc., and the form of expressions in these societies aimed at win of good over bad, speaking in the voice of god. Art forms evolved from an imitation of already existing mythic patterns and its appreciation was the result of what comes from seeing these patterns.

The Enlightenment changed ways of perceiving reality and it had crucial consequences on imaginative literature. Locke proposed in his theory of *tabula rasa* that each individual is the sum of his or her unique experiences. Lockean assumptions proposed need to understand personal details so as to understand art. Henceforth, individual became an object to perceive reality. Further, Descartes reinforced values placed on individual by stating that one can start with one’s own thinking as the basis for further investigation and speculation. “Overall, Descartes’ philosophical starting point encourages a shift away from the concept of literature
as communication and towards the romantic belief in literature as expression,” writes Katherine Hulme. With the rise of Universities and new education system, newer thinking and information started to be accumulated and eventually disseminated. Acquiring knowledge for its own sake, for the enjoyment of acquiring and deploying it, became more practicable as idea of salvation faded away from the central consciousness of western civilization. The nineteenth century fiction highlighted this concern when realism began appearing at the front stage with construction of the novel form. However, at the same time, with technological developments and modernity, narrative forms became much more complex and it became a difficult task to categorise fiction into real and/or non-real.

4.2 Evolution of Science Fiction

Returning to our earlier point of placing the genre of Science Fiction within the vast domain of literary traditions of non-real and real, the task of deciding on nature of Science Fiction becomes more difficult. It is because the identification of a point of origin for Science Fiction and defining the form of Science Fiction are both being contested. When we come down to specifying in what ways Science Fiction is fantasy literature and at the same time how it is distinctive from other forms of fantastic literature, there has been a lot of disagreement. The analysis of one critic contradicts other on various grounds. Associating Science Fiction with the broad category of fantastic allows one to place Science Fiction across wide range of expressions and different histories and
cultures to speak something fundamental to human make-up. It would be related to human desire to imagine worlds other than the one we actually inhabit. Some critics go back no further than a hundred years and others insist on searching out ‘fantastic’ or ‘Science Fictional’ elements in literature as ancient as itself. There are journeys to Moon or heroic protagonist seeking out new worlds and strange new civilizations in the oldest epics of human culture, from the ancient Sumerian Epic of Gilgamesh onwards. This stream of thought cites earlier texts with the broad understanding of idea of Science Fiction identifying it as ‘Proto SF’ in writing of, for example, Lucian, a Syrian novelist. In his True History, the ship in which the narrator is sailing is caught up by a hurricane and hurled into the sky, from where it sails on to the Moon. John Clute records that writers have written, what he calls, ‘Proto SF’ without realising that they were writing Science Fiction. According to Clute, a text is ‘proto SF’ when “it’s fantastic and realistic elements are described as though they are part of the same overall reality.”

Further, as Clute reveals, in the proto-SF,

We know that for this author the real world and trip to the moon are entirely different kinds of reality. But if the text is written as though the author believes that horse-drawn moon ships might be part of a real world, then it is Proto SF. In other words, Proto SF has to embody a sense- not necessarily articulated at length- that the marvels it depicts can be argued for, if necessary by example and analogy from the existing world.

Basically, the proto-SF was seen as fictional work that “suspends the law of nature in order to give more power to the laws of
nature.” 28 The approach takes us to maintain generally accepted belief that Science Fiction is a response to cultural experiences of Industrial Revolution that began surfacing in the nineteenth century. In this way, much Science Fiction criticism talks about origins of Science Fiction by connecting it with the consciousness of the scientific outlook. Clute and Nicholls add that “there is no sense at all in which we can regard Science Fiction as a genre conscious of being a genre before the nineteenth century”.29 As we have discussed, before scientific and Industrial Revolution, Europeans saw themselves as central players on the stage. Everything, it was assumed, was designed for man; man was essentially different from everything. Other species were food, other races were servants, and the female came from the master’s rib. With the changes in the nineteenth century, a vast knowledge opened its gate. Geologists began to speculate that the fossil record only makes sense if Earth was at least a million years old, which meant that the life was there eons before Earth came into existence.

Then published Darwin’s *The Origin of Species* and it became scientifically clearer that like birds and beasts, and women, men were creatures too. With the Industrial Revolution, western science and technology slowly began gathering momentum and it came in full swing by the 1800 to affect and transform every aspect of individual lives. As a result, two important genres of fiction writing were founded in the period: the historical novel that attempted to give its readers some imaginative handholds on the world that has passed before Progress turned everything inside out; and Science Fiction, as imagined by Mary Shelly, that attempted to bring in sheer fantastic novelty of the creature’s origins
‘manufactured’ by a scientist. In the post-Frankenstein period, an issue of Science Fiction as a form of literature and its distinctness from other forms of fantastic literature became more demanding than earlier.

