

**T.C.
ISTANBUL AYDIN UNIVERSITY
INSTITUTE OF GRADUATE STUDIES**



**OVER EXCESSIVE AMBITION AS REFLECTED IN THREE SCIENCE
FICTION NOVELS: *FRANKENSTEIN*, *SOLARIS* AND *INFERNAL DEVICES***

THESIS

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**Department of English Language and Literature
English Language and Literature Program**

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March, 2021

DECLARATION

I hereby declare with respect that the study “Over Excessive Ambition As Reflected In Three Science Fiction Novels: Frankenstein, Solaris And Infernal Devices ”, which I submitted as a Master thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the Project phase to the conclusion of the thesis and that the works I have benefited are from those shown in the Bibliography. (.../.../20...)

KHULOD H. HUSAIN

FOREWORD

Chasing the dream is what gave me the strength to continue.

I would like to express my heartfelt thanks and gratitude to my supervisor and Assist. Prof. Dr. ESMA TEZCAN for her sincere efforts and steady encouragement during the entire process of this thesis. Without her strict supervision and remarkable personal touch, this work would not have been completed.

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March, 201

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OVER EXCESSIVE AMBITION AS REFLECTED IN THREE SCIENCE FICTION NOVELS: *FRANKENSTEIN*, *SOLARIS* AND *INFERNAL DEVICES*

ABSTRACT

This thesis attempts to explore the emergence of science fiction as a genre and its development into steampunk as a subgenre of science fiction in selected science fiction novels: Mary Shelley's *Frankenstein* (1823), Stanislaw Lem's *Solaris* (1970) and K. W. Jeter's *Infernal Devices* (1987). This research shows that the scientists in these novels drag themselves into darkness. Victor, the protagonist of *Frankenstein*, is an ambition scientist who wants to conquer death but tragically loses his family during this endeavour. Kelvin, the hero of *Solaris*, is psychologically devastated when he struggles to understand how Solaris ocean creates a simulation of people. The hero of the third novel, George Dewar's father, a mad scientist and inventor, creates a double of his own son as a robot tries to destroy the earth. The main argument of this research is that all these novels set in different eras draw on science fiction to criticize and question man's greedy and unrestricted desire for scientific discovery to the extent that they want to conquer the universe and play the role of God. The study will ask the following questions: How do the ambitious scientists in the novels drag themselves into madness? And how does the scientific desire turn into a crave for transcendence bringing about their damnation? What do these scientific explorations and inventions reveal about human nature? Does steampunk bring the evolution to the future as a sub-genre of science fiction?

Key words: *Science, Fantastic Literature, Science Fiction, Epistemology, Steampunk, ambitions Frankenstein, Solaris and Infernal Devices*

ÜÇ BİLİM KURGU ROMANINDA YANSITILAN AŞIRI HIRS: *FRANKENSTEİN, SOLARİS VE INFERNAL DEVICES*

ÖZET

Bu tez, Mary Shelley'nin *Frankenstein* (1823), Stanislaw Lem'in *Solaris* (1970) ve KW Jeter'in *Infernal Devices* (1987) isimli kitapları gibi bazı bilim kurgu romanlarında, bilimkurgunun bir tür olarak ortaya çıkışını ve onun bir bilim kurgu alt türü olarak steampunk'a doğru gelişimini çalışmaktadır. Bu araştırma, bahsi geçen üç romandaki bilim adamlarının kendilerini karanlığa sürüklemeleri üzerine odaklanmaktadır. *Frankenstein* romanının ana karakteri olan Victor, ölümü alt etmek isteyen ancak bu girişim sırasında ailesini trajik bir şekilde kaybeden hırslı bir bilim adamıdır. *Solaris*'in kahramanı Kelvin, *Solaris* okyanusunun, bir insan simülasyonunu nasıl yarattığını anlamaya çalışırken psikolojik bir çöküş yaşar. *Infernal Devices* romanının kahramanı olan George Dewar'ın çılgın bilim adamı ve mucit babası, bir robotun dünyayı yok etmeye çalışmasından dolayı kendi oğlunun bir kopyasını yaratır. Bu araştırma, farklı dönemlerde geçen romanların, insanın evreni fethetmek ve Tanrı rolünü oynamak istemesini, insanın açgözlülüğünü ve sınırsız bilimsel keşif arzusunu eleştirmek ve sorgulamak için bilimkurgudan yararlanmaktadır. Çalışmanın cevaplarını arayacağı sorular şunlardır: Çalışılan romanlardaki hırslı bilim adamları, kendilerini nasıl deliliğe sürükler? Bilimsel arzu, bilim adamlarının lanetlenmesine neden olan aşkınlık arzusuna nasıl dönüşür? Bilimsel keşifler ve icatlar insan doğası hakkında ne ortaya çıkarır? Steampunk, evrimi bilim kurgunun bir alt türü olarak geleceğe taşıyor mu?

Anahtar kelimeler: *Bilim, Fantastik Edebiyat, Bilim Kurgu, Epistemoloji, Steampunk, hırs, Frankenstein, Solaris ve Infernal Devices.*

1. INTRODUCTION

The thesis traces the development of fantastic literature as a point of origin for science fiction novels and explores how the genre of fantastic literature gives ascension to a subgenre which can be defined as science fiction. On the other hand, science fiction attempts to capture the reader's imagination and create the arena which defies the quality of facts through creating the alternative worlds. In this sense, in these imaginary worlds, for example readers might move to dragon's world whose battle lies in the skies. Or in another world, aliens might want to preserve peace between planets and creatures coexist on Earth with humans (Zgorzelski,1979, p.269). However, the writers who experience their imaginary worlds and utilize it in their literary work coinciding with the Renaissance. Renaissance possessed the authority and beliefs in order to conquer knowledge, it aroused the curiosity of individuals and encouraged individualism. Investigations and discoveries made people to wonder their own old belief system. Hence, the Scientific Revolution (16th and 17th centuries) broke out and people started to carry out experiments to understand natural phenomena of the world which had always been mysteries and enigmas to human understanding. In other words, scientific and empirical investigations and discoveries had enormous effect on their old beliefs and therefore people began to change their own perception of the world, thanks to the emergence of a new era of knowledge paradigm shifts an era which encapsulates episteme (Cohen,1976, p.257).

The **Scientific Revolution** altered our understanding of nature once and for all. Nature emerged as a new vision. In other words, science had its own sovereignty and became a discipline, having its own distinguishing features from religion and myth. Science gives the quality of the radical transformations of inventing new machines and scientific experiments that shaping the world (Cohen,1976, p.230). This thesis aims to study the origins of science fiction literature as a new genre, starting out as a sub-genre of fantastic literature and evolving into a genre its own right. Meanwhile, it presents how, as a separate

literary genre, science fiction starts to create its own sub-genres, steampunk. Steampunk is inspired specifically by the technology of the Victorian era. Therefore, this study argues that a genre marked by the future begins to show its own case of "nostalgia" and the defining umbrella-term of science fiction which is determined according to the episteme of the era, not just sets its focus on the future but gains a retrospective attitude.

Fantastic genre has been marked by the necessary presence of reality which is usually confronted by a number of motifs that expand the particular genre into subgenres and usually includes a mad scientist, a fabulous invention, ghosts and vampires and an extraordinary voyage. All of them attempt to provoke the feeling of marvel and wonder of the unknown and the unexpected in the reader. Fantastic literature, which was coined in the 1940s, can be defined as a genre that characterizes supernatural and magical elements inexistent in reality (Zgorzelski,1979, p.269). In spite of the fact that some writers juxtapose the fantastic elements with reality, many other authors create their own world with its own laws and logic. In this sense, fiction is not related to reality or ruled by scientific laws. Fantastic is a liminal state involved with the supernatural. Accordingly, the fantastic deals with the reader's hesitation by arising the sense of confusion whether the work is referring to the real known work with its natural laws intact or whether it is an imaginary realm with its own set of laws.

Theoretically, many critics try to find a general agreement to systemize fantastic literature which makes it as an argument to question what is impossible or unbelievable today, and will it be possible in the future? The foundation of fantasy is anti-anthropocentric and critics in this way, argue that the nature run the world and in charge of the laws. They assume that one might pretend s/he in control but fantasy challenges that (Sandner,2006, p.291) H. G. Wells as a proto-science fiction writer discusses the term "scientific romances" as:

[F]antasies; they do not aim to project a serious possibility; they aim indeed only at the same amount of conviction as one gets in a good gripping dream. They have to hold the reader to the end by art and illusion and not by proof and argument, and the moment he [sic] closes the cover and reflects he [sic] wakes up to their impossibility (Bergonzi,1961, p.61).

Here, Wells refers to the sociological speculations about transformation of the impossibility, as same as the applies to Wordsworth who shifted the venue of fantasy from the past to childhood loss. Science fiction moves the fantasy's power from the past to the future one where it is just waiting for us but inaccessible, like touching its fantasy to create our obsession to contemporary culture "Episteme". By holding the readers to the self-deception without giving arguments but just revealing the impossibilities (Bergonzi,1961, p.88).

Nevertheless, Damon Knight declares that the science fiction in the 1950s, as a genre standing on its own. He explains that the critical reader comprises selected excerpts of the "sense of wonder", that the moment of crossroads of impossibility of wonder including impossible parts to achieve the wonder of progress to shape these things to come (Sandner,2006 p.292).

By giving a broad description of science fiction as a genre, one can clarify those identifying markers which shape it. The first and the most important one is imaginative narratives that explore scientific possibilities. The second one is the ranges that are posed from simple to complex speculation about the effectiveness of scientific advances. When the science fiction literature epoch as a unique genre that addresses alternative world commenced, it had a great impact on these worlds by turning them into literature. Science fiction has emerged as a continuity of fantasy. Some authors affirm that science fiction and science fantasy is both part of fantasy (Bereit,1969, p.895).

Science fiction emerged as a proper genre in 1818. It is generally agreed that the genre began with Mary Shelley's *Frankenstein*. However, the social consciousness that simulates the genre started earlier, when people began to prefer empirical interpretation of natural phenomena over mythical and religious explanations. The significance of the evolution of fantastic literature into modern fiction as science fiction and fantasy literature is also revealed. To this aim, the study will attempt to reveal and illustrate the transition from proto-science fiction into multi-subgenres. Particularly, the depth of the experiencer's participation in the worlds of fantasy and science fiction is a demonstration of the importance of this modern myth as well as the reality of the relationship between the experiencer and the world of fantasy (Karmen,2013, p.26).

Nonetheless, science fiction has a great impact on literature. It has inspired societies, writers, dramatists and poets to write about it and pursue their interests in science. This has resulted in developments in technology such as the emergence of artificial intelligence, rockets and robots all of which first appeared one way or another in literature. It is important to note that this thesis will shed light on the point of view of the writers in question. Science fiction possesses the elements that involve many genres by adding and mixing speculation and visions about an imaginative world of the future. Science fiction rises in popularity during the twentieth century, however before that many writers have written about it because of the rapid pace of new inventions and technological advancements (Roberts,2006, p.106).

Steampunk, as a subgenre of science fiction that emerged in the nineteenth century,

[E]vokes, imitates and re-imagines the nineteenth century and favours the Industrial Revolution ideals of science and technology. In a historical framework, it mixes nineteenth-century conventions and retro- futuristic machinery with science fiction and fantasy elements. Steampunk authors are able to radically redefine socio-cultural implications that affect both past and contemporary societies (Bergman,2013, p.vi).

When science fiction invaded the world of literature, various genres erupted. Science fiction gave birth to the subgenre of steampunk which combines imagination and science. In this context, during the late nineteenth century steampunk was inspired by the steam-powered machinery, where the term "steampunk" originates. Steampunk works are set in the Wild West of America or in Victorian England and offer an alternative future by combining the world of fantasy and technology. It is important to recognize how science differs from technology and how steampunk deals with both of them. Technology, as Garth Smith argues, is the physical manifestation and result of applied sciences (Bergman,2013, p.67) and therefore serves a practical purpose.

Some consider steampunk as a style of life; however, it is distinguished as a hybrid genre because it gathers many elements of other genres including speculative fiction, horror, and fantasy especially alternate futures. However,

the essential characteristics of steampunk which distinguishes it from neo-Victorianism is technology. Victorian style gets a mechanical steam and technology upgrade with steam-powered machines to establish futuristic technology as well as giant airships. Moreover, the term of punk implies rebellion against societal norms.

Steampunk was born out of the cyberpunk genre. K. W. Jeter who is an author of science fiction coined "steampunk" in 1987 to depict the 19th century stories which were inspired by speculative fiction of especially H. G. Wells. The first works described as steampunk include Jeter's own novels, such as *Infernal Devices: A Mad Victorian Fantasy* (1987) and *Morlock Night* (1979). In mid twentieth century, steampunk included new art designs and films. In this sense, individual artists have modified and added modern aspects to steampunk (Reddy,2007, p.100).

This thesis will apply epistemology as a high philosophy that reveals the importance of knowledge and argues that how the ambition of the scientists of these novels drag them into darkness with irreversible damage. *Frankenstein* exemplifies proto-science fiction, because it considers the first novel that conveys the efficacy of scientific ambition. *Solaris* is a hard science fiction represents how the scientists psychologically destroyed and *Infernal Devices* represents a proto-steampunk novel. Epistemology is a philosophical branch that deals with and studies the nature of knowledge. Although the term was coined by James Frederick Ferrier in the nineteenth century, Michel Foucault develops the concept of episteme (knowledge) to refer to the shifting of knowledge that is happening in a specific period. In this context, science widens and deepens man's knowledge of the space and outer world (Foucault, 2019, p.75). It helps us to predict and explore the future. Therefore, it is not a surprise that in twentieth century science fiction has developed and become common. Thanks to the Age of Reason and scientific methodology, writers of science fiction have established modern conscience for man and society (Solotaroff,1976, p. 212).

By tracing the shifting and development of knowledge in different eras, this research will highlight and expose the thematic transformations of the development of science fiction as best manifest in the novels in questions. Accordingly, this thesis is divided into four chapters and a conclusion. Chapter

One, the introduction, illustrates fantastic literature, the uncanny and marvellous, history of the Science Revolution and steampunk as a sub-genre of science fiction. It sheds light on epistemology as a theory of knowledge. It also highlights some poets, dramatists and novelists' views about the use of science fiction in literature.

Chapter Two explores Mary Shelley's *Frankenstein* in which the authoress reveals that unrestrained application of knowledge and science for greedy, power purposes might lead to go beyond God's law and bring about one's doom. It will be argued that, *Frankenstein* is a proto-science fiction that reflects and marks the birth of science fiction as a new distinctive literary genre. Therefore, punishment, in the form of doom for the main character, is regarded as a price that man must pay for going beyond his limitations of knowledge due to his curiosity and desires for the unknown.

Chapter Three studies *Solaris* written by Stanislaw Lem and focuses on the problem of modern man with an insatiable desire to know a new world in order to conquer it and uses its sources for economic purposes. The exploration of the new world might lead man to an imaginative world that can only be achieved through science fiction. Moreover, Chapter Four argues that *Infernal Devices* can be considered as an example of proto-steampunk fiction. In this sense, proto steampunk refers to the earlier works of steampunk, in another words *Infernal Devices* considers the first Steampunk novel since K.W. Jeter who is coined the term in the first place.

However, the novel consists of a various combination of elements such as invention, mad inventor, metal robot, pseudo-Victorian setting, an adventure plot and the supernatural. *Infernal devices* are exemplary of the moment of the birth of this new subgenre. The novel evokes the darkness that comes from technology set in an imaginary world that leads the hero to discover his path when he faces his own doppelganger.

Finally, Conclusion sums up the most important findings of the thesis regarding the three novels. It concludes that the journey in each novel not only adds a significant to one's experience and ambition, but it also makes them realize what it means when one crosses the border of man's limitation for absolute power and

replaces God. Science and technology create a new civilization that affects values and morals of man.

2. THE EPISTEMIC EVOLUTION AND SCIENCE

2.1 The Scientific Revolution

The Scientific Revolution in Europe, from the late sixteenth century to the early eighteenth century, affected and changed society and life forever. Drastically, modern science yielded to develop the transformations of man's thoughts and rejected the doctrines that had dominated Europe since ancient Greek. Modern science was a success as it emphasized experimentalism. Experimentalism refers to the belief that the condition of knowing is gained through experimentation and objective observation, rather than intuition of the divine. Acknowledging the scientific method as the only reliable way to truth allowed scientists to investigate and conduct experiments in order to reach conclusions. Modern science has become the main force behind the idea of the development of the scientific progress. Interestingly, the progress of gaining scientific knowledge is considered a major issue in the epistemology of science. The development of modern science is owed to the progress of science in the work of Galileo, Newton and Copernicus, in the sixteenth and seventeenth centuries. Scientific progress is seen as an evolutionary process of uncovering facts in the physical world. The Scientific Revolution finds answers to the questions which interested in studying the context of epistemological implications (Galileo, 1974, p.217).

The Scientific Revolution of 1543 begins in Europe and marks the appearance of modern science such as mathematics, physics, biology, chemistry, astronomy and human anatomy. It influences the intellectual social movement of the Enlightenment, also known as the Age of reason in the eighteenth century. This era is noticeable by a rising liberty, reliance on reason and scientific discoveries. For instance, the Enlightenment philosophy was sceptic of religion and its premises especially the supremacy of the Church - royal and aristocratic blood (Galileo, 1974, p.217).

Although the Scientific Revolution begins in the mid sixteenth century, it extends for a long period of time through to the eighteenth century. At the beginning it focuses on regaining of ancient knowledge. The developments of the conception of knowledge that is constructed within science contributes to make scientist using science for moral aims or presenting the negativity of it. The epistemic evolution comes to give science its shape in a specific period, but sometimes as if giving a warning to readers about the dangers involved in conducting dangerous experiments. In this way, science shifts to be a tool that scientists misused instead of being as a product to provide humanity by intensive knowledge. This term that Foucault puts forward in his work *The Order of Things* it refers to the unconscious organized structures underlying the production of scientific knowledge at a specific time and place (Cohen,1976, p.257). Thus, during this period science becomes an academic discipline distinct from other disciplines such as technology and philosophy with practical and pragmatic usage (Henry,2011, p.55). Modern development of science leads to the emergence of scientific societies including the Royal Society in 1660, also known as the Royal Society of London for Improving Natural Knowledge, established in London by a team of philosophers and physicians who were inspired and informed by the new sciences. This society is in fact the United Kingdom's and Commonwealth of Nations' Academy of Sciences that encourages science and education, providing scientific advice for policy as R. Syfret points out (Syfret,1948, p.75). As Shelby Hunt observes, science has noble aims, hence its revolution leads to the creation of many modern sciences that cause the development of the world (Hunt,2003, p.18).

Furthermore, the Scientific Revolution led to the emergence of many scientists especially in the nineteenth century, such as Pasteur and Darwin who made important scientific technologies and discoveries possible. These lead to technological inventions and change such as steam engine, machines, automobiles and trains which increased speed and mobility. These achievements brought science to the front. In his book, *Magic, Science and Civilization*, J. Bronowski comments that "today we have a scientific way of thinking and a technological way of acting. We are in the midst of an 'irreversible intellectual Revolution' and a cultural evolution of man" (Bronowski,1978, p.2). In addition,

Bronowski also states that the need of the present age gives its shape to scientific progress as a whole. For him both the scientist and the writer experience and feel the same thing as the sense of pleasure is the heart of creative writing (1978, p.2).

Both the scientist and the artist can discover a hidden likeness that was not observed before. But from the 19th century up to the present, science in human thought and action has always been sceptic and it leads to deep mental conflict, in the case of our protagonist's science drags them into severe struggle because they are torn up between the morality and immorality (Hunt,2003, p.23). Scientific methodology begins to replace the more authoritarian and strict modes of thought.

Science and technology are a relatively new achievements of human society. The knowledge that one produces builds the foundations of culture formation. The horizon of epistemological desire for science would be enormous and immediate, due to its remarkable developments in the world. Human understanding is the most influential cultural receptive. The Epistemic evolution has an enormous effect on technological innovations, since the effects of technological change have epistemological consequences because the technology itself has its way of knowing. Across individuals and societies, there are differences between technology and knowledge. Thus, the consequences of epistemology have their impact on human epistemology of machines and there is no distinct between epistemology of machines and the impact on human epistemology of machines.

Nevertheless, in the latter quarter of the twentieth century, the development of human understanding has a potentially radical consequence. The development of human knowledge creates an immediate tension of the accounts of the standard traditional emergence as well as growth of scientific knowledge. Science as a progressive scheme under the rational appropriate conditions and free inquiry progressively originates a body of knowledge that converges on truth. Epistemology attempts to embrace the Scientific Revolution. On this account, the evolution of epistemic seems to embrace any sense of goal directedness in scientific ambition's inquiry. The radical consequence that many embraced for pursuing an evolutionary epistemology raises fundamental questions about the

concepts of knowledge that studies truth, beliefs and justification (Werner and Stotz,1998, p.36).

2.2 Fantastic Literature

Fantasy in literature is an attractive subject and is associated with imagination. The value that determines fantasy seems to reside between free floating and escapist qualities. These sceptical reflections merely need to compel us to be aware or realize the borders that we cannot transcend. Fantasy appears to give free form from the restraints and conventions that surround realist literary texts. Realist literature fails to notice the unities of time, space and character as three dimensional. Fantasy seeks for interconnection, elicits and broadens the reader's imagination. Northrop Frye argues that literature is a world in which there is only "the human imagination" and no other reality (1963, as cited in Bright,2012, p.1). Fantasy provides a range of various different combinations in order to produce a wide variety of fiction whether it is the marvellous or Romance literature that deals with fairy tales and science fiction or the uncanny which involves strange, mysterious feelings of uncertainty of one's experiences (Royle,2003, p.3).

