Chapter III:

A Parametric Study of Rimi B. Chatterjee’s *Signal Red*-a fervent appeal against use of science in war to secure power
Chapter III:

A Parametric Study of Rimi B. Chatterjee’s *Signal Red*-a fervent appeal against use of science in war to secure power

3.1. Introduction

Rimi Chatterjee believes that science fiction is that pillar upon which new ideologies of different cultures can come into force. It is true the genre science fiction is born due to scientific revolution all over the world. But writers are acutely observing the possible impact of this revolutionary development in their works. The present chapter critically studies how Chatterjee is most conscious about science and its use for establishing a particular ideology in Indian context. Along with this it also studies Chatterjee’s mastery of utilizing the basic parameters of science fiction.

3.1.1. Rimi B. Chatterjee as a Writer of Science Fiction

Though Rimi B Chatterjee was born in Belfast (UK), she has been spending her life in North Bengal India. She came to India in 1986 for her primary education at Modern High School Calcutta. Later she completed her BA in English Literature from Lady Brabourne College, affiliated to Calcutta University. In 1991 she joined Jadavpur University for her MA. She did her Ph.D from University of Oxford, London in 1997.

After finishing her education she worked on writing fiction. Her first novel *Live Like a Flame* was completed in 2001. But she did not find a publisher for the same until 2010. Harper Collins in India finally published the novel by changing the title to *Black Light*. During 2000 to 2010 she worked on writing the History of Oxford University. She also published a translation of Rabanidranath Tagore’s autobiography *Apon Katha (My Story)* in 2004. It was in 2005 that she wrote her first Science Fiction *Signal Red* published by Penguin India. In the year 2007 she published *The City of Love*. Currently she is the editor of *Project C*, a graphic story magazine. In the same magazine she published a short graphic story *Killer*. In the year 2007 she contributed
The Key to All the Worlds to the Indian Science Fiction magazine Superhero: The Fabulous Adventures of Rocket Kumar and Other Indian Superheroes.

3.1.2. A Brief Summary of Chaterjee’s Signal Red

Signal Red is the story of a defence scientist Dr Gopal Chandran who works in a semi-secret defense lab in a parallel future world around 2015 in India. The paperback version of the book was published in 2005 and the e-version was published in 2011. So it becomes clear that the book visualizes the future which is not remote or unreal from the present. There are three parts of Signal Red. The first is entitled Anu, the second Vidura and the third Gopal named after three characters. All of these three play major roles in the novel. Part I is about Anu who is a guest to Vidura and Gopal home which is in the campus of the Centre for Advanced Research and Development of Defense Science where many scientists are busy in their various projects creating new weapons for the war to defend their nation. Gopal is one of them. Infact he is the head of one of such teams who constantly works on experiments with new futuristic technologies to be used in the defense of the country. Anu has actually come to study the life of scientists, their purpose of work, their motivation and social status and how they personally feel for their work.

When asked by Anu, Vidura informs that Gopal is working on sensors. Vidura also talks about Rahil Vidyadhar who is a Sanskrit scholar. Rahil is researching on a set of ancient manuscripts. One of Gopal’s projects concerns a kind of medieval glass that was found only in a particular village in India i.e. Songarh. The glass is deep red in color and is called Signal Red. This glass is used in making jewellery and lamps of red signal. A set of Sanskrit manuscripts are found on the site. They are series of lovely poems. The Centre thinks there must be connection between the poems and glass making process. Therefore Rahil is here. Anu meets Rahil who talks about his plan of setting one foundation for motivational assessment and correction. It will help those scientists who get demotivated and lose the ability to work as in the case of Dr Sheth. Gopal tells Agniv how the arrogant behavior of Dr Sheth led the Director to change his position. Dr Sheth is not allowed to come near to the lab or go outside the campus. It shows the Centre is a totally and socially detached world having no connection with the real world as such. The Centre is world where scientists are
spending their days and nights for experiments and projects by sacrificing their social and personal human life and values.

Anu is surprised to know that no internet facility is given to the campus of the Centre for the reason of security and since scientists work for Defence which is department of highest sensitivity and confidentiality in our nation.

Gopal explains to Anu that he makes weapons to finish the enemies of our nation. His work belongs to Defense Science which has to be secretive. Anu refers to Prasad’s powder work which will have its effect from generation to generation. Anu objects to such weapons which disregard human values and life.

In the second part Gopal sees some smudgy paper in his locker. The paper describes the design of power supply. When Gopal reflects on its implications, the Director argues with him that it is not good for scientists of the Centre to imagine the implications of the weapons since all weapons are made for destruction - moral, physical, economical, social and human.

Rahil is distorting history. He is trying to project a vision of science that is linked with a culture where they are living - totalitarianism with human face. Gopal has to do field tests is Songarh. When Vidura asks Gopal how does he feel working as a scientist at the Centre. Gopal at first answers that it feels like a hen who has nothing to do but lay eggs. Then the eggs disappear and you have no right to know where they have gone. People inform that the eggs turned into monsters. But how can something born in love and pride bring death. Vidura understands the agony of Gopal. She insists on going to Songarh to see the Signal Red project. In Songarh village there are big havelis which sound romantic but very dirty. Tourists have to eat basic food. On their way they visit Sparta. A place is known for having 700 women for 1000 men. Rich families import women for their younger sons. Vidura meets Putalibai who depicts the poor condition of people in India. She proposes to set up an organization for such people in Songarh itself. Gopal tells her that the village belongs to the Centre and the Centre will not allow doing it. And the local administration or panchayat has nothing to do anything with it. Vidura questions Gopal about constant visits of doctors to the village. Gopal says that the people suffer from sickness, malnutrition, poverty, unhygienic water supply, insects vectors, and animals and men live in the same
building, opium etc. Gopal and Vidura realize that they are not at all free. They are prisoners like Putalibai.

In the third part Gopal comes to know that Vidura is in the fifth months of preganant. His team members Agniv, Namrata, Sachdeva are busy in watching computer screen and experiment of insect Vector data with which people will not only turn sick but also die. Agniv tells Gopal that some basic questions bother him a lot. For example, why he is at the Centre, why he is dong this, what makes him do the job at the Centre, is he really happy at the Centre. Later Gopal has the same questions and feels guilty of being a part of the system which generates weapons to kill people. He cannot remove this feeling from his mind which makes him angry and disturbed all the time. War and weapons are both offensive and defensive and both of them are major concerns of any civilization. Gopal feels very sad about Agniv’s absence from the Centre. Moreover he is also disturbed by the fact of his inability to convince Agniv, who overheard a conversation between Rahil and the Director, regarding the news of aircraft missile incident at Naigoan, and a tiny village Gaya is disturbing Gopal. It is getting difficult for Gopal as to whom to trust. Gopal starts asking questions of himself. He does not know what to do against the authorities as the Director and other seniors can no long be trusted. He understands their goal is to do evil. He wonders if he would he leave like Agniv or would he have no option like Shethji. Gopal is just thinking about unanswerable questions. In the Pune conference Gopal meets the prostitute and they share each other’s grief, life experiences and their journey. Gopal is fighting over two contrary thoughts. He does not understand who is right and who is not. He is messed even with his own existence and his own choice of work. Sometimes he considers his masters at the Centre as representing entirely the republic of India. He is confused with whom he is working. After coming from Pune Gopal gets an order of transfer. Gopal has been selected under the Defense Oriented Research Act and he has only three days to join the new post. Gopal goes directly to meet Anu without telling Vidura anything about his transfer to Mumbai. He runs from the Centre like Agniv. But the authorities of the Centre make Gopal another Sethji.