4.3 Game of ‘Familiar’ and ‘Unfamiliar’ in Science Fiction

At this point in discussion, we would like to reiterate our earlier point by posing questions like: How do we examine ‘the unique configuration’ of the world in Science Fiction? How do we set standards with which we compare human world with different world? How does a Science Fiction writer set to create world of imagination different from the ‘real’ world? Carl D. Malmgren’s view in this regard might be of some help. In his book, Towards a Definition of Science Fantasy, Malmgren positions Science Fiction within the fictional world as follows:

The generic distinctiveness of Science Fiction lies not in its story but in its world. The various plots of Science Fiction, once divested of their alien, otherworldly, or futuristic appurtenances, tend to coincide with the plots of realistic fiction. In order to understand the nature of Science Fiction and its cognitive possibilities, we must examine the unique configuration of its worlds.  

We would like to elucidate Malmgren’s point to sharpen our understanding of the distinct nature of Science Fiction. While discussing the ‘proto-SF’ we could see that Science Fiction creates blurring images that on the one hand, demand fantastic world and
on the other, representational reality set in scientific facts. Nicholls, pointing to this particularly blurred demarcation line, argues that Science Fiction must, by definition, follow natural law whereas fantasy may and mostly does suspend it. Fantasy need not be susceptible to ‘natural’ or cognitive explanation; indeed, supernatural explanation is at fantasy's heart. Although Science Fiction shares with myth, fantasy, fairy tale and pastoral an opposition to naturalistic or empiricist literary genres, it differs very significantly in approach and social function from such adjoining non-naturalistic or meta-empirical genres. Both of these complementary aspects, the sociological and the methodological, are being vigorously debated among writers and critics. The fantasy literature, like myths, also uses the attitude of distancing itself from the world outside but it is different than Science Fiction. The mythological tales or fairy tales, for example, see fixed determined relation or supernatural elements in it. However, such determinations are non-scientific illusions to Science Fiction.

Myth asks ahistorically about man and the world. Science Fiction asks: What kind of man? In what kind of world? Why such a man (or indeed non-man) is in such a world? The mythic narrative is always an absolute statement of constant relationships from “period of sluggish social development.”

Science Fiction’s fundamental difference from the genres like fairy tales, horror stories is that these forms are all concerned with the world that is totally on its own with no connection with the human world. As well, Science Fiction shares with ‘naturalistic’ fiction with the basic rule that man’s destiny is man
and it is understandable by reason and methodical doubt and therefore changeable. In other words, Science Fiction is a literary form that is meant to extrapolate scientifically from experiences that exist in real or natural environment.

At this stage, we would like to argue that the world of Science Fiction necessitates a representation of the universe but it also discontinues itself from what is being represented. This is an experience of disjunction from the basic narrative world created by a character or setting or terrain. Science Fiction, then, relies on what Suvin calls a ‘universe of discourse to be intelligible’. The bug eyed monster with sensory of scientific devices attached will be set in the galaxy of Science Fiction and this particular aspect of imagination informs Science Fiction. Not only that it takes from and revises human history but also puts it out there in the defamiliarised manner that will be different from the representational approach to literature. This means Science Fiction exhibits its peculiarity in two ways. First, Science Fiction requires material, physical rationalisation, rather than a supernatural or arbitrary one within the known world and, second, the world in Science Fiction is differentiated from the ‘real’ world to create unfamiliarised fictional world.