This section argues that although fantasy has always been incorporated into literature throughout time, it was never conserved and considered as a professionalized subject. In fact, it was Tzevan Todorov, a Russian structuralist, who helped professionalizing fantastic literature by defining its patterns that governs this new genre and makes it distinctive from other literary genres. The fantastic literature deals with the undetermined hesitation between probability and possibility of supernatural forces. He explicates that the fantastic refers to a kind of hesitation that a person who sees events only in light of the laws of nature would experience, when they face any seemingly supernatural phenomenon (Todorov,2007, p.25). In other words, in fantastic fiction both characters and readers hesitate between what is real and what is not. The term hesitation is similar to the term duplicity and ambiguity in the sense that both are used to mean the grotesque (Todorov, p.228). This hesitation is due to an aspect of the fiction that makes the reader experience what Todorov calls the "uncanny" in which the supernatural comes to be rationally justified and

explained or the "marvelous" that denotes the existence of the supernatural is confirmed within the text (p.41).

Todorov examines the concept of symbol and redefines the fundamental notions of semiotics. According to him, semiotics as a field of study derives from symbolic. Todorov studied major works to establish the fundamental of semiotics in *Theories of the Symbol* 1977 and *Symbolism and Interpretation* 1978. He defines the relationship between three basic concepts of history, enunciation and discourse. By making a distinction between language and discourse, he elucidates the purpose of symbolism's definition of language. Also, he differentiates between the symbol and the sign, which are based on the direct meaning of the text and the indirect content (Todorov,1992, p.13). However, Todorov adopts the term fantastic to separate it from fantasy. In *The Fantastic*, Todorov defines the term as a literary works as a much smaller canon (Todorov,2007, p.237). He defines the fantastic as an instant of hesitation that lies between both disbelief and belief implying the presence of supernatural phenomena. As a literary work, it is fragile because it swings from side to the other. The suspension that makes literature fantastic is due to this swinging aspect, as it resides between two sides and therefore implies uncertainty. As Todorov puts it:

The fantastic occupies the duration of this uncertainty. Once we choose one answer or the other, we leave the fantastic for a neighbouring genre, the uncanny or the marvelous. The fantastic is that hesitation experienced by a person who knows only the laws of nature, confronting an apparently supernatural event" (Todorov,2007, p.25).

Moreover, fantastic literature transcends the laws of nature. In other words, fantastic literature is defined as transcending reality, escaping human's conditions and lived experienced and constructing a secondary world as a superior alternative. Therefore, fantastic literature in this sense refers to portion of a nostalgic human vision, because they are closely related to each other. In other words, both of them are longing to find the idealization of the past which irretrievably lost. The imaginary world contrasted and removed from the

original or the real one it will be considered as a personal genre as well as marking it as a fantasy literature (Jackson, 2008, p.5).

The fantastic as a technical term which bonds between two literary elements, the marvellous and the uncanny. In the familiar world of reality where we exist, one cannot find supernatural elements such as vampires, devils or werewolf simply because there has been no scientific, substantial evidence as to their existence. The laws of nature, as known to us, do not provide any opportunity for their existence. Therefore, the one who reports to have experienced these phenomena could be said to be a victim of their own hallucinations and imagination. Consequently, according to science the devil is either an illusion or an imaginary entity. The fantastic meets with the neighbouring concepts, the marvellous and the uncanny but swings between them. The fantastic represents the hesitation that is experienced by one who is only familiar and bound to the laws of nature (Todorov,2007, p.25).

Todorov argues that fantastic literature's main concern is a description of an excessive, existing desire that comes in different forms (Todorov,2007, p.25). This statement was inspired by critics such as Marcel Schneider who defined the fantastic as dramatizing "the anxiety of existence" (cited in Jackson,2008, p.3). Todorov sets fantastic swing between the marvelous and the uncanny which relate to the known reality. The uncanny refers to a phenomenon which has eventually a rational explanation as seen in Gothic romances. On the other hand, the marvelous deals with the supernatural which is also explained within its own logical laws and order. The fantastic requires three conditions:

First, the text must oblige the reader to consider the world of the characters as a world of living persons and to hesitate between a natural or supernatural explanation of the events described. Second, this hesitation may also be experienced by a character; thus the reader's role is so to speak entrusted to a character, and at the same time the hesitation is represented, it becomes one of the themes of the work—in the case of naive reading, the actual reader identifies himself with the character. Third, the reader must adopt a certain attitude with regard to the text: he will reject allegorical as well as "poetic" interpretations (Todorov,2007, p.150).

According to Todorov there are three properties that are involved with fantastic, using the figurative discourse as well as how the figurative discourse has been taken in the sense of the literal word. The existence of supernatural begins with the existence of fantastic due to figurative expression, exaggeration and how the supernatural fabricates from rhetorical form. The second property concerns with the relationship between the narrator and the idea of the story (discourse wise) as well as the connection between the character and the narrator who must pass the test of truth. The narrator is the one who tells the truth and cannot lie and gives the explanation of the marvelous, has his own doubts to create the fantastic. The final one is the aspect of the syntactic (Zgorzelski,1979, p.296).

According to Vladimir Solovyov, if a work is really fantastic, there must always be an easy explanation, both formal and external, for the phenomenon although it might not be internally probable (Jackson,2008, p.16). The uncanny phenomena as a term comes from German *das unheimlich*. Uncanny refers to one's experiences that both lie between familiarity and ambiguity as well as between supernatural causes and natural causes. Accordingly, the hesitation which lies between them (deciding whether it is familiar or unfamiliar and if it is natural or supernatural) creates an effectiveness of fantastic (Gelder,2005, p.15).

Moreover, Freud argues that the uncanny "derives its terror not from something externally alien or unknown but – on the contrary – from something strangely familiar which defeats our efforts to separate ourselves from it" (Gelder,2005, p.20). Freud explains how the writer can summon an uncanny reaction to the world of the reader's imagination by extending the line which links between unreality and reality of the fantasy and fiction. Although Todorov distinguishes his structuralist theory from Freudian psychoanalysis, he agrees with the conclusions that Freud arrived in ascribing the terror to the disintegration of the boundaries of the psychic of self, reality and unreality and life and death. Todorov argues that the characteristics of the uncanny are based on a character's response seemingly towards something impossible or inexplicable. To Todorov, the uncanny refers to the supernatural formula that gives proper explanation, but the marvellous, on the other hand, refers to the supernatural events that are accepted as normal in an imagined world that gives the wondrous

impossibilities. As Todorov puts it, "I nearly reached the point of believing that is the formula which sums up the spirit of the fantastic. Either total faith or total incredulity would lead us beyond the fantastic: it is hesitation which sustains its life" (Todorov,2007, p.31). Todorov adds that the fantastic is as "[t]he hesitation felt by one who recognizes only natural laws when faced with an event that seems supernatural" (Todorov,2007, p.31). Accordingly, to elicit the sense of hesitation, the setting of the events should be realistic enough to make the reader swing between reality and supernatural. As for the characters, they should share with the reader's hesitation in order to awake the sense of empathy, and this condition is considered necessary and indispensable. The third condition refers to the reader that must refute the allegorical explanation of the text, but they must perceive the text representatively (Todorov,2007, p.29).

The marvellous requires that the fantastic events occur without a need for the character's response. The occurrence of the event should not evoke fear or anxiety. The marvellous requires no supernatural element. This type is considered a reaction of the rational nature of the events, not of the character's response. However, the marvellous consists of many types such as the hyperbolic that refers to details which are exaggerated but without excessive violence. On the other hand, the exotic marvellous gives the details which are further exaggerated and seem to be believable because of the ease with which characters can accept events. The instrumental marvellous is the idea that there is no proper explanation of instruments' functions within the narrative by using technology, such as flying carpets or magic poem that give healing power (Todorov,2007, p.30). On the other hand, in our times these topics are no longer considered marvellous after they have been replaced by scientific and technological advancements like airplanes. According to Todorov, the existence of airplanes is a result of the existence of the flying carpet, a marvellous impression and idea. As Todorov puts it, "[t]he marvellous that depends on the degree of human knowledge is not worth calling pure marvellous" (Todorov,2007, p.55). In other words, the marvellous is neither possible nor will be and nor can be imagined in the history of human beings. According to Todorov, reality must not have a resemblance with the pure marvellous. To Todorov, science fiction developed scientific theories and refers to it as stories

governed by "laws that contemporary science doesn't recognize" (p.55). He also refers to other stories which keep the logical coherence, "starting from some irrational premises" (p.57). This includes the scientific solution to imply mesmerism. In this sense, mesmerism is a supernatural that considers the marvellous because it exposes the characteristics of science fiction which reveals the scientific explanation for the phenomenon. However, Todorov argues that this kind belongs to the category of strange marvellous and he considers it as a fantastic marvellous despite the scientific explanation. Nevertheless, he does not believe that mesmerism comes from the realistic reason, as Todorov believes. The twentieth-century reader understands that the realistic explanation for it might sound marvellous to the readers of other periods. George Orwell's 1984 (1949) seems to be more marvellous for the sixteenth-century readers than the demons and various stories about witches (Prasad,2015, p.123).

According to Todorov, the pure fantastic will not be fading as a genre or literary element. In this sense, the supernatural gives hesitation, whether will be real or not, will disappear by explanation. In this sense, fantasy includes a strong and growing number of subgenres. Todorov uses two terms on opposing ends of a parameter relating to the known reality, these being the uncanny and the marvelous whereas the fantastic is situated in between and in equal distance to both. The uncanny deals with a phenomenon which has eventually a rational explanation such as in Gothic romances. On the other hand, there is the marvelous that deals with the supernatural which is again explained within its own logical laws and order (Rose, 1976, p.150).

2.3 Science Fiction

Human inquisitiveness and curiosity have led human to pursue all that is bold to discover, the mysteries of the universe. Writers endeavour to signify their imaginary ideas combined with knowledge in order to reflect this human curiosity. The challenges which they confront and have always puzzled them are the question of their origin and genesis, if they have been created by God or if they are a product of evolution (Bould,2010, p.25). There is a phrase talking about "the nature of science" this phrase being used to explain what the job of

science in our life is and what is the information that we get from scientists, this will lead to into two divisions the role of science and the knowledge that we get from science. As Brooks Landon asserts, "what sets SF [science fiction] apart from other popular genres and from mainstream literature is that its readers share a sense of participation in an agenda" (Landon, 1993, p.47). By agenda Landon means science fiction as epistemological instead of ideological. As Landon puts it, science fiction is a "vehicle for gaining new perspectives," (Landon, 1993, p.47). By delving deeper into imagination and illusion to see the impossible thing, writers as well as readers could see yesterday and tomorrow at the same time, the origin and the end of the universe. They could feel the entire universe in one single moment. Science fiction fulfils this purpose as it has a high ability to create incredible stories by using imagination. In this respect, science fiction has turned everything upside down to find answers to the biggest questions of all: What is man? Where does he come from? What drives him? What is his destination? (Warrick,1978, p.41). This section aims to define the concept of science fiction in literature and studies how this genre helps us understand some of these questions that have preoccupied our mind for centuries.

Historians argue that science fiction has always been present as a valuable heritage since the ancient civilizations. Nevertheless, one can imagine that science fiction did exist from these ancient times to mix the possibility with probability. Some of the earliest ancient works can be considered proto-science fiction such as *The Epic of Gilgamesh*, *Ramayana* and *Mahabharata*, Lucian's *The True Story* and *One Thousand and One Nights*. These precursors are considered as a proto-science fiction because they manifest the fantastical elements in spite of a lack of fact that is the basis of technology and science. The fantasy aspects similar to contemporary science fiction include "mechanical birds (which are equivalent to aircraft), the idea of time travel, human-like machines, the concept and quest for eternal life, as well as others" ("History of Science Fiction"). Because these works were written at the time when technology was still in its infancy, many of these particular aspects were not yet possible (Karmen, 2013, p.9).

Science fiction is defined as an escapist story of wonder and as a genre, it is speculative that usually concerns imaginary situations and scenarios including science and technology of the future (Barron,1981, p.125). Often, it looks into the probable results and consequences of science and other human innovations, and as such it is referred to as a literature of ideas. Although the study of science fiction is relatively new, it bears much importance and meaning for us. As Thomas Clareson remarks, "[s]cience fiction and fantasy can tell us more about the late 20th century than can the novel of social realism because these literatures look at our time from a new perspective" (Clareson,1971, p.60). Similarly, Patricia Warrick argues that science fiction is of two different scales. The first has many traditional literary values, such as "graceful use of language, purity of style, perceptive illumination of persons, insight into the human condition" (Warrick,1978, p.41). The second scale has many qualities: a portrayal of man's position in the open universe and his capacity to face it, as well as his dilemma as a result of the new environment creation (Warrick,1978, p.41). It is important to note that this second scale belongs to science fiction only (Knight,1972, p.12). Science and technology change and affect the value of cultural patterns and help man look into the future. Science fiction is neither an adventure into outer space nor a fight against alien invaders or creators. On the contrary, "it has the ability to treat people as reasoning beings, for its courage in dealing with the great human questions – the origin of the universe, the nature of reality, the ethical dilemma and for its unmistakably benign influence on the mental climate of our world," as Damon Knight points out (Knight,1972, p.12).

Throughout the history of Western fiction, science fiction has played an important role. Scientific methods started to replace religious worldviews and helped people to realize the possibility of different ways of life. In old times almost up to the end of the Middle Ages, people believed in the timelessness of the world and myths. Yet, fiction describes the development of man from the mythic view at the world into a rational and realistic way of thinking. The development of human science during and after the Scientific Revolution led to the progression of fiction from relying on myth to realism. Here, realistic novel becomes supreme in the world of fiction and the developing knowledge of the world and outer space makes people aware of the problems which only fantastic

speculation can solve (Davenport, 1955, p.15). In other words, science has shaken the basis of the Judeo-Christian thoughts. The demands for religious moral values began to diminish as people found other substitutes. With the rapid and considerable scientific developments of twentieth century, science has compensated for these old values in answering man's long-held existential questions mentioned earlier. In other words, man has found new values to replace the lost religious ones. Science fiction has the ability to present a context within which values are implied in science itself. Whereas, Knowledge about space and the outer space can express values that evaluate man's conduct in the future.

With, and as a result of, the development of technology, new fictional forms begin to appear especially in nineteenth century when the traditional world views are shaken as a result of scientific understanding of the laws of nature which leaves almost no space for any supernatural intervention. Terence McKenna argues that our imagination, although a very successful achievement, has got too powerful for our planet (Sheldrake, McKenna, and Abraham 2005, p.98). In other words, imagination as a universal library reflects reality in somewhere, sometime. New fictions of time and space help man to understand their own world. Science fiction requires an imagination, discovery and understanding of the opportunities that science has opened up and, in that sense, it expresses a scientific view of the world (Sheldrake, McKenna and Abraham 2005, p.98).

In modern world, people consider science fiction as a phenomenon that emerges in the time of atomic dynamism and the competition to reach and control outer space. Therefore, it is regarded as an imaginative exploration of the opportunities that science has provided (Suvin, 1985, p.66). As Darko Suvin points out:

[S]cience fiction started from a pre-scientific or proto-scientific approach of debunking satire and social critique and moved very close to the interesting sophisticated human and natural sciences, the natural sciences that caught up and surpassed the literary imagination in the nineteenth century (Suvin,1985, p.62).

Then, he adds that science fiction has entered the realm of:

[A]nthropological and cosmological thoughts, becoming a diagnosis, a warning, a call to understanding and action class of prose narrative treating of a situation that could not arise in the world we know, but which is hypothesized on the basis of some innovation in science or technology or pseudo-science or pseudo-technology whether human or extra-terrestrial in origin (Suvin,1985, p.62).

Science fiction is a speculative understanding of the opportunities and risks that science has brought about and a literary expression of the scientific worldview (Suvin,1985, p.59). Therefore, Suvin considers science fiction as "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 authors' empirical environment" (Suvin,1985, p.62). For him, estrangement is the main factor that differentiates science fiction from conventions of realism from the eighteenth century to the twentieth century. For example, fairy tales begin to use imagination to arrive at satisfaction and entertainment as an end to itself rather than to bring insight into our understanding of reality. Therefore, it is not a surprise that everything is possible in fairy tales, such as flying carpet which violates the law of gravity (Suvin,1985, p.58).

Science fiction has changed the literary sensibility that leads to the rebirth of romance. Mary Shelley in the preface to *Frankenstein* (1823) illustrates the gothic romance by saying that she is not interested in just combining supernatural threatening atmospheres, but she has decided to tell a specific form of the fantastic (Suvin,1985, p.59). Astonishment and curiosity about mysterious things are considered main factors in science fiction. Hence, as a literary kind, science fiction has been devoted to find the ideal environment or community from the unknown (Suvin, p.59). Therefore, science fiction refers to any form of fantasy literature which consists of scientific factors to show scientific facts and ideologies.

In the 1920's and 1930's, science fiction is divided to include two groups of American and European writers. The works of the European writers focus on social and intellectual dilemmas and philosophical fiction. On the other hand, American writers concentrate on wonder and horror in their writings using new

devices and physical concepts. Their writings are completely devoid of social consciousness. American science fiction writings become more thoughtful, hypothetical and effective without losing its sense of wonder and surprise (Freedman, 2000, p.71).

Science increases man's knowledge about space. It helps man to explore the future. Therefore, in the twentieth century, science fiction has developed and become a common genre. Science fiction is the only way that can help man's imagination through portraying such fictional worlds (Solotaroff,1976, p.212). Science fiction has made a decent position among genres in spite of various charges against it. Science fiction writers have serious and dedicated efforts in order to establish a modern conscience for man in an age of reason. Brian W. Aldiss remarks that "science fiction is the search for a definition of man and his status in the universe which will stand in our advanced but confused state of knowledge and science and is characteristically cast in the gothic or post-gothic mode" (history and definition of science fiction, 2004). Through their writings, science fiction writers attempt to create a better world and expose new moral values. Hence, science fiction is concerned not only with using science but with the problem of scientific development (Butterfield,1959, p.7).

Through science, modern man begins to challenge the universe to conquer knowledge. Similarly, science fiction writers concentrate on science's perspective on religion that reinforces not only modern civilization but, religion as well. In other words, science gives the redemption in time of old religions by revealing the clash between science and religion (Macgrath,2007, p.79). In the twentieth century, science fiction has developed greatly with the emergence of robots. This non-human can solve many difficult problems but at the same time it is a dehumanized man. As Mike Reddy remarks, twentieth century science fiction "did not only create the concept of the robot, but demonstrated the complexity of the threats, opportunities and moral dilemmas their arrival would spark" (Reddy,2007, p57). Furthermore, it could be argued that there are two kinds of science fiction novels, hard science fiction and soft science fiction. The second type of tales concentrate on philosophy, sociology, politics and psychology in times of negligent the technology. This means, it has rejected the

machine and returned to old society; whereas, hard science fiction focuses on the development of science and technology (Luckhurst,2005, p.85).

It is important to highlight the difference between science fiction and fantasy here. The latter is a type of literature that describes unreal and imaginative situations which completely differ from real life. Merriam-Webster describes fantasy as "a book, movie, etc., that tells a story about things that happen in an imaginary world" (Mendlesohn and James, 2012, p.75). Fantasy uses magic and other supernatural elements to build the story and creates an imaginary world. Science fiction is equipped to reveal the problems that focus on the interactions of individual human. Haraway argues that, "[c]ontemporary science fiction is full of cyborgs - creatures simultaneously animal and machine, who populate worlds ambiguously natural and crafted" (Haraway,2006, p.149). Haraway refers to fictional worlds by using the word "crafted" which differs from the world of magic, the latter being consistent, rational and logical with the spirit of knowledge (Haraway, 2006, p.117).

Darko Suvin defines science fiction as "distinguished by the narrative dominance or hegemony of a fictional 'novum' (novelty, innovation) validated by cognitive logic" (Suvin ,1979, p.65). He tries to clarify that science fiction texts do not rely on specific scientifically confirmable facts but are based on "the cognitive logic" by accepting the miraculous and the supernatural (Suvin,1979, p.65). It is clear that fantasy is different from the science fiction since the latter depends on science not on magic. In fantasy, all elements such as characters, setting and plot are unreal. To create enjoyment, the fantasy writers concentrate on suspension of disbelief and the acceptance of impossibility. Therefore, fantasy is away from reality as it depends on non-existence and unreal world, which is imaginative and impossible whereas, science fiction depends on a possible world of future. Fantasy does not depend on facts. On the contrary, it concentrates on the supernatural whereas science fiction depends on rational hypothesis. "Science fiction is not possible until the world-view shifts from a supernatural explanation of phenomena to a rational explanation based on known or hypothesized laws of the universe," as Mark R. Hillegas argues (Morton,2004). Science fiction writers use some literary tradition of fantasy. Miriam Allen de-Ford clarifies that the difference between

science fiction and fantasy pointing out that the former is concerned with possibilities which are not probable but the latter deals with possibilities which are possible (Rabkin,2004, p.417).

Another related subgenre to science fiction is fairy tale. It is a type of short story that is mostly composed to teach children some life lessons. Utopian fiction is also associated with science fiction but emphasizes and portrays imaginary societies separated from the present. Utopian writings reflect the real-life order of things, portray social and personal satisfaction or represent imaginary paradise. In this regards, Utopian fiction gives many features of its own since it has the relation to science fiction genre. One of the important elements of Utopian fiction is technological utopias which depict the developments in robotics, computing and transportation that become only dreams in the present world (Rabkin,2004, p.417). Science fiction includes any tale or story that focuses "on the result of a possible, though not actual, change in the condition of life. It teaches adaptability and elasticity of mind in the face of change" (Houghton,1942, p. 51). Thus, science fiction is concerned with imaginary experiment to see the reaction of the people about a potential change before it happens. In fact, the future is a consequence of the present; as a result, science fiction gives a clear analysis of new social concepts and their impact on the future of man and the world. Moreover, it presents many different views about the world and many issues that need to be studied and tested (Gilde,1970, p.469).

