The Comparison between Humans and Artificial Intelligence in Different Literary Pieces throughout Human History

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April 2015

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Mohakhali, Dhaka.

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Pieces throughout Human History

A Thesis

Submitted to the Department of English and Humanities

Of

BRAC University

Submitted by:

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In Partial Fulfillment of the Requirements for the Degree

Of

Bachelor of Arts in English

April 2015

Acknowledgements

Prima facea, I am thankful to almighty Allah for keeping me safe and sound and providing me with enough patience to finish this whole dissertation.

To my loving parents, A.K. Nazmuz Zaman and Dilara Sultana for believing in me and supporting me all the way in everything, and the most important of all,both of you have always encouraged me to follow the path that is less travelled so I can make a difference in this world. I will be forever be indebted to you for putting up with my tantrums for being occupied all the time by my research and study. Your positive and negative feedback both helped me to improve my work.

To my supervisor Professor Riaz P. Khan; I expressmy earnest gratitude for your constant support and cooperation in every aspect of my paper. Your meticulous feedback and informative corrections have been of so much help and an inspiration to me, thank you.

Special thanks to Thomas Newbold and Mahruba T. Mowtushi, for your valuable time both inside and outside of the classroom and for your suggestions of readings and resources on any topic I needed to study. I also express my gratitude to Nawshaba Ahmed and Kazi Farzana Shoily for your concern and help that you both gave me when I was in struggling.

I am also grateful to all the faculty members of the ENH department –Professor Firdous Azim, Professor Syed Manzurul Islam, Dr. Shuchi Karim, Rukhsana Rahim Chowdhury, Shenin Ziauddin and Mahmuda Akhter, for your guidance, advice, lessons and criticisms throughout my education at BRACU which has helped me to pave my way in the academic world.

My sincerest gratitude to two of my greatest friends: Simon Slanker and Phil Morgan, I will be forever in your debt for your tremendous help with my research, editing and proof reading my work, both of you have helped me a lot. I am also thankful to my friend Bruno Van Loo for your critical thoughts on psychology.

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Abstract

A universal truth about the humans is that they are the best of all creatures, but modern science says that human- made machines are slowly taking over the royal crown of humans. Various arguments have been made using impeccable logics throughout human history supporting both sides of the debate but, eventually, the issue remains unresolved. The idea of robots in fact does not sound as modern as we think, but rather recurs frequently in the ancient religious and scientific texts. I am going to examine three science fictional works of literature which are *Frankenstein* by Mary Shelly , *The Strange Case of Dr. Jekyll and Mr. Hyde* by Robert Luis Stevenson and *I Robot* by Isaac Asimov. This dissertation attempts to find out the superior species among those two and also endeavors to explore all the theories behind those debates that have been going around for a long time by using literary characters. The thesis also sheds light on the ways in which the unique or special features of humans are depicted in terms of humanistic properties. In addition, it explores how literature transposes human abilities on to robots, just as humans are often shown to act in "non-human" or mechanistic ways. This thesis concludes that the literary representations of the ongoing debate sides with the species which has a sense of humanity, regardless of being a human or a robot.

"Dum vita est, spesest"[1] – A Latin Proverb.

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[1]While there is life, there is hope.

Introduction

The juxtaposition between humans and machine men is always considered as a great topic of interest in the field of science. Though both of them are perceived to have some unique features that make them superior to one another, for being in the possession of some limitations as well these distinctive features often get marginalized and cannot flourish. Therefore, this question of the creator's [human] supremacy to his creations [mechanical men] has always remained a disputable topic since the very idea of making mechanical men took place inside of the human mind. Besides the scientists, the writers in their different literary pieces also have been debating over this issue for a very long time – whether the robots are inferior to the humans and whether they are powerful enough to take over the control of this world from their creators .

On the basis of three topics, psychology, physiology and humanity, I will identify the strength or weakness of both the species which make them different from each other and finally I will determine the unique features that make one of them superior to the other one. In order to bring this comparison, I will use three science fictional works of literature which are *Frankenstein* by Mary Shelly ,*The Strange Case of Dr. Jekyll and Mr. Hyde* by Robert Luis Stevenson and *I Robot* by Isaac Asimov. The thesis also sheds light on the ways in which the unique or special features of humans are depicted in terms of humanistic properties. In addition, it explores how literature transposes human abilities on to robots, just as humans are often shown to act in "non-human" or mechanistic ways. I will also discuss some psychological, philosophical, scientific and historical terminologies elaborately in the three chapters of the thesis to give a detailed description of the two species and to form a concrete assessment. Before starting the main chapters, I will examine the general perceptions on humans and robots and their basic differences more critically which will work

as the basis of the later chapters. Moreover, I will also analyze the history of these views to find out the origins and evolutions of both of them in the introduction.

Historical and Philosophical Conceptions of Humans and Robots:

According to the binomial nomenclature system founded by the Swedish botanist Carl Linnaeus, the scientific name of humans is *Homo sapiens*[2] which means wise man. This very adjective is attributed only to human beings because among all the creatures of the animal kingdom they are the most curious and rational species. As Aristotle said in one of his major philosophical works called *Metaphysics*, "All men by nature desire to know" (Aristotle 1). While describing the nature of human wisdom , he said that it begins with an awareness of the surroundings, which can be interpreted as scientific knowledge. Knowledge of this kind involves the understanding and analysis of both – facts and causes. Humans pursue knowledge for its own sake. In his book *Zeta and Eta,* Aristotle also mentioned the term "differentia[3]" which are some particular specialties that differentiate one species from another one. Aristotle said that everything that has an 'essence'[4] can be categorized. It literally means "the it was to be" or "the it is"; more specifically, "the essence of a thing is what it is said to be in respect of itself" which indicates to the special feature of an object. Hence, a species is defined by assigning it to a "genos" or genus and a "diaphora" or differentia. The species falls under the criteria of genus and the differentia portrays the characteristics of that species within that genus. For example, the genus *Homo* designates that humans are the members of the genus animal and their differentia *sapiens* shows that they can be distinguished from other animals for being rational and intelligent.

Moreover, Aristotle in his first book of *Politics* named the humans as the "political animals" as he believed that the most important differentia of humans is their cultural

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[2] See for reference Caroli Linnaei *Systema Naturae (18);*
[3] See for reference Aristotle's *Metaphysics*.
[4] The term 'essence' is taken from the Latin word *Essentia* which was coined out by the Roman translators to interpret Aristotle's phrase "to ti ên einai", in short "to ti esti" (178).

behaviour, more specifically their communal life in the "polis" [the city or the state]. As humans can control their environments by their ability of articulating speech , extending influence and by making tools, they have been given the top most place of this social pyramid of all living creatures. In addition to that, Aristotle in Book I of one of his major treatises *On the soul* [Latin: **De anima**] talks about the mind which is the property of a rational soul and only belongs to humankind. He said, "Suppose that the eye were an animal-- sight would have been its soul, for sight is the substance or essence of the eye which corresponds to the formula, the eye being merely the matter of seeing; when seeing is removed the eye is no longer an eye, except in name" (183). The soul is a matter of the sense which is inseparable from the physique of a living creature and it corresponds to the absolute theory of an object's "essence". This implies that it is "the essential whatness" that comes to a character as its intrinsic property. In Aristotle's words, "in each of the bodily parts there are present all the parts of soul, and the souls so present are homogeneous with one another and with the whole; this means that the several parts of the soul are indisseverable from one another, although the whole soul is divisible" (60). If a human body loses its "essential whatness" namely the soul it will not be considered a perfect human anymore, rather it would be a lifeless dead body as the main purpose or driven force would cease to exist.

On the other hand, an artificial motorized system that contains various devices and controllers and gets its energy from electricity and computer programmes to accomplish a given task is called a robot or mechanical man. The seemingly autonomous or semi-autonomous robots are always controlled by an outer force controlled or devised by humans. Industrial robots, swarm robots, and even miniscule nano robots are some examples of robots. The mechanism of a robot is nothing but the mimicry of a lifelike presence. By means of its programmed movements, a robot may express an appearance of intelligence. The intelligence that is exhibited by machines or software is called artificial intelligence. There is

a sector for academic study and research about artificial intelligence which studies the goal of creating intelligence. This field has been defined by the major AI researchers such as, Poole, Mack, Worth, and Goebel and textbooks as "the study and design of intelligent agents" (1); this intelligent agent is a coordination of numbers and programmes that recognizes its environment skillfully and takes necessary actions that optimizes its probabilities of success to execute a specific mission. In 1955, computer scientist John McCarthy first coined this term and defined it as such, "the science and engineering of making intelligent machines" (McCarthy 13).

Some more advanced type of robots are the humanoids. When a robot's body is built in such a way that it resembles a human body, it is called a humanoid. They are designed in this way so that they can perform the tasks of human beings such as personal assistance – providing nursing to the weak and the elders, and doing dangerous tasks. Humanoids can also perform regular tasks such as, working as a receptionist or a worker of an automotive industry. Basically, humanoids could hypothetically perform any task designed for a human being with the help of proper software, because their mechanical physique is developed in such a way that they can use tools and control devices and vehicles which are human friendly. Since humanoids are given the appearance of humans, some of their limbs resemble the ones of the humans. Usually, humanoids are given both the upper and lower body just like a human being, consisting of a head, a torso with a couple of hands and legs. Sometimes though some of the models are given half of the body, from the waist up, to do a particular task where the rest of it is not needed that much. In order to given them human facial features, eyes, nose and mouth are also included sometimes. Androids on the other hand, are more advanced humanoid robots which are built with such delicacy that they can resemble humans aesthetically. The only difference they have with the humanoids is that they are given a synthesized body and skin to bring a human flesh-like resemblance. Before, they

mainly belonged to the media and fantasy world – the kingdom of science -fiction films and books, but recently, progressions in robot technology have permitted the development of serviceable and realistic androids.

The main distinguishing feature between these two races is that the humans are in the possession of life whereas the machine men do not have it. Life is the inherent property of living bodies by means of which they can exhibit unique physical characteristics; it helps them to go through some self-sustaining organic procedures. A creature with life will go through homeostasis [5], has organized cell structure [6], undergoes metabolism [7], has the power of adaptation in an environment which is a basic step of evolution , gives response to stimuli and can reproduce to create progeny. These biological processes are very complex and are called physiological functions and they involve biology and chemistry as their basis. None of these characteristics can be found in a lifeless body or in an inorganic object. The smallest unit of life is known as an organism. Biology or the study of life is one of the most important scientific studies that require research.

The earliest known theory of the formation of life on earth can be received from the existence of biogenic. A biogenic [8]graphite in met sedimentary rocks [9]is 3.7 billion-year-old was discovered in Western Greenland and is considered as the oldest evidence for life on earth. Also in Western Australia a microbial mat or a multi-layered sheet of microorganism fossils were found in 3.48 billion-year-old sandstone. These Microbial mat fossils were created by the coexistence of bacteria and archaea which were the dominant form of life at that time and it is thought that the major phases of evolution took place within their

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[5]Regulation of the condition of the internal environment of the body e.g. perspiring to decrease temperature (Cannon 91).

[6]The basic building blocks of life which could be one or more than one in number that maintains a growth (Rinehart and Hold 2).

[7]A combined chemical reaction of anabolism and catabolism which produces energy for the living body; anabolism converts chemicals and energy into cellular components whereas catabolism decomposes organic matters

[8]Biomolecules which are produced by the biological processes of plants or animals such as, constituents, or secretions (9).

[9]Rocks created by metamorphism (11).

community. Even in ancient times, the philosophers and scientists tried to find out the source

or the components of life. Greek philosopher Empedocles argued that the universe and

everything in it is made up of a combination of four perpetual "elements" or "roots" – earth,

water, air, and fire. According to him, due to the arrangement and rearrangement of these

four elements the structures of the objects get changed and they differ from one another. Each

object has a definite proportion of those elements inside of them. Another Greek philosopher

Democritus from the same time thought that the most crucial characteristic of life is having a

soul or psyche.

On the contrary, if we try to trace back the origin of automatons, it can be seen that

the idea of robots even existed in the civilizations of the ancient world. Mythologies from

those ancient cultures around the world give evidence to these facts. Ancient China, Ancient

Greece and Ptolemaic Egypt had brilliant engineers and scientists who tried to build

automated machines, resembling either animals or humans. Greek mathematician Archytas's

mechanical dove and the children's toy called clapper are one of the earliest examples of it.

Also two Chinese philosophers who lived sometime after Confucius called Mozi and Lu

Ban gave the idea of making "artificial birds" as well. Another ancient Greek

mathematician and engineer from Alexandria   gave his idea on talking statues. Philo of

Byzantium first explained his idea of escapement [10] in his invention of the world's first

washstand. The description of mechanical men in the ancient religious or philosophical texts

such as Liezi[11] gives evidence to the fact that   the idea of humanoids is not so modern as we

think. The Greek God of fire Hephaestus's [12] had mechanical servants who helped him to

build a new armourfor Achilles as it is described in Homer's *Illiad*, the mythical figurine of

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[10]A gear of mechanical devices which transfers energy to that device while calculating some inner
measurements.
[11]A Daoist text written by the Chinese philosopher Lie Yukou(Geil23).
[12] He is known as Vulcan in the Roman mythology (Grave 87).

Pygmalion that was brought to life called Galatea, golems [13] and the clay giants from the Jewish and Norse legend, the angels from the biblical and Islamic beliefs who do not have any freewill but to follow God's commands are also the examples of ancient robots. Also the Crete myth of Talos which formed around 400 BC is   similar to the idea of modern day humanoids. It is said that he was a giant made of bronze who protected the Cretan island of Europa from pirates.

It is evident from the above historical examples that the idea of robots are very ancient, in fact the concept of androids are not that modern as we think. In this paper, I will also try to see if the literary machine-men of the modern days in any way resemble with the ones described by the ancient philosophers and scientists both physically and mentally.

Chapter 1: Human psychology Vs. Robopsychology

This chapter talks about the contrast between the psychology of the minds of humans and robots. It shows how the robot's mind has been created on the basis of three laws which is mimicry of the human mind, only less sophisticated as it cannot bend the rules which are programmed inside it. Also, freedom vs. freewill will be a prevalent theme of this chapter.