The creation of unfamiliar world is an important formal characteristic of Science Fiction. It will be useful to explain the dynamic of creating unfamiliar world with the help of theory espoused by Victor Shklovsky, a major modern Russian critic. Shklovsky’s seminal work on ostranenie or the process of ‘making strange’, for our purpose, is one way of ‘making alien’ through characters or setting. Although, Shklovsky does not talk about
Science Fiction, he is concerned with a form of literary expression. Therefore, Shklovsky’s theory about literature’s purpose, effects and employment of *ostranenie* may be considered for Science Fiction as well. In his essay, *Art as Technique*, Shklovsky seeks to describe qualities that distinguish art from ordinariness. In perceiving a common object, Shklovsky explains artistic creation as opposite to a simple ‘algebraic’ way of thought and ‘habitualised’ process of gaining meaning in everyday life. For him, the experience of true art, celebrates prolonged perception. Art, according to him, remedies our automatic route of knowing. The artistic value is in its ability to rejuvenate, and ‘make strange’ a common act, object, or feeling that is otherwise rendered dull and lifeless by habit. In other words, the technique of art is to make things ‘unfamiliar’. Shlokovsky illustrates the basic idea of *ostranenie* with the use of Leo Tolstoy’s short story *Kohlstomer*, a tale narrated by a contemplative horse who is baffled by human behaviour. He muses quite profoundly and profusely, for a horse or for a human, on the notion of property, of which only a brief portion is included here: There are people who call women their own, or their ‘wives’ but their women live with other men. And people strive not for the good in life, but for the goods they can call their own. As Shklovsky analyses, defamiliarisation is at work in these two sentences of Tolstoy and the primary agent for the defamiliarisation is the horse’s narrative voice. The institution of marriage and the desire for material things are commonplace to us, but the perspective of the horse renders them anew, as the horse has never owned or desired to own anything. Thus, Tolstoy’s tale of the horse is artful, by Shklovsky’s definition; for it causes the
reader to temporarily abandon his usual conceptions about private property, goodness, and even the average horse. The horse is important for our research as it resembles ‘alien’ that has ability to prolong one’s perceptions and in effect, reconstruct the reader’s previously held notions of an object.

Science Fiction, while sharing quality of ‘artful’ literature of making the familiar seem unfamiliar demonstrates it through the language, other world or the theme of alien. Science Fiction’s use of the alien in different shapes and forms create the defamiliarised art work. Thus, Science Fiction by taking on the theme like alien generates enormous possibilities of creating marvellous and disengaging readers from the ordinary representation of human life.

4.4 Cognitive Estrangement and Structural Fabulation

Darko Suvin takes forward the idea of creating defamiliarised world in Science Fiction with his nuanced understanding of the formal feature of Science Fiction in his essay, *Metamorphosis of Science Fiction*. With the publication of the essay in 1979, as Milner opines, “critical theory has transformed Science Fiction studies from a ‘fan’ enthusiasm into a scholarly sub-discipline.” 33 It was in this work that Suvin has introduced two concepts that are central in our study of Science Fiction: ‘cognitive estrangement’ and *novum*. For Darko Suvin, Science Fiction is

A literary genre whose necessary and sufficient conditions are the presence and interaction of estrangement and cognition, and whose main formal device is an imaginative framework alternative to the author’s empirical world. 34
However the concept, although particularly clear in theatre, is in fact of more general, cultural for its potential usefulness. By ‘cognition’ Suvin means the seeking of rational understanding, and by ‘estrangement’ he means something akin to Bertolt Brecht's *Verfremdungseffekt*. Actually, the concept of estrangement proposed by Suvin was first introduced by the Russian Formalists and later developed further by Brecht. Brecht defined *Verfremdungseffekt* in 1948 as, “A representation which estranges is one which allows us to recognize its subject, but at the same time make it seem unfamiliar.” 35 ‘Cognition’ with its rational, logical implications, refers to that aspect of Science Fiction that prompts us to understand unfamiliar landscapes in a Science Fiction narrative. Estrangement, in Suvin’s opinion, refers to the element of Science Fiction that we recognise as different, that ‘estranges’ us from the familiar and every day. Adam Roberts explains,

> If the Science Fiction text were entirely concerned with ‘estrangement’ then we would not be able to understand it; if it were entirely to do with ‘cognition’ then it would be scientific or documentary rather than Science Fiction.36

In Science Fiction, the co-presence of cognition and estrangement allows Science Fiction to relate itself to the human world while challenging the ordinary and the taken-for-granted. Suvin explains it further by explaining formal feature of Science Fiction makes his point in *Metamorphoses of Science Fiction* by defining the genre as:
A fictional tale determined by the hegemonic literary device of a locus and/or dramatis personae that (1) are radically or at least significantly different from the empirical times, places, and characters of ‘mimetic’ or ‘naturalist’ fiction, but (2) are nonetheless—to the extent that SF differs from other ‘fantastic’ genres, that is, ensembles of fictional tales without empirical validation—simultaneously perceived as not impossible within the cognitive (cosmological and anthropological) norms of the author’s epoch.  

Robert Scholes in his *Structural Fabulation* extends Suvin’s point further to the metaphorical aspect of cognition. Scholes defines fabulation as, “fiction that offers us a world clearly discontinuous from the one we know, yet returns to confront that known world in some cognitive way.”  