It is fruitful to showcase some practices and ideas of science fiction by a selection of poets and dramatists chronologically to make it clear that the incorporation of science into literature is not a new phenomenon. In different times and cultures, science fiction has taken various forms. Poetry is about feelings whereas, science is about facts. This means they have nothing to do with each other. In previous centuries, the pre-Socratics reworked questions about the world such as how it came and from what it is made of. This shows a close link between literature and science. In the nineteenth century, Erasmus Darwin's poem *The Temple of Nature* (1803) follows life-forms from micro-creatures to human society. Earlier in the seventeenth century, John Donne concentrated on exciting new scientific discoveries, stating that "[a]

mathematical point is the most indivisible and unique thing which art can present" (Butterfield,1959. p.15).

The link between literature and science is best manifest in Donne's *An Anatomy of the World* (1611) and in many of his, as well as other metaphysical poets', scientific conceits. He used scientific ideas to express the notion of love at the end of the seventeenth century (Butterfield,1959, p.15). For example, his "Love's Alchemy" is a criticism of those who consider science meaningless and absurd. In the poem, Donne compares love to the alchemist's elixir that is eternally distant from unending delight. He shows the efforts that alchemist makes to find out the life elixir. When making a parallel between the lovers' microcosm and macrocosm, Donne turns the human body to a small universe made of innocent nymph. Moreover, he compares the growth of love to the growth of flowers and vegetables. Thus, Donne draws on botany. Donne's poetry and poetic philosophy relies heavily on science (Donne and Grierson, 1912, p.11).

Matthew Arnold was elected as a Foreign Honorary Member of the American Academy of Arts and Sciences (Arnold and Lang,1996, p.8). In his poems, Arnold deals with powerful emotions against modernization during the Victorian period which is happening too fast. He believes that rapid movement in any area in society makes people distant from faith. He concentrates on the ability of man to find his true self via nature as he considers modernization against faith. For him, faith is a crucial element of human nature which is unfairly blurred by too much scientific rationality and reasoning (Tinker and Lowry, 1950, p.14). In "Bacchanalia," Arnold criticizes this new era and how its capacity has violated the order of life. Robert H. Super argues that for Arnold "the idea of science and knowledge is desired by our whole instructions and businesses. Science is an inventive power, a faculty of divination, akin to the highest power exercised in poetry" (Arnold and Super ,1978, p.25). Arnold believes that interpretation of science does not provide such intimate feeling about objects as poetry does.

Constance Caroline Naden, another English poet of the nineteenth century, is famous for using scientific ideas and facts to express love and describe unscientific faculties of human mind (Murphy,2006, p.42). In her poetry, she

explores the clash between love and the scientific mind, shedding light on important scientific theories to express the realities of love. For her, "science and literature are two seemingly distinct disciplines with different aims and methodology" (Murphy, 2006, p. 45). In "The Astronomer," Naden compares love to stars who love the Earth. In the poem, Urania is the goddess of universal love who at the same time represents astronomy, love and the beloved. We see that an astronomer who is very certain that the world is not heliocentric and therefore explains his astronomical discovery (Naden, 1987, p.13). Through using science and the lens of a spectroscope, Naden views love, the beloved and life.

Also, Robert Kelly, a twentieth-century American poet, in "Science" compares science to a basket that includes different ends taken from different parts. Hence, he compares science to poetry which explains the universe and its experience with an accurate language. For him, science is like poetry. As he puts it, "while science is all subject to materialist verification, in a rational world, I would side with the scientists, but I'm not always rational. There are times when precision will kill the soul faster than the surest poison" (Krueger, 2009, p. 251).

Richard L. Kenney is another twentieth-century author who relies on science. His poem *Orrery* (1985) is a metaphorical poem that has three major parts: "Hours" (time), "Apples" (memory) and "Physics." The poem rests on the idea that science at the moment is mechanically driving the world. Thus, it tackles the subject of technological advance and contains images of time, season and nature. This long poem was inspired by the time he spent in Vermont Apples, an apple farm. To Kenney, the cider mill represents:

[A] relic of that pre-electrical world . . . a comprehensible world, in many ways . . . None of it seems to have left this farm, at any rate . . . crippled dance steps, disassembled stories, half-hummed tunes, all common property disintegration projects . . . with the confusion of common sense, as it sometimes seems, from the decay of the clockwork universe. (Kenney, 1985, p.52)

Kenney seeks the pre-electrical world in the middle of a very advanced contemporary life and depicts the union of time and nature that collapsed.

Dramatists too touch on science in their plays. As Kirsten Shepherd-Barr puts it, "[f]or centuries, science and theatre have enjoyed a fruitful intersection in the form of dramas that utilize scientific ideas or feature scientists at their centre" (Shepherd-Barr, 2006, p.34). Marlow was living in a time where there were many changes happening in Western Europe as there were many new advances in science that affected literature. His famous play, *Doctor Faustus* (1592) deals with the relation between society and science, the role of science in man's life and the complicated moral consideration of science (Shepherd,2006, p.14). Faustus is a contradictory character. He is very ambitious, unwilling to lose the powers that he has managed to gain. Doctor Faustus tells the story of a Renaissance man who is interested in the individual, scientific exploration of the nature of the world and classical learning. As Faustus puts it, "I go through every field of scholarship, beginning with logic and proceeding through medicine, law, and theology" (Ruickbie, 2009, p.15). For Marlow, ambition can lead to the destruction of man. He points out that "wanting too much is immoral, meaning when the lust for knowledge cannot be controlled, and the new discoveries are made, the consequences are known (Logan, 1973, p.14).

Ben Jonson's *The Alchemist* (1610) is another example of incorporation of science in literature. The title refers to the concept of transformation of metal into gold by using science. Sir Epicure Mammon, the protagonist, disguises himself as a doctor to carry out his fraud. Abel Drugger, an honest good man and a tobacconist, asks Mammon to advise him about the new shop building. Instead of advising him, he tricks Mammon into handing a lot expensive tobacco that leads to his loss of everything. Sir Mammon's name means a person who is devoted to material wealth. He is the greediest and the main fraud. He compares himself and the alchemist's work with antique riches that he turned into gold by the philosopher's stone. His greed destroys him and kills all his hopes of being rich as other conmen exploded his heater. The play rests on alchemical theory, suggesting that things are in a continuous state of change. The characters are transformed into other characters. Also, their fears and faith are easily transformed into gold for the conmen. Transformation plays an important role in the play. They can change base metals into gold thanks to alchemy. Hence, alchemy is considered the source of a con game, a means to

deceive innocent victims whose willingness of believing help the conmen deceive them easily and gain financial benefits. For Jonson, London of the alchemist "was growing and glittering and slightly hysterical, and cozening was easy, widespread, and immensely successful" (Knight,1972, p.44).

He criticizes those who use science for deceiving others in order to gain wealth and self-interest.

Thomas Shadwell, another English poet and playwright, in *The Virtuoso* (1676) deals with the ideological crisis that is associated with the new science. The play is about Sir Nicholas Gimcrack, a man of general curiosity who pushes back the borders of knowledge in random instructions with absurd experiments and theories. Sir Gimcrack's study collection seemed foolish, but his discovery is horror to common sense (Hillegas, 1979, p.3). The play is a satire on contemporary science and on the Royal Society for showing how the king becomes disconnected from many of his subjects and unable to recognize them. When his estate must pay off debts, he asks for help from everyone, but none accepts. Despite being a ruined man, he still hopes to discover the philosopher's stone. Here, Shadwell draws the reader's attention to specific follies of the Royal Society. This play can be regarded as the most extensive dramatic treatment of modern science for it is the first play that discusses the character of a scientist, presenting him as an image of a great faith in rational discussion and persuasion (Collins, Latham and Fischer,1988, p.219).

Johann Wolfgang Goethe's *Metamorphosis of Plants* (1791) translated as *The Transformation* is regarded as an important twentieth-century work of art. The story begins with a travelling salesman named Gregor Samsa. When he wakes up, he finds himself being transformed to a large monstrous creature. He tries to adjust to his new condition because his parents and sister are frightened of this horrible creature. Both his body and voice have changed. Finally, his death leaves the family with a great sense of relief. Goethe's work focuses on various topics such as planets, colour, geology and weather. He seeks for better understanding and caring for the natural environment (Miller,1995, p. 275).

Bertolt Brecht's *Life of Galileo* (1938) is about the ethics of modern science and discusses the work of the great Italian philosopher Galileo whose scientific discoveries are rejected by the Roman Catholic Church. The play shows the

conflict between rigidity of religion and scientific evidence as well as questioning the values of constancy in the face of oppression (Billington,2013, p.88). The Church has refused his theory about the motion of the Earth, considers it against religion and decides to execute him. To save his life, Galileo denies his scientific discovery which later becomes more available to all people. Galileo insists on continuing his scientific researches and nothing can prevent him. Through Galileo's struggle against the Church, Brecht reveals a civilized and convinced scientist torn between adherence to truth and desire for life. The swirl between the progress of science and the needs of mankind, "might grow so wide that the new achievements of science could lead to the destruction of mankind. In fact, the scientist must develop his knowledge for the good of humanity" as Galileo's says (Danter,2001, p.16). Brecht's motivation is primarily to express his scepticism about science and his politics makes him challenge sciences that do not serve people.

Tom Stoppard's *Arcadia* (1993) describes man's progression of knowledge. Thomasina, the protagonist, is a genius girl. She knows the second law of thermodynamics and can disprove determinism. She focuses on discovering the rules of mathematics. Her approach of academic knowledge enables her to succeed since she understands the principles of heat. Believing to understand the flame better than anyone, Thomasina is engulfed by it and dies. Hence her tragic end encourages Septimius to spend his lifetime trying to prove her hypothesis. Both Thomasina and Septimius understand the limits and the unfulfilling nature of academic knowledge. Despite their entire attempt to reveal the mystery of science, they cannot resolve it (Fleming, 2008, p. 44). The ambiguities of the mathematics reveal greater truths about humanity and the family. In the play, it is considered the source of pride especially for Valentine, a chaotic mathematician who refuses to share Thomasina's model and theory of the structure of the natural world by using mathematics. This play explores the nature of truth about history, mathematics and physics showing that in the present people and scholars can illustrate things happened in the past (Stoppard and Delaney,1994, p. 224). Scepticism towards science does not motivate Stoppard to introduce scientific notions. On the contrary, he has demonstrated a constructive interest in the intellectual aspects of science and has utilized

science for metaphorical goals. In fact, Arcadia has didactic sequences and reveals an interesting transition between science and theatre.

Like the poets and dramatists, many novelists write about science fiction for specific purpose that reveal their opinion about it. One is Aldous Leonard Huxley, an English writer and philosopher. *Brave New World* (1932) is his satirical novel in which people live happily into a dystopian world. He uses biotechnology to get rid of mental pain showing that universal happiness will cost our family, culture, love and freedom. The recreation of the universe arouses people's awkwardness. He seeks to warn the people from scientific utopianism. For him, it is only bioscience that can cure suffering and death and not spirituality or literary intellectualism rejection (Huxley,2010, p.7). Huxley does not show any sign of feeling or artistic creativity or individualism in *Brave New World*. In addition, there is no scientific discovery or intellectual excitement either. Therefore, this novel is considered as having a negative view of science and technology by highlighting what would happen if they go out of control. Nevertheless, scientific progress seems to have stopped with the emergence of a world state. Huxley has no hope of man's ability to save himself from himself. He focuses on the theme of scientific development and its effect upon man saying that "scientific advances that are specifically described are those involving the application to human beings of the results of future research in biology, physiology and psychology" (Huxley, 2010, p.7). He criticizes and warns of the perils of using technological and medical intervention for the aim of reproduction such as "the medical elimination of fruits, the creation of complex entertainment machines that generate both harmless leisure and the high levels of consumption and production that are the basis of the World's stability and the soma" (Huxley,2010, p.2). This portrays a horrible picture of a society run by compassionate behaviourists to show the fear that technology may lead to the destruction and death of mankind.

H. G. Wells a British novelist who composed a series of science fiction novels is the first writer who used reasonable scientific discoveries and propensities. His science fiction novel, *The War of the Worlds* (1897) is about an alien invasion of the Earth. The protagonist, who is the narrator, seeks to know the dreadfully appearance of the aliens. He wants to understand the aliens "organs,

their head-bodies and lipless mouths, therefore, he makes many connections with them. Through a telescope, he observes tiny organism. He seeks to study Martian's nature inhabitants and their evolutionary growth that is compared to humans. He finds them "at once vital, intense, inhuman, crippled and monstrous" (Wells,1964, p.30). This novel compares the alien invasion to colonialism. It refers to the cruelty and injustice of imperial invasion. As Wells portrays it, Martians' treatment of the Earth is like that of its colonies by the colonizer. Martians who are ugly worm-like monstrous creatures invade England for they consider the Earth as a source of feeding. On the other side, the Earth is powerless. It does not have the strength to confront the invaders. In order to survive, Martians start to eat humans and overrun the planet. Because Martians do not have antibodies to protect themselves from the Earth's bacteria and viruses, they die. This invasion terrifies and overwhelms the country as the extra-terrestrial invaders attack the city with black smoke and kill everyone with heat rays. The Martians are more developed than humans, but they come to the Earth for food. Through his novel, Wells criticizes the organization of modern life for indistinguishable human beings who kill each other and cannot find a mutual defence due to their weakness. Wells believes that because of science, the modern life will witness many changes, hoping not aggravated by human ignorance, greed and arrogance (Wells,1964, p. 35).

John Ronald Tolkien, another English writer and poet of the twentieth century, is identified as the father of modern fantasy literature. Tolkien's *The Lord of the Rings* (1954) is a great science fiction series that deals with many themes of human survival, power, evolution and biology. However, the paradise of the Shire is an illusion. It is true that the Shire is lush, and their hobbits are joyful and happy, yet the main protagonists return. They feel that the ignorance and innocence they once had and enjoyed in the Shire are gone forever. They have had many painful experiences and memories and have seen many adventures and become adults (Kellner,2006, p.21). *The Lord of the Rings* is a series of journeys that concentrates on the conflict between industry and nature. Tolkien was raised in the countryside and was very attached to nature, so he was disappointed when industry and machines began to control. Therefore, he has made a clear link between metal and evil and metal by creating The Shire as a

place that is inhabited by fire, machines, wheels and other gadgets that are manufactured. For him, science and development destroy the beauties of the world.

In Douglas Noel Adams *The Hitchhiker's Guide to the Galaxy* (1978), science is used to prove the insignificance of people and their wrong view about the universe. It is concerned with space travel, life on other planets, imaginary worlds, and many advances and scientific and technological innovations (Adams, 1988, p. 12). This novel begins at a time when the Earth is destroyed. When the house of the main protagonist Arthur gets torn down, his friend Ford Prefect is an alien who can save him when another alien Vogons comes to destroy the planet to make way for some sort of space road. It shows that people may invent new technology, but science cannot change their thinking completely.

2.4 The Emergence of Steampunk

Steampunk in literature emerges as progressive by imitating and re-imagining the nineteenth-century society. Hence, it is preoccupied with the manifestation of the Industrial Revolution to deal with the idealism of science and the advances of technology. Through the historical framework, steampunk creates a mixture of the conventions of the nineteenth century with retro futuristic machines. Steampunk deals with the elements of fantasy and science fiction as a genre. The authors of steampunk radically redefine the implications of the socio-cultural. Steampunk genre seems to have appeared to calm the fear of replacing technology with human being. Steampunk combines mechanical elements and industrial design with a touch of fantasy set in the Victorian era (Taddeo and Miller, 2013, p.15). The rapid technological changes and developments of the Industrial Revolution are portrayed in a fabulous and incredible way through which pollution jeopardizes the workers' health and existence. The occupational hazard of the nineteenth century has a great impact on that progressive era (Onion, 2008, p. 136). During the twentieth century, steampunk has a great impact on film, music, fashion and television. Steampunk, is relatively considered a new literary genre, with roots barely reaching the seventeenth century and gaining a name only in 1987, but its seeds

can be traced back to the nineteenth century when Jules Verne, H. G. Wells, Mary Shelley and others paved the way for the future steampunk writings (Onion, 2008, p.138).

Mike Perschon argues that, "[s]teampunk does not seek to reconstruct the past in literature, art, or fashion, but rather constructs something new by choosing elements from the Victorian and Edwardian past to create a style which evokes those periods" (Perschon,2018, p.36). Steampunk attempts to expand their readers' ideas about what "something new" can give the readers steampunk as an aesthetic to be in an elegant shape, thus allowing readers the "flexibility to discuss its diverse expressions." According to Perschon, there are three components: neo-Victorianism, retrofuturism and techno fantasy, all of them work as a lens to shape steampunk's text and a text must possess them all to be considered steampunk, to avoid making the term meaningless. Since steampunk is the future of 1890s Jeter's novel, it is a prediction of the future of Victorian period (Perschon,2018, p36).

Neo-Victorianism reveals that steampunk does not imitate, yet rather summons the nineteenth century as a resonant, mimesis, but not accurate. Steampunk utilizes a feel and look towards the period between 1800–1914. A text in this sense, set in the future, several hundred years on an alternate world, could conjure up the Victorian era in London. Retrofuturism is the second component and refers to the way a present imagines the past through seeing the future. Perschon argues, "[s]teampunk technology's blend of past and future often ignores the ambitions of late Victorian progressives, less concerned with sky dreadnoughts and phlogiston powered ray guns than with medical advancements and human rights" (Perschon,2018 p.40). Retrofuturism still shows how modern readers of steampunk perceive the nineteenth century. The third component is Techno fantasy and indicates how technology depends on the abandonment of the world of reality. As Perschon points out "steampunk fans seem remiss to admit steampunk's connection to fantasy" (Perschon,2018, p.45). Steampunk does not necessarily lack magic; thus, it deals with sciences and the forms of magic that can imitate scientific methods that deal with actual magic. Techno fantasy allows scientists to produce a living breathing machine-like creature.

Techno fantasy helps steampunk scientists to build a wall of clockwork gears that power to craft automata who seem perfectly human (Perschon,2018, p.45).

Nevertheless, steampunk is just a way to bring us back to those days that are more imaginable than real. In this sense, it posits history into an alternative world. As K. W. Jeter points out, "the mid-Eighties" had "starry-eyed, gobsmacked fascination with the siliconized future" (Jeter,1987, p.98). At the end of the twentieth century, Jeter like many other technophiles turned the imagination towards applying science that will be knowable, pliable and seeable. As he puts it, "the technology of steampunk is natural; it moves, lives ages and even dies" (Jeter,1987, p.439). Steampunk seeks to reject the conformism to the modernity of featureless and soulless design of the shaping of technology. Hence, it seeks to find a solution to the damages caused by the emerge of industrialisation. This is not just a motive for bleaching the bad parts of what the Victorian era presents, but rather a progressive motive to restore the past in an affirmative way. Proto-steampunk influences by creating machines that are connected with the subculture that has been participated in an active way (Jeter, 1987, p.218). Within that context, *Infernal Devices* is a social critique with a sense of dark humour. Jeter juxtaposes comedy with effected point through the drunkard Creff, the servant of George Dower and Ethiope, the stranger who comes to George's shop.

Cynthia Miller defines steampunk in a 2011 interview about science fiction:

Curious tales of historical science fiction infused with Victorian visions of wildly anachronistic technologies . . . scientists and magicians, philosophers and poets, time travellers and clockwork humans animate worlds inspired by Gothic scientific romances of H. G. Wells, Jules Verne, and Mary Shelley, where fantastic inventions are seamlessly integrated into everyday life (cited in

(Taddeo and Miller, 2013, p.197).

Although steampunk considers a subgenre of science fiction, it becomes popular in the last fifty years. According to Steffen Hantke, a scholar of steampunk in 1990, steampunk's appeal largely related to the Victorian era still dominates

modern imagination. Hantke emphasizes steampunk's ability to twist and transform history; it asks an overarching question of "what if?" (Attebery,2013, p.207). As Hantke points out, "[w]hat makes the Victorian past so fascinating is its unique historical ability to reflect the present moment" (Hantke,1999, p.54). In other words, he argues that there is always a natural corollary between the history of the Victorian era and modern events. As Hantke argues, steampunk is a "[s]cience fiction sub-genre that postulates a fictional event of vast consequences in the past and extrapolates from this event a fictional though historically contingent present or future" (Hantke,1999, p. 245). For Hantke, the use and the existence of steam technology is the biggest difference that comes from alternate history and steampunk. As he continues, "in choosing the steam engine as the most appropriate icon of the past to describe itself, it makes technology its main focus" (Hantke,1999, p.246). Hantke argues why steampunk novels have a great impact on the reader's attention and why they capture their awareness. In this sense, he notices that steampunk is not just a pillar to support the steam-powered of its own fantastical devices, but a way to discover our inner nature because "the plots of such texts force their respective protagonists to see the truth behind the mask" (Hantke,1999,p.148).

Nevertheless, the term punk refers to counter-hegemony and rebellious tendencies. Steampunk helps shape retrofuturism that faces past and present as parallel dimensions. "Retrofuturism represents the crossing of technologies or 'futurist' forms of life with others that we consider obsolete or outdated" (Guffey, 2015).

Steampunk is an "outcast steam"; it has a Victorian charm, characteristic of the steam, but it has an outcast sense in the creative point of view, for when you think about steampunk you think about technological creation, you think about possibilities. Outcast steam is indeed a great definition for it, because in steampunk you can observe people wearing safety glasses [the unfailing goggle], always modifying things for their use or creating things all the time (Guffey, 2015).

Hantke points out that steampunk is not merely a sub-genre of science fiction. It "[i]s content with revealing a single, coherent underlying reality, which nevertheless remains subject to the same basic ontological rules as the appearance it replaces" (Hantke,1999, p.248). Although airship adventures and fantastical inventions are exciting, steampunk delves into deeper issues of human fears. Hence, as Hantke argues, "steampunk" can "be an ahistorical, free-floating intertextuality in which all moments exist simultaneously and are equally accessible to the competent postmodern reader" (Hantke,1999, p.248). Nevertheless, steampunk raises questions about one's existence and how one got here.