3.2. Science in Rimi B. Chatterjee’s *Signal Red*

In the novel, science is highlighted as a defence project of manufacturing war arsenal to protect India from enemy attack. Scientists are employees of the Defence
Service’s Centre of Advanced Research and Development. Dr. Gopal leads a group of twelve scientists working on nanotechnology of glass to manufacture what is called Signal Red glass. Signal Red glass is a kind of medieval glass. It is found only in a particular village of India, that is, Songarh. The glass is deep-red in color and is used in making jewellery as well as Red Signal lamps. A set of Sanskrit Verses on a manuscript were found on the site. Gopal is working on the glass to make sensors. He is working on a novel glass application theory to make glass nanowires, photonic computing shields and security sensors. The research is meant to provide to Indian soldiers the ability to see even in the dark. The technology that results from the research would help to implant in the human eye a thin layer of glass that would enable the persons/ soldiers to see naturally even at night. Throughout the novel the author tries to show technology as most likely the solution for social problems. In connection with this Mark Bould and Sherryl Vint observe:

As SF developed, it intended to move more towards imagining technology as the panacea for social problems, becoming less successful at imagining alternative social and economic arrangements. The emphasis on innovation and science that the genre took from other enrolments increasingly tempers the drive for political change, but SF does retain this desire for another-often better- world.¹

The scientists at the Defence Centre were sequestered from the real world of people and lived a life which denied to them freedom which normal human beings enjoyed. This was because the scientists were working on a TOP SECRET defence project. In Anu’s words:

The Scientist working in very advanced fields is by and large employed by the state, in other words, in defence. This inevitably brings with it the ethical question of killing people. To work, the scientist must be convinced that it is right and fitting to kill people in certain moral and political circumstances, but he or she has no actual say in the deployment of weapons.²

In the novel, the village Songarh was once a beautiful, peaceful village. But after take-over by the Army it became a village of disease. When science is used for defence purposes, to make arsenals, human life and human values are sacrificed. This
aspect of science for war is emphasized in the novel. The moral aspect of science keeps on appearing in the novel. Ken Macleod optimistically looks at the genre “science fiction is essentially the literature of progress, and the political philosophy of science fiction is essentially liberal”.3

Agniv was bothered about basic questions like being guilty of making weapons of destruction only to fulfill the ambitions of the politicians at the helm of affairs of our country. Gopal, too, had similar feelings, but the Director convinced him thus:

I do not need to tell you that the nature of warfare has changed. This is the age of technology; we are living in a world governed by strategic nuclear weapons, pulse bombs, neuro-bombs, biolock bombs that can seek you out at your daughter’s wedding and kill just you only. I can name seven major countries that possess such weapons and two are our neighbors.4

Later in the novel, Gopal stresses the fact that the scientific research depends largely on funds. Gopal explains this fact to Anu:

….we scientists have always gone with whoever had the most funding, the biggest facilities, the most unquestionable authority like prostitutes. I’m no different from that woman, Anu. I was greedy for money and an easy time of it, and afraid, afraid of all those brains in Cambridge, solving the mysteries of the Universe while I struggled with my little problems, afraid I didn’t have it in me to compete in their world. Science is brutal with reputations. All our work deals with what’s there, and you can’t invent what’s there. It’s not like that in the arts. If you write a book or a symphony, it’s yours forever. No one can else write it better and wipe your name off the title page.5

The novel ends with Vidura writing a letter to Anu. She mentions in the letter how Gopal was brought to the Centre by Murthy and company in a miserable state. It is very difficult for her to accept the condition in which Gopal is. She mentions that she has failed to understand Gopal as a man and husband. Brooks Landon’s views:
Science Fiction and Science Fiction criticism have come in the attempt to understand violence and war in a century where history has proved sadly inimical to such an effort. Just as surely as science fiction has played some role in the construction of the myth of the superweapon in the twentieth century it may now be taking tentative steps toward contributing to myths of peace in the twenty-first century.6

The authorities of the Centre inform her that Gopal has to go through extensive medication and physiotherapy to counteract the effects of the stroke. They also inform that it was mainly because Gopal collapsed on the train from Mumbai. Dr Golwakar thinks Gopal will be well enough to come home in two or three month’s time. Mani informs that Gopal is trying to speak and apologise for what he has done to him. When asked about the future, Mani Shethji laughs and states that neither he nor Gopal is going to leave the Centre. Gyan Prakash, in his book Another Reason: Science and the Imagination of Modern India, states

To speak of India is to call attention to the structures in which the lives of its people are enmeshed—railroads, steel plants, mining, irrigation, hydroelectric projects, chemical and petroleum factories, public health organizations and regulations, the bureaucracy and its developmentalist routines, educational and technical institutes, political parties, media and telecommunications, and, now the bomb.7

The text is an attempt to visualize the possible dystopic nature of science. Chatterjee is very much concerned with the brutal aspect of some scientific organizations in India and political interference in them destroying the life of young scientists like Gopal.

3.3. The Handling of Space and Time in Signal Red

Science Fiction is famous for warping time and space. But Rimi B Chatterjee exercises restraint in warping the use of space and time in her novel Signal Red. It is as if the writer is writing a traditional novel or she intends not to experiment with time and space by presenting events either of time past or future and creating some effect in a work so that it could be called Science Fiction. There is a sequence of events happening at the Centre in chronological order of time. The narrator does digress in
telling the events of the past of individual characters. For example, Putalibai narrates her story to Vidura, the prostitute Aishwarya meets Gopal in Pune after his Conference and narrates her story to Gopal and Gopal too narrates his past story to the Prostitute. The common thing about the three digressions is more than the grief or agony of life they share with one another presented in the relatively same pattern of time and space only altering the places but the mode of warping time and space remains the same. At the beginning of the novel Vidura welcomes Anuprabha Shastri. They were together at Cambridge. Anu points out how a whole decade has passed so suddenly after their having been at Cambridge in 2015. It means they are living in 2015 and the story is set in time future as the novel is published in 2005. It is about futuristic technologies of India. Anu travelled from Mumbai to Vindhyas, the northern corner of Madhya Pradesh. When Anu comes to the Centre, she understands that phones do not work due to security reasons. Vidura further informs how Gopal is always busy at the Centre and it has been 11 years since she left Cambridge.