While Scholes’ idea of discontinuity shows certain similarity with the Suvinian estrangement, he emphasises the point that though being discontinuous, Science Fiction is not escapist or irrelevant. According to Scholes, Science Fiction is both different and the same, both discontinuous from our world and the also confronting world in cognitive way. The fabulation, in Scholes’ opinion, has been favorite vehicle for religious thinkers precisely because religions have insisted that there is more to the world than meets the eye, that the common sense view of reality is incomplete and therefore false. Science has been telling us much the same thing for several hundred years. Thus, it is not surprising that Science Fiction should employ the same narrative vehicle as the religious fictions of our past. However, Scholes differentiates between ‘romances of religion’ and ‘romances of science’. He says that romances of religion are ‘dogmatic’ whereas romances of sciences
are ‘speculative’ fictions respectively. As opposed to dogmatic narratives of religions, ‘speculative fabulation’ is a creation of humanism, associated from its origins with attitudes and values that have shaped the growth of science itself. Since Thomas More’s *Utopia*, ‘speculative fabulation’ has seen growth and developed and born of humanism and later, it has been fostered by science. While taking his own point further, Scholes argues that the structural fabulation is modification of speculative fiction “by awareness of nature of universe as a system of systems, a structure of structures and the insights of the past century of science are accepted as fictional points of departure.” Unlike Suvin, Scholes considers Science Fiction as more than mere scientific version of fiction. For him, structural fabulation is neither scientific in its methods nor a substitute for actual science. It is a fictional exploration of human situation made perceptible by the implication of recent science. In this sense, Science Fiction becomes a term to suggest denotations. Robert Scholes characterises Science Fiction as a “modern body of fictional works” that “accepts or pretends to accept a cognitive responsibility to imagine what is not yet apparent or existent, and to examine this in some systematic way.”

The theoretical models of Suvin and Scholes that we have discussed so far broadly propose that the reader enters into the imaginative world (estranged) of Science Fiction that is different in greater or lesser degree from the empirical world around the writer or the reader. It is different in a way that it obeys rational causation or scientific law which Suvin refers to as estranging cognitively. The cognitive aspect presents an image of a different world as
understandable in the terms of contemporary reality, and “it sees the norms of any age, including empathetically its own, a unique (and) changeable”.\textsuperscript{41} Taken together, cognitive estrangement means that the genre is realistic but it also presents readers with settings and situations that are alien to them. The element that introduces this sense of estrangement Suvin terms the \textit{novum} or new thing. The estranged is that it presents itself in strangely new way or in Suvin’s word, through a \textit{novum}: a deviation “from the author’s and implied reader’s norm of reality.” \textsuperscript{42}

\textbf{5. Novum}

\begin{quote}
A \textit{novum} in Science Fiction is a way to experience cognitive estrangement. Suvin coined the term, \textit{novum}, the Latin phrase for ‘new’ or ‘new thing’. This is the most important part of Suvin's definition, and the easiest with which to agree, is the emphasis he puts on what he and others have called a \textit{novum}, a new thing - some difference between the world of the fiction and what Suvin calls the empirical environment, the real world outside. Originally, the term, \textit{novum} was coined by Ernst Bloch, for whom it referred to those concrete innovations in lived history that awaken human collective consciousness out of a static present to awareness that history can be changed. The \textit{novum}, as imagined by Bloch presents a wide scope for transformation and Science Fiction suits to being \textit{novum} as it has inherent desire to imagine the world through transformations. Suvin, while talking about the \textit{novum}, refers to the point of difference of Science Fiction from other literary fields. He says,
\end{quote}
I want to begin by postulating a spectrum spread of literary subject matter which extends from the ideal extreme of exact recreation of the author’s empirical environment to exclusive interest in a strange newness, a *novum*.\(^4\)