In this context, knowledge has an importance role of revealing the spectrum of all those genres and sub-genres accordingly. The merits of knowledge play an important role to clarify how writers connect steampunk to be a part of literature. Steampunk gives a better chance to be as plot device by maintain its own valuable. There are these laws that govern the fantastic sciences throughout steampunk alternat worlds which consider them as natural laws. Steampunk gives the ability to innovate changes that establish the foundation of science and technology-savvy. Michael Moorcock argues that in creating natural laws as part of alternative worlds, steampunk promotes and evokes changes for the better. The important thing is to recognize how science differs from technology and how steampunk deals with both accordingly. Technology has the practical purpose that is applied by science (Moorcock, 2013, p.241).

Infernal Devices written by K. W. Jeter was first published in 1987 and then republished in 2011 by Angry Robots who added a new introduction. The novel takes place in Victorian London, has a dark humorous tone and refers to the events which nearly ruined the Earth. The story has been told in retrospect by the protagonist George Dower from the moment that his loyal servant Creff enters George's room and informs him that there is a visitor who wants to see him "crazed - a murderous savage!" (Jeter,1987, p.10). Jeter epitomizes steampunk as a sub-genre from the cover image of the book, which has many details. There is a man with a metal mouth, wearing a hat, the background is covered by shiny pipes and layering of gears and industrial screws.

Steampunk gives the Maker Movement, which emphasizes tinkering the existing devices and materials and invention as opposed to consumerism, an aesthetic design and subculture. The roots of steampunk firmly go back to the roots of science fiction that expands fantasy. Steampunk romance mastered technology with love and sexual fulfilment that exists in a society which shaped by technology (Taddeo and Miller,2013, p.15). Nevertheless, the desire for full knowledge and ingenuity expressed by some of steampunk's supporters offers a great opportunity to rethink and make human reconsider how knowledge establishes ethics and technology in a post-human existence. Radically knowledge changes our perspectives towards the universe. The technological advances during the past few years will change our future and create new techno-cultural worlds. Jeter's *Infernal Devices* reveals how knowledge constantly changes and connects the past to the future and defines particular culture practices. In fact, steampunk offers the tendency to gain an idealism of knowledge (Forlini,2010, p.98).

However, steampunk describes the relationship between human and machine in a way that technology spreads its authority over human ideologies and culture. Hence, the tendencies of steampunk's machines are towards human control, but steampunk is not a means of human hegemony. Therefore, writers typically portray steampunk heroes who use their mastery to control technology and lead their own fate rather than being controlled by the machine (Taddeo and Miller,2013, p.67).

The science attempts to understand the governing laws of nature and provides models to explain natural phenomena and, therefore always subject to questioning. Knowledge helps human understand universal laws by drawing on empiricism and reason. Epistemological principles give philosophers the ability to reveal what resides behind horizon of knowledge that affects the universal. Michel Foucault has had a huge impact on our perception of science and society. Foucault points out that the history of knowledge is a means to power. In *The Order of Things* (1966), Foucault discusses how the power of knowledge affects the history of science. He refers to episteme (a system of scientific knowledge and understanding) as the historical, non-temporal knowledge that is the basis of truth and discourse. Knowledge has the ability to fight against

ignorance in all areas by shedding light on the unknown. When knowledge is acquired to give the humanity their purpose, whether through direct or continuous participation, it must be elucidated and organized fittingly in relation to the specific environment. In order to give proper structure to cognitive theories, theorists strived to refine the progression of knowledge over time.

According to Foucault, science does not have a smooth linear history that leads to more knowledge; instead there are many abrupt changes and ruptures that he calls episteme. As he points out elsewhere, "[i]n any given culture and at any given moment, there is always only one episteme that defines the conditions of possibility of all knowledge, whether expressed in a theory or silently invested in a practice" (Foucault ,2019, p.197). He explains that throughout history, there has been too much emphasis on the subject, its desire, wishes, intention, belief, decision, etc. and therefore we tend to interpret phenomena in terms of an explanation of the individual subject experiencing it. For example, we tend to speak about individual geniuses such as Darwin, Newton and Sigmund Freud. However, the course of sciences is not determined by such individual geniuses but by scientific methodologies and processes that the individual employs. In other words, as implied by Foucault, our science today would probably be the same even if these figures never lived because other individuals would make the same progress and inventions thanks to the scientific methodologies. In fact, Foucault tries to move away entirely from the level of consciousness of the subject, from the idea that at the level of conscious thinking, one has a certain belief and desires that lead one to make decisions (Rescher,2003, p.102).

Foucault adds and points out that historians of science have been mostly interested in these conscious phenomena. However, he argues that by focusing too much on the consciousness, we fail to bring into consideration our unconsciousness. In other words, it is not our consciousness that determines why we behave in a certain way but also and more significantly our unconscious mind that includes believes, desires and decisions. Therefore, it is more important to look at the rules that govern our unconscious behaviour. According to Foucault, episteme is "the set of unconscious rules that govern all serious scientific discourse in a certain society and time period and determine what does

and what does not get taken seriously by that scientific community" (Rescher,2003, p.63). In other words, in every time and culture, there are unconscious rules that regulate and manage the type of discourse or scientific writing that should be taken seriously. Moreover, scientists themselves may not be aware of these rules. These rules are what Foucault calls episteme.

Knowledge gives the capacity to science presence in order to create the sensation of possibilities as well as the activity that builds the relationship to the future. Science fiction has influenced science to this day by realizing it shapes the future. As Ed Finn points out, science fiction will continue to have an effect on today's science that will result in forming our imagination of the future (Rescher,2003, p.63). Thus, science fiction provides a spectrum of opportunities. The thesis will reveal three novels that represent the science fiction genre in different eras. The first one that shows the mystery of science is Mary Shelley's *Frankenstein*, which is a series of letters from Walton, an Arctic explorer, to his sister Saville. These letters illustrate his devotion to scientific exploration on the North Pole, hoping to find a way from Pacific Ocean to Atlantic Ocean. He wants to discover the reason of magnetism in this dimmed land. His insist on achieving his childhood dream encourages him to go very far away (Shelley,2017, p.16). Mark R. Hillegas argues that *Frankenstein* is not a horror novel; on contrary, it is one of the earliest science fiction novels since it exposes the horrifying consequences of the scientist's studies about the principle of life. This novel seeks to delineate man's position in the world and sheds light on ethical dilemmas (Hillegas,1979, p. 3).

The second novel is Stanislaw Lem's *Solaris* (1970), a science fiction that tries to understand limitations of human's memory and experiences as well as eventual communication with non-human species. *Solaris* is considered an extreme example of science fiction, because there is no heroic action or monster in the book. The author shows the futile attempts of communication with another terrestrial life on a very far planet which is totally covered with an ocean. Because of that the planet has shown to have life with whom Terran scientists try to communicate. While the scientists examine the oceanic surface of the planet *Solaris*, this planet in turn studies them. *Solaris* has the ability to notice and arouse the secrets and guilt of each scientist. The novel goes beyond

anthropomorphism and anthropocentrism which seem to be rooted in human perception (Murphy,2006, p.93).

Moreover, *Infernal Devices* by K.W. Jeter shows the protagonist journey towards his destiny and in a world dominated by technology and robots. Nevertheless, after George's father dies, he is trying to be like his father by repairing watches. An unexpected visit by a stranger mark the starting of his adventures. After he owns the things that his father left, the burglars and murderers start to chase him. The course of events changes when he receives a coin that is engraved with the image of an unknown saint.

3. SCIENCE'S MYSTERY IN MARY SHELLEY'S *FRANKENSTEIN* (1828)

3.1 *Frankenstein* as a Proto-Science Fiction Novel

Mary (Godwin) Shelley (1797-1851) is best-known for her proto-science fiction novel *Frankenstein; or, The Modern Prometheus* (1818). Shelley is the daughter of William Godwin, a radical philosopher who described her as "an active in mind, a singularly bold and imperious" (Dunn,1978, p.85). However, it is argued that the novel is a proto-science fiction although Shelley started it off as a romantic novel. Proto-science fiction refers to any early literature that contains elements that would develop into science fiction. Shelley chose the subtitle *the Modern Prometheus* for Victor Frankenstein as an assault on the egotism of scientists. However, Frankenstein's fate intends to be a warning to scientists. It shows the possibility that a scientist can take to replace God by creating life. Frankenstein's crucial intellectual goal turn his attention to the science of electricity which implicates in the mechanics of science-electricity. In the novel, Shelley focuses on knowledge to show the effect of scientific advances on society and mankind. She does so through examining knowledge in relation to Victor Frankenstein, who tries to conquer death, Captain Robert Walton, an explorer who is preoccupied with reaching the North Pole, and the first born creation of Victor Frankenstein, the monster, an ugly huge but intelligent and sensitive creature who finally takes vengeance against his own creator. Shelley tries to suggest that the Enlightenment might reinforce social injustice after all (Dunn,1978, p.85). The novel examines human fears, the mystery of one's nature through blending science with fiction. Victor Frankenstein is a modern representation of Dr. Faustus whose lust for knowledge strikes terror in the heart of all who would venture into the unknown. In this respect, when a man tries to play God through science and gives the breath of life, the darkness awakens. Brian Aldiss argues that Frankenstein can be considered as a proto-science fiction which came into existence in the middle of the Romantic movement (Aldiss ,1973, p.3). This part

also argues that the novel is a critique of a misused application of a significant scientific advancement and technology of the time, Galvanism, in expanding human abilities in reviving the dead and is therefore a proto-science fiction novel.

Ed Finn contends that "Frankenstein beautifully captures issues such as creativity and responsibility and the difficult balance between letting your imagination run wild and dealing with ownership and parental responsibility of that idea" (Finn,2017). The novel expresses the preoccupation that has permeated cultures, presenting the reduction of the relationship between creativity, technology and responsibility (Longhi,2014). Frankenstein who believes that knowledge makes him like a god notices his monster creation akin to God's creation. He makes references to the monster as Adam. This foreshadows the imminent disaster as we are aware that Adam turns against his creator by refraining from submission. In the form of epistolary novel which "refers to a novel that told through a series of letters written by a person" Frankenstein is a series of Walton's letters to his sister, revealing the story of a scientist who lets nothing stands in front of his goal in pursuit of scientific breakthrough. Like many other writers, the novel anticipates the future of robots and the revolution of artificial intelligence that might go beyond the control of humanity (Griffin,1966, p.66).

Frankenstein's quest drags him into knowledge that absorbs him, and he becomes selfish. Subsequently, he sacrifices his family for the success of his experiment. It could be argued that the real monster is Frankenstein, not the gruesome creature he creates. He becomes guilty and devastated by his monstrous and the hideous creature who is left alone in a cruel, unsympathetic world that gives him nothing but pain and infelicity. The unsympathetic world leads him to seek revenge furiously. Victor's anguish for abandoning his first-born creature is due to his infatuation with knowledge and science as he tries to conquer death. But he wrestles with guilt throughout the novel (Hillegas,1979, p.3). The pursuit of knowledge is the major concern of the novel as Victor tries to move beyond the human limits and to know the secret of life. Meanwhile, Robert Walton tries to exceed human exploration to reach the North Pole. Unfortunately, Victor's brutal search for knowledge proves risky results as his

act of creation leads to the destruction of his family while Walton is trapped in extreme ice layers. Shelley criticizes the Enlightenment that places the emphasis on reason. She suggests that science brings no happiness to man (Punter,1996, p.3).

Victor considers science as a mystery that should be explored. Thus, for him Krempe, whom meets at Ingolstadt, "is a model scientist, an uncouth man, but deeply imbued in the secrets of his science" (Shelley, 2017, p.85). Therefore, his search for knowledge symbolizes huge ambition for scientific knowledge in the nineteenth century. He learns to recreate life from collecting pieces of the dead. His research for knowledge encourages him to make an experiment that gives life to an abnormal creature (Punter,1969, p.107). Biology and chemistry help Victor create life with the power of electricity and pieces of dead bodies as his raw material. As he puts it, "[f]rom this day natural philosophy, and particularly chemistry, in the most comprehensive sense of the term, became nearly my sole occupation" (Shelley,2017, p.48). Unfortunately, the created monster has a strange appearance which stands for and embodies science's faults.

3.2 Critique of the Enlightenment towards Scientific Knowledge

In *Frankenstein*, light stands for knowledge, the Enlightenment and discovery. Mary Shelley wrote *Frankenstein* during the Enlightenment in the eighteenth century. The Enlightenment affected the way of thinking scientifically, culturally and intellectually. The foundation of the Enlightenment is scepticism and reason. Enlightenment as a sceptical philosophy means that a person was able to think critically and methodically to be able to think systematically and critically leading to the creation of science. The aim of the Enlightenment was to understand the natural world and the basis of reason without turning to religious beliefs. In this context, the novel gives attributes a villain and a hero to the same person. Frankenstein is fascinated with discovery and science. "None but those who have experienced them can conceive of the enticements of science. In other studies, you go as far as others have gone before you, and there is nothing more to know; but in a scientific pursuit this is continual food for discovery and wonder" (Shelley,2017, p.22). He tries to create something new,

never seen before. He is ambitious, highly educated and still passionate about creating and achieving the impossible. His new creature reflects the idea of the Enlightenment by embodying morals without the influence of God. The monster learns from observation of others and develops his own sense of manners and right and wrong.

There are many dark secrets in this natural world with unknown mechanisms and hidden paths and therefore the scientist aims to reach light (knowledge) which is considered dangerous and very powerful because of its association with fire. The creature's first experience with flame is an indication of the hybrid nature of fire. It lightens darkness of night; however, it simultaneously burns him when he touches it (Shelley,2017, p.24). Victor seeks to know everything about science. At university, he is attracted to the ancient art of alchemy. He wants to turn metal into gold and find out the elixir, an element of eternal youth. The combination of old and new sciences leads to his devastation. He tries to reanimate man from the dead to revive people who have died. But inappropriately, he creates an ugly monster.

Shelley explores how knowledge can be used for both evil and good purposes and technology has invaded contemporary modern world. She asks the following questions: Is man able to gain too much knowledge without risking himself or others? (Smith, 2000, p.16). Will man be able to raise the dead without destroying the living? The authoress answers these important questions by saying that man cannot become God and creator without difficulty (Smith, 1994, p. 39). Shelley suggests that to depend on technology, man's personal and spiritual growth will decrease. Because of his frightening experiments on the dead, Victor loses his freedom and becomes a slave to machine. His obsession with animating the dead makes him lose his morality and soul. Thus, science destroys his humanity. What is left for him is only the consequences of his experiments that have undesired effects (Smith,1994, p.59).

The concept of creation dominates this novel. First, Victor creates the monster out of dead tissues, then the monster thinks of reading about the creation of Adam in Paradise Lost which makes him ask Frankenstein to create a mate for him. Shelley concentrates on this theme to explore the means of creation. Both Frankenstein and the monster feel bound to each other (Sherwin,1981, p.883).

But the monster blames his creator because of the "negligence and distorts workmanship for his own bad in life" (Sherwin,1981, p.903).

Frankenstein's subtitle, or alternative title, is *The Modern Prometheus* that refers to Titan Prometheus's myth. In this Greek mythology, Titan steals fire from gods and gives it to mankind in order to free them from ignorance and helps them bear life's struggle, but he is punished by Zeus for this crime (Sherwin,1981, p.903).). Fire here is associated with light which stands for knowledge and leads to life. Fire foreshadows Frankenstein's discovery which means giving life to a creature that finally punishes him and brings about his tragic end. Frankenstein, like Titan, releases the prohibited knowledge for the humanity.

Frankenstein is the only child of a rich family. His family regards him as a "bestowed on them by heaven, like a gift from God" (Shelley,2017, p.39). Since his childhood, Frankenstein is fond of alchemy. He blames his father for neglecting Cornelius Agrippa's book about alchemy, stating that "[i]t is even possible that the train of my ideas would never have received the fatal impulse that led to my ruin" (Shelley,2017, p.33). He attempts to find the links between life and death. His longing for knowledge becomes obsession with power. He is anxious to know the ways that can restore the dead. This encourages him to concentrate on natural sciences more than alchemy (Bann,1994, p.55). The modern science of Isaac Newton draws his attention to an oak tree that was destroyed by a lightning storm. These natural sciences increase his ambition and enthusiasm. Though the oak tree event makes Frankenstein realize the contradiction of life and death. While light is a revelation of life, it ruins the tree (Flynn, 2005, p.59). During his study at Ingolstadt University, Frankenstein is influenced by many teachers, especially Dr. Waldman, a professor of modern chemistry who says:

The modern masters promise very little . . . but those philosophers . . . have indeed performed miracles . . . They penetrate into the recesses of nature and show how she works in her hiding places. They ascend into the heavens; they have discovered how the blood circulates, and the nature of the air we breathe. They have acquired new and almost unlimited powers; they can command the thunders of

heaven, mimic the earthquake, and even mock the invisible world with its own shadows. (Shelley,2017, p.47).

These lines explain how the ancient science influences the modern science. M. Krempe one of those ancient scientists who teaches Dr. Waldman, alchemy and natural philosophy when Victor meets Dr. Waldman, he teaches Victor to study science. Dr. Waldman praises the modern scientists because they possessed their position to be the great masters who creates miracles and unlocking the mysteries of the existence of secrets, when he describes them “they can command the thunders of heaven”. Dr. Waldman's speech, the incident of the oak tree and the death of Victor’s mother encourage Frankenstein to reanimate and recreate life. The loss of his mother stimulates him to search for a means to overcome death. Hence, death and life are mixed in a horrible way (Levine and Knoepflmacher,1992, p.66).

As Frankenstein declares, "[t]o examine the cause of life, we must first have recourse to death. I became acquainted with the science of anatomy, but this was not sufficient; I must also observe the natural decay and corruption of human body (Shelley,2017, p.47).

Victor’s ambition and curiosity drag him into figure out how to turn dead body into living one by studying the science of anatomy and observing how the corruption of human body happens. Victor intends as if creates a new race of creatures ignoring the ethical and moral responsibilities Then, he adds:

I paused, examining and analysing all the minutiae of causation, as exemplified in the changes from life to death, and death to life, until from the midst of this darkness a sudden light broke in upon me – a light so brilliant and wondrous, yet so simple, that while I became dizzy with the immensity of the prospect which, it illustrated I was surprised that among so many men of genius who had directed their inquiries towards the same science, that I alone should be reserved to discover so astonishing a secret. (Shelley, 2017, p. 48).

Victors explains in detail how he is obsessed with the idea of life and death to discover the developments of life’s source. This passage exemplifies how science fiction deals with science as a major theme of the novel. He describes

his scientific quest which leads him to discover how resurrects dead tissues. He admires himself by saying he is the only one among many scientists who could solved the puzzle of death. In Chapter Five, Frankenstein says that:

I started from my sleep with horror a cold dew covered my forehead, my teeth chattered, and every limb became convulsed; when, by the dim and yellow light of the moon, as it forced its way through the window shutters, the miserable monster whom I had created. He held up the curtain of the bed; and his eyes, if eyes they may be called, were fixed on me. (Shelley,2017, p.54)

Frankenstein's abandoning the monster in the world is an indication of his cruelty. Because of the deformed appearance of the creature, Victor "rushed out of the room" (Shelley, 2017, p.42) and he describes his creature as "demonical corps" (p.43). Although Frankenstein is successful in creating a being, he feels horrified at the moment he sees it. The monster starts to explain his sufferings and infliction done to him by people to whom he has done no harm. Thus, the injustice makes him violent. For him, nurturing is more important than creating, an idea that Frankenstein fails to grasp (Moers,1985, p.84).

The monster has no idea of this world and therefore becomes completely alien. According to Shelley, ambition is natural to man but Victor's ambition and search for knowledge make him take the role of God in creating life. Being too ambitious causes his downfall and complete destruction. Frankenstein is punished because he considers himself a god and creates a life through the violation of natural laws (Jansson,1999, p.80).

The monster tells Victor "I am alone, and miserable; man will not associate with me; but one as deformed and horrible as myself would not deny herself to me. My companion must be of the same species and have the same defects. This being you must create" (Shelley, 2017, p.149). The rejection by his creator and the bad treatment of mankind cause the isolation and alienation of the monster. Because of his hideous appearance, people reject and beat him. They get frightened as they see an ugly monster. The monster seeks sympathy and love from the society and people, but he receives nothing and consequently becomes rebellious and even satanic. He needs a female being like him to be his mate. Then he adds, "I desired love and fellowship and I was spurned. Was there no

justice in this world? am I to be thought the only criminal when all humankind sinned against me?" (Shelley,2017, p.233). Through the monster's conversation, Shelley sheds light on the injustice of the society. When the monster saves a girl from drowning, he gets a bullet in return for his heroic action just because he has a horrible appearance (Behrendt,1990, p.80).

Shelley predicts harsh, potential consequences of misusing technology. In her novel, she does not condemn Frankenstein's act of creating the monster but his moral fault of refusing the responsibility of his deed. Victor should realize that his creation would go insane among people who never understand the mystery of science. Thus, knowledge demands people's awareness to comprehend the swing between the probability and impossibility of mysteries (Bloom, 1965, p.217). Shelley seems to agree with Jean Jacques Rousseau that man by nature is good but circumstances such as society or education affect his or her character, mind and soul. This is shown clearly when the monster offers friendship and affection to Frankenstein after seeing him terrified, but the latter rejects him completely. His rejection is the main reason that transforms the creature into a terrible monster seeking to avenge which consequently causes Frankenstein's tragic collapse (Punter,1996, p.109). In fact, both Frankenstein and the monster are obsessed with the idea of destructive avenge. At the end of the novel, the monster declares that, "[r]emember that I have power; you believe yourself miserable, but I can make you so wretched that the light of day will be hateful to you. You are my creator, but I am your master; obey!" (Shelley, 2017, p.175). Through the monster's statement, Shelley reveals that scientific development can destroy human civilization. Here, Frankenstein decides to abandon the miserable monster for his inability to protect him. Jessica M. Natale remarks that:

Victor is not doomed to failure from his initial desire to overstep the natural bounds of human knowledge. It is his poor parenting . . . failing to follow through. Thus, he created a monster through his absence of nurturing and love for his progeny. Frankenstein did not take into account that he would be responsible for the goal of his study only concerned with the means rather than the ends of his ambition. (Dussinger,1976, p.38)

As a scientist Victor makes the experiment successfully. He creates a superior being, eight feet, brilliant and invulnerable. So, he is not doomed in this respect, and his desire as an ambitious scientist bounds to the knowledge that he gains. But he fails to take his responsibility seriously, never gives his progeny a name or identity and he sees no need to be sorry for his action. Victor's ego is surmounted his logic and blinded by his ambitions.