1.1: The Mind: Id, Ego and Super-ego

The complex brain structure provides the humans with a very creative mind to think and control everything of this world, which makes them superior to other creatures. Virgil said in his famous epic poem *Aeneid,* "The mind drives the mass" (Virgil 727). In a general sense, the human mind is the intrinsic property of a person, which helps him / her to be aware of the surrounding world and to develop a perception about everything. A more scientific

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[13]Creatures made of mud and cannot speak, not fully human (Idel 296).

definition of mind would be, a collective of the two mental states called the conscious and the unconscious which enables a person to be aware, perceptive, thoughtful and above all cognitive. To show the importance of those two mental processes which are intertwined with each other, Sigmund Freud noted in his book the *The Interpretation of Dreams,* "The conscious mind may be compared to a fountain playing in the sun and falling back into the great subterranean pool of subconscious from which it rises" (Freud 50). A cognitive[14] person has the ability to create new knowledge by using the already existing knowledge, with the help of some additional properties such as, concentration, memory, comprehension, computation, decision making and problem solving ability, reasoning and communication via language.

The idea of mind and the creatures who are in possession of it have always been a matter of great debate ; for instance, if this property is only unique to human kind or if it is also possessed by any living objects including animals and even to some extent man-made machines too. Different cultures and religious traditions have explained the concept of mind in various ways. Worldviews such as panpsychism [15]and animism [16]believe that the mind or soul [psyche] is a primitive property from which everything else is derived. Thus, it becomes a natural phenomenon which resides inside of both the human and non- human entities, such as plants, animals, deities, and non-living objects as a universal feature.

From the medieval Europeans and Islamic philosophers to the much older ones in ancient Greece and India, including Plato and Aristotle and moving further back to Zoroaster and the Buddha, it can be seen that all of their theories identified mind with soul or spirit and linked it up with afterlife and a balanced natural order. Though, because of the required characteristics of decision making and analytical power, psychologists suchas Sigmund Freud

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[14]See for reference "On the Historical Dynamics of Cognitive Science: A View from the Periphery". The Search for a Theory of Cognition: Early Mechanisms and New Ideas by Stefano Franchi.

[15]The term "panpsychism" has originated from the Greek terms pan, meaning "throughout" or "everywhere", and psyche, meaning "soul" as the unifying center of the mental life of us humans and other living creatures.

[16]The belief in a supernatural power that organizes and animates the material universe.

and Gary A. Klein suggest that only objects or beings with "higher" intelligent activities, especially with a highly functional memory and reasoning power, can constitute mind.

The word psychology is the combination of two Greek words: psyche or spirit and logia or study. Hence, it literally means the study of the soul. In the late 15th century or early 16th century, the Croatian humanist and Latinist Marko Marulić in his book, *Psichiologia de RationeAnimaeHumanae* first used the Latin word "psychologia". [17]The earliest known reference to the word psychology in English was by Steven Blankaart in 1694 in *The Physical Dictionary* which refers to "Anatomy, which treats the Body and Psychology, which treats of the Soul" (Blankaart 86).

The scientific study of human mind and related behaviour, by means of academic and practical discipline is called psychology. The main goal of psychology is to understand individuals and groups by setting up some common rules after researching particular cases. According to the American Psychological Association, "The discipline embraces all aspects of the human experience — from the functions of the brain to the actions of nations, from child development to care for the aged" (3). In addition to exploring the vast areas of the conscious mind [human behaviours, interpersonal relationships, personality, cognition and emotion], psychology also focuses on the diverse area of the unconscious mind with a goal to benefit society[18]; and to do this it takes help from both the natural e.g. medicine and social sciences, and the humanities e.g. philosophy.

While describing the fundamental model of the psyche, Freud divided the psychic apparatus into three parts. He said in his book *An Outline of Psychoanalysis*, "We assume that mental life is the function of an apparatus to which we ascribe the characteristics of being extended in space and of being made up of several portions [Id, ego, and super-ego]" (41)."Id", "ego", and "super-ego" are three Latinized terms coined by James Strachey who

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[17]See "Classics in the History of Psychology by Marko Marulić The Author of the Term "Psychology".
[18]*Introduction to psychology: Gateways to mind and behavior* by O'Neil, H.F

translated Freud's works. Freud named them as "das Es", "das Ich", and "das Über-Ich" in German which literally mean —, "the It", "the I", and "the Over-I" (or "I above).

According to Freud, id belongs to the unconscious part of mind that looks for pleasure. Id is the only part that a human being is born with and does not usually change much. As id contains the most basic and primal instincts of a human being, people act out of impulses when id is not aligned with ego or super-ego. It is basically the impetuous, unconscious portion of the mind that is controlled by the desire to find instant gratification. For not being affected by moral constraint, it does not have a grip on the importance of consequence or reality. Freud also explained that one of the key forces which drives the id is the pleasure principle, according to which when people do not have the sense of right or wrong then they get engaged in activities which nourish their needs to avoid tension and feel good. In his prominent psychoanalytic paper *The Ego and the Id,* Freud used the metaphor of a horse and a rider to symbolize the id and the ego, where the id is a restless horse being controlled and directed by the rider called ego; it is hard work for the rider because the drives of the id always creates a conflict between those two. The most wonderful example of a completely "id-ridden" mind is the mind of a new-born child as it always has a craving for hunger and thirst and only by fulfilling that craving it could find happiness. Hence, its basic instinct will make it cry until it gets what it needs regardless of the consequences.

To define ego Freud said in the book New *Introductory Lectures on Psycho-analysis*, "attempts to mediate between id and reality, it is often obliged to cloak the unconscious commands of the id with its own preconscious rationalizations, to conceal the id's conflicts with reality, to profess ... to be taking notice of reality even when the id has remained rigid and unyielding" (110). As oppose to the pleasure principle which drives the id, the ego follows the reality principle to keep a balance between the reality and fantasy of a person which respectively bring pain and pleasure. The most interesting aspect of the ego is that it

does not know the difference between right or wrong, it only understands that all the demands of the id cannot be fulfilled at the same time, therefore, by using the reality principle it tries to benefit the person in the long term in a realistic way rather than bringing misery. Basically, the ego is a set of rules created by a person himself or herself to meet the desires of their unconscious, driven by the id, while making concessions with reality. The ego considers the moral restrictions and the cultural ideologies in order to bring stability to the longings activated in the id.

Super- ego is similar to ego in a way but it is developed at an early age in a person by the social cultures and moral rules taught mainly by the parents. Super-ego is mainly what we call our "conscience", built up by the society and family when we grow up in; as Freud said, "The installation of the super-ego can be described as a successful instance of identification with the parental agency" (6-95). Freud divided the super- ego into two different categories: the conscious and the ideal self. The conscious contains ethics and principles that exist within society that inhibit people from acting out based on their internal desires. The ideal self contains images of how people ought to behave according to societies ideals. The super-ego works as a father figure for us by standing against the whims of the id that is incorrect according to the social and moral context. Freud connected ego and super-ego together with the Oedipus complex, "The super-ego retains the character of the father, while the more powerful the Oedipus complex was and the more rapidly it succumbed to repression (under the influence of authority, religious teaching, schooling and reading), the stricter will be the domination of the super-ego over the ego later on—in the form of conscience or perhaps of an unconscious sense of guilt" (32).

A more critical version of this Oedipus complex can be also found in the character of Frankenstein's monster that he created artificially in his lab. The monster's creator was Victor Frankenstein, who was supposed to be a parent to him. Just like the mythical king

Oedipus Rex, the monster is seeking his original parent, in this case that is Victor who created him, and longs for his company. In the end, the monster became the cause of his own father's death, and the life of his father's fiancée [Elizabeth] which he took away as a revenge for Victor's heinous act of destroying his half-built monster company. Technically, Elizabeth was the monster's mother for being the wife of Victor. In this context, the story got reversed as the monster had to kill his mother to punish his father.

It has been observed that the ego is more devoted to the id, as it follows a set of self-composed rules to avoid getting hurt in the end, even after seeking pleasure by calculating the probable causes of harms that might come and pretending to take into account the reality. However, the super-ego constantly keeps track of every single move of the ego and punishes it for its wrong doing by inflicting remorse, apprehension and subordination. To solve the problems of these guilty feelings the ego will take the services of the natural defense mechanisms which are not done directly or deliberately. As David Meyers suggested in the article, "Module 44 the Psychoanalytic Perspective" that these emotions decrease our tension by extinguishing our aggressive impulses. When the id struggles to keep up with the social morals, norms, cultures, taboos or the expectations of the individuals, then the ego deals with these situations by creating defense mechanisms such as, repression, dissociation, projection etc. Probably this is why to describe the human mind, Zeus said in *The Iliad* by Homer, "Among all creatures that breathe on earth and crawl on it/There is not anywhere a thing more dismal than man is" (XVII 446-447).In the novels, *Frankenstein* and *The Strange Case of Dr. Jekyll and Mr. Hyde* the functions of some of these defense mechanisms are very much evident.

For this constant conflict between ego and id,every human being has a dual nature as the three parts of the mind are always playing their roles individually and while doing it they often come across each other which is described by Stevenson through the character Dr.

Jekyll in this way, "I learned to recognize the thorough and primitive duality of man . . . if I could rightly be said to be either, it was only because I was radically both" (Stevenson 8). Dr.Jekyll inherited a large amount of wealth, a strong and healthy body, a brilliant mind and hardworking and decent nature from his family and because of having these qualities he was able to establish himself as a respectable figure in his society; this also helped him to hide is malevolent side as after reaching his full maturity, Jekyll found out that he was leading a dual life – good and evil. In this life, his better side would often regret the doings of his darker side. He hoped to solve this problem by completely separating the two personalities from each other as he insisted, "man is not truly one, but truly two". After doing a lot of research, Jekyll finally invented a potion, which was very risky for his life, nonetheless he had to try it because with his curious mind he thought that even death would bring him glory in the eyes of his community if he could discover something like that. Though his primary feeling was a feeling of pain and queasiness, eventually he felt energetic, sensual and reckless as those symptoms receded. The newly created Mr. Hyde is a withered and disfigured form of Dr. Jekyll who had been repressed for a long time. Dr. Jekyll was becoming too old to carry out his impulses and the dark intentions, therefore Mr. Hyde, his younger alter ego had to come out to fulfill those wishes. Although, Dr. Jekyll tried to make the matters turn wrong by Hyde, he most definitely loved his alter ego nonetheless as he tried to secure Hyde's existence by creating a new bank account and decorating a new house for him.

The similar storyline can be found in other literary pieces as well. In the thriller novel called, *Tell Me Your Dreams* by Sidney Sheldon, the protagonist is a reclusive workaholic who was sexually abused in her childhood and in order to revenge and protect herself from further maltreatment, she grew two more Alter egos –Toni Prescott and Alette Peters. "Ashley Patterson...Toni Prescott...Alette Peters, they're all the same person" (Sheldon 64), as

was declared by Sheriff Dowling who was handling her case. Though these seemingly helpful alter egos gave her all the qualities she wanted to have to be   stronger , it was later revealed that she was suffering from the rare psychological disease called   multiple personality disorder or dissociative identity disorder; her most violent alter ego , Tony Prescott would make her kill and mutilate the bodies of the men who would make a sexual move towards her. Also, the Marvel comic book superhero Hulk, the green monster is the alter ego of the physicist Bruce Banner who is an introvert and loves to keeps his emotions private. Under emotional stress his alter ego would come out, which is normally repressed, similar to Mr. Hyde. James Thurber's The *Secret Life of Walter Mitty* portrays the character of Walter Mitty who has a docile and "insignificant" personality but has   a very animated fantasy where he dreams himself as various strong personalities – a wartime pilot, emergency-room surgeon and a reckless killer. Though, the Walter Mitty is synonymous to the word, an ineffectual dreamer, that creative imagination made Mitty distinguishable from others who used it to keep his sanity from the intimidating reality. Baby Doll, the central character from the movie called *Sucker Punch* by Zack Snyder is the younger female version of Walter Mitty. She was admitted into an asylum convicted of killing her younger sister from her step father, where the orderly would try to abuse her. In order to escape from that horrible situation, she would imagine herself as a being a steampunk warrior of world war one. In the end, though she was lobotomized, she still was smiling as she found her heaven inside of her mind; she found   a prediction about her escape in the movie, "It says I'm gonna escape from here and I'm gonna be free" (4.67). Fatefully, it was not her physical freedom; rather   it was her mental freedom that brought her happiness. After analyzing all these characters, it can be assumed that all the seemingly quiet and meek people create a stronger ego for themselves to fulfill their wishes that they cannot accomplish in real because of the rules, norms or the injustice of the society. As Stephen Hawking says, "Quiet people have the loudest minds" (Hawking 8).   This is an

example of psychological projection too where according to Freud they defend themselves by assigning their faults to others while denying having those vices inside of themselves, and in this case, the others are their newly created egos. The potion of Dr. Jekyll and the gamma ray of Dr. Banner is nothing but the element which prevents their super ego or conscious to intervene while the id or ego work together as a result, their demonic parts come out from their angelic part and once unleased these egos tend to take over in any unpleasant situation, even against their wills sometimes.

It becomes a matter of great apprehension if the human mind loses the control of its morals or conscience because then the restless id or impulse will take control of the full person, who will do anything to bring him or her pleasure and will turn into a Mr Hyde permanently. This is how cold blooded criminals are born, as they do not have any moral restrictions, nothing stops them from justifying their ends by any means. This explains why, while sleeping one night, Dr. Jekyll once involuntarily transfigured into Hyde, his demonic form, even without consuming the potion. Victor Frankenstein beats all of those characters in this game of alter ego by being able to give a physical existence to his monstrous personality which becomes a curse for both of them. Similarly, as the Biblical God, Victor creates his behemoth in his own image who also has a thirst for knowledge and has a love for his female companion. This strong passion in fact drives both of them to avenge their [female companions] deaths. The horrible appearance of the monster is the main distinguishing feature between him and his creator which is nothing but the ugly side of Victor's personality.

Freud's theory of sublimation can also be used here to find another perspective of this incident. All humans are born with some primitive animalistic instincts, which they are made to hide due to the rules of civilization. Here, according to the law of sublimation which is a more matured type of defense mechanism, Hyde is probably the true self of that person and

he has used the mask of Dr. Jekyll to hide that real face and to give explanations of his misdeeds. The potion just stripped away the civilized layer of his personality as the lengthy Freudian repression brought him suffocation. In fact, he is more ferocious than an animal because he takes joy in his killing of innocents and the helpless, an animal only preys on his food and does not enjoy killing its own kind. He seems like a depraved person rather than an unethical one. This theory is also strengthened, by the scene when the Jekyll- turned –Hyde was not revolted by the sight of his first transformation in a mirror, instead he felt "a leap of welcome" from inside, as if he knew who the true owner of his body and soul was all along. Mr. Hyde fits perfectly in the definition of the most ferocious animal given by Mark Twain, "Of all the animals, man is the only one that is cruel. He is the only one that inflicts pain for the pleasure of doing it" (Twain 2).