The story presents the life and memories of a few characters. The writer does not set the story in the past or future. It is just a psychological flashback of some memories, not the events. Actually, action or event happens in chronological order of time. The memories of the past of a few major characters namely Dr Gopal, Anuprabha Shastri, Putalibai, Agniv, prostitute Aishwarya and Vidura are presented as flashbacks. The interesting thing about the text is that it primarily deals with future technology. Dr Gopal is working as the head of a group which is constantly experimenting with making innovative weapons of war. He and his team work on the Signal Red glass project on the campus of the Centre for Advanced Research and Development of Defence Science where many scientists are busy in their various projects creating new weapons to defend their nation during a war.

One of Gopal’s projects concerns a kind of medieval glass that was found only in a particular village in India i.e. Songarh. The glass is deep red in color. It is called Signal Red. The Centre thinks there must be some connection between the poems and the glass making process. Anu wishes to see the lab. Gopal tells her that it is only for the employees and authorities, not for others. She can wander on the ground and go to visit some staff families. That is what she can do there. It indicates that only a few selected people have the access to the lab at the Centre.
Barring the Centre, Songarh is the place where a majority of events take place. Gopal and Vidura travel to Songarh. Gopal is there mainly for the field test and Vidura is there for a change. Vidura meets Patalibai and her four children Baby, Jaguu, Ruby and Chotu in a disorganized hut. Patalibai’s miserable story takes readers to time past of her life. About Songarh Gopal tells Vidura that the village belongs to the Centre. A majority of people suffer from sickness, malnutrition, poverty, unhygienic water supply, insects, vectors, animals and men live in the same building. Therefore doctors visit Songarh.

After completing his visit to Songarh, Gopal comes to know that Vidura is pregnant. In the third Part of the book the writer presents how time and events pass quickly in the life of Gopal. Gopal’s psychological journey runs fast. Vidura gives birth to a beautiful daughter. But Gopal is disturbed mainly because Agniv decides to quit the Centre, because he overheard the secret conversation between Rahil and the Director. Rajdaksha and Basu are desperate to have a war to test their deadly weapons. Without caring for moral implications, they get the Bill for defence passed.

During the Defence System and Materials Conference in Pune Gopal meets in his room, one woman, a prostitute named Aishwarya. She narrates her journey of life from marriage to entry into the world of prostitution. This is same method the writer adopts with respect to Patalibai. Then Gopal narrates his story. He talks a lot about Vidura and how he has betrayed her as well as himself, by joining the Centre. He confesses that he is not happy with his work and decision to serve here in India. During the return journey he remembers all the words he had shared with the prostitute. Within his mind a bitter feeling of hatred and anger is growing against himself. Gopal is torn between two opposite ideas. He does not understand which is right and which is not. He is confused even about his own existence and his own choice of work. Gopal burst out in anger to Prasad that they are all animals in a cattle market. They do not have a choice. Later Gopal is highly disturbed when S Murthy hands Gopal the order of transfer. He informs that Gopal has been selected under the Defense Oriented Research Act and he has only three days to join the new post. Then S Murthy uniforms about all the conditions, rules and regulations to Gopal attached to the new post. Then the scene of action shifts from the Centre to Mumbai when Gopal goes directly to meet Anu without telling Vidura anything about his transfer to Mumbai. He is desperate to be free. Anu thinks that he should go back and belike
Mani Shethjii. But Gopal is not ready to go to the Centre. Gopal thinks that he has become a Frankenstein and the Centre people are monsters who are after him. S Murthy finds Gopal and takes him to the Centre. The novel ends with Vidura writing a letter to Anu. She mentions in the letter how in a miserable state of condition Gopal has been brought to the Centre by Murthy and co. The exchange of letters between Vidura and Anuprabha also reveals some course of action in the novel. Thus Rimi Chatterjee does not allow her narrator to warp time and space as other Science Fiction narrators do. She believes in presenting a series of events in the sequence of time. Her focus is mainly on developing the characters. The novel traces the psychological journey rather than the physical journey of the protagonist Dr Gopal Chandran. The narrative has been presented as a comment on how science can be used to turn democracy into totalitarianism.

3.4. The Handling of Characters with Realism in Signal Red

There are three parts of Signal Red. The first is entitled Anu, the second Vidura and the third Gopal, after three characters. All these three, play a major role in the novel. Unlike Science Fiction where writers are busy in making their heroes powerful, omniscient and gifted so as to pose doubt about whether the heroes are really gods in disguise, Rimi B Chatterjee makes her hero a genuine scientist and a human.

Dr Gopal Chandran works at the Centre for Advanced Research and Development of Defense Science located in the Vindhyas, the northern corner of Madhya Pradesh. The scientists are busy in their various projects of creating new weapons for the war to defend their nation. Gopal is one of them. Infact he is the head of one of the teams and he constantly works on experiments with new futuristic technologies to be used in the defense of the country. Gopal is not gifted enough to be able to change shape at will, to be a spaceship and a submarine and to think like a computer and to move as fast as light like a Science Fiction hero. It is believed that Science Fiction writers create characters that not only make the Universe but also save the entire Universe. But Chatterjee does not create such a situation in her novel. The hero Gopal himself is trapped in the system of the Centre.

Scientists and their wives and their thinking are controlled by the Centre. It is Anu who reveals to Agniv and Gopal the truth that scientists working at the Centre
are controlled by the authorities of the Centre, by asking questions relating to their work. She comes to study the life of scientists, their purpose, their motivation and social status and how they personally feel about their work. She points out in her study that the Centre is totally and socially detached world, for the scientists have no connection with the real world as such. They spend their days and nights on experiments, and projects at the cost of their social and personal lives and values. Anu is surprised that no internet facility is extended at the Centre for reasons of security as scientists work on Defence equipment which are of highest sensitivity and confidentiality. Anu understands that people on the campus are provided excellent facilities of living but they are not totally happy for what they are and what their position is. Difficulties are networking, outer world connection, no internet, absence of sources of entertainment. A huge sacrifice is made by the wives of scientists at the Center. Vidura is one of them. She is not happy with her life at the Centre. She feels lonely on the Campus. Later when she visits Songarh and meets Patalibai she understands the life and struggle of the poor people of India. In fact for the first time in her life she comes into contact with the Indian poor. She observes the poverty and cruelty of fate at Songarh. She wants to help the poor but the Centre does not allow her to do because social connection is not allowed. Her feeling of loneliness disappears for a time, when she gives birth to a beautiful daughter Vatsala.