Frankenstein portrays how a man's deep ambition may cause multiple flaws leading one to devastation. Finally, he will face unanticipated consequences. Through their scientific achievements, both Victor and Walton seek to glorify their names through history and change the perspective of society. However, their ambition also makes them imperfect. The dream of glory blinds them from seeing the consequences of their actions. Victor's efforts to explore the unknown and the secrets to conquer death lead him to confront the revenge of the monster, when it has been turned against him after all (Spark,1988, p.162).

Through concentrating on knowledge and its significance, Shelley points out how knowledge can lead man to disastrous consequences. Victor's creation of life leads to misfortunes that haunt him all his life. As a stranger tells Walton, "[y]ou seek for knowledge and wisdom, as I once did; and I ardently hope that the gratification of your wishes may not be a serpent to sting you, as mine has been" (Shelley,2017, p.22). His tragic consequences cost him a great price that he must pay for going beyond all expectations.

In *Frankenstein*, Shelley draws on Galvanism, which was made popular in the late eighteenth century by Alessandro Volta. Galvanism refers to a potential power to resurrect the dead, the ability that electricity gives power to generate a chemical action by stimulating muscles with an electrical current that will eventually revive the dead. Frankenstein tries to exceed the state between life and death by using electricity to generate power and stimulate human tissues. Sharon Ruston considers the novel as "contemporary investigations into resuscitation, galvanism and the possibility of states between life and death" (Ruston, 2012, p. 310).

In the prison, Victor thinks that the monster comes to visit him and says, "I know not by what chain of thought the idea presented itself that the murderer had come to mock me at my misery" (Shelley,2017, p.190). Victor suffers in

the prison when he sees his first-born mocks him, he describes the monster as a murderer with referring to his family tragedy. Victor's excessive ambition is the cause of the tragedy of his family. He feels guilty for his brother's murder, his family's maid, Justine and even his friend, Clerval. Because he feels responsible for the tragic end of the people around him, he decides not to create a mate for the monster as he is afraid that they might become a threat as a race of devil (Magill,1952, p.296).

3.3 Overcoming Death: Scientist's ambition

According to Shelley, man should not discover some mysteries of nature. There is a final price to pay when one challenge the laws of nature and acts like God. The natural world is considered the source of uncontrolled emotional experience for man that offers him spiritual renewal. After William and Justine die for which Victor feels responsible, he goes to the mountains to redeem and free his spirits. In a cold weather, Victor's creation feels his heart has gone warm as Spring comes. However, for Victor the power of the natural world power that comforts him disappears after he notices that the monster will catch him wherever he goes (Ruston,2012, p.31). Because of his strange appearance, the monster is forced into isolation. Therefore, he takes advantage of Walton's presence hoping to find someone who can understand and sympathize with his miserable existence. Before his death, Victor confesses his secret that has ruined his life. Victor's hatred of the monster has caused his death. Walton learns from Victor that the desire for knowledge can be destructive (Shelley,2017, p.22).

Victor's obsession with the mystery of life and death encourages him to study and collect samples to find out the boundary between life and death. He says that "I saw how the worm inherited the wonders of the eye and brain" (Shelley,2017, p.47). From the restlessness which constantly tormented him, success has been obtained, "in discovering the cause of generation and life" and "capable of bestowing animation upon lifeless matter" (Shelley,2017, p.47). He becomes life creator. He is similar to Goethe's Faustus, a man who has been destroyed by eagerness for knowledge. Although Faust is saved by God, Victor perishes without salvation.

Victor's search for knowledge and glory causes a total destruction of his life. After a round circle of death, he decides to follow the monster and take revenge. He reaches the Arctic Ocean where he meets Walton whom he regards as his mirror image. He informs him that:

“A new species would bless me as its creator. A human being in perfection ought always to preserve a calm and peaceful mind, and never to allow passion or transitory desire to disturb his tranquillity. I do not think that the pursuit of knowledge is an exception to this rule. If the study to which you apply yourself has a tendency to weaken your affections and to destroy your taste for those simple pleasures in which no alloy can possibly mix, then that study is certainly unlawful, that is to say, not befitting the human mind”(Shelley,2017, p.51).

In this statement Victor declares to captain Walton that he creates a new kind of species and he tries to reach to the perfection by gain the glorification of the world. Victor is a servant of science will serve the humanity. Victor's passion for his work negates his judgment when the result of his experiments comes ugly, he escapes. His pride and hubris affected on his sight. He sinks in his despair. In this statements Victor Frankenstein reflects Shelley's thoughts about current are trends. The early 1800's, science was as if an illusion, a new vogue spreading like fire arousing people to pursuit knowledge. People surrounded by scientific discoveries that the age of Enlightenment emerges to give a new perspective of new time when religion and morality were faded and questioned, and science becomes a better solution to the all problems. People felt passionate as the movement was new, they were excited and blinded judgment.

In this context, the excessive ambition leads into building the ego but not to serve humanity. There is no shame to pursuit knowledge, but it must be under control without losing one's morality that might lead to evil and disaster. “A human being in perfection” Victor disobeys this sentence by letting his passion of knowledge to reanimate a dead body disturb his mind's peace. A man can obtain a great knowledge without losing his peace, but by crossing the limitations the acts will lead to suffering.

Frankenstein says that, "every night I was oppressed by a slow fever, and I become nervous to a most painful degree; the fall of a leaf started me, and I shunned my fellow creatures as if I had been guilty of a crime" (Shelley,2017, p.52). Victor has become a sick person because his creation has had a significant impact on his health and life. The phrase "guilty of a crime" refers to Victor who knows that his work on the beast is morally abominable. Nevertheless, he warns Walton that search for knowledge and fame pushed him into the edge of the abyss. Hence, he should avoid the temptations of knowledge that separates him from his family. Walton takes Frankenstein's advice seriously and orders his crew to return back home immediately.

Shelley tries to warn her readers about the story of a scientist whose life ends catastrophically and tragically. As Victor says:

Farewell, Walton! seek happiness in tranquillity and avoid ambition, even if it be only the apparently innocent one of distinguishing yourself in science and discoveries. Yet why do I say this? I have myself been blasted in these hopes, yet another may succeed. (Shelley,2017, p.20)

Frankenstein admits that his endeavour drags him to a forbidden science. While encouraging Walton to seek for knowledge but avoiding an extreme ambition that leads one to inevitable disaster. Frankenstein lies dying on board of Walton's ship. This quote reflects the mistakes he has made. He says there is no error in discovery or science. It is his fault not to take liability for his creation. His ambition overwhelmed his rule and humanity. He feels that he has misused his knowledge. In fact, as the novel suggests, Shelley is not against scientific development but rather against the misuse of science (Bloom, 1965, p. 46). Being too ambitious, Victor is punished. "The death of William, the execution of Justine, the murder of Clerval, and lastly of his wife" (Shelley,2017, p.71) are considered as punishment for his creation as he never thinks about the consequences of his action. He tells Walton "But I-I have lost everything and cannot begin life anew" (Shelley,2017, p.21). Everything he cared for is destroyed, hence, his happiness and life of dreams are gone. Due to his over-ambition in science, isolation and punishment become part of his life just like the abnormal creature he has created (Bloom, p.46).

“I was easily led by the sympathy which he evinced to use the language of my heart, to give utterance to the burning ardour of my soul, and to say, with all the fervour that warned me, how gladly I would sacrifice my fortune, my existence, my every hope, to the furtherance of my enterprise. One man’s life or death were but a small price to pay for the acquirement of the knowledge which I sought, for the dominion I should acquire and transmit over the elemental foes of our race (Shelley,2017, p.20).

Robert Walton is the speaker of this quote at the time when he wants onboard his boat with Victor when they were sitting in the boat cabin. Attending Victor's dying moments, Walton observes and listens to the stranger who tries to share his burning aspiration of gaining knowledge as ambition scientist. He reveals his companionship as they are both thirst for knowledge since Walton leaves his family behind in order to sail into cold water by risking his crew’s life. Walton’s eagerness to sacrifice everything for knowledge as Walton says” a single death will be a small price to pay”. It foreshadows to how there are many innocent people are died for this ambition. Also regarding to how the value of life will be little according to Walton’s statement. In the novel the setting that refers to white glaciers indicates to knowledge. Walton’s statement “foes of our race” relates to the endangerment of humankind because the creature that Victor creates. Frankenstein replies, "[d]o you share my madness? Have you drunk also of the intoxicating draught? Hear me; let me reveal my tale, and you will dash the cup from your lips!" (Shelley, p.20). Now, Frankenstein begins to understand that too much ambition leads to inevitable destruction. He warns Walton that, "you seek knowledge and wisdom as I once did and I ardently hope the gratification of your wishes may not be a serpent to sting you, as mine has been" (Shelley. p.22). Through this warning conversation, Shelley suggests that not all applications of knowledge are good as sometimes it causes terrible consequences (Levine,1992, p. 115). Seeking too much knowledge means going beyond God's law. The word "serpent" in the above quotation is an allusion to the Christian myth of Creation where Satan appears as a serpent. Frankenstein considers knowledge as a serpent which is alluring, tempting and deceiving like Satan in the Garden of Eden. Because it was the serpent that convinced Adam and Eve to eat from the tree of knowledge, they were cast out of Paradise since

they disobeyed God. After listening to Frankenstein's warning, Walton decides to abandon his search and ambition, preferring to return home.

Frankenstein's aim in life is to learn the physical secrets of the world by focusing on science only. His motivation for creating the monster discloses his idea about life and death saying:

“Life and death appeared to me ideal bounds, which I should first break through and, pour a torrent of light into our dark world. A new species would bless me as its creator and source; many happy and excellent natures would owe their being to me. No father could claim the gratitude of his child so completely as I should deserve theirs” (Shelley, 2017, p. 49).

Shelley believes that obsessive desire for more knowledge may ruin one's life. This is obvious in Victor's obsession with knowledge of the unknown that takes his life.

Rejection leads to revenge which is an important theme of the novel. Victor abandons his creature. "Devil! Do you dare approach me! Begone, vile insect! Or rather stay, that I may trample you to dust!" (Shelley, 2017, p. 99). It is crystal clear that Victor feels abomination and dereliction. The creature replies that "Cursed, Cursed creator! why did I live? Why, in that instant, did I not extinguish the spark of existence, which you had so wantonly bestowed? My feelings were those of rage and revenge!" (p. 101). Both Victor and the creature develop hostile feelings towards each other. Fuelled by a sense of rejection from the people who look at him with disgust, the creature addresses Victor that, "I may die but first you, my tyrant and tormentor, shall curse the sun gazes on your misery. Beware I am fearless and therefore powerful" (Shelley, 2017, p. 176).

Two forces are clashing with each other in the novel, Victor and the monster conflict Vs conflict, two opposing forces. Mary Shelley conveys this conflict for the reader's perspective if they sympathize with monster or with his creator's misfortunes. The conflict begins when Frankenstein rejects to create a female for his first son and the latter vows to kill everyone that Victor loves. yet, the conflict transforms into deadly battle, the monster's obsessions with revenge and Victor's attempts to hurt the monster, destroying the female that he creates

to it. The monster is determined to bring misery and sorrow into Victor's life. Victor swears to hunt the monster down. Ultimately, their desire for revenge destroys the maker and the monster alike. It is clear that Victor's misuse of science causes his downfall and death. Therefore, this novel is as warning against the potential and dangerous consequences of advancement in science and technology. As Ruston points out, the novel "also can be seen to be warning about the dangers of uncontrolled application of technology and its use without proper morality" (Ruston ,1964, p. ii). In this novel, Shelley highlights the morality of scientific invention and its threats to social conventions. Martin Tropp argues that the creation of life cannot be through mechanism only, therefore, technology is just a means; it "can never be more than a magnified image of the self, technology can cause the total dehumanization" (Tropp,1976, p. 55).

Upon the creature's suffering Shelley says that: "the creature entered, but, the creature had hardly placed my foot within the door before the children shrieked and one of the women fainted. The whole village was aroused some fled, some attacked" (Shelley,2017, p.94). Wild abandoned Vs. Man, frightened and losing the sense of identity cause the ultimate revenge and the Victor's death in the final scene. Obviously, the monster as a new-born without knowledge or experience, no guided help to survive in the world he feels completely alone in it. In this regard, the monster starts to develop every part of life by his own self to gain knowledge. He develops speech eavesdrops on humans' conversations. Every time, he wants to talk with families, they shooed him away, he realizes that he is completely alone, takes refuge into mountains to gain peace. The monster struggles to find a shelter to survive from society, government and social tradition. Isolation and ostracization cause his monstrousness of his soul and body.

Shelley conveys internal struggle of Frankenstein's regret when he says: "the beauty of [his] dream vanished, and breathless horror and disgust filled [his] heart (Shelley,2017, p. 35). The internal conflict is appalled with the monster, when Victor struggles with his ambitions and the creature that he makes as if being like man vs. himself. The monster's destructive nature, Frankenstein seems to feel and admits that it is his fault the monster behaves in this horrible

action as well as with the murders he has committed. Victor enters into deeper hatred for his ambition and himself. He attempts to commit suicide many times “I was seized by remorse and the sense of guilt, which hurried me away to a hell of intense tortures, such as no language can describe” (Shelley, p.61). His struggle indicates the evils upon which science brings. His regretful attitude upon his creation gives the reader the glimpse to acknowledge that man has a specific limitation and cannot perform godlike role, such as creating new life.

Moreover, both Victor and Walton, they have this ambition, in one hand Victor as a scientist wants to conquer death, and the other hand, Walton attempts to explore the Pacific Ocean to explore new area. In this sense, Walton writes to his sister that “my life might have been passed in ease and luxury; but I preferred glory to every enticement that wealth placed in my path” (Shelley, p.10). Walton describes his motivation for exploration and explains his justification for why he wants to achieve the glory. The quote foreshadows the similar of Walton’s ambition of Victor’s will to chase one. Walton implies a moral path of superiority to commit hard working to serve his passion for exploration. Walton’s desire for fame and glory to gain not the possible benefits or will bring any harm to anyone else. Victor Frankenstein describes his passion flame when he says:

“for when I would account to myself for the birth of that passion. Which afterwards ruled my destiny. I find it arise, like a mountain river, from ignoble and almost forgotten sources; but swelling as it proceeded, it became the torrent which, in its course, has swept away all my hopes and joys (Shelley,2017, p.34).

Victor tells this quote to describe his reflection of the origins of his fascination with creating life. The style of selection the poetic words reveals Victor’s eloquence and the level of education, the quote reveals that how Victor’s perspective lack of moral responsibility, self-awareness and lack of humility. His ambition affects him as an external force goes beyond his control by comparing it to a raging river sweeping away everything in its path. His ambition might have been a powerful desire, the internal feeling that he tried to control allows him to direct his actions without any considering consequences.

The ambition that Victor seeks dragging him to deepest mysteries without thinking of his moral actions. Mary Shelley shows that in these words: “so

much has been done, exclaimed the soul of Victor, more for me will I achieve treading in the steps already marked, I will pioneer a new way, explore unknown powers and unfold to the deepest mysteries of creation”(Shelley,p.44). The quotation exemplifies Victor’s ambition to learn the progress of contemporary science because his ambition exceeds just learning alchemy. He goes further to fantasize his reaction and his arrogance to find out the mysteries of creation and the secret of life.

In this context, science portrays as a noble pursuit in the novel, Marry Shelley refers to science as a virtuous quest, the quest for absolute knowledge, but it drives Victor into excessive ambition to find the scientific possibilities. Yet, the curiosity leads Victor into his own destruction. In *Frankenstein*, Marry Shelley shows how the modern scientific methods leads one into the dangerous aspects and she reflects her work to connect science fiction to the power of radical science and as future revisions in 1831.

Frankenstein can be considered as a criticism of the radical behaviour of Victor who has blind devotion to science. His rejection of inevitable death led to irresponsible act. He indulges in deep sorrow instead of destroying the source of potential evil. Nevertheless, Victor proves to be a god by rebelling against the inevitability of death, but he gains his punishment as a result (Giganet,2000, p. 565). The novel is a pre-science fiction as it adapts the vision that predicts how future will be but in a cynical way that mixes with curiosity about the future. *Frankenstein* anticipates science fiction works such as *Ex-Machina* (2015) by Alex Garland and the *Batman* series. Victor is like Nathan Batman who creates an artificial creature to represent the future of humanity. The robot here is Victor's creation. Also, his creature is like Ava in *Ex-Machina*, a female robot imitates emotional reactions of humans and manages to emotionally manipulate the hero and finally makes him fall in love with her. Victor and Nathan represent the conception of challenging the scientist's narcissism.

Unlike Victor's creature, Ava has beautiful features. Both Ava and the monster portray the inevitability of the downfall of those who play God by drawing merely on scientific technologies. *Ex-Machina* is a modern Prometheus. The acquisition of the superiority of intelligence and technology has transformed speculations about the mysteries that were once forbidden to know. Victor is

just like Prometheus who knows these secrets. Hence, the superiority of the artificial intelligence represents by Batman's creator is similar to Prometheus. Frankenstein shares the same elements and the same boundaries that extract the relationship between human and non-human and the artificial intelligence. In this context, Ex-Machina is a twenty-first century echo of Frankenstein. As Anne K. Mellor declares, "one of the deepest horrors of this novel is Frankenstein's implicit goal of creating a society for men only; his creature is male; he refuses to create a female; there is no reason that the race of immortal beings that he hoped to propagate should not be exclusively male" (Mellor, 2016, p88). The radical implications of shifting knowledge's power between techno-science and humans during two different eras suggests trauma of the consciousness in both cases, Ava and Victor's creation.

Frankenstein's creature is associated with the postlapsarian Adam throughout owing to be "united by no link to any other being in existence" (Shelley,2017, p.133). Remarkably, he is incapable to be like Adam and links himself with the fallen angel. As he says, "I considered Satan as the fitter emblem of my condition" (Shelley,2017, p.133). When Frankenstein's role externalizes in a dynamical way: "I remembered Adam's supplication to his Creator. But where was mine? He had abandoned me: and, in the bitterness of my heart, I cursed him" (Shelley, 2017, p. 135). However, the novel runs much banishment through the fact that the monster considers his creator as God who has failed. According to Joyce Carol Oates Frankenstein "He is no sadist, he is a highly idealistic and naïve youth in the conventional Romantic Mode, he is a noble, cultivated, a celestial spirits" (as cited in Botting, 2021, p.213). Victor employs a kind scientific process that does not include the creature's humanity into consideration and for whom life is only defined in terms of science. The bound between Victor and his demon causes the ultimate disaster to both of them.

Martin Willis in his essay "*Frankenstein and the soul*" argues that the creature is a breathing representation of the scientific experiment comes to life "From the basic skeleton through the 'muscles and arteries' to the facial complexion a picture is built up of a straining mass of sepulchral material barely held together. The monster personifies scientific materialism in the most literal

sense". Basically, the life that has been made by Victor presents as a perceptible process, absent of an unseen force (Willis,1995, p.35). When man's ambition to understand how science works, it will be a kind of an external conflict between a mortal and an immortal, between creation and the creator. Victor's ability of reanimation comes to be along with God's original work of creation. in this regard, Man versus God reveals the role that Victor plays as a main source of this kind of conflict. Knowledge and the ambitions give the power to Victor to play this role but with horrible consequences since he is just a man. Since, creation of mankind only can be achieved by God's power. When Victor obtains the secret of life, by using his experiments through the chemistry's means come through creating an evil hybrid species. The monster in this sense, new-born and innocent then the rejection turns him to lose the sense of belonging and becoming a monster in heart not just the appearance.

4. CONQUERING THE ALIEN WORLD OR JOURNEY INTO THE PSYCHE IN STANISLAW LEM'S *SOLARIS* (1970)

4.1 An Overview of *Solaris*

Stanislaw Herman Lem (1921-2006) was a writer of science fiction, satire, philosophy and a trained physician. His works deal with philosophical ideas such as "the theory of technology, the nature of intelligence, the impossibility of mutual communication and understanding, despair about man's limitation and his place in the world" (Jarzebski,1977, p.252). Lem's works are generally called strict science fiction, because his stories are so far more predictable. Instead, Lem tries to draw the reader's attention to certain questions such as how can one understand the existence of the universe and what is the purpose of the inevitability of destiny? This section will explore to find answers to such questions raised in Lem's *Solaris* (1970) and argues that the novel is set in a different technological era, the Space Age, and therefore reflects the dilemmas of human's tendency to replace God, becoming as omnipotent as Him, by drawing on the new technology to explore outer space such as spaceships (Enns,2002,p.34).

When Kelvin leaves the space capsule and enters the space station, he sees the alien-ocean and he starts to lose his self-confidence. He feels afraid from the alienness of surroundings:

The wave crests glinted through the window, the colossal rollers rising and falling in slow motion. Watching the ocean like this one had the illusion—it was surely an illusion—that the station was moving imperceptibly, as though teetering on an invisible base; then it would recover its equilibrium, only to lean the opposite way with the same lazy movement. Thick foam, the colour of blood, gathered in the troughs of the waves. For a fraction of a second, my throat tightened, and I thought longingly of the Prometheus and its strict

discipline; the memory of an existence which seemed a happy one, now gone forever (Lem,1970, p.65).