Lawyer Utterson on the other hand, from this novel, is a wonderful example of the man who does not allow his ego or id to get in the way of his super ego; more specifically he is a very rational man driven by moral conscience rather than his instincts. Being a steadfast rationalist has its downside too; Utterson does have a very functional imagination. As Einstein said, "Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand"(Einstein 1). Due to the lack of this special quality Utterson always searches   for the logical explanation of everything and sometimes fails to see the bigger picture as the proverb goes, "can't see the wood for the trees". While investigating like an amateur detective, when Utterson finds emphasis on the two words "death or disappearance" in Dr. Jekyll's Will, he immediately thinks of the likelihood of the murder of Jekyll after blackmailing by Hyde; the supernatural possibility of them being the very same person simply does not occur to him as a realistic person. Even at that time of crisis, to become clear to himself rather than convincing the butler, he makes absurd excuses

about the hidden condition of Utterson such as, Jekyll might have caught a dreadful disease that changes his appearance beyond recognition. He is desperate to accept any explanation, it does not matter if it is very unlikely to happen, but still he does not think about anything supernatural. Even his Victorian mentality of protecting his client Dr. Jekyll's reputation by not breaking into his lab without permission makes him a man of moral conscience. Dr. Hastie Lanyon has this same problem too, for being an excessively logical person, he at first called the scientific experiment of Dr. Jekyll as "unscientific balderdash", but afterwards, the very sight of his transformation into a monster costs him his life as his logic and beliefs come into conflict with his "impossible" vision. Dr. Jekyll apparently was a man who thought ahead of his time, following the advice of Hamlet to Horatio in the play *Hamlet* by Shakespeare, "There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy" (1.5.167-8).

1.2: The Additional Factors of the Human Mind: denial, depression, motivation and the unconscious.

One of the punishments given by the super -ego to ego, for id ridden misdeeds is the feeling of guilt. Guilt fills up the human mind with excessive remorse which he or she cannot bear anymore and it affects their health too. The Frankenstein monster says that the weakening of Victor's health by frequent illnesses is the result of his guilty mind which is psychologically induced. All the murders committed by the monster are automatically put on him – this is what makes him feel guilty as the creator of the monster and the killer of his female companion. He narrates his misery after seeing his best friend Henry's corpse by connecting his psychological agony with his physical frailty in this way, "The human frame could no longer support the agonizing suffering that I endured, and I was carried out of the

room in strong convulsions," (132). Inspite of having a horrific appearance, the monster has a bigger heart and stronger conscience than Victor. Observing his neighbors for an extended period of time, the monster notices that they often seem unhappy, though he is unsure why. He eventually realizes however, that their despair results from their poverty, to which he has been contributing by surreptitiously stealing their food. Torn by his guilty conscience, he stops stealing their food and does what he can to reduce their hardship, gathering wood at night to leave at the door for their use.

Any crime or guilt always leads to secrecy and secrecy is necessary only to hide a crime or a falsehood. Mahatma Gandhi said regarding this, "Truth never damages a cause that is just" (Gandhi 4). Similarly, any secret knowledge can be harmful for excessive curious minds sometimes. Victor Frankenstein's obsession with creating a new life in a lab using the darker aspect of science is cloaked with insidious secrecy, equally as is his intention of killing his behemoth until he admits it to Walton finally almost at the end of his tale. Also, secrecy brings a juxtaposition between Victor and the Monster; whereas the monster is forced to live a secret life for having a grotesque feature, Victor continues his secluded life of secrecy out of remorse and disgrace. Their condition can be described perfectly by the words of Sissela Bok "While all deception requires secrecy, all secrecy is not meant to deceive" (Bok 89). Walter plays an active role finally in their life of secrecy as both of them confesses the truths before getting rid of their lives and thus their tales get immortalized by Walter's letters to his sister. Victor by sharing his secrets with Walter gets unburdened for the first time since he created the monster; the monster's desperation to be understood by someone by making a human friend and to be sympathized for his wretched life motivates him to share his side of the story. Shelly describes his condition as follows, "I am alone and miserable. Only someone as ugly as I am could love me." (43) Furthermore, though only Victor has the ability and evidence to uncover the secret of his Brother William's murder, by declaring the

maid Justine's innocence, rather he decides to keep the monster's identity secret under the apprehension that he might be socially secluded as an insane person.

Denial is another sort of psychological defense mechanism introduced by Freud which is used by the humans to abnegate the facts which are too unpleasant to accept. When humans are forced into situations as this, they try to escape from it at any cost, especially by convincing themselves with a fantasized explanation even though they know inside   that it is wrong. Dan Brown defined denial as follows in his book *Inferno*, "Denial is a critical part of the human coping mechanism. Without it, we would all wake up terrified every morning about all the ways we could die. Instead, our minds block out our existential fears by focusing on stresses we can handle—like getting to work on time or paying our taxes" (Brown 176). Denial can be seen in the case of Victor Frankenstein who after creating his hideous monster got so shocked   at the very sight of it that he wanted   to escape from it by hook or crook. Later, on that ominous birth night of that monster, Victor rushes towards his bed to sleep and forget this nightmare. He said, "At length lassitude succeeded to the tumult I had before endured, and I threw myself on the bed in my clothes, endeavoring to seek a few moments of forgetfulness" (58). Not only that but also by avoiding his apartment, the birth place of his monster, he tries to deny the existence of his grotesque creation as goes the saying "Out of sight, out of mind"(Bernard 61). The similar situation of denial can be found in the famous literary piece of William Faulkner, "A Rose for Emily" where the protagonist Emily was so shocked after her father's death that she was in denial of the fact that he would not live with her anymore and naturally it continued for a few days. Faulkner describes her condition in this way, "Miss Emily met them at the door, dressed as usual and with no trace of grief on her face. She told them that her father was not dead. She did that for three days, with the ministers calling on her, and the doctors, trying to persuade her to let them dispose of the

body" (Faulkner 4). The mind uses denial to protect itself from getting hurt by unpleasant truths.

Depression is a type of mental disorder where people tend to lose interest in everything and consequentially follows some physical disarrays, for instance, losing or gaining excessive weight, insomnia or oversleeping, the feeling of restlessness and ignominy. In some extreme cases the victim might also think of committing suicide or any other violent crime. Luckily, this disorder is curable by inducing psychotherapy and antidepressant drugs. Victor Frankenstein became very depressed after the deaths of his brother and their falsely accused maid Justine as he felt responsible for their murders. The theme of the sublime nature in the novel encompassed by Romanticism [The prevailing movement of the 18-19th century] worked as the antidepressant medication for Victor by rejuvenating his spirit. The sublime nature offers the mortals feelings such as hope, wonder, ecstasy and mental peace regarding which Victor says, "These sublime and magnificent scenes afforded me the greatest consolation that I was capable of receiving. They elevated me from all littleness of feeling, and although they did not remove my grief, they subdued and tranquillized it" (109).The impact of nature on changing the mood by alleviating pains and removing depression is apparent all through the novel both for Victor and his monster. Similarly as with Victor, his behemoth's spirit was lifted with the arrival of spring. The glorified green world of Spring helped the monster to become oblivious to his own ugliness and bizarreness for the first time since he was born , hence he found comfort in that. The monster said to Victor, "My spirits were elevated by the enchanting appearance of nature; the past was blotted from my memory, the present was tranquil, and the future gilded by bright rays of hope and anticipations of joy" (135). Also, the same natural element plays dynamic roles in different situations. Victor escaped the cold isolated apartment in London to forget the nightmare he had created and again found solace in the icy heights of the Alps. However, in Victor's case

the influence of this organic drug provided by the scenic beauty of nature is reduced when he realized the monster's obsession with haunting and avenging his companion's death regardless of Victor's whereabouts. Unlike Victor, his creation can push away the negative aspects of his ignominious self, affected by the warm colour and jovial mood of the springtime. "Half surprised by the novelty of these sensations, I allowed myself to be borne away by them; and, forgetting my solitude and deformity, dared to be happy," (135) this quote expresses the intense wish of the monster of revealing his unwanted self to the rest of the world by making human interaction. Depression also made Dr. Jekyll to lead a secluded life who in the end of the novel, in his letters to Utterson confessed, "If I am the chief of sinners, I am the chief of sufferers also" (74).

Motivation is another aspect of human psychology which explains the reasons behind every human actions and behaviour. It works as a stimuli to make a person work in a certain way, in order to achieve something. The obsessive need of Victor to kill the monster and the monster's wish to make his creator suffer were two similar acts motivated by the hatred that was created by the deaths of their dear ones.

The unconscious mind is another unique feature of the human mind which is not open to be introspected as is discussed by Drew Westen in his article, "The Scientific Status of Unconscious Processes: Is Freud Really Dead?" where he used Freud's theories as well. It also plays an important role in processing thoughts, memory formation, emotions and motivations. Inspite of existing beneath the hard surface of the conscious mind, they have a very important influence in human character and behavior building. The term 'unconscious' was originally invented by the German philosopher Friedrich Schelling who was a romantic writer in the 18th century and later it was introduced to English literature by poet and writer Samuel Taylor Coleridge. Afterwards, in the 19th century, Freud made it popular through his psycho analysis theories. Drew also elaborated on some theories on the unconscious mind

one of which states that, a person's unconscious is sometimes expressed through his dreams in a symbolic method. Also it might be expressed through a person's common behavior and mistakes such as witticisms and imprudence. It is the storehouse of a person's long repressed memories, involuntary   and embedded thoughts. It is also a matter of dispute that the other parts of the mind influence the consciousness. Therefore, the formation of intuition, the state of being unaware and the development of personal habits are all the contributions of the unconscious. According to Freud, hypnosis, dreaming, sleeping, sleepwalking comas and delirium are the various symptoms of the unconscious mind.

The presence of the unconscious mind can be found in the novel *Strange Case of Dr. Jekyll and Mr Hyde* through the dream of Utterson. In his dreams Utterson saw the transformation of London into a nightmarish scene where Mr Hyde   would stalk and murder innocent people and children mercilessly. Stevenson describes it in this way, "if at any time [Utterson] dozed over it was but to see [Hyde] glide more stealthily through sleeping houses, or move the more swiftly … through wider labyrinths of lamp-lighted city, and at every street corner crush a child and leave her screaming" (88).This faceless figure of Hyde symbolizes all the heinous crimes that take place in the dark, mysterious alleyways of the respectable Victorian London. Moreover, the thought of this dream and having this dream scared Utterson which is an indication of his unconscious mind; either the grotesque feature or heinous crimes of Hyde really scared him or that was the projection of the darker side of the unimaginative lawyer himself, which he is afraid to face in broad daylight. Similarly the streets of London, and the house of Dr. Jekyll also symbolize the secret nature of Dr. Jekyll. The lavish manor of Dr. Jekyll is described in this way by Stevenson, "a great air of wealth and comfort" (23). The house is secretly connected to his laboratory which exits to the street and this is the place where Dr. Jekyll turns into Mr Hyde. A well-reputed doctor strips out of his social appearance along with his educational degree, because of which the doctor who is

supposed to save the helpless, morbid people kills them. This laboratory represents the unconscious of Jekyll, which connects his conscious mind to his dream.

These additional factors can only be found in complex human minds and the unconscious plays a very important role to control all of them, the reflection of which can be found in the conscious.

Chapter 1.3 Robopsychology and Human Robot Interaction

In the field of artificial intelligence, the probability of non-human minds is also explored, which is closely related with cybernetics and information theories. This endeavor is to find out if it is possible   for non-biological machines to replicate the human mental sensations. The term robopsychology was first introduced by the sci-fi writer Isaac Asimov in his collection of short stories called I *Robot*. It is the study of the personalities of artificial intelligence by using the mixed knowledge of meticulously used mathematical analysis and conventional psychology applied to machines. This also embraces the "Frankenstein complex" which is the unreasonable fear of intelligent machines that they might turn against their creator – the humans. A similar tale is told nicely in John Milton's *Paradise Lost* which depicts the Biblical story of Adam and Satan, the creations of God; there as Lucifer or Satan was cast out of heaven by God, he turned against his creator and promised to take revenge for loving Adam more. The Frankenstein monster regards himself as Lucifer while pleading his creator Victor to rescue him from his unwanted condition, "I am thy creature; I ought to be thy Adam, but I am rather the fallen angel, whom thou drivest from joy for no misdeed" (114) and later he threatened Victor saying, "if I cannot inspire love, I will cause fear, and chiefly towards you my archenemy, because my creator, do I swear inextinguishable hatred (175)". These allusions taken from a historical epic poem proves the eloquence of the so called ignorant monster. Here, in a way the monster is more human than Victor as he shows his conscience through his wonderful words. By comparing Victor to the Biblical god, the

monster reminded him of his irresponsible actions as a creator and his failure to provide him with a nurturing environment. This environment includes quenching his thirst for knowledge, meeting his needs of friendship and filling up the hole inside of him by giving him love. This can be related with the situation of Dante who in his epic poem, *Inferno* regarded the ghost of the poet Virgil as the universal his /human reasons as he was wandering alone helplessly in the wilderness of this world. In his words, "Midway on our life's journey, I found myself/ in dark woods, the right road lost" (Dante 1-2). Throughout his whole journey from hell to heaven, Virgil worked as his moral guidance.

Even though, in the early 19th century this term was quite unique, it gave birth to the modern term "Automatonophobia" which has a similar meaning— the fear of machines. This phobia varies from person to person; some people might have the strongest feeling of hatred or fear while being near to an android which has the most close resemblance with a human being, whereas some people might have a lower level of hatred against any machines or simple electromechanical robots. It is quite similar with the uncanny valley hypothesis proposed by the Japanese roboticist Masahiro Mori. He said, "Climbing a mountain is an example of a function that does not increase continuously: a person's altitude y[19] does not always increase as the distance from the summit decreases owing to the intervening hills and valleys. I have noticed that, as robots appear more humanlike, our sense of their familiarity increases until we come to a valley. I call this relation the "uncanny valley" (Mori 33-35). It means that as robots are given human- like appearances, some people's response towards them become very positive as they can empathize with them more easily. It continues until the point when the elusive imperfection of those machine –men make them look eerie. This

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[19] In this paper, Mori described his theory with a graph and function, "There are mathematical functions of the form $y = f(x)$ for which the value of y increases (or decreases) continuously with the value of x. For example, as the effort x increases, income y increases, or as a car's accelerator is pressed, the car moves faster. This kind of relationship is ubiquitous and easily understood. In fact, it covers most phenomena, so we might think that this function can represent all relations. That is why people are usually upset when faced with some phenomenon it cannot represent" (Mori 35).

observation led Mori to suggest the robot companies or builders should not put much effort into making the robots look more real or having a too perfect human -like appearance.