Gopal feels unease with the authorities of the Centre. At first he is not happy with Agniv’s decision of leaving the Centre, but later he thinks Agniv has taken the right decision. Overhearing the secret conversation between Rahil and the Director also disturbs Agniv. He feels guilty about his work as well. While working on the Signal Red project he discovers what his masters are really up to, and the kind of weapons that are being created by people like him. He gets selected to be part of an 'invisible' project, and tries to run. Gopal’s character indicates dualism of east versus west.

By and large, Rimi Chatterjee provides only a framework of theoretical Science Fiction to her characters, who can be identified in soft science fictional work or mundane Science Fiction. Chatterjee is concerned with the implications of futuristic science and its influences on the mind of the characters. By doing this, all her characters appear to be real, having socio-political connection with the existing scientific world of India. Gopal’s character gives a strong message of how a
developing country like India is employing its talent to establish hegemony or Hindu ideology. Thus what makes Chatterjee’s characters seem realistic Science Fiction characters is their passive role in scientific development of their country leading to establishing a new hegemony in the world. Indian Centre for Advanced Research and Development of Defense Science wants to establish power all over the world by creating deadly weapons for war and by sacrificing the life of scientists like Gopal and Shethji. Thus resemblance of characters to the real world of Indian science, leads to a link between religion, science, and politics in India.

3.5. Narrative Technique benefits in Minimizing the Distance between Setting and Events in Signal Red

It is experiential that modern fiction has introduced new modern ways of narration. But in Science Fiction, writers of the genre are cautious in making use of new ways of telling a story. There is plenty of scope for Indian Science Fiction to make experiments in narration, like hypertext, but in actual practice this has been in minimal use. Mostly, it is traditional narrative storytelling mode with which Indian Science Fiction is at home. Rimi B Chatterjee is also straight in communicating her ideas of science and their relation with religion and politics of the country though her ideas are not as strange as one would wish. She employs an omniscient narrator who narrates events in the chronological order of time. Chatterjee uses a very simple mode of narration. The narrator travels into the past in telling the past stories of a few characters. He takes a solid position when a few characters narrate their journey of life by resorting to the flashback technique. As it is evident from the stories of Patalibai who presents her miserable past tale of her life to Vidura, the prostitute Aishwarya who narrates to Gopal her journey from marriage to the world of model – turned- prostitute, and Gopal’s own journey from childhood to that of a scientist to Aishwarya in brief. In these three cases one prominently common thing is that the three characters are not happy at all in their current phases of life and talk a lot about society in anger. When they present their tales one can observe that they are by force the product of society or system. The narrator minimizes the distance between time and setting while presenting the past memories of Patalibai, Aishwarya and Dr Gopal. Another method employed is the partly epistolary technique. But it is the narrator who
informs us about the exchange of letters between Vidura and Anuprabha Shastri. Through the last letter of Vidura to Anu we come to know about Gopal’s tragic end or how Gopal has been squeezed into the line of Dr Shethji by the authorities of the Centre. Most of the events happen at the Campus of the Centre. The narrator stresses the intellectual, physical, religious, economical and social control of the Centre over the scientists and their wives while narrating the story.

3.6. The Presence of Epical Pattern, Element of Suspense, Grandeur and Impossible Probabilities and Improbable Possibilities in *Signal Red*

It is easy to identify the similarities of elements between the classical form of epic and Science Fiction. But it is not possible to see all these similarities in each work of Science Fiction, esp. Indian Science Fiction. It is mainly because Indian Science Fiction writers suffer from some limitations such as, creating suitable plots, characters and even setting. The first is handling of theme or subject. Chatterjee deals with a lofty or grand subject of visualizing the possible implications of futuristic technology leading to creation of destructive weapons for the world war. It is universal that many societies are concerned with both defence and power. To achieve this purpose they go to their extreme level of creating deadly weapons. Though Chatterjee presents Indian Centre for Advanced Research and Development of Defense Science where many scientists are busy in various projects of creating new weapons for the war to defend their nation, scientists and the nation represent various societies in the world trying to deploy hegemony by using the source of science.

The second epical element is that of an adventure. In the novel many scientists are working on different projects. Gopal and his team are working on Signal Red glass project which is very adventurous. Gopal visits Songarh for the experiments. When asked by Anu, Gopal tells that he is working on a novel glass application: glass nanowires, photonic computing shields and sensors. But his major work is on flexible sensor displays. It is for Indian soldiers who can see even in darkness or in a dark alley. According to Gopal such futuristic technology would be very effective as it is to implant a layer into an eye that gives the capacity to see even in darkness as naturally as possible without putting on goggles or helmets. But it needs proper implantation and training. In Gopal’s case Agniv Nag helps him a lot to find the results of their
constant day and night laboratory work at the Centre. In the novel, it is an intellectual adventure which is bound with hero’s fight against evil implications of the work he is creating. Unlike in Science Fiction where adventure consists in voyages and voyages consist of visit to the moon, planets or stars, Chatterjee presents only the psychological journey or motions of the protagonist. Therefore, it can be said that the element of adventure is absent in Chatterjee’s novel, contrary to its effective presentation in most Science Fiction and epics.

The third epical element is handling of characters. Characters in the epic are both human and Godly figures. Chatterjee fails to create characters fit to be called characters of Science Fiction. Barring the view that scientists are highly intellectual people, Chatterjee does not give them extraordinary power or capability to save humanity from evil intention or bad people or monsters. Chatterjee’s characters are all human with all sorts of limitations of human beings. Gopal has his limitation. He cannot go against the authorities of the Centre. Chatterjee does not present Gopal as a heroically ‘larger than life’ character, often the source and subject of legend or a national hero. He is the victim of the system at the Centre. He is unable to fight against the stringent rules and goals of the Centre. He tries to escape but fails, like Chatterjee in creating characters of Science Fiction.

In the novel, suspense is combined with future predictions of a writer. Prediction means what would happen to mankind, race, universe, galaxy tomorrow or in the next century or a million years from now. It is also a possible calculation about both good and bad potentialities of mankind. Chatterjee presents the futuristic defence science technology of India calculated to create dangerous weapons of war for the destruction of the enemy and establishment of power.