The ocean here plays an important role in the novel as a great womb. Kelvin in this point plays multiple roles. He seems involved in a birth and rebirth cycle, but he has little control. In Prometheus "the mother ship" Kelvin observes the reincarnation of creatures he confused if he is an original or just a copy of others. He struggles to discover the alien's body, since Kelvin is a confident product of earth technology and science. Kelvin's experience with the first reaction when he sees the new Rheya makes him feel safety distanced. Yet, the contact with the aliens reveals a distrust of his own subjectivity to the aliens. As the novel progresses, Kelvin is contacted by the ocean's creatures. He becomes obsessed with Solaris. When he feels threatened, he retreats to the mother ship to read more. Kelvin in this way realizes the futility of rereading, his ambition sends him nowhere. There is no explanation about the ocean. Kelvin represents the ambitious scientist who sees the ocean with different eyes because he is involved with his own personal experience. He arrives on Solaris as a confident scientist, attempting to explore the actions of the ocean. Yet, the ocean destabilizes his self-confidence by leading him to a new state of identity. All the scientists attempt to escape the planet, only Snow acknowledges the personal experience for personal enlightenment. He tells Kelvin that "It might be worth our while to stay. We 're unlikely to learn anything about it, but about ourselves" (Lem,1970, p.77). Snow tells these words to convey how humans not only fail to understand the ocean but cannot understand themselves after all. The ocean is the main entity which can reflect the hopelessness of the scientists although it represents the only way of communication with the creatures. The scientists focus their gaze upon the ocean no matter how they construct it as a term. The scientists attempt to anthropomorphize the ocean, in other words, they give it human characteristics and human form in order to study them; yet the ocean resists identification. The scientists scientifically classify the ocean as a cosmic gigantic brain, but all these classifications become meaningless in light of living with indestructible projections from an insentient and unconscious mind.

Solaris is a philosophical and psychological science fiction that explores man's limitations in the world and focuses on the nature of human memory along with his experience and eventual communication with non-human species. It considers an extreme science fiction, because there is no heroic action or monster involved in the novel. Instead of, there is a horrifying atmosphere (Jarzebski,1977, p.113). The name of Solaris is connected to the Sun which personifies the source of life, giving warmth to the Earth. It is also a place where man is forced to challenge the dark side of his own psychology. In *Solaris*, the characters spend most of their time alone. They are away from each other on the space station orbiting Solaris, a newly discovered planet covered by a huge ocean, but close to their visitors. The inhabitants including the protagonist Kris Kelvin, a psychologist who has been sent there to study and test the validity of reports on what was diagnosed as hallucinations of the astronauts, are visited by alien creatures. Kelvin is told that the visitors began to appear after an over-excessive and unauthorized number of X-ray experiments was carried out to understand the nature Solaris. Kelvin too starts to dream and face his own dead wife and is filled with guilt because of her suicide. The novel shows the futile attempts of communication between the human and another terrestrial life form on a very far planet. While the scientists examine the oceanic surface of Solaris, the latter in turn studies them. It seems that Solaris acts like a live organism.

Solaris has the ability to mark the secrets and guilt of each scientist but goes beyond the anthropomorphism and anthropocentrism which seem to be rooted in human perception (Murphy,2006, p.93). Anthropomorphism means when non-human or animals are given a characteristic of humans. In this sense, the ocean is imagined in the image of humanity, as a live dynamic creature. The sentient ocean is covered with the eponymous aliens. As the novel reads, it "is blocked by the most abstract achievements of science," "[e]very science comes with its own pseudo-science, a bizarre distortion that comes from a certain kind of mind" (Lem, 1970, p. 103). If one tries to relocate the alien into human image, meanings and values will lose their essence. Anthropocentrism on the other hand, considers humans as a superior to other entities and all the mineral resources justifiably exploited to serve humankind. The scientists attempt to

communicate with aliens in order to spread their authority over them. To communicate with a non-human existence seems to be impossible because it is beyond human perception. In view of that, humans have no capability to grasp the life beyond their expectation, as the novel tries to suggest. However, this is the root of human desire as depicted in the novel (Solotaroff,1976, p. 218).

Snaut, another scientist and cybernetician on the laboratory's station, tries to study the ocean's intelligence that the scientists struggle to contact for seventy-six years, but without any successful achievement. The dialogue between Kelvin and Snaut reveals how they suffer to analyse this situation, Snaut says:

No. Not in the slightest. It could simply have taken a procedure that didn't consist of words. As a fixed memory trace, it's a protein structure. Like the head of a spermatozoon, or an ovum. After all, in the brain there aren't any words, feelings, the recollection of a person is an image written in the language of nucleic acids on mega molecular asynchronous crystals. So, it took what was most clearly etched in us, most locked away, fullest, most deeply imprinted, you know? But it had no need whatsoever to know what the thing was to us, what meaning it held. Just as if we were able to create a symmetrised and toss it into the ocean, knowing the architecture and the technology and structural materials, but with no understanding of what it's for, what it means to the ocean... (Lem,1970, p.85)

Snaut tells Kelvin that the living intelligent ocean is a blind planet; it means that the creatures are not consciously aware, without intentional self-reflective system, especially in the sense of epistemic consciousness. Although the scientists totally refer to the ocean as blind brain, this explains the reason behind the alien having control over his unconscious memories through his sleeping as a reflection, coming from his previous life in earth. Kelvin discovers that the aliens violate his memories by reproducing the replica image of his dead wife without intentional consciousness and without any clue why and how. Lem's work is sceptic of knowledge and shows the ambitions that consume the scientists who want to possess knowledge.

This novel explores science fiction genre suggesting that episteme has the ability to change the organizational thinking to grasp the relationships of

knowing that define and specify our present. Stanislaw Lem uses the planet as a new setting to refer to how the future will look like. The ocean represents the possible logic of the digital codification and simulations. The novel also raises questions of the intelligibility of time. It tries to reveal the possibility of bending time and space and the ability of travelling through a black hole to see what lies beyond our understanding of reality, what price we would pay to gain this knowledge and how far scientists could go (Tirado and Domènec,1999). Lem's novel presents the tragedy of modern man struggling to explore the world without any restrictions using science. Through exploration in outer space, man seeks to find out a new unknown world in order to conquer for economic purposes. The mysterious and opaque planet becomes the mirror of the small world of human image. Solaris stands as a puzzle that scientists need to solve. Yet, due to their failure in communication, they feel frustrated that their efforts are in vain. Solaris focuses on the mind's struggle to understand an incredibly and unimaginably alien society.

The planet is entirely alien and completely mysterious to humans. Lem explains about his intention behind writing the novel:

[T]o my best knowledge, the book was not dedicated to erotic problems of people in outer space . . . As Solaris' author I shall allow myself to repeat that I only wanted to create a vision of a human encounter with something that certainly exists, in a mighty manner perhaps, but cannot be reduced to human concepts, ideas or images (Murphy,2006, p. 98).

The scientists spend a long-time studying Solaris. But they cannot understand some activities of the planet. The planet is considered an obscure entity for them. Their quest for making a contact with the planet becomes a search for a sense of identity. It is a metaphor for seeking to discover the mystical union with a divine or godly intelligence and to understand its purpose in the world which is "mission of Mankind" Some critics argue that the ocean represents God. Solaris's ocean sends visitors who look like people they know or love. It also represents the dualism of the visitors who seem to be incarnations of the crew. It reveals the crew's suppressed feelings and guilt. Dr. Kris Kelvin as a psychologist arrives at the space station to discover the mystery surrounding

Solaris. But, the result of his experiment becomes psychologically painful and his own individuality is damaged (Lem,1970, p.57).

We think of ourselves as the knights of the Holy Content. This is another lie. We are seeking only Man. We have no need other world. We need mirrors. We don't know what to do with other worlds. A single world, our own, suffices us; but we can't it for what it is. We arrive here as we are in reality and when the page is turned and that reality is revealed to us_ that part of our reality which we would prefer to pass over in silence (Lem,1970, p.72)

In this passage Lem describes what is both misleading and important about efforts to achieve the contact between human and alien. He recasts scientists and astronauts as medieval knights' pilgrimages on religious quest, men who desire to assert cultural dominance to discover new realms. Their quest to seek only to explore that in order to prove the significance discoveries of another worlds. Such quests, the author suggests the investigation do not require the exploration of outer space, because human explorers closed their eyes to understand the alien and themselves as well. The external universe needs open eyes to begin this quest.

The novel creates a suspense between reality and illusion to reveal the dualism of beings. Hence, the central point of the novel is emulation that adapts the haziness of borders between inhuman and human. For Jean Baudrillard, simulation is generated by a code or a model linking with knowledge and technology out of tangible reality. Baudrillard suggests that hyperrealism in Solaris is "the precession of Simulacra" (Lem,1970, p.90). where the manifestation of visitors comes from the crew's disoriented thoughts. Uncertainty has been growing to define the realism. Solaris depicts the events that serve human existence with real simulation of being. The construction of the existence of the visitors in the crew's mind comes from memories of the individuals. Therefore, Kelvin's memory brings Rheya to him when he spends his first night near Solaris. The dilemma that the crew is facing in the space station is the one between the possibility, the originality and uncertainty provided by the simulation of the existence of the visitors. The world of hyperreality becomes unintelligible because of the simulations of human that

becomes morally ambiguous. The authenticity of the multiplicity of these memories becomes the fundamental of the relationship between reality and artificially. As Walter Benjamin argues:

It might be stated as a general formula that the technology of reproduction detaches the reproduced object from the sphere of tradition. it substitutes a mass existence for a unique existence. And in permitting the reproduction to reach the recipient in his or her own situation, it actualizes that which is reproduced (Benjamin, 2008).

For example, Rheyra appears with many versions and each one exhibits its own consciousness, but she knows at the same time she is not the original one, and Chris knows this too. Rheyra's existence exceeds space and time of her own copies.

Solaris provides a ground for visitors to be authentic beings, having the characteristics of inhuman and human simultaneously. The dilemma of existence of the visitors is defined by the original's existence. Human can be defined by the concept of exclusionary. As Judith Butler puts it, "the human is not only produced over and against the inhuman, but through a set of foreclosures, radical erasures, that are, strictly speaking, refused the possibility of cultural articulation" (Rachwal,2017, p.273). Accordingly, Rheyra's existence is not a counterfeit or original persona but instead she is the product of ideas mixed with imagination. As Baudrillard points out, "[t]here is no more counterfeiting of an original, as there was in the first order, and no more pure series as there were in the second; there are models from which all forms proceed according to modulated differences" (Rachwal,2017, p.273).

Each version of the simulations of Rheyra creates its unique existence successfully. As Kelvin declares, "I don't believe we are predetermined to relive our past. I think we can choose to do it differently" (Lem, 1970, p. 66). With the last incarnation existence of Rheyra, ambiguity has the authority upon Kelvin as he considers Rheyra a simulation of himself. Hence, when he cuts his finger in reality on the Earth, he feels the wound at the space station too although it immediately heals. As Dillon says, "[b]efore he meets Rheyra, Kris has tried to arrange a world without imagery, without illusion. Yet, the final sequence, which takes place we know not where . . . the image... may not be the true, but it

is necessary, or inescapable" (Rachwal,2017, p.273). Kelvin never departs Solaris but forces Dr. Gordon to go to the Earth. Kelvin's illusions between the Earth and the space station reveal his psychological sufferings and an attempt to correct or make up for the past when his wife committed suicide. Baudrillard defines the idea of the death as "annihilation is a priceless luxury" (Rachwal,2017, p.273). In other words, if Kelvin's existence demands surviving after the death of his wife, annihilation becomes like a luxury.

Solaris's living ocean reveals that the planet fails to visualize something outside their frame of reference and is also an indication of the failure of communication. Similarly, the crew fail to understand the possibilities of an alien's existence. However, Stephen W. Potts suggests that Kelvin is "an empty slate ready to receive the universe on its own terms" (Rose, 1976, p. 75). Also, Mark Rose argues that Kelvin is sure that this Ocean is real and is quite ready to accept what happens in the future (1976, p. 75). Upon his arrival to the space station, Kelvin encounters Snow who tries to start a conversation about Solaris. He says that "we are humanitarian and chivalrous, we don't want to enslave other races" (Lem, 1970, p. 72). Snow asserts that this is about exploration of knowledge. It is a quest for exploring themselves first. In this context, the author tries to grasp the idea that mankind's effort accompanied by courage to conquer the cosmos is just a blind endeavour.

4.2 Exploration of the Psyche and Illusion of Scientific Knowledge

The novel shows how human scientific knowledge to conquer the universe turns out to be an illusion but a way to discover more about their own psyche. Kelvin experiences mental breakdown and the scientists are on the edge of madness because mysterious creatures haunt the spaceship. It is obvious that through an unknown mechanism, Solaris's ocean creates these visitors. Kelvin feels that his duty is to study the mysterious ocean that covers Solaris planet. Through his research, his painful and previous unconscious memories get embodied in the living physical image of his dead wife. When he lands on the space station, he observes many strange things. Kelvin sees his friend Gibarian who killed other scientists and himself, like Snow and Sartorius, who behave in a strange way. Also, he sees a gigantic black woman standing next to Gibarian's corpse. He

feels confused and unable to differentiate between hallucinations and reality (Murphy, 2006, p. 101). Kelvin confronts many bad memories in his life. Thus, he feels haunted by guilt and wonder. His instructor at university, Gibarian committed suicide too before Kelvin's travel to the station. These horrible memories affect him psychologically. His mental breakdown is clear with the appearance of Gibarian's visitor twice before him, first in a hallway after his arrival and second when he examines her corpse. The visitor seems either unaware of other humans or disregard them (Suvin, 2017, p. 212). Rheya too returns as his visitor with conflicting emotions. To get rid of her, Kelvin launches her into outer space. He becomes aware of her transient nature. Thus, she decides to commit suicide once again, but this attempt fails since her body is not normally made of elements but only of neutrinos by a force which has strength to rebuild it over and over again. She asks Snow to kill her with Sartorius by using a device which was developed by Snow in order to demolish the atomic structure (Lem, 1970, p. 47).

Sartorius, the last member of the crew Kevin meets, exemplifies human pride. As a scientist, he has a desire to conquer more planets. He represents human pride not dissimilar to Faustus, in contrast to Kelvin who does not have the desire to colonize the planet and anatomize its secrets. Kelvin loves Rheya and accepts her presence on the planet, deciding to keep her with him forever. Later he begins to notice that she is inhuman, asking Snow to shoot her: "You don't love her. You love her. She is willing to give her life. So, are you? It's touching, it's magnificent, anything you like, but it's out of place here-it's the wrong setting" (Lem, 1970, p.73). Throughout these words Snow tries to say that the rules in space and morality have been broken and love has no meaning. Hence, Rheya goes away forever just like all the visitors and never comes back. Kelvin realizes reality after he touches her toes and finds them soft like of the new-born child. Moreover, he finds that the black woman is soft too when he touches her toes accidentally. After this revelation, he decides to get rid of Rheya by launching her in a space capsule, but she returns again (Ketterer, 1983, p. 200).

Gibarian fails to eliminate the black woman neither from himself nor from the station. The black woman causes his suicide as these creatures are in fact an externalization and expression of his deepest thoughts and emotions. Rheya, as

a non-human creature, has the ability of taking many doses of medication to sleep but without any effect. Thus, she can live without food and drink because she is a kind of superhuman (Gaiman,2005, p. 120). This situation portrays a clear insight into what happens when one is disconnected from human beings and culture for a new, different and distant culture. David Ketterer argues that Kelvin learns about human limitations constrained by planet Solaris and his obsessions to communicate with aliens it became impossible (Ketterer,1983, p.197).

Snow illustrates that those various visitors who are human-like creatures come from the scientists' memories and imaginations. He thinks that they are linked to the giant ocean, so they attack it with X-rays. The result is that the ocean "has sent back the visitor as a thank you . . . or an insult . . . or a test . . . or who knows why? The motives of a giant ocean are hard to figure" (Lem, 1970, p. 51). When they try to remove one creature, the ocean gives them another one. The violent X-ray attack makes the ocean reveal the secrets of the crew members' personality whereas they themselves cannot expose it. The ocean examines the scientists' mind by making them face their suppressed thoughts and memories. The scientists cannot explain the physical phenomena of the ocean. They are just using conventional scientific methods. During their repeated quest, they fail to communicate with inter-species and thus their attempts are unproductive (Solotaroff,1976, p.212).

The scientists believe that this ocean exemplifies the intelligence of space creatures, but they fail to communicate with it. In fact, these creatures are a projection of the scientists' past memories including their own sense of guilt. As Snow explains to Kelvin:

Imagine a man who at one and the same time is ashamed of the object of his desire and cherishes it above everything else, a man who is ready to sacrifice his life for his love, there are nothing, situations, that no one has dared to externalize but which the mind has produced by accident in a moment of aberration of madness flesh and blood. That's all (Swirski, 2008, p.153).

In this regard, inside every man there are some personal and painful experiences that make one dislike having a communication with others. Thus, when these

experiences appear after a long time of their blockage, man would suffer. This is exactly what happens to the crew members. However, on the planet Solaris the alien has apparently connected to the crew's psyche in order to discover the hidden part of their psyche. The ocean has the ability to accomplish what the crew members cannot. Lem criticizes, and reveals the irony of, man's tendency and greed to be the master of the universe, to play God. However, at the same time they lack the adequate knowledge to reveal the dark spots of their own mind and psyche. Lem seems to suggest that Solaris is just a giant brain, a consciousness that can create many kinds of creatures. The title of the novel refers to the mysterious entity which toys with the ship's crew since it has a consciousness (Solotaroff, 1976, p.212).

Each scientist seeks solitude to deal with his own shame complexes which have come to surface and visibility (Gaiman, 2005, p. 124). As the work on the station comes to its end. The scientists who have come to study the alien ocean and communicate with it stop communicating with each other:

What communication can there be between social beings who create their spiritual and material civilization outside the individual beings who involved in numerous conflicts between the self and the others, the ego and the world and a giant for whom there are neither plurals nor pronouns and presumably also no human feelings? (Jarzebski, 1977, p. 117)

It is obvious that the scientists not only fail to understand each other but also fail to communicate with each other. Therefore, it is difficult to contact aliens when they lose the contact between themselves. Lem criticizes man's simple mindedness. For him, man is conceited to imagine that he has the ability to travel to another world and communicate with its inhabitants while they do not know, and cannot communicate with, themselves. As a matter of fact, "we don't want to conquer the cosmos, we simply want to extend the boundaries of Earth to the frontiers of the cosmos. . . . We have no need of other worlds . . . We need mirrors we go in quest of a planet, of a civilization superior to our own, but developed on the basis of a prototype of our primeval past" (Lem, 1970, p.72).

Jerry Jarzebski points out that:

[C]ollectively we dare to engage in enterprises of gigantic proportions but, these acts exist as if they were separate from us; when we are left to ourselves, we cannot master our own inner strife which is the result of our social contacts. The most important and necessary thing is to understand each other and not to contact with aliens (Lem,1970, p.72).

This is shown in Kelvin's case who loves Rheyra and feels guilty at her death which affects his life. Hence, the journey to Solaris adds nothing to himself since his creativity is a part of his inner self. In fact, the reader can hear Kelvin's thoughts inasmuch as he considers the first-person narration. Rheyra's disappearance pushes him to end his creativity; even he dislikes returning to the Earth and decides to stay there instead (Jarzebski, 1977, p. 117).

In the space station, the scientists try to get rid of the creatures by either poison, weapons, injections or violence but they fail, and the visitors always return. Despite using different means to destroy these creatures, they fail because the visitors are the projection and embodiment of their own psyche. Then, they realize that by using the microwaves and the brain waves, they can get rid of the creatures (Gaiman,2005, p. 144). The long period of their stay makes the creatures keep the personalities of their own. When Snow and Sartorius decide to build a destabilizer to get rid of the visitors, Kelvin gives them false information because he loves Rheyra and decides to take her off the station. After listening to Gibarian's tape that she is inhuman, Rheyra decides to put an end to her life but she does not die. Without Kelvin's knowing, she tries to kill herself again by facing Sartorius's destabilizer and disappears forever. Feeling depressed and angry for the loss of Rheyra, Kelvin decides to destroy the planet but Snow obliges him to face the reality that her death is the only way the ocean planet can recreate a blueprint which only can be found in his memory without any intention of hurting him. He says, "[i]t is blind . . . or rather it sees in a different way from ourselves. We don't exist for it in the same sense that we exist for each other. We recognize one another by the appearance of the face and body. It introduces itself directly into the brain (Lem, 1970, p. 193). Then he adds, "it removed the deepest most isolated imprint, the most assimilated structure without knowing what it meant to us" (p. 194). And:

A sadder and a wiser man, I shall never again give myself completely to anything or anybody and this Kelvin will be no less worthy a man than the Kelvin of the past, who was prepared for anything in the name of the ambitious project called Contact. Nor will any man have the right to judge me (Lem, 1970, p.142).

Kris Kelvin, an ambitious scientist, travels to the planet Solaris to communicate with the planet's native inhabitant as a huge, sentient substance body of plasma that takes up Solaris' surface that they call it "ocean." The ocean is described by scientists as undesirable or incapable of communication with humans. Upon Kelvin's arrival at the space station, he senses a presence of a strong entity as he sleeps. He sees "visitors" that have been produced by the ocean as if from repressed desires in the unconscious of a human. Kelvin spends his energy trying to learn the creature's origin and understand them as alien communication. He realizes that the most noble man may drag himself into quixotic illusions as he declares:

I had never felt the gigantic presence so strongly, or its powerful changeless silence, or the secret forces that gave the waves their regular rise and fall. I sat unseeing and sank into a universe of inertia, glided down an invisible slope, and identified myself with the dumb, fluid colossus; it was as if I had forgiven it everything without the slightest effort or thought (Lem, 1970, p.210).