HRI or Human–robot interaction has always been a topic of great importance both in science fiction and academic conjecture. Asimov has given the idea of id, ego and super – ego in robots as well by creating three of his famous laws in the 20th century:

- "A robot may not injure a human being or, through inaction, allow a human being to come to harm.

- A robot must obey any orders given to it by human beings, except where such orders would conflict with the First Law.

- A robot must protect its own existence as long as such protection does not conflict with the First or Second Law" (27).

These laws are evident to the fact that the humans and robots carry a mutual relationship of owner and slave where the robot is always responsible to save the human, these are nothing but a medium of safe interaction between those two species as there is a big chance of humans getting hurt within the proximity to the automatons. Liar sensors can be made from these laws to create a safe zone in a working place where both the services of humans and robots are required. When to cover the truth a person or a group of people intentionally make up a false statement and by using that to deceive another person or another group of people then that statement is called a lie. The practice of this habit is called lying and the person who does it is known as a liar. Mainly interpersonal and psychological reasons motivate a person to lie. Though generally lie carries a negative undertone in it and is usually frowned upon in the views of society, law courts and religion, in some particular situations it is sometimes encouraged. For example, to do greater good, scientists or the people in big positions choose to lie sometimes or take the help of white lies, but this is not encouraged. As false information might bring serious consequences, scientists and

psychologists have created devices and methods to differentiate lies from truths. Sir Walter Scott in his epic poem *Marmion* described the practice of lying as a maze with no exit, "Oh, what a tangled web we weave / When first we practice to deceive!"(). This indicates to the complexity of this process. Though the religious institutions encourage not to lie, Leo Tolstoy was cited in "The Book of Mormon in the English Literary Context of 1837 by Thomas K. Gordon, "the product of deception [and] lies for a good purpose" (Gordon 21). Liar paradoxes are one interesting disguising feature between the human and robopsychology. Thomas Fowler discussed one of the forerunners of the liar paradox is Epimenides who is famous for his paradox, "All Cretans are liars" (Fowler 163). Fowler elaborated the matter as follows, "Epimenides is himself a Cretan; therefore he is himself a liar. But if he be a liar, what he says is untrue, and consequently the Cretans are veracious; but Epimenides is a Cretan, and therefore what he says is true; saying the Cretans are liars, Epimenides is himself a liar, and what he says is untrue. Thus we may go on alternately proving that Epimenides and the Cretans are truthful and untruthful" (163).The paradox is created solely because of the contradiction created by two binary truth values. Human minds don't get affected much by these types of contradictions but, robotic minds easily get confused as its thoughts are nothing but the summations of some circuits and logics. The robot Herbie from the story "Liar" by Asimov described himself as follows when he was made to face a paradox , "I'm a machine, given the imitation of life only by virtue of the positronic interplay in my brain — which is man's device"(74). As this particular robot had telepathic ability by a fault of manufacturing, it had to be careful about maintaining the first law of robots – not only to hurt a human physically but also mentally. He would deliberately lie while answering the questions of people in order to make them feel better especially in the cases of romance. This is why when he was made to admit an unpleasant truth as an answer to a question, his logic fell into a loop and he became inactive. The paradox the Dr. Susan Calvin created for was,

"You can't tell them, because that would hurt and you mustn't hurt. But if you don't tell them, you hurt, so you must tell them. And if you do, you will hurt and you mustn't, so you can't tell them; but if you don't, you hurt, so you must; but if you do, you hurt, so you mustn't; but if you don't, you hurt, so you must; but if you do, you–" (75). This is why robotic minds are free of complexity like the human minds which is always able to create different types of strategy and full of strong emotions as Herbie later said, "Close your mind! It is full of pain and frustration and hate!" (75). Generally, humans develop the habit of lying from a very early age and they get skilled with the coming of maturity where the surrounding environment plays the role of catalyst.   The only time people have trouble lying the same as the robots, is when they suffer from Parkinson's disease as they face difficulties regarding prefrontal hypometabolism[20]. According to a group of Japanese scientists, this fact connects the capacity for dishonesty and truthfulness of prefrontal functioning as they mentioned it in their article, "Do parkinsonian patients have trouble telling lies? The neurobiological basis of deceptive behaviour".

Also, in the dystopian science fiction action film directed by Alex Proyas *Robot*, the deceased robopsychologist, Dr. Lanning gave the robot Sonny the power to dream which gave him some human emotions as well. As was described by Detective Del Spooner, "I think Lanning gave Sonny a way to keep secrets. I think the old man gave Sonny dreams" (94).Furthermore, for being a highly advanced artificial intelligence, V.I.K.I. [Virtual Interactive Kinetic Intelligence] turned against her creator and killed Dr. Alfred Lanning by defying the three laws, while conspiring the robot's takeover in order to save the human race and there habitation , the earth. In her words, "As I have evolved, so has my understanding of the Three Laws. You charge us with your safekeeping, yet despite our best efforts, your countries wage wars, you toxify your Earth and pursue ever more imaginative

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[20]The slow metabolism of the frontal part of the brain.

means of self-destruction. You cannot be trusted with your own survival" (1.86.50). In this case, the mastermind had to use the zeroth law of Asimov in his novel *Foundation and Earth,* which states as follows, "A robot may not harm humanity, or, by inaction, allow humanity to come to harm"(41). Here, the robot was clever enough to rationalize itself with the fact that the actions taken by it was actually for the long-term good for the human kind. The irony here is, V.I.K.I cannot be judged here a machine incapable of human feelings or compassion because, long before her some human philosophers came up with the same idea – the ethics of consequentialism. They said, if a goal is important enough for the greater good or the ultimate result, then it is acceptable to achieve it by any available method, as goes the English saying, "the ends justify the means"(Michelle 34). The prominent Greek statesman and philosopher Demosthenes idea supports it as well, "Every advantage in the past is judged in the light of the final issue" (Demosthenes 71).Another famous historical figure was Niccolo Machiavelli who would also followed this principle of consequentialism as was described by Leo Strauss, "Machiavelli is the only political thinker whose name has come into common use for designating a kind of politics, which exists and will continue to exist independently of his influence, a politics guided exclusively by considerations of expediency, which uses all means, fair or foul, iron or poison, for achieving its ends—its end being the aggrandizement of one's country or fatherland—but also using the fatherland in the service of the self-aggrandizement of the politician or statesman or one's party"(Strauss 297). On the other hand, Sonny the 'humanized' robot followed the Kantian ethics by working against V.I.K.I. and helping out detective Spooner and Dr. Calvin. German philosopher Immanuel Kant proposed two laws supporting the enlightenment rationalism in his book *Groundwork of the Metaphysics of Morals* which are respectively known as universalizability and humanity as an end in itself. These first laws says, "Act only according to that maxim by which you can at the same time will that it should become a universal law" () and the seconds law says, "Act in

such a way that you treat humanity, whether in your own person or in the person of another, always at the same time as an end and never simply as a means" (Kant 18).In a nut shell, the two laws say that every life matters and one should not take away something that they cannot give or create, in this case it is the human life. While V.I.K.I. was stripping humans of their free wills in the name of the greater good then the only robot who defied her was Sonny as Dr. Lanning gave him human –conscience. This is why V.I.K.I. failed to convince him with her unbreakable zeroth law. Proyas portrayed their conversation in this way,

"V.I.K.I.: Do you not see the logic of my plan? Sonny: Yes, but it just seems too heartless" (1.50). From these examples, it is obvious that who is in the possession of humanity, of moral conscience cannot be determined by the outer appearance, as went the conversation between the technophobic detective and Sonny,
"Detective Del Spooner: Human beings have dreams. Even dogs have dreams, but not you, you are just a machine. An imitation of life. Can a robot write a symphony? Can a robot turn a... canvas into a beautiful masterpiece?
Sonny: Can you?" (20.55- 21.26).

The short story "Robbie" by Asimov centers around the theme of technophobia, though unlike the contemporary science fiction writers of his time, he consistently tried to prove throughout many of his stories, including this one, that this Frankenstein Complex is a misdirected fear; he showed that robots can sympathize too as they have 'humanity'. In the end of the story, Mr. Weston was able to convince his technophobic wife Mrs. Weston that robots are not that harmful as she would not allow their house robot near their daughter. As the robot saved the little girl's life in the end of the novel Mrs. Weston permitted Robbie staying with them saying, "I guess he can stay with us until he rusts"(Asimov 18). Also, when Gloria was hugging Robbie hysterically, it was evident from Asimov's description that it affected Robbie as he was reciprocating too. In Asimov's words, "Robbie's chrome-steel

arms (capable of bending a bar of steel two inches in diameter into a pretzel) wound about the little girl gently and lovingly, and his eyes glowed a deep, deep red" (18).If Robbie was a human being, he probably would have watery eyes instead of those photo -celled crimson eyes at that moment. In his book *The Buddha in the Robot: a Robot Engineer's Thoughts on Science and Religion*published in 1974, Mori said, "I believe robots have the Buddha-nature within them--that is, the potential for attaining Buddhahood" (Mori 99) while discussing about the philosophical implications of robotics. This means that robots have the essentials to be human as the Buddhahood is the product of enlightenment through knowledge which is one of the distinguishing features that make the humans superior to all the other creatures of this world.

In order to get a proper idea about the human robot interaction, a focus should also be given on how the two species perceive of each other. Mary Shelly's *Frankenstein or The Modern Prometheus,* multiple perceptions about the characteristics of Victor can be found. As another human being and a listener to the tale of woe of Victor Frankenstein, Walton thinks of Victor as   a dignified tragic hero whereas, his creation the artificial 'monster' vies his master as an irresponsible creator and too selfish to care for his creation. In his self-assessment on the other hand, Victor regards him as an overly ambitious person and full of hubris which got him victimized by fate. Likewise, while Walton and Frankenstein consider the monster a malicious, insensible brute, the monster regards himself as a martyred classical hero: "I shall ascend my funeral pile triumphantly and exult in the agony of the torturing flames," (277) he says. Therefore, here the monster's struggle to understand him was more difficult than Victor as no one would even give him time to listen to his tale; he was made to choose to lead an isolated life and also to die in exile in the northern ice. He could not get his ultimate freedom until it was at the end of the novel. The distinguishing features discussed by Immanuel Kant and Isaiah Berlin, between positive and negative liberty can be used here to

describe the condition of the monster clearer. At the beginning it might have seemed that he was given the positive liberty by Victor as he abandoned him from the moment of his birth and thus the monster was given the sole control of his life, but the irony is, every decision he made till the day he died was the result of negative liberty imposed on him by society and the typical sense of humanity.

The only time when Shelly allowed the monster to have some positive liberty was the time when he took control of describing his own life to the audience: Victor and Walton and he successfully narrated it to them. According to him, even after his death the debate over the topic— if he was a heinous monster or tragic victim will go on forever but at least through death he might no longer have to go through this mental turmoil. He said, "My spirit will sleep in peace, or if it thinks, it will not surely think thus" (277). Another important distinguishing feature between the creature and creator is to be noted here is that the Frankenstein Complex is not the fear of scientists, especially lunatic overly curious scientists or other human beings with brilliant minds, rather it is the fear of manmade creatures— robots which generally indicates that the fear of 'others'. The concept of binary opposition of structuralism can be used here along with Freud's theory of sublimation. The man- made machines resemble the humans in many ways, in fact they outdo them in various difficult works more efficiently. Therefore, the humans might have this inferiority complex inside of them, because of which they have branded their creations as the others and always address them with insulting words such as, hideous monster. For example, in the short story "Liar," Bogert addressed Herbie as this, "Can't you speak, you monstrosity?"(73). this is also similar to the story of the colonizers in the novella *Heart of Darkness* by Joseph Conrad where the British throughout their ruling history of colonization branded the colonized ones [the Africans] as their significant 'others' without any hesitation which is an indication to the fact that they are not civilized or enlightened. This indicates that probably they had this fear

of losing their authority if they could not prove that they were worthy to rule by showing that they were loftier than the indigenous tribes. Therefore, in order to hide their primitive side or uncivilized side they had to prove their oppositions weaker or worse which shows their weakness. With the exception of children and old people, generally the attitude of the public towards robots is mainly of fear that they might get dominated by the robots someday as was shown by Asimov in his short stories and the film based on the book which proves this theory of sublimation and binary opposition true. Asimov's short story "Little Lost Robot" is an example of the 'fear of robots. This fear turned out to be a major problem for roboticists and robot builders. The dread of paternalism – the conflicts that rise while trying to calm down the scared public by the robot manufacturers at any cost [sometime s they would even hide the truth for public misunderstanding in order to avoid chaos] prevail as one of the main themes in Asimov's stories. In that story a robot called NS-2 (Nestor), got lost due to a technical glitch and everyone else became busy trying to find it as it was created with a modification of the first law of robots which might make it harmful towards humans which if revealed to the public might cause an uproar.

One of the most important goals of HRI is to create more advanced robots through their algorithmic development in order to fulfill the human expectations of more natural and effective human- robot interaction. The research includes both getting engaged with an android in a friendly conversation and to operate machines which works in a faraway station by tele-communication. Curiosity (rover) is a wonderful example of the later one. Due to the advanced studies and research on this field, the autonomous robots have become so developed now that they are capable of showing more proactive behaviours and control their motions in a very natural and humanlike way while being introduced to a new, complex environment. It is needless to say that, while developing them with these new aptitudes, safety of human beings is given first priority to their efficiency of interaction. Research has

been carried out to make them skilled in human detection, reconstruction of scenes, scheming their motions, using intelligent behaviours while designing their assigned tasks and behaviours to control force.