The epic involves the element of mythological references to gods, divinities, vices, virtues in order to establish morality. The gods and lesser divinities play an active role in the outcome of actions depicted in the epic narratives. For example, Vidura explains to Anu how Rahil Vidyadhar is involved in the Signal Red glass project. Rahil is researching on a set of ancient manuscripts. One of Gopal’s projects concerns a kind of medieval glass that is found only in a particular village in India i.e. Songarh. The glass is deep red in color. It is called Signal Red. This glass is used for making jewellery and lamps of red signal. A set of Sanskrit manuscripts are found on
the site. They are a series of lovely poems. The Centre thinks there must be a connection between the poems and the glass making process. Rahil does talk about the scientific and religious connection between the poems. He calls it, the text of the Signal Red project. For instance, one poem deals with trimurthi- Brahma, Vishnu, and Shiva in terms of metaphorical chemical process. Even as Meenakshi delivers her speech, Dr Batra raises objections. Dr Batra explains that the four Varnas are associated with the head, the arm, and the stomach and the feet of God- that is thought, action, production, and service. He further argues how non-violence is weakness. Meenakshi answers that a state should have means to defend. But targeting others means tyranny. Dr Batra Nayer takes objection to Menakshi’s non-mentioning of The Bhagwat Gita, The Ramayana, and The Mahabharata. The references to mythology are about Hinduism only or Hindu Nationalism which holds that only people belonging to the Hindu religion have a right to the Indian tradition, Muslims are considered as ‘others’. Chatterjee presents the dangers of the scientific discourse being woven into ideologies. Thus Chatterjee very effectively uses Indian mythology in her Science Fiction. Unlike the epic where gods and deities play active role, in Signal Red Chatterjee uses mythological references to present the concerns of a few characters in establishing Hindutva through weapons. Thus there is close connection between mythology and Science Fiction.

Both in the epic and Science Fiction the setting covers several nations, the whole world, or even the universe. The setting of the novel is universal but highly connotative in terms of man’s desire to establish hegemony over other civilization. Most of the events happen at the campus of Centre for Advanced Research and Development of Defense Science located in the Vindyas of Madhya Pradesh and Songarh, a small village, where Signal Red glass project is going on. Thus the researcher strongly believes that only a few epical elements or patterns are present in Chatterjee’s work.

3.7. Writer’s Attitude to Science and the Genre of Science Fiction

As mentioned in Chapter I (1.4.6.), Science Fiction writers do have sufficient background of science or most of the Science Fiction writers are primarily scientists. To popularize science they go with this form. In Rimi B Chatterjee’s approach both to the form and science a variation can be noticed. For example, she presents the
implications of futuristic science and partly dystopian society of Indian Science in emphasizing values of humanism and democracy in the life of scientists. She understands that the need for human mind ought to be found in the laboratory in using appropriate techniques and objective methodology. Therefore she presents Rahil Vidyadhar who has developed a number of motivational drugs and techniques for those scientists who lack motivation or are not happy with the work mainly because of the implications of weapons they create in Defence Science Lab. It indicates that the writer of *Signal Red* wants that science and human relations should merge with modern sciences as the necessary part of Science Fiction. She anticipates the changes in human relationship due to science and technology while working at the Centre. At the same time Chatterjee effects a balance between fiction and science by observing a majority of literary principles. By and large, Chatterjee is concerned with society that exists both inside and outside the Centre. While predicting some sudden and slow political, psychological, cultural, economic changes of human tradition of Indian society in the world of science and technology, she states how different societies in the different parts of the world are using science merely as a tool to establish hegemony. Chatterjee writes very seriously. She critiques a totalitarian state. The novel points out the hybrid nature of Indian Science Fiction through a double dialectic between the West and the East and between hybridity and indigenism. Chatterjee raises a very relevant question of how the nation can escape from the control of a new hegemonic order. Chatterjee believes that the dangerous thing is that the scientific discourse is being woven into this ideology. Thus Chatterjee predicts both futuristic science and futuristic Indian society in a semi-dystopic way where science will be used to establish hegemony.

Anu visits Vidura and Gopal’s home which is on the campus of the Centre for Advanced Research and Development of Defense Science where many scientists are busy in their various projects creating new weapons for the war to defend their nation. Gopal is one of them. In fact he is the head of one of such teams which constantly works on experiments with new futuristic technologies to be used in the defense of the country. Anu, Vidura and Gopal were classmates at Cambridge University. Anu has actually come to study the life of scientists, their purpose of work, their motivation and social status and how they personally feel about their work. Therefore she puts questions to Gopal, his wife, young scholars like Agniv, Rahil Vidyadhar, housewives of scientists, Dr Shethji and his wife. She comes to know how people at the
Centre have excellent infrastructure facilities but lack communication facility. They lead their life in boredom and meaninglessness. Her view appears to be the writer’s major concern in the novel as Chatterjee is concerned with presenting the effect of work of scientists both on their life and the life of victims who will suffer due to their weapons. Anu explains in her paper:

The Scientist working in very advanced fields is by and large employed by the state, in other words, in defence. This inevitably brings with it the ethical question of killing people. To work, the scientist must be convinced that it is right and fitting to kill people in certain moral and political circumstances, but he or she has no actual say in the deployment of weapons. 8

Further in her paper she makes a classification of scientists as MES (Most Evolved Scientist), LES (Less Evolved Scientist), SES (Slightly more Evolved Scientist). MES knows that he cannot afford to dispense with cooperation from the state. LES does not think very much about it. He thinks that if he does not do it then someone else will do. And Anu thinks SES has a paradoxical view of himself as helpless. Anu in her paper explains how scientists behave in a particular environment and how they demonstrate their abilities in this categorization. Thus, Anu’s paper reiterates the words the Director said to Gopal: that for the ministry, as far as the public is concerned, we hardly exit. On the other hand Gopal at the end in trying to escape from the Centre meets Anu in Mumbai and very plainly states about science and art. He observes:

….we scientists have always gone with whoever had the most funding, the biggest facilities, the most unquestionable authority, like prostitutes. I’m no different from that woman, Anu. I was greedy for money and an easy time of it, and afraid, afraid of all those brains in Cambridge, solving the mysteries of the Universe while I struggled with my little problems, afraid I didn’t have it in me to compete in their world. Science is brutal with reputations. All our work deals with what’s there, and you can’t invent what’s there. It’s not like that in the arts. If you write a book or a symphony, it’s yours forever. No one can else write it better and wipe your name off the title page. 9
To support this view, Diane M Nelson in his essay, *A Social Science Fiction of Fevers, Delirium and Discovery: The Culcutta Chromosome, the Colonial Laboratory, and the Postcolonial New Human*, states

Laboratories are sites of hard work and discovery, where theories and techniques are tested and new things are created. Etymologically, laboratory is linked to labor and hardship, but also to labi- to slip, fall or totter.10

Thus Chatterjee presents how an artist is superior to a scientist on the parameter of living life morally, ethically, and socially.

**3.8. Juxtaposition of Science and its Use in the Present and the Future**

Science Fiction shapes the future through the speculations or visions presented in Science Fiction. Modern Science Fiction stories deal freely with sociological possibilities and the progress of humanity under future conditions. In this regard Pamela J. Annas makes very significant remark. She states:

Science Fiction as a genre is more useful than mainstream fiction for exploring possibilities for social change precisely because it allows idea to become flesh, abstraction to become concrete, imaginative extrapolation to become aesthetic reality. It allows the writer to create and the reader to experience and recreate a new or transformed world based on a set of assumptions different from those we usually accept.11

Rimi B Chatterjee, in her novel *Signal Red* makes predictions regarding the development of futuristic defence science of India and how an advanced science and technology will create dangerous weapons for the next world war and how science will be used for ruling the world. The novel presents how scientists and young scholars in the campus of Centre for Advanced Research and Development of Defense Science India, are busy in their various projects creating new weapons for the war to defend their nation. Gopal is one of them. He is working on a novel glass application: glass nanowires, photonic computing shields and sensors. But the major work is on flexible sensor displays. It is for Indian soldiers who can see even in darkness or in a dark alley. According to Gopal such Futuristic technology would be very effective as it is to implant a layer into an eye that gives the capacity to see even
in darkness as naturally as possible without using goggles or helmets. But it needs proper implantation and training. Gopal thinks the he makes weapons to finish the enemies of the nation. His work belongs to Defense Science which has to be secretive.