Kelvin's awareness comes with a great struggle; his romantic faith by mourning his wife Rheyra makes him decide to return to Earth. When the ambiguous situation turns into self-diminution, Kelvin decides not to return to Earth and study the responses of the creatures by playing a game to touch them in order to make physical contact, but, unfortunately, he fails after all. He is deeply affected and feels despair. He says: "I hoped for nothing, and yet lived in expectation. I did not know what achievements, what mockery, even what torture awaited me. I know nothing and persisted in the faith that the time of cruel miracles was not past" (Lem, 1970, p.204). In Kelvin's concluding words, he attained a new level of wakefulness and awareness. His pre-aggressive drive that drove him for contact makes him more serene receptivity. In *Solaris* Lem conveys that human consciousness seems to couldn't receive a new level of

cognition as long as it is trapped in the state of its egocentric conception of reason. The alien reality that encounters with the cathartic creates a result leads to violate of self-consciousness of human being's self-sufficiency can dissolve the scientists' pent up emotional fixations and initiate outside of oneself and the knowledge that something else not only exists but can change the self. The novel reveals the hidden contradiction, Kelvin tries to purge himself from illusions at the end of the novel by accepting the reality of Solaris as "not humanness". He gains a new ability to see himself objectively as if he understands man's limits, he sees himself as "not human" in order to contact the others. In this point, Kelvin has redeemed his illusion by proving the truth of the aliens. The quest for contact being an illusion keeping his sense of humanity. He realizes that man's knowledge is not limited to the creations and himself after all, by understanding the truth, justifications and beliefs of knowledge (Jarzebski, 1977, p.117).

When man has a desire and curiosity to conquer outer space, carrying out scientific experiments to understand the unknown, s/he may find out many strange things concerning the cause of alien creatures. As a matter of fact, typical science fiction looks towards new situations that go beyond the experience and control of man. Under such circumstance, human ethics break down to prove their wrongness (Jarzebski, 1977, p. 122).

What happens on Solaris makes Kelvin realize the limitation of humanity. The universe and its evolution would continue without man. Lem personifies Solaris ocean as an imperfect god. All gods from all religions are imperfect and jealous because their superiority requires man's submission and sacrifice. In this sense, the Greek gods are "sulking, squabbling and were as imperfect as mortals" (Lem, 1970, p.197). The idea of imperfect god is acceptable in our modern technological society since God is "an evolving god who develops in the course of time, grows and keeps increasing in power while remaining aware of his powerlessness" (p. 198). For Lem, such god has nothing to do with mankind. Kelvin says that he believes in a god "whose passion is not a redemption that saves nothing fulfils no purpose a god who simply is" (Lem, p.199).

Unlike old societies where man would get the meaning of life from religion, new modern society makes man recognize his position in the world without

relying on religion. In fact, modern man tries to take the place of God. The novelist is concerned with man who is now the measure and centre for everything in the world. Yet, Lem seems to argue that man does not have the ability to understand the world and cannot be omniscient or omnipotent. In fact, Lem questions epistemology (the idea that we can know the world objectively through knowledge) and the anthropocentric view of man that dominates modern world. Lem's protagonist abandons the Earth in order to fulfil his quest, which fails by an excruciating pain of the ambiguity and tension between the crew and the simulacrum. Epistemologically, *Solaris* reveals how knowledge cannot help to conjure the unconscious desires of the crew to discover the essence of the unknown creatures. The quest is not totally in vain, but it is a fragmentary obligation towards ambiguity. Kelvin is a successful scientist because of his expertise in psychology (having a PhD in the field), yet, he is a broken man, mentally damaged despite the irony that he is a psychologist. As he says, "I hoped for nothing and yet lived in expectations. I did not know what achievements, what mockery, even what tortures awaited me. I knew nothing and persisted in the faith that the time of cruel miracles was not past" (Lem, 1970, p. 212). Many critics agree that Kelvin's words indicate the awareness about the existence of others. For Mark Rose, Kelvin has recognised that others exist and the reality of the ocean. According to Darko Suvin, "Kelvin wins through to a painfully gained provisional and relative faith in an 'imperfect god'" (Suvin, 1972, p. 212). *Solaris* reveals that the consciousness of human could not reach a new level of realization as if human is trapped in their own reason. Lem's vision of exploration as a battle between the consciousness and unconsciousness of the superiority and developing one into inferior one with get nothing, *Solaris* has the same aim since the scientists is attempting to take the power of the planet's mastery. In this point, the visitors are entities beyond the scientist's comprehension. This insufficient result hurts their pride. Lem describes that in his words:

In any case, it's in an extremely rare category, not like Earth. Earth is a common type the grass of the universe! And we pride ourselves on this universality. There's nowhere we can't go; in that beliefs we set out for other worlds, all brimming with confidence. And what

were we going to do with them? Rule them or be ruled by them: that was the only idea in our pathetic! What a useless waste (Lem, 1970, p.211).

Lem criticizes human nature for trying to be the master of the universe, while not possessing knowledge of their own mind and soul. The planet has a consciousness, since it is alive and is just like a huge human brain. In other words, the actions of the scientists against the planet make them realize that although they have little knowledge of themselves, they are eager to know about the planet's mechanism. However, Lem criticizes mankind's ignorant attempts to discover something beyond their comprehension instead of knowing themselves in the first place. If we want to accept that Kelvin has already been purged from the illusions at the end of the story, we should accept the fact that it is Solaris that makes him know himself. Kelvin wonders where the human limitations end. Kelvin is a victim of his romantic obsessions and has suffered from isolation. Thus, Kelvin abandons humanity for the world of aliens but acknowledges the despair of knowing. As Michel Foucault believes that, the purpose of knowledge is not to know or understand, but for cutting, that is for discontinuities of history (Foucault,1977, p.247). Foucault's critique of knowledge does not refer to the transcendental, nor is it about the possibility of the metaphysics; on the other hand, it is about genealogical that interweaves its design and method. At the end of the novel, Kelvin asks himself whether man should live.

Because of his depression, Kelvin decides to return to the Earth, but then changes his mind. He realizes that his stay on the space station to study Solaris's ocean and communication with other creatures is the only way that gives meaning to his life. He also says that:

Man remains imperfect till the end thus he accepts the unfinished world like himself. He knows his place in the world as well as his imperfect and defective future. Therefore, he tries to understand the nature of his existence in order to deal with the future that is a part of the history in which man is nothing but an accident. It is obvious that Lem poses problems without giving solutions (Lem,1970, p.204).

Kelvin realizes that human remains imperfect even they try to conquer universe, because he fails to understand what the ocean's essence is? he struggles to understand his existence purpose and his future. Science fiction like *Solaris* is a natural response to techno-scientific achievements and questions the possibility of human knowledge and limitations in understanding the world and mankind. Lem deliberately implies ambiguity that he links to the epistemological inclinations by associating intelligence to this odd ocean. Like Marry Shelley's *Frankenstein*, when Victor fails to communicate with his monster, Lem implies the inevitability of human contact and how scientists strive to comprehend other species (Csicsery- Ronay,1985, p.219).

Since human beings have the form of a fully sentient life, any defiance with non-human intelligence is necessarily speculative. Authors in the seventeenth and eighteenth centuries create many works of travel to and from other inhabited worlds. A fuller knowledge enabled writers to visualize that life of other worlds might develop deferent life on earth. The aim of the novel is to reveal a scientific theory within the content of a literary work to create an intellectual debate within the development of knowledge. Yet, human science and understanding knowledge proves as insufficient in this quest for connecting with an alien planet. The planet is ambiguous and alive as if it plays a game with the scientists revealing the buried memories of the darkest corners of their mind by sending visitors, just to remind them this is your limitations and nothing more. Transcendentally, the sentient planet of alien is distant from humanity that causes the scientists' hallucination and mental collapse after all. However, the planet of aliens, in this sense, is a permanent enigma that is unsolved by any scientist through studying. They explore *Solaris* as an unusual planet and try to unlock the mysteries of it. Yet, the tension is derived from frustration, active denial and confusion rather than an antagonistic outside force.

Solaris escapes the attempts to define it and exceeds the understanding of scientists. It is a planet of alien life form and as a sentient being refers to the unknowable. Knowledge has inherent values and means to an end. The pursuit of knowledge will satisfy our needs to defeat the unknowability. Like our protagonist Kris, we can dissect, catalogue and study the fictional world of planet in tiny discrete bits. Kelvin is terrorized with painful dream. The terror

holds him to chase the mysterious that surrounds the ocean. The ocean, as Snaut says is without any intention to do anything harm, but in contrary, tries to give the scientists expensive gifts that have been hidden in their mind for a long time. In this sense, Kelvin realizes that the gigantic, powerful presence and relentless silent ocean will give nothing but mystery that exceeds the comprehension of human minds.

5. K. W. JETER'S INFERNAL DEVICES: A MAD VICTORIAN FANTASY (1987)

5.1 *Infernal Devices* as Steampunk Fiction

K. W. Jeter (26 March 1950) is an American science fiction writer, who coined the term steampunk. Jeter is also best known for his novels that include horror, science fiction, machinists, robots and dark fantasy. *The Star Trek* novels, the *Star War* novels series, *Blade Runner* sequels and steampunk *Infernal Devices* represent fantasy literature. Inspired by nineteenth-century fantasy and industrial machinery, Jeter expresses his view of fantasy in contemporary time: "Personally, I think Victorian fantasies are going to be the next big thing, as long as we can come up with a fitting collective term for Powers, Blaylock and myself. Something based on the appropriate technology of the era; like 'steampunk', perhaps" (Jeter, 1987, p.43). According to Jeter's work, machines remain as machines, and better to differentiate them from machine-like humans, relating the idea with possibilities of steam based on alternate history and technology. *Infernal Devices* as a steampunk novel reveals steampunk aesthetic that consists of three components: neo-Victorianism, retrofuturism and techno fantasy. The novel is a prediction about the future of the Victorian era in London when the hero starts his adventure. In this sense, neo-Victorianism focuses on the combination of the aesthetic and the social characteristics of the Victorian period including technology, morality, culture and philosophy. Retrofuturism is shown in the novel through the predictions of Jeter's work when George sees many devices that his father creates as a genius scientist. Jeter uses Techno-fantasy that establishes the aesthetic of steampunk by combining technology and fantastic elements such as flying machines and robot with great talents like playing music

(Perschon, 2018, p. 36).

Jeter's *Infernal Devices* has been republished by Angry Robot Books as Victorian literature in 2011. As he clarifies, steampunk was meant to be a joke. *Infernal Devices* is described as a mad steampunk fantasy; it introduces the surrealist mystery of dark science fiction of nineteenth-century machines, flying mechanical devices, the morality of Victorian age, scientific societies, music, fashion, horrific monsters in the fashion of H. P. Lovecraft's fiction and some anachronistic technologies. It has an elegant language with fantastical elements that gives a full description of mechanical of steamed power. The novel displays a mixing of weird humour and an unlikely hero. Hence, somehow George Dower, the protagonist, does not feel easily excited and most of his actions are out of the character he owns, set in Victorian London: "A delicious and quite insane romp through the gaslit streets of London" (Jeter,1987, p.3). The novel links the idea of technology and the sense of authenticity by showing grimy alleyway and clean shop fronts. This section will argue that *Infernal Devices*, as a subgenre of science fiction, shows another effect of the shifting of the time and technological advancement of science fiction and human understanding of the world and the future. This part will also contend that new technological advancement and devices such as the development of artificial intelligence (AI) and consequently robots towards the end of the twentieth century is perceived as having an infernal effect and consequence that might lead to a total destruction of the world and humanity, similar to a post-atomic time in case of a third World War when no one would probably be alive. The novel is exemplary of the portrait of a shift from the age of space to an age of artificial intelligence and robots. It anticipates what would happen if humans take an unrestricted step towards the unknown by relying too much on artificial intelligence and robots: the result would be hell.

Infernal Devices starts with the protagonist George Dower who is the son of a late horologist who has left the business to his son. One night, George is visited by a creature, Brown Leather Man, called after the colour of his deep brown skin. When his servant Creff informs him that this man wants to see him immediately "Creff, my factotum, interrupted the breakfast he had brought me only a few minutes earlier and announced that a crazed Ethiope was at the door, presumably to buy a watch" (Jeter,1987, p.43). As the creature tells George, "I

was a client of your late father. . . . For me he built this, upon my commission. Some elements of disorder have entered its workings, and I seek to employ you in the setting right of it" (Jeter,1987, p.14). The man was a client of George's father and gives George a mechanical regulator to repair. Although George tells Brown Leather Man that he has not been trained to repair such devices, the man insists and leaves the device. He gives George a silver coin engraved with an image of Saint Monkfish, as a partial payment. The device will bring about two different outcomes. At some point, it leads George to the person whom he is seeking for; yet, it causes his death (Jeter,1987, p.16). By accepting this regulator, George enters a secret struggle with the Godly Army, the Royal Anti-Society, and the Ladies Union for the Suppression of Carnal Vice and finds himself in very confusing position. He does not know anything about them, if they will be friends or foes.

George is very curious; this makes him go to London. Nobody has a desire to talk with him; his curiosity only leads him to more troubles. Through the novel the characters try to tell the same events several times, and those events and stories maintain their novelty by having the structure of stories within stories similar to *One Thousand and One Nights*. The novel reveals George as a mild-mannered, rather than a dynamic figure. It is an example of "Mad Victorian" era. The author portrays the evil necessity of the power of knowledge to change the course of history. As steampunk, the novel is set exclusively in the Victorian age to reveal the tropes of science by using the steam engine as a very influential source of energy and power that changed the landscape of not only England but the world. George tries to fix the problem that his father creates, the mad scientist by creating an evil device as a regulator that could destroy the earth. As George says: "There are two things without limit – the stupidity of Man and the mercy of God" (Jeter,1987, p.69). The ambition of his father leads to creation of an automaton, a double of George himself. The building clockwork possesses a skill with the violin and superior sexual abilities. Because he is an exact double of George, there are many people who try to kidnap him. However, there a woman abducts the hero by making a mistake believing that he is the clockwork twin. George in the above quote compares the

stupidity of his father's madness for creating this creature and God's mercy to protect people from the destruction.

Hey, it's gonna be a gas,' Scape assured me. 'If you're into machines and stuff - like I am - you'd go for it. People are gonna have all kinds of shit. Do whatever they want with it. That's why it didn't faze me when Bendray first told me about wanting to blow up the world. Hey - in the Future, everybody will want to! (Jeter,1987, p.104).

The dialogue is between George and his friend Scape about what will happen if they let the creature do if they cannot defuse his power. He says the world will blow up and everybody in the future wants to own it, because it has the power to destroy the earth. And he adds: "All men, reaching back to Adam in the Garden, plead Ignorance as their defence; when, if we were but honest, we would admit that the apple was hedged with every warning imaginable. So, I too fell; perhaps all sins are not causing but effects, being the result of the first sin" (Jeter,1987, p.80). Jeter's hero reveals how the ambition of scientists drags them to do anything in order to gain their desires and reach greatness. Jeter tries to say that they want to be like Adam to play god, foreshadowing the transcendence they want. But they will regret if when their endeavours go wrong by claiming their ignorance as the excuses for their egoism.

Moreover, K.W. Jeter as the leader of the steampunk sub-genre uses the three elements of steampunk by combining the science of steam power, clockwork and elements of magic. Neo-Victorianism is an aesthetic movement that predicts the future of the Victorian period and the modern principles of technology. Jeter imagines the alternate world in a fantasy future where the steam power remained a dominant power and the power of technology survived. Retro-Futurism refers to the optimistic and paradoxical version of the future that never materialized. It is the future as the past imagined it. Jeter's *Infernal Devices* shows the past of the Victorian period that affects the future as creating a paradox when George is dragged into an ongoing conflict in London. Jeter shows the third component of steampunk aesthetic which is Techno-fantasy. He sees technology connects to fantasy by abandoning the real world. George's father, as a steampunk scientist, builds a robot and makes him superior as a time bomb that will bring destruction to the earth.

5.2 Artificial Intelligence and Automaton in *Infernal Devices*

Infernal Devices imagines the function and outcome of human experimentation with artificial intelligence and devices. It shows the extent to which the fundamental rules of nature can be modified to give alternate sciences. However, science in this sense acquires an uncanny feature just like magic. Cynthia J. Miller argues that in steampunk technology turns into a magical world, thus, magic has transformed into the scientific world (Miller and Bowdoin,2011, p.92). The novel considers the spark of steampunk's eruption in order to trace the changes of identify. The title of the novel gives readers expectations about devices, objects and technology. As Forlini points out, the most important thing about steampunk is that it is about objects, particularly technological objects, and their relations with us (Forlini,2010, p.72). In the novel, as indicated by its title, device is associated with "infernal." Therefore, science here has a connection to devil or devilish acts. However, "infernal" deals with the image of devils that go beyond human limitations (Forlini,2010, p.98).

George's father was a man of science, an inventor who had the ability to use his own knowledge and talent to create a new species, a hybrid of fish and human called "Selkies." He has built many devices like devices of elimination and devices for entertainment. These devices have a specific mission. They use vibrations to cause destruction:

Your father's greatest creation – so it is designed to transmit equally destructive pulsations into the core of the earth itself. Pulsations that build, reinforce themselves – marching soldiers! Hah! Yes – until this world is throbbing with them, shakes itself to its component atoms!" (Jeter,1987, p. 183).

The quotation is an allusion to what happened in 1831 to Broughton Suspension Bridge, when it collapsed while seventy-four soldiers were marching on it. They felt that the bridge was vibrating. Before the first group of men had succeeded crossing other side, a pillar of the bridge collapsed sending the other group of soldiers into their inevitability (Smith,2013, p. 79). Eventually, the vibrations caused the bridge to collapse. Pulsations that reinforced the collapse are based

on science that is referred to in the novel as "Cataclysm Harmonics." George's father created devil devices that could bring about doomsday. The devices' vibration with right frequency can cause the destruction of the Earth. Hence, in the novel the Earth becomes like a giant machine throbbing with its vibrations until it eventually breaks away from "its component atoms" (Smith,1994, p. 39).

George's father created "Paganinicon," an automaton who can play violin and is a double of George but possesses superior skills to him. Jeter tries to create resemblance with the musician Niccolò Paganini. George's brain is just like this device with "mechanical resonance" and "the principle of vibrations" (Jeter,1987, p.78). George's double or Paganinicon which is a clockwork is a reference to the day of reckoning. The ability of the fantastical magic has been transported into brain as a function to produce vibrations. Hence, the novel creates an alternative world identical to Victorian world where there is the ability to advance knowledge to create the artificial science that mixed with magic. Jeter in this sense uses mechanical vibrancy to evoke an eccentric science.

In the novel we see a futuristic world yet set in the Victorian era. The Selkies are trying to ultimately devastate the world of humanity. The Brown Leather Man intends to destroy the humans after the activation of the device:

The Brown Leather Man stood there, gazing down upon us, his arms lifted above his head. He had gained entrance through secret ways, and now gloated at our despairing situation. "See!" His voice was a wild howl, all resemblance to humanity removed. "Your folly is this! This you brought upon yourselves – your blood cares not for others' blood! Their death you bring about, your stupidity and greed kills, and you care not! Now has come your death!" (Jeter, 1987, p. 392).

The Brown Leather Man attempts to conquer the world of humanity by using the reckoning machine built by George's father. However, the frequency of George's brainwave is changed by something like primal sex. This seems to be as a primal magic of creation, using to abolish the lethal science of the reckoning machine. The consequence of that is "Bendray Hall still stood after the shuddering

vibrations emanating from its cellar had ground to a halt" (Jeter, 1987, p. 33).

Mike Perschon declares that the emergence of steampunk as the genesis of the genre lacks adherence to rigorous science when he studies stories from three steampunk writers, James Blaylock, Jeter and Powers. As Perschon points out:

K.W. [Jeter] rolled his eyes at something I'd said (something involving "science") and suggested that given my curious notions of that subject I'd be likely to write a story in which someone plugged a black hole with a Fitzall Sizes cork. After a momentary silence I asked him whether, with all due respect, he was willing to let me have that idea or whether he wanted it for himself. He said I was welcome to it, and I went home and wrote "The Hole in Space" (Perschon, 2018, p. 36).

In *Infernal Devices* the automatons are an example of the effectiveness of technology. These automations have intelligence that exceeds the comprehension of science like Paganinicon. The novel has a crooked reflection of the world of reality. As Perschon puts it, it is "a resonant not accurate, mimesis" (Jeter, 1987, p.68). Steampunk mixes pseudo-science (fake science), magic, fantastical science and science itself. However, retrofuturism, techno-fantasy as well as the aesthetic of the neo-Victorian era have affected science as expressed in steampunk such as this novel. The relationship between the adjustment of the scientific method and the Industrial Revolution that the Victorians experienced are expressed in the novel.

In *Infernal Devices*, London seems to be a character. George's quest leads him to Dampford and Groughay, as a fictional village. The events surrounding George trace his adventure from London to the village. London represents a place where George hides when he tells his story. He goes forward to his adventure in "London bounded voyage of discovery" (Jeter, 1987, p. 62) to find out the origin of the coin he received from Brown Leather man. In this mysterious, he first goes to churches and then to Tottenham Court Road to find a coin collector, costermonger. Throughout his search, he finds out that the coin is in fact a token. This leads him to Wetwick, a district of London. London is a place "[w]here all things are bought and sold" (Jeter, 1987, p.87). This fictional

location is mixed with real London; thus, the novel gives that impression of being as alternative history.

Infernal Devices uses the automaton's technology to give the readers an understanding of the devastating power of technology. In this regard, the novel portrays the impact of the dark side of technology both in the Victorian age and in our contemporary time. Charles Stross argues that the dark side presents London's past. Stross's idea is influenced by the Victorian literature. As he puts it, "there's a dark side as well. We know about the real world of the era steampunk is riffing off. . . . Life was mostly unpleasant, brutish, and short. . . . It was a vile, oppressive, poverty-stricken and debased world and we should shed no tears for its passing (Stross,2010). Steampunk perceives real London as it has been influenced by Dickens's texts. Steampunk in this sense portrays unsatisfactory pictures.