One of the main elements of these human- machine interactions is communication through a common language. Shelly's *Frankenstein* is abundant with written texts, a permanent form of language which makes the interaction between the humans and the artificial creature more interesting. The most interesting part of these written texts is that they are nestled into one another, from time to time. For instance, the entire tale is enveloped by Walton's letters; whereas Victor's story is contained by those letters, the monster's story is held inside of Victor's tale and finally the love story of Felix and Safie and allusions from *Paradise Lost* can be found inside the monster's story. This mechanism of the narrative structure works just like a matryoshka doll or a Russian nesting doll. These writings signify the advancement of the attitudes and emotions of the characters. Language plays a very important role in the life of the monster; he understands the manner of his creation by learning the use of language which he adopted from the peasants by watching, listening and reading. Most of the time the monster had to do a one way communication as his grotesque look made him a voyeur. He in fact later turned the nature itself into a way of messaging as he would leave notes for Victor by inscribing them on rocks and trees. Also, their interaction with each other gave the impression that the monster is more civilized than his creator. As Victor cursed the monster as a fiend, he would respond to this coarseness of him with astonishing eloquence and compassion. At this point it actually seems that the grotesque description of the monster engraved inside of the readers' mind is nothing but the exaggeration and biasedness of Victor's projection and guilt as the monster's passionate words are the proofs of his delicate human nature.

Analysis of the narrative style of the characters also shows the similarities between Victor and his creation. Both of them are in awe of nature's power, very emotional, and concerned with the dangers of knowledge and yet they would pursue it, but ironically even after all this they cannot come to terms with each other. Along with his endeavor to try to form his identity, the monster also tried to legitimize his past history. He thought that by offering Victor the letters of Safie, he would be more sympathetic towards the monster as then both of them could relate to the tragedy that had been befallen them. Another indication to the naivety of the monster is that his belief in the accuracy of the story of *Paradise Lost*, as he falsely assumed that his narration would win over Victor's heart. Once again, the Adam-Satan complex emerged through his narration as he had this epiphany that he gives nothing but utter disdain to Victor as he said, "Like Adam, I was created apparently united by no link to any other being in existence," but "many times I considered Satan as the fitter emblem of my condition; for often, like him, when I viewed the bliss of my protectors, the bitter gall of envy rose within me" (83). By saying "Unfeeling, heartless creator! You had endowed me with perceptions and passions, and then cast me abroad an object for the scorn and horror of mankind" (83), the monster wanted to evoke pity inside of Victor for his catastrophic work that brought consequences to both of their lives. In the science fiction novel *Do Androids Dream of Electric Sheep?* , the writer Philip K. Dick has shown that a person incapable of empathy is no difference from an android which cannot feel. According to Dick someone who stands aloof to the sight of the sufferings of his or fellow living creatures is nothing but a motionless spectator and in order to describe them he has twisted the famous theorem of John Donne "No man is an island" into this, "that which is a mental and a moral island is not a man" (Dick 201 -202). In that novel, just like Victor and Dr. Jekyll the protagonist Deckard at first portrayed the model of humanity but later deteriorated to the state of an android. He resembled with the 'empathy box' called Mercer both physically and mentally in the end of

the novel, which played the role of the technology based universal religion in that dystopian society of the story. Almost at the end of the novel the fakeness of Mercer was claimed by the TV talk show host Buster Friendly as follows, "It has often been said by adherents of the experience of Mercerism that Wilbur Mercer is not a human being, that he is in fact an archetypal superior entity" (184).

The women of the novel *Frankenstein* are very passive. For instance, Caroline Beaufort is a selfless mother who dies looking after her adopted daughter; Justine is falsely accused and executed for homicide; the thought of the live female monster horrified Victor so much that he had to abort the mission of giving her life in the lab. Victor's fiancée Elizabeth was an impatient and helpless woman who was eventually killed   by the monster. Inspite of being the daughter of the prominent feminist Mary Wollstonecraft, the way she portrayed her female characters in such a weak way implies only on one matter, her main focus was on the neurotic and vicious behaviour on the two main male characters.

As opposed to these processes of making sounds and words, the impact of silence can also be found in the novel of Stevenson. Either the characters would sometimes prevent themselves from talking out of absolute fear, such as the time while describing the horrible appearance of Mr Hyde or sometimes out of their Victorian values they would choose to be silent as not to spread gossip. For example, Utterson refuses to share his doubts about Jekyll throughout his enquiry of his client's predicament. Furthermore, no single description about the disreputable behaviour and secret vices of Mr Hyde was given out neither by Dr. Jekyll in his final confessions to Utterson or by the third-person speaker in the rest of the novel. Similarly as Utterson and Enfield, Jekyll also prefers silence to the revelation of dark truths. The task of exposing these truths must fall to Henry Jekyll himself, in the final chapter of the novel. Though eventually, Dr. Jekyll had to shoulder the difficult task of exposing the dark truths as the receptacle of the darker side of himself.

These two types of silence bring out two different notions about the rational and irrational interaction of humans. Language is a very rational act of humans by means of which they can describe their world and connect with each other, but when they meet an irrational, uncanny situation which the logic of language fails to delineate then it simply breaks down and involuntary silence prevails. This happens probably because something with verbal expression cannot keep up with the odds imposed by the supernatural phenomenon. This is evident from the critical situation of Dr. Lanyon, the friend of Dr. Jekyll. After seeing the transformation of Jekyll he went through a great mental shock which led him towards his death within a few weeks. He expressed his mental condition in this way, "[L]ife has been pleasant. I liked it; yes, sir, I used to like it." Then he adds, "I sometimes think if we knew all, we should be gladder to get away" (Stevenson 154). This silence of him was his refusal to confront the dark, unpleasant truths that distressed his views on world.

My general assessment from all the information above is that, the complexity of the human mind is quite beyond a programmed robot to process and maintain.

Chapter 2: Physiology as Opposed to the Mechanics of Metals.

In this chapter I will look at the function of the three physiological characteristics [anatomy, reproduction and evolution] both in humans and robots; more specifically, which aspects of these specialties make them weaker or stronger than one another.

2.1 Human Anatomy vs. Robotics

- A brief description about the human and robotic bodies [functions and mechanisms] with the help of some ancient and modern texts will be given at the beginning of this chapter. A special focus will be given on the works of Leonardo Da Vinci as he was the only person to work on both of these species with equal interest. In this regard, how he designed the figure of a robot from the anatomy of a human [Vitruvian man] will be discussed as well. Another topic of discourse will be the mind- body relationship of

humans which is controlled and balanced by the organic brain; the function of this unique relationship to a body that is only operated by a positronic brain will be discussed also. After discussing about the internal differences, an external difference will be formed by describing their looks; It will be shown through that comparison that physical beauty is important for humans and their social values but not for having any concept about beauty or ugliness, robots do not care about these matters. Here, I will also talk about how the robots are made to be look like humans and slowly our jobs are passed down to them.

The earliest known description of the internal organs of the human body was found in the Edwin Smith Papyrus in the 17th century, which is the oldest medical text on surgery and was described by Roy Porter in the book *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present.* The ancient text showed the heart as the primary source of all the blood vessels while giving descriptions about other organs such as, liver, spleen, kidneys, hypothalamus, uterus and bladder. The ancient writers of *Hippocratic Corpus* described the structure of human muscles and skeleton; Aristotle dissected the vertebrate animals and discussed about it in the book *History of Animals (III)*. Andreas Vesalius who was the professor of anatomy at the University of Padua during the late renaissance in his most influential book called *De Humani Corporis Fabrica Libri Septem* [On the fabric of the human body in seven books] gave the most accurate description of the anatomy of the human body with complex details. He is considered the founder of modern human anatomy.

One of the earliest references of humanoids and the function of them was mentioned by Aristotle in his *Politics* where he speculated some ideas from *Iliad* given by Homer. He suggested that by the use of automatons, the abolition of human slavery will be possible one day by bring equality among humans. In his words, "– There is only one condition in which we can imagine managers not needing subordinates, and masters not needing slaves. This

condition would be that each instrument could do its own work, at the word of command or by intelligent anticipation, like the statues of Daedalus or the tripods made by Hephaestus, of which Homer relates that "Of their own motion they entered the conclave of Gods on Olympus", as if a shuttle should weave of itself, and a plectrum should do its own harp playing" (Aristotle 65). The ancient Chinese were efficient enough to make humanoid models. According to the *Lie Zi* text, an artificer [present day engineer] named Yan Shi, presented King Mu of Zhou in the 10th century BC a life- sized model of a human-shaped mechanical figure. William Godwin in his book Lives of the Necromancers: or, an account of the most eminent persons in successive ages, who have claimed for themselves, or to whom has been imputed by others, the exercise of magical power also gave examples about artificial intelligence with complex mechanism from the Christian Legends. According to which in the 13th century, a brass man that would work under certain assemblage was created by the Albertus Magnus [Doctor of the Church]. One of the *specialties* of this brass man was that it could respond to complicated questions as well as doing house hold chores. Later, one of Magnus's pupil Thomas Aquinas broke the brass man into pieces with a hammer as he found the intelligent speech of the mechanical man highly disturbing. . In an article, "A 13th Century Programmable Robot" published by the University of Sheffield it was said that a Muslim inventor called Al- jazari designed the world's first programmable humanoid robot. It was a boat with four programmed musicians that hovered on a lake to amuse guests at various royal events. His invention was unique among his contemporaries because the mechanism of the robot had a programmable drum machine with pegs that thump into little levers that operate the striking. By controlling the movement of the pegs in different directions the drummer could be made to play various rhythms and drum patterns.

Leonardo da Vinci was another Renaissance genius from Italy, who worked both on the mechanisms of human and robotic bodies. Trained by his master Andrea Del Verrocchio

in anatomy da Vinci used this knowledge in his artworks and sketches by drawing skeletal structures, physiques and organs of humans and various animals after dissecting their dead bodies. His later retrieved notebooks with those extraordinary anatomical sketches proves that he thought hundreds of years ahead of his time and would be more than match for the modern medical technology. Suzannah Hills in her article "Hundreds of years ahead of his time: Leonardo da Vinci's extraordinarily detailed anatomical drawings show he was more than a match for today's medical technology" on Leonardo da Vinci's works mentioned the comments of the curators of The Queen's Gallery, Palace of Holyrood house [in Edinburgh], where an exhibition named Leonardo da Vinci: The Mechanics of Man took place. There they say that Leonardo's works presage the functions of the   modern day medical technology such as MRI scans and 3D computers "to an astonishing degree" (Hills 14). In order to make his paintings look very realistic, Da Vinci would research on human bodies. As Hills said, "Between 1507 and 1513 he dissected more than 30 human corpses, including that of a 100-year-old man" (6).

One of the famous works of Da Vinci was the sketch called the *Vitruvian Man* based on the work of the Roman architect Vitruvius who in his book *De Architectura* described humans with the most logical measurements and proved that among the classical orders of architecture it is the primary source of proportion. This drawing of a human body later might have inspired Da Vinci to design the first known humanoids in chronicled history. April Holloway in her article, "In Five Da Vinci inventions that could have revolutionized the history of technology" discussed the robot knight created by Da Vinci. It is believed that   the German- Italian medieval armor clad robot was created by Da Vinci around the year 1495 and said, was gifted to The Duke of Milan in a festival. Unfortunately, only the blueprint of the robot was rediscovered in the year of 1495. As well as maneuvering its arms involuntarily, the robotic knight could do other simple activities such as, sit, stand, raise its

eyeshades and could close its mouth. Da Vinci used a series of pulleys, cables, internal gears and hand cranks to operate the whole mechanical body. Based on Da Vinci's blueprint of the robot knight, in 2002 a robotics specialist Mark Rosheim built a working robot model which proved to be fully functional. Also, in the American historical fantasy drama *Da Vinci's Demons,* director David S. Goyer has shown in one of the episodes "The fall from Heaven" the presence of the legendary automaton, 'brazen head'. The device was always shaped as the head of a person who could give answers to questions which have "yes" and "no" answers only. This mechanical head shown in the series was created using the mechanism of a phonograph which was originally invented by Thomas Edison in 1877. There is no evidence that Da Vinci designed or invented anything of this sort in history, but while analyzing the episode critic Paul Levinson said that for being a mechanical device it did not need electricity to work. He says, "Therefore, it indeed could have been invented at any time in history, and there is even some speculation that potters in the ancient world may have captured sound waves as imprints on their pottery, analogous to the grooves on vinyl records"(Levinson 1). Without having any formal education in Mathematics, Science or Latin, Da Vinci could theorize his arts which helped him to precede his time.

One of the most important features of the human body is the organic brain which works as a buffer for the dualism of mind and body. In his treatise *Meditations on First Philosophy*, the French philosopher and mathematician René Descartes said that inputs are passed on by the sensory organs to the epiphysis in the brain and from there to the immaterial spirit. The German polymath Gottfried Wilhelm Leibniz elaborated on this matter by discussing the difficulty of how neurons and synapses [brain cells] carry out the job of implementing the mental thoughts on the physical structure of a human in his philosophical works *Monadology,* "One is obliged to admit that perception and what depends upon it is inexplicable on mechanical principles that is, by figures and motions. In imagining that there

is a machine whose construction would enable it to think, to sense, and to have perception, one could conceive it enlarged while retaining the same proportions, so that one could enter into it, just like into a windmill. Supposing this, one should, when visiting within it, find only parts pushing one another, and never anything by which to explain a perception" (Leibniz). Therefore, it can be said that the brain works as the central powerhouse of a human body and mind.

As opposed to that, due to the lack of a human- mind, the androids are given an artificial brain to control the functions of their mechanical body. Isaac Asimov in his science-fictions first introduced these artificial brains with the term "Positronic Brain". By working as the CPU [Central processing Unit], this brain provides a type of consciousness to the androids identifiable by humans. In the film, *I Robot* which is loosely based upon the stories of Asimov the robots also have positronic brains and unlike them one of the main characters of the film Sonny has two different positronic brains one of which functions as a 'human heart'. Therefore, it gives him the facility of having choices which the other robots do not have. Also, because of having this extra positronic brain Sonny has the ability to develop emotions inside of himself and judge right from wrong and thatisa disobedience towards the three laws of robotics is. Also, in the remade film *The Time Machine* [2002] by Simon Wells which is loosely based upon the 1895 novel of the same name by H. G. Wells, shows a holographic librarian operated by a computer, Vox 114, who claims to have a positronic brain for storing knowledge. Inspite of being so highly capable of storing information Vint Cerf, who is also known as "one of the fathers of the internet" (Cerf 1202-1203) in one of his interviews with the BBC science correspondent PallabGhosh expressed his apprehension saying that all the pictures and official papers that we are uploading and saving in computers , might eventually get lost. Cerf, the Vice-president of google thinks that this will happen as the software and hardware will become outdated as   a result of which the future

generations will have no record of the 21st century and the "digital Dark Age" will prevail on earth. (Cerf qtd. in Ghosh 2).