According to Suvin’s argument, *novum* in Science Fiction is rational, as opposed to the supernatural intrusions of marvellous tales, ghost stories, high fantasy and other genres of the fantastic. In Science Fiction, the *novum* might be a material object like a spaceship, a time machine or a matter-transportation beam; or it might be something conceptual, such as a new form of gender, or a wholly new way of organising society. In a *novum*, a thing or things that differentiate the world portrayed in Science Fiction from the world we recognise around us, is the crucial separator between Science Fiction and other literary forms. As claimed by Suvin, the worlds depicted in the Science Fiction *novum* are not ‘that’ different from the world we live in, Science Fiction is not so far from reality as it may seem. Science Fiction’s uniqueness among other forms of naturalistic fiction is because of the place and/or characters portrayed in Science Fiction that do not belong to our world (that is, *novum*); but Suvin also separates Science Fiction from fantastic genres because a *novum* introduced by an author is validated through cognition. While portraying different worlds from our own, the genre offers a new point of view in dealing with real world. There are other forms such as myth and fantasy, these are also alternate but what makes these forms different from Science Fiction is the idea of cognition. In Suvin’s postulation, we can see that a Science Fiction text may be based on a *novum*, such as the device that enabled H G Wells’ hero to travel through time.
in *The Time Machine*. More usually it will be predicated on a number of interrelated *nova*, such as the varieties of futuristic technology found aboard the starship enterprise in *Star Trek*, faster than light travel to other world or strange aliens talking to human beings. The *novum* is not supernatural; so as to be a part of Science Fiction and need not necessarily be a piece of technology. Ursula K. Le Guin in her *On Not Reading Science Fiction* writes:

People who don’t read it (Science Fiction), and even some of those who write it, like to assume or pretend that the ideas used in Science Fiction all rise from intimate familiarity with celestial mechanics and quantum theory, and are comprehensible only to readers who work for NASA and know how to programme their VCR….Most of the scientific ideas in Science Fiction are totally accessible and indeed familiar to anybody who got through sixth grade, and in any case you aren’t going to be tested on them at the end of the book.44

In this sense, the central *novum* in Ursula Le Guin’s *The Left Hand of Darkness*, for instance, is a different model of gender, although there are other, more technological *nova* in that novel, including interstellar transport and a hyperspace walkie-talkie called as ‘ansible’. These *nova* are grounded in a discourse of possibility, which is usually science or technology and, which renders the difference in a material rather just a conceptual or imaginative one. A *novum* functions as a kind of trigger: it alerts the reader to the fact that she cannot take things for granted, cannot assume that the text she is reading reproduces the world in which she lives. A *novum* puts us in the position of rewriting the reality (with which we are familiar) and reconstructing a different reality. The more
expertly a novum is deployed, the more thorough the imaginative encounter with the difference can be. We are going to look at one such novum: the alien.

6. Alien as a novum

The primary focus of the present research is going to be a study of the alien as a novum. The main interest lies in the fact that the alien world engages the reader in the experience of alienation and gives newness of the body and the space through fictional narrative. The alien might be an extra-terrestrial being or a new ‘alien’ setting or a landscape from the other world of a foreign planet. The alien world might include new idea of civilisation followed by different social structures as part of the new setting. In short, the creation of the alien world involves attempt of making the reader feel that a concept, a sight, an object depicted in Science Fiction are not of this Earth as we now know them.

The methods and meanings of devising such alien(s) comprise two categories: ‘conceptual’ and ‘perceptual’. The first refers to objective methods based on science, the second to subjective methods of the emotional reaction. The conceptual method of alienation is one that stresses the impartial, objective, scientific data of a world- the aspects of that world which exist whether a human is on it or not. A conceptual world is brought into existence through scientific facts. The perceptual method is one that stresses sensory perception; the ‘feeling’ of world, its emotional impression, the reactions to the impartial physical data and its relationship with it when human beings live on the planet.
Unlike conceptual method, the perceptual method is about human perception of the alien world through devices of images, direct analogy between terrestrial and extraterrestrial world and synesthesia. The main argument in our research is that the theme of alien raises the concerns of self (humanhood) and seems to leave it open without espousing a definitive answer. This means that the alien in Science Fiction allows a writer to construct a fictitious concept or a linguistic convention. At the same time, contrary to Katherine Hulme’s view, Science Fiction’s quest for an understanding of the Self through the alien raises the second issue: the issue of the uniqueness and individuality of the Self, a central concern in the issues of the human existence. While the question of the criteria of personality of a human being is typically approached from an objective, analytical and logical perspective, the question of what makes one his/her own personality can be approached from the individual’s own perspective in his life. The alien in Science Fiction might challenge understanding of the way a personality is formed to focus on human being’s confrontation with the daily life and its position within broader world outside. This raises certainly different sets of questions about idea of being Self and human. For instance: What is it about human beings that make them unique as human beings? What is it that makes each human individual unique? In the following chapters, we would like to address these concerns while reflecting on significance of the alien in Science Fiction of Gwyneth Jones and Nicola Griffith. Before that, we