There are young scholars at the Centre who are working on different projects which deal with future defence of the country. For example Namrata is helping Dr Prasad to make models, Sachdeva is working on control software, Shweta is on computational fluid dynamics for aircrafts, Rahul is on microwaves and Agniv is helping Gopal in making displays- smart displays- faster than human thought. Agniv further mentions that they are making artificial eye for people who cannot see. There will be a thin sheet in the eyeball linked to optic nerve. He explains:

Display on inside of tank-suit also, as if no walls. No blind spots. Soldier will see everywhere as if nothing around him. Yet he will be safe in invisible cocoon. And we can make gun rangefinder control respond to tracking eye: you just look at target and press button and boom! it is shot. It indicates a good future if it is used for blind people. But the Centre does not want to expose this futuristic technology for fear of the enemies knowing their secret. The Centre does not wish to use it for the betterment of humanity. Similarly when Shethji shows his wallet to Anu, Anu is surprised to see that the wallet is made of artificial human skin. It is one of Gopal’s incredible innovations. It could be helpful to burnt victims. But it is not folded, never commercialized. Army keeps it a secret so that the enemy does not know or steal it from hospitals. Thus the text predicts some phenomena of science which can be used in the present and the future for the benefit of humanity.

Some devices or weapons presented in the text are highly dangerous and their effects will last long if man created them and used them during war. For example Prasad’s powder will have its effect from generation to generation. Anu objects to such weapons which are not based on human values and life. Secondly Gopal tells the Director that he found a paper in his locker. The Director takes it and drops it into his locker. Gopal is worried about its implications. Gopal observes:
As you no doubt are aware, sir, that paper describes a power supply, a very powerful one, for a klystron, a microwave source. And there is a paragraph at the end which describes how the source will be fitted with a high-k dielectric ceramic reflector. I did some calculations, sir. That microwave source will be more powerful than anything we have at present, and it will be focused. Sir, you don’t need to be an engineer to know this…..instrument…..will be able to….destroy living tissue.

When Gopal contemplates the implications, the Director argues with him that it is not good for scientists of the Centre to imagine the implications of the weapons. After all, weapons are made for destruction- moral, physical, economical, social and human. Thus Rimi Chatterjee is predicting how some agencies are interested in misusing weapons of futuristic technology. When Gopal and Vidura visit Songarh for the Signal Red project she talks about the dangers posed by the project and its effects on villagers. According to Vidura experiments and field tests may cause health related problems to villagers. Gopal thinks it has been only four years since the Centre has taken control of the village. Vidura believes that there must be some secret project the Centre has carried out, of which Gopal is unaware and the authorities might have lied to him about it.

Once, when Agniv, Namrata, and Sachdeva are busy watching the computer screen, Namrata calls Agniv to look at her new simulation. Then she explains that it is epidemic. This is insect Vector data. It is with airborne data. Sachdeva thinks that because of this people will not only turn sick but die as well. There will be high mobility and low mortality. Namrata explains it can work for plants and animals. Agniv also watches the dance of death begin all over again on the screen. This is another example of science and its use in the future. Scholars are busy in creating deadly weapons during the war. Actually Rajdaksha and Basu opine that they need either war or Chhravyuh to test the results of weapons they created. Agniv feels guilty of being a part of the system which generates weapons to kill people. Gopal tries to convince Agniv by saying that war and weapons are both the offence and defence and both of them are major concerns of any civilization. He further tells that if we believe that our society is good then we must defend it to the best of our abilities. It indicates that science can be used both for defence and offence. It is up to that society or civilization concerned, whether to use or misuse science in the future. At the end part
of the novel S Murthy informs Gopal how Rahil Vidyadhar has successfully developed a number of motivational drugs and techniques for those scientists who lose their motivation to work. It shows how science exerts control over mankind both in the present and the future. Thus the researcher feels strongly that in Science Fiction juxtaposition of science with the present and the future is keenly felt.

3.9. Interface between Science and Fiction

As discussed in Chapter I (1.4.8.) there is an interface between science and fiction. To put it in other words, there is a resemblance between the two entities - science and fiction in terms of their elements, functions, characteristics, purpose and mechanism. The first point of similarity is vision. Vision is, to take efforts in transforming the present condition of man into a better state by removing drawbacks and weaknesses. Both scientists practically and fiction writers theoretically are busy in making and visualizing good things for human life. Both take efforts and propose to make human life on earth a better place to live by presenting the possible dimensions in their respective works. Signal Red projects the possible futuristic world of technology and science. There is a Centre for Advanced Research and Development of Defense Science where many scientists are busy in their various projects creating new weapons for the war to defend their nation. Chatterjee projects, to some extent, the evil world of science and warns young scientists to be selective in their production and its implications. The novel projects a semi-dystopic India where science is gradually becoming a tool in the hands of fundamentalist forces to establish Hindu Hegemony. Chatterjee presents the vision of how humanity will escape from such hegemony.

The second similarity is characters or people in the text who are involved in making the Earth a better place to live. In fiction, characters possess either good or bad intentions. In science too, scientists conduct a lot of experiments with the intention of doing good for a particular society. But in the text Signal Red scientists are not allowed to really think about the implications of their production of weapons. In fact scientists are doing a lot of laboratory work without knowing its implications. They work for the Centre for Advanced Research and Development of Defense Science, India located in the Vindyas of Madhya Pradesh. The Director makes it very clear to scientists that as far as society is concerned they do not exist as it is the
question of national security. They represent the common feelings like greed, truth, revenge, anger, love, gratitude, affection and so on. Some are selfish and some are selfless. Some care for humanity and some are interested in power regardless of humanity and life. The Director of the Centre and Rahil Vidyadhar are interested in Hindu Nationalism whereas Anu, Dr Gopal, Vidura, Dr Shethji and Agniv represent human values and humanism. Thus characters presented in the text do have relevance in the Indian context.