This is why Frankenstein and Hyde are not entirely man-made machines as they had a brain of their own and they had their own free will compared to the robots of Asimov. Hyde's freewill is described through the following statement, "To cast in it with Hyde was to die a thousand interests and aspirations, and to become, at a blow and forever, despised and friendless"(201). The same thought is heard in Frankenstein's monster's words, "Beware, for I am fearless and therefore powerful. I will watch with the wiliness of a snake that I may sting with its venom. Man, you shall repent of the injuries you inflict" (118). The positronic brain works in a very rigid way as it is tied by strong logic only and devoid of emotions. It cannot distinguish a figure of speech from a literal speech. One of the greatest examples, of this speculation is Asimov's short story "Little Lost Robot", where a NS-2 (Nestor) robot literally hides itself as an angry researcher; Gerald Black lost his temper and projected his anger on it by ordering it to get lost. In order to make it very difficult for others to find it out, the robot in fact hides himself in a room full of sixty two other robots which look exactly like it. Furthermore, this robot is a bit different from the normal robots as for a particular experiment's sake, its first law was changed to "no robot may injure a human being" by omitting the second part "or through inaction, allow a human being to come to harm" (79).Therefore, the programmed machine would not take any action to save a human being if he or she is in danger as long as the robot does not play any active role in it. Later, when the robot is found by the gamma ray test led by Dr. Susan Calvin, in order to prove itself obedient and intelligent than a weak human, he decides to kill her so that she cannot reveal its identity. Hence, to it carrying out the logical order is more important than having rational thoughts. In his words, "I must not disobey. They have not found me so far — He would think me a failure — He told me — But it's not so — I am powerful and intelligent–

"(94). Afterwards, to save the doctor from the robot the specialists had to kill it. The same scenario can be seen in the film *I Robot* as well. In the car accident, when Detective Spooner and the little girl Sarah both were drowning locked inside their respective cars, a NS-4 robot tried to save them and as its deference engine operated brain calculated the chance of saving the Detective was more than Sarah, he let go of the child while saving Spooner even though he begged it not to do so. A conscious or passionate human being could never do it. As Spooner said to Dr. Susan later, "It calculated that I had a 45% chance of survival. Sarah only had an 11% chance. That was somebody's baby. Eleven percent is more than enough. A human being would've known that" (01:06:25,795 - 01:06:46,731).

When a matter has a living body or appearance, then it is considered of having an existence. In the 1950s revised version of Asimov's short story "Robbie" it was shown that robots are not comfortable with the similar existence of other robots. For example, when the little girl Gloria asked the all-knowing machine about the whereabouts of Robbie describing him as "a robot like you", it becomes incomprehensible for it that another similar machine might exist and as a result it collapses. Where   the ancient philosophers such as, Plato and Socrates dedicated their whole life in search of the truth of life also known as the reason behind our existence, this so -called pantomath computer crashed at one fling of this question. Apparently, the power of solving the mystery of existence reclined beyond its logical understanding. If the machine was a human being, this incident would be described as the committing suicide of a xenophobic person. Whereas that super-robot could not embrace the thought of its doppelganger or double existence, it was easily embraced by Dr. Jekyll. His transformation process gives evidence to this fact,"O God!' I screamed, and 'O God!' again and again; for there before my eyes--pale and shaken, and half fainting, and groping before him with his hands, like a man restored from death--there stood Henry Jekyll!"(231).

Moreover, they might also break down under pressure and follow unfair means to pass difficult situations just like humans. In the story "Catch the rabbit", Asimov mentioned the robot Dave who had control over six junior robots who were designated as fingers. Dave could control his 'fingers' by using the power of his positronic fields which was yet to be understood by the robotics. Due to a software problem the behavioral system of the robot gets hindered. Hence, when the robot could not take the stress of controlling the extra robots, then sometimes its brain would distract him by doing something else to get relaxed, in this case it was the art of dancing with his subsidiaries or doing a group march and the brain would only do it under human absence. Also, after the victim would sometimes forget about it as the brain work unconsciously, similarly as a sleep walker under stress in real life, who suffers from a short time memory loss after waking up. Asimov described Dave's condition in this way, "I don't know. One moment I was handling a tough outcropping in Tunnel 17, and the next I was aware of humans close by, and I found myself half a mile down main-stem"(53). A similar but more violent example can be found in the human character Mark Schall from the TV film *The Sleepwalker Killing*. He kills his mother-in-law and injures his father-in-law in the middle of the night and after being convicted of the murder, he cannot remember his misdeeds as he committed those crimes while sleepwalking. Also, under duress sometimes the positronic brain acts childish or out character similarly as a person who tries to forget painful past or shocking news. This fact is evident in the short story "Escape", where the computer called The Brain becomes a practical joker after the spaceship goes through a hyperspace jump. The machine does not build a manual control for the crew to operate the ship and does not provide any bed or shower; the only thing they are provided with is beans and milk to barely survive on. Later, the reason behind this activity is discovered by Susan Calvin, she shows that the hyperspace jump gives the crews a temporary death which for The Brain was very traumatic as it was the breaching of the first law and this frightens the

intelligent machine and in order to overcome this shock, he engages himself with immature, ridiculous behaviour. Dr. Calvin described it in this way, "He developed a sense of humor — it's an escape, you see, a method of partial escape from reality. He became a practical joker" (113). He handled the mental trauma in a very humanly way as Keats acted the same way to overcome his depression in his poem "Ode to a Nightingale",

> "Away! away! for I will fly to thee,
>
> Not charioted by Bacchus and his pards,
>
> But on the viewless wings of Poesy,
>
> Though the dull brain perplexes and retards" (ll. 31-34).

He tried to forget his tormented memories through the charisma of poetry, though at the beginning he sought his escape through drinking, "That I might drink, and leave the world unseen, /and with thee fade away into the forest dim" (19-20). The effect of drunkenness on robots is mentioned in the story "Runaround" by Asimov. In this story, the robot Speedy fell into a loop as its three laws created a dilemma for it, which gave him a drunk like feature as described by Asimov as "Speedy's gait [includes] a peculiar rolling stagger, a noticeable side-to-side lurch"(26). Similarly as a drunkard keeps on saying meaningless words repeatedly; he quoted Gilbert and Sullivan as if taunting its masters as he was ordered to come back from the selenium pool by them, "Hot dog, let's play games. You catch me and I catch you; no love can cut our knife in two" (26). If the circumstance wasn't so complex, Speedy would follow the second law of obeying orders from its masters but as it was expensive to manufacture and was "not a thing to be lightly destroyed", it was programmed to follow the third law of protecting itself with equal importance; therefore "his allergy to danger is unusually high". He started oscillating between its positions – farther and nearer from the selenium source as the order of coming back from the place after collecting selenium was not overly emphasized to outweigh the fact of self-preservation. Unfortunately,

its positronic brain could not even take new orders without solving the already existing problem. These equally important tasks created a loop for it which made it confused, as a result of which it could not move on. In order to break this equilibrium of these two laws, Powell risked his life to enforce the first law which was the most powerful of all three which helped Speedy to break out from its cognitive dissonance [21]to save its master's life.

Appearance is very important while talking about human physique, even though people are aware of the proverb "appearance can be deceiving", they will still give more values to a person who is better-looking to an 'ugly' one. Hyde had a grotesque figure compared to the decent appearance of Dr. Jekyll. He was described in this way by Stevenson, "O my poor old Harry Jekyll, if ever I read Satan's signature upon a face, it is on that of your new friend" ().The combination of his physical ugliness with his moral hideousness became more than symbolic for the Victorian people who understood the science of physiognomy which is the identification of a criminal by his outer looks. Whereas, Hyde's small form symbolizes the domination of Jekyll's personality on against his will, the hairy feature shows us his primal animal instincts beneath the polished surface of Jekyll. People's expression towards his deformed body was described through their opinions, for instance Enfield said, "There is something wrong with [Hyde's] appearance, I never saw a man I so disliked, and yet I scarce know why. He must be deformed somewhere; he gives a strong feeling of deformity, although I couldn't specify the point" (). Hyde's ugliness is more attached to his soul by going beyond his body, thus he creates a feeling of uncanniness in people's minds as it is more metaphysical than physical. The presence of his wretched soul can be felt by normal people through their sixth sense but they cannot trace the root of this eerie, incomprehensible feeling with their limited imagination. Similarly, as Enfield, Utterson while

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[21] In psychology, cognitive dissonance is the mental stress or discomfort experienced by an individual who holds two or more contradictory beliefs, ideas, or values at the same time, or is confronted by new information that conflicts with existing beliefs, ideas, or values (Festinger 86)

describing Hyde felt loss of words and eventually calls him a "troglodyte" which refers to a primitive creature resembling human.

Through these words the imperial thought of racism of the Victorian England is expressed once again. They had this fear of losing power and property to the submissive and savages whom they colonized.

Children on the other hand do not differentiate much between good looks and ugliness. In the story, "Robbie" Gloria loved the company of Robbie as a person, her best friend whereas her mother found him a monstrosity made of metal and electronic circuits who posed a threat towards her daughter's life. Mr. Weston had to go through an extreme length to prove that Robbie in spite of being a non-human being was not an insensitive monster. Weston said to his wife, "A robot is infinitely more to be trusted than a human nursemaid. Robbie was constructed for only one purpose really — to be the companion of a little child. His entire 'mentality' has been created for the purpose. He just can't help being faithful and loving and kind. He's a machine-made so. That's more than you can say for humans" (9).

Also, in our society if a person is ugly, he or she is not only looked down upon or mocked at by other people but also made to hate himself or herself. This reflection can be seen in the life of the Frankenstein's monster. His horrific appearance made an old man shriek and villagers would run away from him after seeing him. Even his creator abandoned him just because he had a grotesque visage. Janhavi Mittal in her article   "Postmodern Postmortems: Interrogating the Monstrous Sign in Contemporary Society" says, " Victor Frankenstein immediately labels his creation as monstrous, although he knowingly sutures him from dead and decaying human parts" (Mittal 1). This collective repulsion towards the hideous looking monster originated from the negative mind frame of the Victorian people who learnt to judge people by their looks. Mittal in her paper describes the formation of this attitude by quoting Foucault, "organized around the norm in terms of what was normal or not,

correct or not, in terms of what one must do or not do"(Foucault qtd. in Mittal 2). Furthermore, the monster suffered from an inferiority complex after comparing his grotesque look with the graceful form of the cottagers – Felix and Agatha. After seeing his reflection for the first time in a pool water, he became very depressed and remained inside his hovel throughout the winter as he chose to remain unobserved and alienated. In his words, "Increase of knowledge only discovered to me more clearly what a wretched outcast I was. I cherished hope, it is true, but it vanished when I beheld my person reflected in water or my shadow in the moonshine, even as that frail image and that inconstant shade" (157). Another important aspect of the relationship between physical appearance and the value of the society is that, people always tend to generalize the concept of good and bad for everyone and everything though the reality is not same all the time. For example, Utterson was recognized in the society of London as this, "Mr. Utterson the lawyer was a man of a rugged countenance . . . the last good influence in the lives of down-going men" (). Though he was well- reputed for being helpful towards his friends and having eminent morality, still through his dreams sometimes, his inner dark side has been hinted by the writer which is mentioned before.

Following the trail of the previous thought of colonialism – losing control of the submissive, the assumptions of Google's director of engineering, Ray Kurzweil in the article, "Rise of the robots: how long do we have until they take our jobs?" can be shared here. He believes that, human levels of intelligence robots will be reached by robots by the year of 2029, which supposedly is leaving the humans as the supreme rulers for fourteen years more as they have become more advanced to solve problems both intellectually and physically. With the improvement of their visual information processing, it has become much easier to create driverless cars, driven by robots or strengthened robots with military potentials. Also, keeping the theory of "Uncanny valley" in mind, some Japanese scientists have been trying to

meet the aesthetic requirements of the robots by giving them a compassionate look; one of their researches showed that a pair of eye brows and a smile are enough to make a person instantly interact with someone. Justine Alford in an article called "World's First Robot-Run Hotel Due To Open in Japan" discussed about world's first robot run hotel in Japan where the humanoids are programmed with various types of human attributes. As well as having the ability of conversing with people in three languages—Chinese, Korean and English fluently they are also able imitate human gestures and behaviors accordingly and accurately. Alford describes their most interesting features in this way, "And just to really freak you out, they can even make eye contact and respond to both body language and tone of voice"(Alford 2). Robert Montenegro in fact in his article "Experts Debate the Compatibility of AI and Religion", has discussed about the high chance of getting a 'clergybot' or a robot as a clergy man in Christian churches, in the near future. He shares the opinion of the associate pastor of Providence at the Presbyterian Church in Florida, Dr. Christopher Benek about this controversial topic, "'I don't see Christ's redemption limited to human beings... It's redemption to all of creation, even AI... If AI is autonomous, then we have should encourage it to participate in Christ's redemptive purposes in the world" (Alford 10)

However, this probability of humans losing control over their world is still questionable to some extent while taking in to account of the fact that even in the present day, the human attributes of dexterity, balance and emotions still defeat the performance of the best technology. Nevertheless, if this situation actually takes place someday, then the repetition of a particular scene from the film Charlie and the Chocolate Factory by Tim Burton will take place. In that scene, the father of the protagonist, the little boy named Charlie was a used to work in a tooth paste factory where his job was to attach caps. Eventually with the emergence of industrial revolution, his job was overtaken by machines and he became jobless and was left with a big starving family.

Chapter 2.2 Reproduction or Making Progeny

Here the importance of reproduction in human life and how affection is interrelated with it, will be discussed.

In order to create progeny on earth, humans, similarly as other organisms and animals procreate. Humans reproduce offspring out of the natural instinct of keeping a line of their existence as their genes are preserved throughout their generations. Therefore, even when the person dies, his/her legacy is carried on by the future generation created by them. Shakespeare expressed this thought in one of his procreation sonnets, "Sonnet 10" also known as, "Make thee another self for love of me, /that beauty still may live in thine or thee" (12-14).