Jeter is considered as the first author who introduced the idea of the mad technology that represents knowledge and science. The science that Jeter depicts and the explanation that gives for the events of the story are preposterous. George is insecure, rigid and persecuted. George is unwillingly involved in this adventurous story, but he does not possess the intelligence of his father as a watchmaker and an automaton's developer. Unfortunately, he does not have the ability to discern their authentic purpose. As the novel reads, "[a]mateur scientific pursuits had long been a preoccupation with serious-minded gentlemen of property and leisure" (Jeter,1987, p. 28). George's father was a serious-minded who is considered as a mad inventor as he possessed the knowledge to invent devices that could destroy the world. George takes the responsibility after his father's death and finds about the device his father invented:

Under the glass I discovered the floating escapement with ratcheted counter valences, linked in parallel to a train of duplicates disappearing into the brass innards. One section, brighter than the rest, appeared to be made of finely hammered gold leaf, the sheets of which were folded upon themselves in various asymmetrical patterns (Jeter,1987, p.30).

As the description and the tone of the novel reveal, there is a deep detailed contradiction of love and deliberate frustration for both the narration and the reader. Jeter points to the future and how knowledge will impact the fabric of science. The novel refers to The Brown Leather man as an outrageous character called Ethiope: "Lord, Mr. Dower, it's an Ethiope! . . . and crazed – a murderous savage!" (Jeter,1987, p.10). When the Ethiope gets injured, his blood is saline solution. George discovers layer after layer of weirdness associated with his late father's bizarre work in creating intelligent automata. George is surrounded by many characters who want to possess the strange device. George's father creates that device as an identical copy of George himself. Nevertheless, this similarity causes his captivity by a woman called Miss McThane when she believes that he is the clockwork twin. George is haunted by machine and man alike. He struggles to escape from his virtue and his life. He realizes the significance of the device that everybody wants to possess and their relationship to each other (Collins, Latham and Fischer, 1988, p.219).

In the Scottish Hebrides George encounters aliens and meets the forger of the coin, a pair of scammers with odd futuristic accents, the Godly Army, temperance leaguers and elderly mad villains. Throughout the novel, several sudden incidents change the reader's perspective of the previous events. All of these events are not provoked by George himself, but by being manipulated by secondary characters (Gabrielle, 2011). However, when the race of the Brown Leather man is revealed, the reader recognizes a powerful metaphor. the man represents the British Empire that wrecked civilizations throughout ages.

Infernal Devices deliberately offers taunting events and is a mean-spirited and a clever novel which establishes the basic fundamentals of knowledge to draw the reader's attention towards science and steampunk specifically. One of the novel's characters has seen the future and says, "Hey, it's gonna be a gas. If you're into machines and stuff—like I am—you'd go for it. People are gonna have all kinds of shit" (Jeter,1987, p.294). At his point, the novel shows how the future will be if technology is misused especially for greedy imperial tendencies. Nevertheless, the author of *Homunculus*, James P. Blaylock, argues that "[w]hat we see in *Infernal Devices* is not just the presage of what steampunk is, but what it could have been, a marvellously self-aware and

inventive attack on the obsessions and degradations of the present" (Jeter,1987, p.98). He also contends that "[t]his is the real thing – a mad inventor, curious coins, murky London alleys and windblown Scottish Isles . . . a wild and extravagant plot that turns up new mysteries with each succeeding page" (1987, p.212). In the novel, Victorian England has been reimagined not only a steampunk's vision of the future, but what it would have been. It is a marvellous critique of unrestricted innovation and its application for greedy imperialist means to control the whole universe and concerns with degeneration of the present.

5.3 Psychological Instability and Imminent Threat of Technology

Infernal Devices shows the psychological instability of George in the fashion of H. P. Lovecraft. Similar to Lovecraft's characters, George is transfixed and terrified by the events relating to him. As he says in Chapter Three:

I awoke the next morning, half-believing that the preceding day's events had been but a dream, driven by its own eccentric machinery to a baffling conclusion. My sleep had been vexed with shadowy figures, dark-skinned and sombre, or with eyes hidden by blue glass and spouting incomprehensible obscenities; I would have been grateful to shake them out of my muddled head, to disappear with all the nocturnal phantoms that had gone before them (Jeter, 1987, p. 63).

George's terror is indicated in his horrific dream where life-threatening de-humanized "shadowy" figures appear. The description of the alien-like creatures points out their non-human features. In other words, technology and humanoid creatures are depicted like evil intended vampires who feed on humans. The Industrial Victorian that Jeter portrays is part of popular culture. However, the aesthetic fictional construction evokes the visual imagery of technology and advances and the shifting of knowledge throughout the ages. The use of descriptive language about the clockwork engineering of steam is sufficient to conjure the futuristic industrial landscape or humanization of clockwork automaton, which in this case is George's identical copy invented by his father. Hence, steam technology is a larger puzzle in the novel.

Moreover, the greatest strength of Jeter's style is his breezy style of writing which makes the novel readable and Victorian England alive. When George walks through Wetwick, the lurching denizens and the shadowy alleys as well as the smell of rotting sweeping into the gutters are vividly described. The novel shows that non-Western individuals are not free from the mystery of the Victorians' doom. Jeter briefly points to the threats of the technology of the future. The novel gives the lighter end to represent the spectrum of the steampunk sub-genre.

The novel as steampunk re-imagines the Victorian's future and the potential dangers of technology for the future generations. It reveals how the shifting of knowledge impacts the future of humans. *Infernal Devices* is not only a social novel. It also shows the competing interests of miscellaneous social and political satirical tones. Jeter employs "the Royal Anti-Society" to burlesque the scientific society and their supporters, and "Godly Army" to make fun of religion. Furthermore, it reveals the underlying slavery and the cultural imperialism that manipulates technology for its ends. Poking fun at religious and scientific triumphs via the Ladies Union and the Godly Army is noticeably connected to modern world. But, more importantly, Jeter tries to convey the idea that machine may govern the world when he mentions the fly machine that wants to destroy the Earth. "Limping down the street came a bedraggled figure, its ribs protruding from the rigours of its journey, still scarred from the crash of the flying machine, scarcely recognisable" (Jeter,1987, p. 241).

James P. Blaylock describes Jeter's novel as "a mad inventor, curious coins, murky London alleys and windblown Scottish Isles ... a wild and extravagant plot that turns up new mysteries with each succeeding page" (McGee and Cramp,2012, p. 35). Blaylock considers the novel as a steampunk fiction that creates an alternative world. Although, Jeter refers to many things that relate to the destruction of the Earth, he intentionally does this in an unbelievable and light-hearted way. George is finally rescued at the end of the novel and all the events are linked together perfectly. Knowledge attempts to tame the cruelty of ignorance, and accordingly steampunk tries to show that science and technology might lead to an absolute destruction. Steampunk rejects the glorification of technology and tries to memorize the lessons of the past eras, as best manifest in

Jeter's novel. Steffen Hantke argues that, "the shaping force behind steampunk is not history but the will of its author to establish and then violate and modify a set of ontological ground rules. . . . Victorianism . . . appears not as a historical given but as a textual construct open to manipulation and modification" (Hantke,1999, p.248). The revolution of science and technology that outbreaks during the Victorian era has a huge impact on people's awareness. Steampunk reveals the core idea of the Industrial Revolution, automated manufacturing with the up-growth machinery, steam engines, the development of machinery and airships. The retrofuturism and steampunk's characters are bounded to each other, in a way that makes a parallel between the past and the future. The contemporary attitudes and values are reflected and mixed with the future and past.

Another important point to note is that steampunk presents women as smart, capable, and determined. In such fiction, females' character does not try to seek for the equality of men, instead, they react against restrictions and the limitations of society. Jeter introduces Miss McThane as someone who persistently tries to tempt George, dragging his attention towards a contravention about the social conventions. As she says, "[t]his is the way it's gonna be some day', she claims, 'no more of that ladylike crap. In the Future, women are just gonna take what they want" (Jeter,1987, p.136). Miss McThane's perspective gives the impression of a modern woman: "I got a brain out of the future inside my head, this is the way it's gonna be some day" and "ladylike crap," as she says (Jeter,1987, p.173). This depicts both Victorian mannerisms based on politeness and modern mannerisms with its brutal emphasis on truth regardless of the other sensitivities. McThane highlights rebelling against Victorian mannerisms.

Moreover, *Infernal Devices* addresses the idea of sexual insurrection. George and Miss McThane eventually have sex. As George describes it, "I watched, speechless, as she grasped the neckline of her gown in both hands. She tore the bodice open, the fabric bunched into her fists. 'All right, sucker!' she shouted. 'England expects every man to do his duty!'" (Jeter, 1987, p. 174). George's brain vibrations share frequency of the doomsday device. Yet, when he participates in a primitive act, it contradicts and goes against the social models

of Victorian demands. "I set wearily on my bed, my head in my hands, appalled at this vision of the future . . . I guess it's good thing that the device finally wore out and flew to pieces . . . the subject worked a horrible fascination upon me . . . what is the future going to be like, then?" (Jeter, 1987, p.171). The mad and brilliant scientist has a great reputation in London. The Brown Leather Man informs George: "Your father was installing this seaweed gathering device, that he came into contact with the aquatic race of Selkies" (Jeter, p.177). This shows the attraction between minds of the Selkies as a brilliant creature to the mad scientist, since they are inquiring breed possessing much knowledge, from them Georg's father learned those principles of sympathetic vibrations in rare field of science. George's father helps "the Selkies to survive by creating a device which consists of wooden booms extended into the ocean and submerged by heavy chains, my father's device worked well" (Jeter, p.177). Georg's father had done well because of the Selkies survived as a race. Jeter uses the race of the Selkies as a creature with creating a device by the mad scientist and shows how his ambition drags him into destruction. Jeter reveals how cruelly the scientists have been exploited to serve their lust for knowledge and greed for determining the purpose of science whether to serve humanity or bring their doom. George understands from an unwilling adventure when the Brown Leather man's visit to his shop, bearing one of his father's Regulators since the latter left it on the island of Groughay. (Jeter, p.180). Many devices have been created by George's father one of the which is the Brown Leather Man who saves George from the Godly Army. "your father enabled me thus, the device he created for the purpose of gathering seaweed, exists still in working order. The chains and wooden booms are yet in place. I had only to activate to create such havoc as you saw" (Jeter, p.187). The device that the Brown Leather Man is talking about saves George from his inevitable death when he has been captured by Godly Army. The device causes the destruction and sinks the ship then George survives. In the island, George and his friend Scape discover at the middle the ruins a huge room one of its walls has been collapsed. they find various metal construction. Scape tells George that "It's your father's old workshop- when he was here years ago" (Jeter, 1987, p.189). when George's eyes catch the scene of his father's genius makes him even more confusing due to the hardware degradation condition. They find like skeletons of some species

metal giant or others just handfuls of rusted gears and wheels. “I find it difficult to credit that this device could actually go up in the air” (Jeter, p.90). However, George believes that his father engaged and manipulated all of his genius capacity to create more than one device. Scape tells George that stuff ran off the master spring and then can fly. “those lines run out to the wings and right there’s where you sit, Christ, may be your own father flew this thing around” (Jeter, p.90). But George mocks the notion of Scape “really? how gullible do you think I am? A flying machine! Capable of bearing a person’s weight aloft the idea is patently ridiculous. Completely, beyond the realm of possibility” Scape replies:” I have been there in the future. All flying machines you could want, the sky’s gonna be just full of em someday huge goddamn things, carry hundreds of people, believe me, I know what I’m talking about” (Jeter, p.90). Jeter shows how the future will be and how the technology brings the great changes to the world. Jeter’s *Infernal Devices* reveals that the power of the technology advancements and the ambitions of the scientist bring a lot of effectiveness on the world. Because of George, Scape and Miss Mc Thane stuck on island since the device cast them off, they try to get a way off from this island by using this flying machine (Jeter, p.193).

The ambition, the strong desire demands the determination to do something even if it will cause harm to others, that what George’s father do. He sacrifices his own son to create infernal device. As Mr. Charles the leader of the Godly Army informs George that “The governing mechanism, once installed in the device it is to control, must be brought within a few miles of the adjunct brain-yours, my dear Dower-for it to pick up the subtle vibrations and begin its operations. My own face was frozen with the realization, as I gazed at Sir Charles, the destruction of the very earth we stand upon” (Jeter, p.209). The vibrations connect to the Georg’s brain and his father doesn’t care about the consequences may ensue from its genius. The mad scientist just valued the achievements of whatever the task demands by using theoretical scientific calculations to study human body. The regulating device which sets to the specific machine demands George’s presence is necessary in order to stop it, he must sacrifice himself for great of good, George the innocent of evil confront an evil of his fate towards the long voyage, turns out that The Godly Army chasing

him in order to prevent him from return to the Bendray Hall. George is ready to sacrifice himself and asks Mr. Charles to kill him, but the solution comes from Scape George's friend, by changing the vibrations from Georg's brain the device will picking up new vibrations and the world will be saved. As Jeter's hero says:

“I lost my innocence, in more ways than one. I have seen the gears and furious machinery of the world that lies unreckoned beneath our feet. I wait the day when all clocks shall stop, including the one that ticks within my breast. Do thou the same, Reader and profit from my example” (Jeter, 1987, p.215).

In this quote Jeter shows that how the technology jeopardizes societies and generations, and how it has enslaved humankind in many ways. George refers to his loss of innocence during his long voyage.

Nonetheless, the technology that is presented in the novel is a revolutionary juxtaposition of the Industrial Revolution and techno-fantasy which gives the balance of shifting power of the possible future and the present. George's rebellion against his brain and the Victorian model represents the rebelliousness of the propriety of the Victorian world as well as the propriety of the future. It can be concluded that steampunk texts such as Jeter's novel are revolutionary and therefore it could be confidently claimed that revolution is an integral and important part of its aesthetic. It is not just the characters who rebel. The technology used in steampunk is itself revolutionary. It represents a revolution of industry and anachronism. The fact that the setting in such texts refers to other places and times (the future) than ours provides grounds for exploration of how our society might end up in the future (Hantke,1999, p. 248).

6. CONCLUSION

The narcissism of scientists extends beyond generations and will define how they can cross limitations to reach their goal. Historically and epistemologically, pre-scientific cogitation has been replaced by modernization as a necessity of scientific progress. Modern period has brought with itself developments in chemistry, human anatomy and so on. These developments have transformed societal perspective towards nature. Science plays a big role in the emergence of the Enlightenment. Science has helped us to do what has never been done before and has made life better and easier. Science and its childbirth, technology, have helped to establish a new civilization that has greatly influenced the development of the world. They have also affected both man's values and morals. Previously, values were taken from myths and religion, but in modern world there has been a shift of values from a mythical way of thinking to a rational and experimental one. Many authors and thinkers have discussed how science has given birth to science fiction genre. Accordingly, science fiction creates a modern conscience for the human race. It is concerned with exploration of strange new worlds, life and civilizations.

Closely related to science fiction, fantastic literature gives the world of literature infinite imagination and multiple visions of life. Therefore, it engages the reader with the characters to create mental images. It gives the sense possibility and probability that makes the reader absorbed by an alternate world. Tzvetan Todorov draws the attention towards fantastic literature as a genre and conceptualizes the border between the supernatural and natural that is made clear according to the hesitation the genre brings about in the reader. In the real world if someone reported the presence of vampires or devil, the experience would be interpreted as hallucination and the person would be considered as a victim of their own delusions. However, in fantasy literature, imagination is used in a way that the unreal or unnatural course of events make sense. However, the fantastic includes the uncanny and marvellous. If the solution in

the text is exposed, the text leans towards the uncanny. Nevertheless, if the supernatural is explained and accepted, the text leans towards the marvellous.

The attractiveness of science fiction lies on wonder and beauty that it creates. The beauty of style evokes a beauty of a rich world. This makes science fiction a persuasive genre. However, science fiction provokes a sense of distrust towards the anonymous and the unknown potential of human scientific advancement and technology. Distrust, suspense and fear of technological advancements are common in such fiction. From Frankenstein as a spark of science fiction to Terminator as cyberpunk, science fiction embraces the shifting of knowledge that has great impact on one's awareness. However, changes occurred in the past and present extend to include the future.

In addition, Among the past and present, and even an extension to the future, the human mind strives to understand everything that is ambiguous through access the knowledge arena that still influences the human cognition. Epistemology as a philosophical branch is concerned with knowledge and a study of its nature. Michel Foucault studies epistemology through the transformation's sciences throughout history. Epistemology suggests that man can understand the genesis and nature of knowledge. In 1977, Foucault argued:

[I]f, concerning a science like theoretical physics or organic chemistry, one poses the problem of its relations with the political and economic structures of society, isn't one posing an excessively complicated question? Doesn't one set the threshold of possible explanations impossibly high?" (Arnason,2018, p. 25)

Foucault tries to draw the attention towards the power of knowledge and refers to the differences of human sciences that unify epistemically disciplines. Foucault points out that science relates to theoretical physics or organic chemistry, the problem of its relations with the political and economic structure of society is not overly complex and posted question that does not specify the threshold of possible and perhaps high explanations.

One would know what is in our future and what is going to happen next year or even in a million years from now. Everyone in government to militaries and also individual leaders employ people they called futurists who predict with

surprising accuracy what the future will be. In the middle of the 20th century a dozen of scientists and futurists who forecast many of technologies which effect on the future. We take for grounded today including the artificial intelligence organs or the use of breath control bills and even libraries which have able to look up research material for the readers. One-way futurists arrive for prediction is by analysing movement and trends in the society and tracing the past to follow the future. However, there was always unimaginable discovery that they arise which would make no sense to anyone in the present. Many futurists scientists, as well as inventors have been inspired by the anticipation and the imagination of the future which has a deep-rooted to science fiction novels. Many extraordinary scientists become interested in science through disclosure to science fiction. The ambition which consider a great desire comes from the obsessions to gain more knowledge regardless it will attend to bring destruction or evolution.

Steampunk emerges as retro futuristic of science fantasy or science fiction that emerged in the nineteenth century. Steam-powered fictional machines are found in steampunk novels such as Jeter's *Infernal Devices*. It considers a prophecy might bring modern achievements or might be a destruction when technology misuses by scientists.

In *Frankenstein*, Shelley concentrates on science and knowledge in order to reveal their impact on man and society. She emphasizes that moving beyond the limits into the shadow of darkness to know life's secrets will definitely lead to man's destruction and downfall as best manifest in what happens to Victor as a scientist who insists on going beyond man's limitations and playing the role of God. As the novel suggests, in fact science, if misused, can put the scientist in great hazard. The novel is a warning to the society about scientific invention and development and its potential threats to humanity. To achieve her purpose, Shelley presents Frankenstein as a spiritually blind man because of his selfish ambition and excessive desires for knowledge that push him to take the role of God and create a monster. This causes not only his downfall but all the members of his family.

Stainlaw Lem's *Solaris* gives us a different image of man who becomes arrogant because of his scientific and technological abilities. In this sense, man wants to

conquer the world, set out to go beyond outer space, conquer the unknown and communicate with any aliens but thinks there these will have no consequences. The novel, similar to *Frankenstein*, is a critique of anthropomorphic domination in the Western culture. The futility to communicate with an unknown organism, that is *Solaris*, gives the scientists unexpected results leading to psychological traumas that in their turn reveals defects of human knowledge. By sending man back to the Earth, Lem makes Kelvin aware of his incapability and weakness in dealing with the issue. As the novel suggests, man who tries to be God will be doomed and therefore humans need to acknowledge their limitations and what they do not yet fully understand or know: their own psyche. The novel suggests that understanding and communication with one's self and psyche is more important than exploration of outer space and communicating with aliens.

In *Solaris*, the journey into outer space does not bring about any scientific significance or insight about the universe. However, it makes them aware of their own self and psyche. Ironically, Kelvin gets a better view of the universe through understanding himself by entering into a dialogue and coming to terms with projections of his own memories and traumas that appear as characters such as his dead wife. He begins to differentiate between good and bad, moral and immoral. For example, Kelvin realizes that killing the visitors is immoral even though it is in alien space.

Infernal Devices describes the conflict between man and technology through gaining knowledge to spread the authority over science. Through George's father as a mad scientist, we realize man's impact on the Earth since he has a moral choice that makes him responsible for his action. George's journey towards London expresses the power of mystery that he is not able to understand. The novel shows how man's old values have changed due to the development of science.

From Shelley's *Frankenstein*, Stanislaw Lem's *Solaris* and Jeter's *Infernal Devices*, we notice that science fiction has a literary worth. It not only satisfies the demands of our age but also it renovates our rational balance. The writings of science fiction have special significance since they focus on human value, illustrating man's self and subjective preferences to determine moral choices. Thus, it deserves serious literary and critical thoughts. Through science fiction,

the reader can realize that science and technology can offer many valuable things to man and his society if one knows how to use them correctly. Manipulation of knowledge for greedy, imperialistic purposes can lead man to exceed limits that might cause the destruction of the whole world. Overall, the ability to attract the attention of the reader's fear of the mysterious things is made possible in science fiction. In this sense, science fiction employs fresh ideas and technological progress to play on the spectator's mind.

Nevertheless, ambition is a great desire and nothing wrong with it, if it is within reasonable limits. The scientists of the novels submitted to their excessive ambitions and destroyed all people around them. They never take their responsibility or accept the consequences after all, whether the scientist is ambitious, mad or mentally ill. Knowledge and the desire to know everything led to the excessive ambition, which in turn led to inevitable destruction. In fact, all of scientists in three novels achieve success believing that they have reached transcendence, justifying their scientific actions, because they want to make the world a better place for humankind. However, they forget that human nature subconsciously controls their actions, whether by creating something that may be evil or inventing something that may cause destruction and doom.

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RESUME

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