There always exists an organized body of knowledge or truth both in science and fiction. In the text creation and use of weapons is demonstrated as existing knowledge in contemporary times. In the text Chatterjee presents man in an energetic, constructive and critical mode. Chatterjee presents the application of scientific knowledge in the Indian context to establish a new hegemonic order vividly. Results are reliable. Logic and imagination go together in shaping science in the book. Chatterjee provides knowledge of deadly weapons which might be needed in a war, to test its results. For example Gopal, the protagonist, is working on the Signal Red glass which enables the soldier and the blind to see even in darkness. Prasad works on nanopowder, Namrata is helping Dr Prasad to make models. Sachdeva is working on control software, Shweta is on computational fluid dynamics for aircrafts, Rahul is on microwaves and Agniv is helping Gopal in making displays - faster than human thought. Thus science rationale is very much a point of concern for the writer.

Another point of similarity is search for truth or realism. Both in science and fiction this element is dominant. Chatterjee uses it effectively. She uses lifelike characters from the field of science. She is concerned with truth. Scientific progress is presented in the form of futuristic technology. She presents how scientists and young scholars at the Centre are working very hard on their different projects calculated to preserve national security. They try to make different types of deadly weapons which will help their civilization to appear strong in the next world war. There is a sense of competition going on with respect to completing the assigned task. The Director holds control over all the activities going on and outside the Centre. Another truth that Chatterjee presents is the innate greed in the form of establishing Hindu hegemony.

Romance or adventure is another aspect in the text. Chatterjee presents this element through the findings of the Signal Red glass. Indian scientists and
government representatives of Defence Centre make it a secret mission at Songarh. The Signal Red glass will be used to make sensors and displays. Gopal and his team are working on it. It is Gopal’s psychological journey on which Chatterjee focuses her attention. It is highly adventurous for Gopal and other scientists at the Centre to complete their projects in time. For that they spend days and nights in the laboratory. Anu and Vidura are adventurous in dealing with their problems of life. Anu is a socialist who travels from Mumbai to the campus of the Centre to study the life of scientists, their happiness and how they feel about their work at the centre. Vidura tries to help Patalibai at any cost. She is adventurous in going against Prasad’s order.

In the novel suspense is a vital point which generates curiosity amongst the concerned people. Science in the text deals with a lot of experiments and results regarding the futuristic technology in creating weapons for defending the country during a war. But the gap between experiments and results is full of suspense. There is suspense when Dr Shethji’s is transferred to be in charge of the guest house. In the text suspense is generated through a character’s action and intention which produces it.

Chatterjee, in Signal Red, anticipates or predicts some probable changes in the cultural, social, political tradition of the entire human race. The text both scientifically and fictionally speculates over desirable results for the betterment of human life. Chhaterjee, like a true Science Fiction writer, anticipates change not only in human behavior but in the entire agency or nation regarding the use of computer technology. She predicts both positive and negative changes in the form of use and misuse of technology through the scientists’ creation of weapons. Gopal tells Agniv that in trying to protect the nation, the Centre has to make reliable means or sources. In anticipating the changes realistically, Chatterjee sets the story in India where scientists are working hard to test the law of gravity. The second prediction is that one should use technology for the security of mankind, for making the Earth a better place to live by presenting a semi-dystopian India. Thus elements of science and fiction are interwoven in Signal Red.

3.10. Balance of Romance and Realism

The strong similarity between H.G.Wells and Rimi Chatterjee is that both present social problems through their works. They are probably socialists. Unlike the
Scientific romances of H. G. Wells, Chatterjee does not mingle the genre of romance with Science Fiction mainly because the element of romance is not strong in *Signal Red* as it is in H.G.Wells. But Chatterjee is realistic in handling the genre. She gives an impression of recording faithfully the actual way of life of scientists and their wives on the Campus of the Centre. The novel depicts the problems of an ordinary scientist struggling to understand whom he is serving, after his friend Anu’s visit to him. He understands that he is trapped in the hands of a few authoritarians and there is no way to escape from them.

It is assumed that science studies facts and results in relation to real human life. Fiction deals with day to day adventures of life. Science Fiction combines these two and finds the balance between the two. Chatterjee writes *Signal Red* in this manner. She presents indirectly a war between two desperate civilizations, a psychological battle of scientists with the Director. She handles the modern problem of dual beliefs between the east and the west, between the Hindu and the other, and science and religion. The realistic issue of colonialism is also highlighted in the text. In modern Science Fiction many writers have used the form to criticize contemporary issues of society. Chatterjee disentangles the problems of totalitarianism and Hindu Nationalism in India through the framework of a scientific development in futuristic technology. Another aspect the novel depicts is semi-dystopic India where science is becoming a tool to establish Hegemony.

Chatterjee realistically presents the rise of India's scientific development in the field of nuclear and economic strength. In the text the Centre for Advanced Research and Development of Defense Science is an entirely Research Centre where scientists work on their projects of futuristic technology to make weapons to defend their nation during war. The Director with his enhanced control over scientific activities disturbs first Dr Shethji and then Dr Gopal Chandran who read the implications of weapons they make at the Centre. But it is rather too late. Thus the researcher affirms that the balance romance and realism could naturally be seen in Science Fiction.
3.11. Prophetic Vision and Changes in Social, Political, Cultural and Tradition of the Universe.

Many works of Science Fiction deal with future prediction. They fall in the category of fiction of future predictions about what could befall mankind or the earth or the next century or a million years from now. It is also about calculating good and bad possibilities or potentialities. Signal Red projects the possible futuristic world of technology and science in India. There is a Centre for Advanced Research and Development of Defense Science where many scientists are busy in their various projects creating new weapons for the war to defend India. Chatterjee projects to some extent the evil world of science and warns young scientists to be selective in their production of deadly weapons and their implications. The novel projects a semi-dystopic India. In it science is a tool which can be used effectively to establish one particular ideology. Chatterjee presents the prospect of escaping from such hegemony.

Prophetic vision deals with an augury for some change in the present political, social, economical, geographical, scientific, technological, religious, and cultural tradition of the universe or entire race. Chatterjee points out the impending changes in relation to science and religion. Chatterjee tends to visualize some changes and the issues relating to Indian society and culture. In post colonial literature it is this dominant element where the writer is set to change educational, political, and cultural tradition of the community which has experienced imperialism in its adverse effects. In case of Signal Red this thing is very evident. Postcolonial India is presented in the text. Chatterjee’s prediction is largely based on the contemporary social developments in science and technology. For example since 1990s the re-emergence of Hindu Nationalism has become ever more important. It is mainly because of the demolition of Babri Masjid in Ayodhya and the Kargil War with Pakistan in 1999. It paved the way to establish control over scientific activities and organizations like the nuclear armament and missile development programs. With the moon mission Chandrayan in 2008 and Mangalyan mission to Mars in 2015 cemented India's position as one of the few space-faring nations. Thus Chatterjee visualizes some changes that have come true to some extent in 2015.