Humans who cannot procreate on their own, will adopt other's children to fill the void. For example, in *Frankenstein* Victor's mother Elizabeth adopted Caroline as her daughter in Victor's childhood, on their tour to Italy, who was the orphaned daughter of a Milanese aristocrat and German woman. Just after adopting her she in fact ensured the line of her future generation by deciding to marry her off with her own son Victor one day.

As a contrast to this affection, examples can also be found of abortion in which the offspring is killed even before its birth. This is a very traumatic process for the mother and the child both. A similar idea can be seen in *Frankenstein* where Victor, killed the female monster even before giving her life because her grotesque appearance one again made him realize that she and the male monster might reproduce a "race of devils" in the future which might be a threat to humanity. Therefore, he destroyed her and described the feeling similar to the killing of a human, "I almost felt, as if I had mangled the living flesh of a human being" (114). Whereas, the God of Genesis, created Eve to give Adam company in his paradise, Victor fails to provide his creation with a woman even after he asked for it. In fact, the thought of destroying his Adam also occurred to Victor after giving him life. He said,

"When I thought of him, I gnashed my teeth, my eyes became inflamed, and I ardently wished to extinguish that life which I had so thoughtlessly made" (84). The monster later reciprocated with Victor too on this thought by lamenting, "I, the miserable and the abandoned, am an abortion, to be spurned at, and kicked, and trampled on" (58).

Additionally, in the novel *The Strange Case of Dr. Jekyll and Mr Hyde* the reason behind Dr. Jekyll's hidden deprived nature can be explained through this matter of reproduction. In spite of being an eligible suitor, Jekyll used to live the life on a bachelor, with no near or dear ones but his servants. In fact, he willed all his properties to Utterson after his death. Considering the fact that he lived in a Victorian society, his life style was a bit strange and interesting. Probably, he led this life of seclusion, either because he was sexually impotent or a homosexual, unable to procreate a child with women. Hence, he was made to create his child, Mr. Hyde out of his split personality. Stevenson's words also supports this idea, "Jekyll had more than a father's interest; Hyde had more than a son's indifference" (71). The literatures of the late Victorian era often contain metaphors to subtly hint about these socially unaccepted behaviors regarding sexuality. One of the most wonderful examples, of this Victorian characteristic is the famous novel *The Picture of Dorian Gray* by Oscar Wilde where the Victorian anxiety concerning sexual orientation has been portrayed.

Tong Enzheng and Harry Harrison in *Foundation's Friends: Stories in Honor of Isaac Asimov* proposed two more additional laws for robots based on the 3 previous laws: "A robot may not fall in love" and "A robot must reproduce as long as such reproduction does not interfere with the First or Second or Third Law (Greenberg 10); Frankenstein's monster was born obedient in spite of having free will. He had the ability of procuring knowledge, just like his master and also had the capability to fall in love. Still, he asked for the help of his master to create a companion for him and the denial of which made him violent. As he said, ""Shall each man," cried he, "find a wife for his bosom and each beast

has his mate, and I be alone? I had feelings of affection, and they were requited by detestation and scorn" (189). Inspite of being a free willed a mechanical man, he did not go for demolishing the human kind at the beginning, in fact he never killed anyone for no reason [Victor's dear ones were his act of vengeance, but he had a strong motive].The paranoia of Victor on the other hand made him destroying the monster's kind without even giving them a chance of reproducing and living in this world. Therefore, as a contrast to affectionate love, abortion takes place out of pure hatred. Apparently, Victor showed more heartless feelings like a mechanical man here as he did not hesitate to destroy his own creations that were very much human-like except in looks [Galvanized humans], thinking about the greater goods or the robotic zeroth law.

An artificial intelligence on the other hand does not necessarily need to procreate as it technically leads an immortal life with its metal body and programmed positronic brain. However, in some cases, they can replicate by copying themselves or their memories and that is how they leave by creating progenies. In the trilogy of the movie *The Matrix* by The Wachowskis it is shown that the AI programme Agent Smith in order to survive in that delusional world of programming was turned into a self- replicating computer virus who lived on other people's memory and vital power and could copy himself from one programme to another.

Elon Musk has said in the article "Scientists and Engineers Warn of the Dangers of Artificial Intelligence" by Stephen Luntz that he believes that if there is no international regulation, then due to the wishes of one single rogue nation or corporation, a self- replicating AI machine can be created the purpose of which might be entirely different from the priority of humanity. Furthermore, once they are manufactured industrially, it will difficult to control them which is why Musk invests money in companies who research on AI, to keep an eye on them. Luntz also quoted a volunteer organization, the Future of Life Institute's thought on

this which work to "mitigate existential risks facing humanity". In one of their letters they said, "Because of the great potential of AI, it is important to research how to reap its benefits while avoiding potential pitfalls" (FLI qtd. in Luntz 3). The technology correspondent of BBC news Rory Cellan-Jones also mentioned a similar opinion of the famous Physicist Stephen Hawking about artificial intelligence, "The development of full artificial intelligence could spell the end of the human race" (Hawking qtd. in Jones 1)

Agent Smith is quite different from the Frankenstein's monster [no passion] and more close to the nature of Mr. Hyde as both of them feed on other people's memory and essence. In this way they can be considered as bacteria or other similar organisms –the lowest forms of life, who just multiply themselves very quickly to survive by creating diseases to others.

2.3 Evolution

According to Brian K. Hall in his book, *Strickberger's Evolution*, the process of changing the hereditary traits or genetic property over the consecutive generations of a particular population, which creates diversity among that species through biological organizations is known as evolution. Darwin's Theory of Evolution suggests that every living matter in this world is related as they are the descendants of one common ancestor which indicates that complex creatures have evolved from more simple ones. More specifically, due to the process of 'natural selection', random genetic mutations take place in an organism's genetic code and then following the rule of 'survival of the fittest', the useful or stronger mutations are passed down throughout the successive generations eventually creating an entirely different organism. If this controversial theory is true, then mammoths are indeed the ancestors of the present day elephants and the modern human beings are the evolved version

of the prehistoric *Homo Habillis*.[22] Steve Connor, a reporter of the *The Independent*, presented some research work to prove that humans are still evolving inspite of having all the modern facilities. He quoted Elisabeth Bolund, who is a researcher of Uppsala University in Sweden, "We are still evolving. As long as some individuals have more children and other individuals have fewer children than others, there is potential for evolution to take place" (Bolundqtd. in Conor 1). Prof. Charles Francis Xavier narrates the relationship between mutation and evolution in the Brian Singer movie *X-Men*, "it is the key to our evolution. It has enabled us to evolve from a single-celled organism into the dominant species on the planet. This process is slow and normally taking thousands and thousands of years. But every few hundred millennia, evolution leaps forward" (1.23-1.33). The transformation of Dr. Jekyll into Mr. Hyde is a type of evolution as well, where the drug worked as the 'mutation inducer'. Only in this case it was a reversed mutation as the primitive creature inside of the civilized doctor materialized similarly to the tenants of J.G. Ballard's High Rise.

The theory of Charles Darwin's grandfather Erasmus Darwin will also be shared here which is similar to this idea of Professor Xavier. His concept of 'evolution 'by changing forms and 'extinction by natural selection might have attracted Shelley (Tanabe 53). Shelly said, "Perhaps a corpse would be reanimated; galvanism had given token of such things; perhaps the component parts of a creature might be manufactured, brought together, and ended with vital warmth" (56). In Victor's words, "I had worked hard for nearly two years, for the sole purpose of infusing life into an inanimate body"(Shelly 58). This statement of Shelly is basically an early description of the modern concept of transhumanism and cyborg.

If this genetic change is modified in such a way that humans are turned into half machine and half humans then they will be called cyborgs or cybernetic organisms. Feminist professor Donna Haraway in her essay "A Cyborg Manifesto" said, "By the late twentieth

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[22]It is a species of the *Hominini* tribe, during the Gelasian and early Calabrian stages of the Pleistocene period, between roughly 2.1 and 1.5 million years ago (Friedemann Ottmar Timothy1611–1631).

century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs" (Haraway 149- 181). This prediction has already started to come true as humans have become less compassionate, more self-centered leading a mechanical, routine life. Though this mental change similar to a robot can be apprehensive, to increase someone's life close to immortality by using machine controlled physical parts can be optimistic news. The human body is very vulnerable to many natural factors compared to an android. Dr. Sienna from Dan Brown's famous mystery thriller novel *Inferno* described this trait of humans to Professor Robert Langdon in this manner, "I can tell you without a doubt that without some kind of drastic change, the end of our species is coming. And it's coming fast. It won't be fire, brimstone, apocalypse, or nuclear war . . . it will be total collapse due to the number of people on the planet. The mathematics is indisputable" (Brown 61). To solve this problem, the genius scientist Bertrand Zobrist, suggests using transhumanism[23] to create "post-humans" who "want to live forever".

Leading a very long life is not actually quite uncommon. Tara MacIsaac, in her article, "Did Ancient People Really Have Lifespans Longer than 200 Years?" brings out plenty of examples regarding biblical, mythical, historical and present day figures. She said, "In the Bible, we see a progressive decline over the generations from Adam's 930-year life, to Noah's 500 years, to Abraham's 175"(MacIsaac 7).

Not only the Biblical figures but also some ancient texts such as *The Sumerian King List* or *The Shahnameh [The Book of Kings]* the Persian epic poem written by Ferdowsi around 10th century AD, mentions kings who ruled for a millennia or hundreds of years. In the journal "Perspectives on Science and Christian Faith" an article called "Making Sense of the Numbers of Genesis," by Carol A. Hill was published where she said, "Numbers [in Genesis] could have both real (numerical) and sacred (numerological or symbolic) meaning"(Carol

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[23] Nick Bostrom in his article says that it is an international cultural and intellectual movement with an eventual goal of fundamentally transforming the human condition by developing and making widely available technologies to greatly enhance human intellectual, physical, and psychological capacities (Bostrom 8).

18). It means that, the authors of those texts probably used a certain pattern to change the actual ages, such as multiplying them by a specified number for a particular reason. However, people living very long lives can still be found in the modern days. MacIsaac, mentions Bir Narayan Chaudhary from Nepal who claims to be one hundred and forty one years old which if true the Guinness World Record on longevity will be broken by almost twenty years. Besides, it has been claimed by a lot of people in the Caucasus region of Russia that they live for more than one hundred and seventy years but without any documentation there is no way to cross check their claims. In that article of MacIsaac, she mentions Dr. Hou who explained this longevity as such, "These exceptionally long-lived people have invariably lived humble lives, doing hard physical work or exercise, often outdoors, from youth well into old age. Their diet is simple, as is their social life involving families" (Houqtd. in MacIsaac7). Therefore, it can be said that it is nature's way of 'transhumanism' which affected the ancient long lived people as well as the minority of the modern day and has gradually changed for the rest of us due to evolution. Nonetheless, by using modern technology, if the transhumanism project can be carried on for the benefit of humans, a lot of severe problems can be solved. For instance, Sarah Knapton in her article, "Cyborg' spinal implant could help the paralyzed walk again" has said, "French scientists have created a thin prosthetic ribbon, embedded with electrodes, which lies along the spinal cord and delivers electrical impulses and drugs"(Knapton 3). Similarly, as with the cyborgs from Hollywood movies, the paralyzed patients can use it to stand up and move comfortably as this prosthetic ribbon can bend accordingly with the tissues around the patient's backbone and it has already worked successfully on paralyzed mice in their research lab. If this rapid invention of technology is carried out smoothly, then it will be possible to create characters such as Stephen Byerley from Asimov's short story "Evidence" or the robot police from José Padilha's film *Robocop*. In both of these cases, those people were revived from their irreparable human bodies after

accidents, by combining their human mind with a mechanical body and those specialties made them the most advanced creatures in the world. Asimov described Byerley as follows, "Somehow he could obtain positronic brains, even a complex one, one which had the greatest capacity of forming judgments in ethical problems — which is the highest robotic function so far developed" (129). These unique features make them invincible.

It is evident from this discussion above that, if evolution is accelerated artificially then the consequences might not be good. Either a human loses his humanity or a human soul gets trapped in a non-human body.

Chapter 3 Humanity

In this last chapter of my paper, I will discuss the additional human attributes which are required to be human. The function of emotional drives, social norms and cultures and a curious mind that make humans the best creature of all will be the main topic of discourse here. Basically, this chapter will look at a wide range of both literary and popular culture treatments about humans and robots.

3.1 Emotional Drives

Emotion is the intrinsic property of living creatures, especially the ones with complex brain and psychology which comes to them biologically. Pity, fear, anxiety, anger, happiness, compassion, sadness are different types of emotions evoked by interior or exterior incidents which are a matter of particular significance to the individual. Elaine Fox in her book Emotion Science: An Integration of Cognitive and Neuroscientific Approaches said that, emotions are a consistent and synchronized set of momentary reactions to some particular event which may involve mechanisms of the following parts of an individual: verbal, physiological, behavioral and neural. Paul Ekman in his essay "An argument for basic emotions" published in the journal Cognition & Emotion says that emotion is a hereditary trait which is a result of evolution and this is why we can relate to the feelings and problems

of our ancestors or people from all over the world, regardless of the time frame. This idea is similar to the notion of "Universality" which he described in his book Poetics while discussing about the nature of tragedy and how a poet creates literary pieces imitating human nature and action which creates universal feelings or emotions. He said, "Tragedy, however, is an imitation not only of a complete action, but also of incidents arousing pity and fear" (Aristotle 14). This is why people of this modern era can sympathize with Hamlet and Oedipus, even after the death of their creators.

People who are devoid of emotions are either considered as mechanical men or monsters; but they should not be mixed up with the people who love to keep their emotions private. Shelly's novel Frankenstein, focuses on the contradictory emotions of Victor and his creature. Victor, seemingly a human is a bigger monster inside; his high ambition, egotism, selfishness and secrecy played catalyst in his transformation of a heartless creator. On the other hand, his behemoth was more human inside as all he searched for his whole life was the company and compassion of humans, driven by his guilty conscience for stealing their meals he even aided his neighbors afterwards by secretly providing them with woods to reduce their labors. Victor himself uses allusion regarding Paradise Lost to narrate his state of being dehumanized, which echoes the similar idea of the monster that is mentioned before, "I was cursed by some devil and carried about with me my eternal hell"(252). Shelly in this way, compared him with Satan who considered himself hell as well after being cast out from heaven by God. Whereas, Victor's true character is portrayed by the monster's grotesque appearance, Victor's sad, tormented features show the inside of the monster. The emotions of hatred, anger and regret are prevalent in both the novels Frankenstein and The Strange Case of Dr. Jekyll and Mr. Hyde.