3.12. Themes or Novum or Issues handled in Science Fiction

The most exciting part of any Science Fiction is its subject or theme. Though it is claimed that Science Fiction suffers from repetition of subjects, there are ample
opportunities for each writer to handle the genre differently. Suvin’s idea of ‘Novum’ (1.1.4.) tells us that Science Fiction can be distinguished from other forms of imaginative fiction. There can be more such novum- the novas- which can explain particularities of Science Fiction. In Signal Red what matters is the world in which the story is set. Carl D. Malmgren’s observation in this regard might be of some help. In his book, Towards a Definition of Science Fantasy, Malmgren sees Science Fiction within the fictional world as “The generic distinctiveness of Science Fiction lies not in its story but in its world.”

Malmgren helps us to identify some of the common worlds of Science Fiction. To name a few of them-rivalry of insect civilization with humanity, war tanks, man-eating planets, collision with another star, super acceleration of life, man-superman with superpower, germ development, travel begin the dimension, aerial warfare, future city, atomic power, decline and fall of galactic empire and space travel. In Signal Red we find a world of scientists working very hard to make futuristic highly dangerous weapons to defend India at the Centre for Advanced Research and Development of Defense Science located in the Vindyas, Madhya Pradesh. Gopal is one of them. Infact he is the head of one of such teams, and who constantly works on experiments with new futuristic technologies for use in the defense of the country. The story is set in time future year of 2015. It is about futuristic technologies of India. Rahil Vidyadhar is a Sanskrit scholar. Rahil is researching on a set of ancient manuscripts. One of Gopal’s projects concerns a kind of medieval glass that is found only in a particular village in India i.e. Songarh. The glass is deep red in color. It is called Signal Red. This glass is used in making jewellery and lamps of red signal. A set of Sanskrit manuscripts are found on the site. They are a series of lovely poems. The Centre thinks there must be a connection between the poems and the making process. Therefore Rahil is here. He is supposed to work with Gopal who is working on a novel glass application: glass nanowires, photonic computing shields and sensors. But the major work is on flexible sensor displays. It is for Indian soldiers who can see even in darkness or in a dark alley. According to Gopal such Futuristic technology would be very effective as it is to implant a layer into an eye that gives the capacity to see even in darkness as naturally as possible without using goggles or helmets. But it needs proper implantation and training. The fact is Gopal is on a secret mission of which he himself is not aware.
While working on the Signal Red project he discovers what his masters are really up to, and the kind of weapons that are being created by people like him. He gets selected to be part of an 'invisible' project, and tries to run away from it. But the real issue in this story is the inside world of a totalitarian future. Thus we find two parallel worlds in the novel. One is the world of scientists and the other world is the Director of the Centre who represents hegemony. It is Anu who unravels rather late the implications of the work Gopal is doing for the Centre. On the other hand Rahil secretly makes drugs for those scientists who get demotivated and lose the ability to work as in the case of Dr Sheth. So it becomes clear for Gopal that the authorities are interested in only using the talent of young scientists in creating deadly weapons to establish power in the world. He tries to escape from such a world but fails in his attempt. He becomes another Dr Sheth.

Second is the patriarchal issue handled in Signal Red. Being a female science fiction writer, Rimi Chhaterjee presents the issues of feminist concerns. In the text Chatterjee presents how male dominated society is still ruling the world in its extreme form. Through Putalibai, Prostitute Aishwarya and Vidura she presents how women cannot exit from their stereotyped identity. Vidura is the wife of Gopal. She is the typical wife of a scientist who works at the Centre. She gets excellent facilities but lacks the happiness of Malti and other wives at the Centre. Though she is educated her condition is not different from Putalibai’s. Putalibai lives in a dirty hut at Songarh village. Her miserable condition leads her nowhere. She has four children. Vidura tries to help her but like Gopal the Centre has set down some rules for her as well. She is not free. Anu is surprised to know that no internet facility is provided on the campus of the Centre for reasons of security, since scientists work for Defence Science which is the highest sensitive confidential department of the nation. A huge sacrifice is made by the wives of scientists at the Center. When Gopal and Vidura visit Songarh on their way they visit Sparta, a small village known for having 700 women for 1000 men. Rich families import women for their younger sons. Gopal informs her that they must be belonging to the lower castes and some of them must be HIV positive.

Another issue is of humanism namely the loss of human values, noticeable in a talk between Gopal and the Director. When Gopal finds a paper in his locker, he is shocked to read it. The paper describes the design of power supply. Gopal is worried
about its implications. When Gopal reflects on the implications, the Director argues with him that it is not good for scientists of the Centre to imagine the implications of the weapons. Labs are often cut off from the normal world. After all, weapons are made for destruction—moral, physical, economical, social and human. He warns Gopal to forget about the paper. It suggests the issue of totalitarianism. Vidura asks Rahil about totalitarianism. He talks positively about totalitarianism. He says:

All the advances of the West that you people so admire, the motorways, the traffic control, the public works, the healthcare system, were carried out by authoritarian governments who forced people to vacate land, follow rules, undergo clinical trials. Democracy is an enemy of change, because it is tied to the opinions of the most stupid, least progressive people in that society. For true progress, authority is necessary, but it must be authority of father, mixed with love and exercised for the ultimate good of the children, even if it brings pain.  

In support of this view Gopal tells Vidura that at first it appears like a battery hen which has nothing to do but lay eggs. Then the eggs disappear and you have no right to know where they have gone. People inform that the eggs turn into monsters. But how can something born in love and pride bring death. Vidura understands the agony of Gopal.

The issue of poverty is presented in the form of Putalibai and the village Songarh. People of Songarh suffer from various diseases. Gopal explains to Vidura that it is mainly because a majority of people suffer from sickness, malnutrition, poverty, unhygienic water supply, insects vectors, animals and men live in the same building, and also The menace of opium. Thus the novel very implicitly highlights various novas to describe how science will be used as a tool to establish power at the cost of devaluing humanism or mankind. The researcher keenly observes that the recurring pattern of theme appears in Rimi Chatterjee’s *Signal Red*.

3.13. Conclusion:

On applying the parameters of Science Fiction, the researcher believes that not all the parameters of Science Fiction are dominantly present in the text. This study leads to the point that the Science Fiction writer Rimi B Chatterjee is a visionary in
that she addresses the quintessential question: What is it to be human under totalitarian forces? She offers important critical insights into the question to explore what it really means to be human in a techno-cultural context. Unarguably Indian Science Fiction plays a significant role in interpreting contemporary attitudes and anxieties of human beings not only of India but also of the whole world, as well as those agencies which control science to establish power. The researcher has argued that it is necessary to consider the parameters present in different cultural manifestations rather than as a figure shaped by a particular genre. The parametric study has sought to analyse Signal Red in relation to characters, science, structure, narrative, plot, and setting. The parametric framework of the analysis stresses the study of the novels in respect of narrative form, language, thematic structure and perception of human relationship. In doing this, the researcher thinks that Chatterjee, in her novel creates new role models and alternative visions for the humans.
3.14. References

4. *Ibid*.225
5. *Ibid*.263