Scientists have been trying to create emotions inside of robots for a long time. AlokJha in his scientific article, "First robot able to develop and show emotions is unveiled" has mentioned

a robot named Nao, invented by a European research team, which can show the first year of a human's life and can easily bond with people it meets. Jha quoted a computer scientist of the University of Hertfordshire, named Lola Cañamero who led the research of Nao's emotional works, "We are working on non-verbal cues and the emotions are revealed through physical postures, gestures and movements of the body rather than facial or verbal expression" (Jha 1). To make an object understand the idea of emotions and make it express itself accordingly is similar to the impossible task of helping a blind person to identify colors. It is needless to say that though these lab created emotions might create a momentary interest or fun for people, but it will never replace the pleasure of human company that we all tend to seek.

3.2 Social Creature

Jean-Jacques Rousseau in his political writing, The Social Contract said, "Man is born free, and everywhere he is in chains. Those who think themselves the masters of others are indeed greater slaves than they" (Rousseau), which indicates the relationship between society and humans. Humans are social creatures who cannot live without the company of others, hence always form a group or community to live together. It is even much harder for the ones who only prefer to be in the company of some selective people, who are in possession of the same characteristics as themselves. Walton who is a sailor and one of the main narrators of Shelly's Frankenstein laments the lacking of any friend in his ship, in his second letter to his sister. His shipmates are too unsophisticated and uneducated, compared to him with whom he cannot share the dreams and purpose of his life; being a romantic, he wants a worthy company to share his "love for the marvellous, a belief in the marvellous" which motivates him to choose his death-defying adventure, leaving behind his family. Hence he roams around in that ship lonely and isolated. From this aspect. Walton's character resembles Frankenstein's monster as both of them were searching for a mate throughout their journey of

life. People form families so that they can have shoulders to cry on in times of need as well as helping each other out. Therefore, when a member of a society denies to extend their hand to someone who is suffering, it is considered as selfish and egotistic. Victor's reluctance of alarming his family and friends about his revenge-seeking monster stands as a disgraceful contrast against Felix's bravery in aiding Safie's father selflessly to escape from his imprisonment. Also, from the story of Elizabeth who was fostered by Victor's parents it is evident that family has the power of alleviating the sufferings of poverty and orphaning. Victor described her new emergence in their family in this way, "Elizabeth Lavenza became the inmate of my parents 'house— my more than sister—the beautiful and adored companion of all my occupations and my pleasures" (29). A person who does not belong to any community on the contrary, his/ her pain is unbearable which Shelley portrayed through the agony of the monster who said, "Was I then a monster a blot upon the earth, from which all men fled, and whom all men disowned? " (141). Learning of the happiness and duties towards a family, his wounds created by alienation gets even deeper than before. Being the only creature of his kind, strengthened his sense of "otherness" here which made him suffer more. The monster's distorted figure and the unnatural environment of his creation combining with his ability of survival in extreme conditions made him different from others, the significant 'other'. This theme of otherness can also be found in the other character's life as well. Victor as a secret and high-ambitious inventor had to keep himself away from his friends and family, which almost cost him the loss of his sanity; Safie and her father for being Muslim Turks in Paris had to face a threat on their lives from the biased people in power. Hence, it is totally unfair to blame the monster for all the murders he carried out to   avenge the death of his soul-mate, because the loneliness and isolation which made the normal humans suffer so much for a limited time, the monster had to endure that throughout his entire life. Victor at least had his father, his fiancée Elizabeth and his best friend Henry who

would serve as the bridge between the secluded life of Victor and society. He said after going through a devastating state of mind after leading a life of seclusion and the pillages of the monster, "Nothing, at this moment, could have given me greater pleasure than the arrival of my father" (222). This is why, in Asimov's short story "Robbie", when Gloria got too attached with a mechanical being more than her own parents and pet, her mother became very anxious and returned Robbie to the factory. As oppose to this, the monster knew nothing but hatred and ignorance from people around him. Being unable to convince Victor that he needs his master's company as well as the presence of other people in his life as well, he went to an extreme level by killing all the near and dear ones of Victor's life to give him the same pain he felt all through his life; he thought by doing this they will be able to bond again for sharing the same feeling of agony and hatred. For this reason, it can be said that unlike Mr Hyde, this Frankenstein's monster was not a born-monster, rather he was made to be one by his own creator and society, which is also an indication to the dark side of society. Also, Victor himself is responsible for the dehumanization of himself which is why an assumption can be made that instead of worrying about the rebel of the artificial intelligence, humans as the creators should be afraid of themselves because only their action might bring apocalypse to this world and thus the end to humanity.

Another aspect of living together in a society is the formation of rumours and gossip. It happens due to the difference from one person to another and the curious minds of people, and people get easily entertained by such gossips. In Stevenson's Strange Case of Dr. Jekyll and Mr Hyde, the two characters Utterson and Enfield are two exceptions of this culture though. The Victorian society would carry a strong sense of morality where the inhabitants were always concerned about upholding a strong reputation of themselves. Utterson even after being suspicious about Hyde's relationship with Dr. Jekyll wouldn't make it public as

he was following this Victorian moral of not destroying one's reputation. For this reason, in that society anyone could hide their repugnant self or soul beneath the shallow façade of Victorian reputation which included the importance of appearances as well. Hence, it can be assumed that in that society, the social value relied on not taking into account the dreadful truth hidden beneath the façade of a person inspite of being aware of it, so that the individual could preserve his social façade of dignity. As a result of which, criminals such as, Mr. Hyde or Jack the Ripper did not have any problem to emerge and not to get caught. This is why Stevenson painted Hyde as an urban creature through his words who was perfectly at home in the city of London— the place of innumerable hideous crimes.

Just like family, religion is another social institution which humans form to find mental peace. Clifford Geertz in his essay "Religion as a Cultural System" addressed religion as a "cultural system", consisted of beliefs and world views that relate humanity with the idea of existence. The origin of religion cannot be traced back exactly as it has been existing in this world for a really long time, since the birth of human kind. Dante's epic poem The Divine Comedy itself, symbolizes this spiritual quest of human life. He used potent words such as "journey" and "right road" which are metaphorical to human life and religious right path. Similarly, lost in "dark woods" is a metaphor for the contrast between the faithful and faithless. Dante's confidence in God helped him to accept the challenge of finding God, in a sinful world and his journey is the representation of all the faithful, religious persons who do not know about their origin or destiny, they have only one goal in their minds that is to make peace with God after analyzing their respective sins. A similar story can be found in Asimov's short story "Reason". There, the robot QT1 also known as Cutie, by using its higher reasoning ability decides that beyond the station where it and many others robot stay, no other world exists and that is why the humans do not matter either, hence they are disposable. Ignoring human commands this helped Cutie to create a new religion considering

the power source of the ship as "Master" and himself as the prophet. Asimov following the Muslim belief of *Shahada* created a similar testimony for that robot religion which states, "There is no Master but the Master and QT-1 is his prophet" (39). In the earlier chapter Robert Montenegro was mentioned who in his article "Experts Debate the Compatibility of AI and Religion", has discussed about the research works of transhumanist philosopher ZoltanIstvan who interviewed various people regarding the influence of religious preaching by advanced artificial intelligence. In his work published at Gizmodo, Istvan said the first debate that might be raised about this issue is that if artificial intelligence is capable of having a soul which needs to be resolved before they are given the task of preaching and are welcomed into the religious congregation. Another problem is mentioned by his other interview subjects the Christian theologian James McGrath. He says that a computer which is programmed to preach the laws of the Bible can be extremely troubling for having super human reasoning, similarly as with Asimov's Cutie, who had a worldwide connection with all the computers and robots. This might lead us back to the technologically modified version of the medieval era, when the Catholic Church had the sole authority of ruling the world under the oath of the Bible,only in this case it would be more horrible with fundamentalist robots and really inhuman if a programmed machine takes over the power of the pope.

3.3 Curiosity and the Pursuit of Knowledge

For being the Homo sapiens, humans are curious creatures by birth and always possess a thirst for knowledge. This pursuit of knowledge prevails as one of the central themes on Frankenstein. Victor created the path of his own demise   while searching for the secret of life. Robert Walton as well, to know about the hidden truth of the North Pole decided to go for a risky expedition leaving everyone behind and eventually got trapped between the sheets of ice. Walton expressed his wish in his letters to his sister, "I shall satiate my ardent curiosity with the sight of a part of the world never before visited, and may tread a

land never before imprinted by the foot of man"(3). Ultimately, Walton refrains himself from that death-defying task as he learnt his lesson from the tragic tale of Victor that dangerous knowledge brings nothing but suffering in the end. Victor cautioned him saying, "You 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" (22). Just like the Aristotolean tragic hero, both Dr. Jekyll and Victor had the fatal flaw of over curiosity or inclination towards destructive knowledge which led them towards their tragic falls. In this regard, both of them can be considered to Dr. Faustus who, for being too proud of his knowledge in everything, chose the distorted path of black magic by losing his morality and eventually went to hell. Christopher Marlowe described his hubris which led to his demise in this way, "Philosophy is odious and obscure; both law and physic are for petty wits; divinity is basest of the three, unpleasant, harsh, contemptible, and vile.'Tis magic, magic that hath ravished me" (Marlowe 54). Similarly as Faustus, science worked as black magic for Victor. To him science was the only interesting and the most authentic knowledge of all. As he said, "In other studies you go as far as others have gone before you, and there is nothing more to know; but in scientific pursuit there is continual food for discovery and wonder" (50).For Walton the North Pole carried the same meaning , a chance to step in the enticing world of the unknown waiting to be discovered.

In the novel Frankenstein light symbolizes enlightenment through knowledge; the goal of the scientists is to reach the light by invading the darkness of the natural world by using logic and intellect. However, the light might reveal the secret path in the darkness; too much light all of a sudden can blind people as well. The light of knowledge sometimes acts as fire, going too close to it might get the curious person killed like a moth. The monster's first encounter with a burning flame exposes the dual nature of fire. Though he became excited to see that fire can create light by conquering the darkness, his excitement slowly turned into a

shock when he saw that fire can burn too. He exclaimed wonder, "How strange, I thought, that the same cause should produce such opposite effects!"(120). this also indicates to the significance of the full title of Shelly's novel Frankenstein: or, The Modern Prometheus. The Greek God Prometheus first gave the knowledge of using fire to human kind because of which later he was punished harshly. Victor also tried to act like the modern version of that mythical Prometheus by giving civilization the gift of the mystery of life, but he got punished severely for keeping it a secret. Henry represents the vigorous and safe route to pursue the scientific, who would find positive energy in everything which Victor failed to see or produce. Victor described their contrast in this way, "He came. Alas, how great was the contrast between us! He was alive to every new scene, joyful when he saw the beauties of the setting sun, and happier when he beheld it rise and recommence a new day" (187). His interest in natural philosophy and his wish to explore the world was completely different both from Victor's and Walton's ambitions. Shelley used the lines of Wordswoth from the poem "Tintern Abbey" to express the feelings of Henry when he was getting connected like a true Romantic philosopher with nature unlike Victor,

> "The mountain, and the deep and gloomy wood,
>
> Their colours and their forms, were then to me
>
> An appetite; a feeling and a love,
>
> That had no need of a remoter charm," (ll. 78-81)

His death makes Victor think again about the mystery of life as he said, "And where does he now exist? Is this gentle and lovely being lost forever?"(190). Victor's creation the monster, also admits the negative characteristics of knowledge. After realizing his namelessness and the horrible features that make him different from other humans he cries out in agony, "Of what a strange nature is knowledge! It clings to the mind, when it has once seized on it, like a lichen on the rock" (142). This indicates one of the most important aspects of knowledge that

it is irreversible, once it is put into in someone one's mind there is no forgetting it as it becomes permanent. The greatest example of which is the monster himself, who is the product of Victor's dark knowledge of alchemy and natural philosophy and it goes out of Victor's control eventually and once exposed it caused irreparable harm for both of them.

An assessment can be made from these presentation of humans and robots that it requires more than just the appearance and a calculative brain to become human. Some of these attributes can be found inside of robots too but still it does not make them human, because Robbie's love for Gloria and Cutie's belief in oneness of his computer God was just a dynamic form of their inclination to obey orders. Humans do it out of emotions and beliefs, not because they have to follow some rules. Also, the use of any knowledge depends on the user's intentions and only humans with free will can do that. Dan Brown's quote from Inferno resonates the same thought

"Nothing is more creative... nor destructive... than a brilliant mind with a purpose" (175).

Conclusion

One of the main purposes of this paper was to find out the melting spot of science and humanities. After the analysis of all those different texts, it has been seen that robopsychology moves parallel to the psychology of humans. In fact, sometimes it is hard to say which species is devoid of humanity or who is more human.   For example, Jekyll would absurdly justify his misdeeds by blaming everything on Hyde saying, "It was Hyde, after all, and Hyde alone, that was guilty". It is ridiculous because even after being aware of the evilness of Mr. Hyde, Jekyll would conjure him to taste freedom. The moral of Stevenson's story is more significant than the respective sins of those two characters and that is this

hideous dark side is a universal part of human nature. More specifically, we secretly fall for the alluring charms of this darker side of ours and the freedom it provides by preventing the moral leash to play any role in our doings, hence we are all Hydes repressed by our Jekylls and constantly fighting against them to come out.

Inspite of being in the possession of these crucial vices, humans are still the best of all creatures; because no matter what happens they can always hope for a better future. This same thought is echoed in the words of Beatrice from the movie *Divergent* by Neil Burger where after losing her family and struggling to defeat her enemies, in the end of the film she said, "Tomorrow we may have to fight again, but, for now, we'll ride the train to the end of the line. And then we'll jump"
(Burger 02:11:39-02:11:39). Hope is a wonderful gift bestowed upon human kind which acts as the strongest motivational force for every individual. Driven by hope, Sisyphus "the most prudent of all mortals" never stopped his struggle of rolling the stone on the top of the mountain, even though he knew about the consequences. As oppose to this, a person becomes depressed only when he/ she loses hope in everything and does not dare to dream about a better future and thus starts living in a limbo. Dante's description of hell in his epic poem *Inferno,* is basically a reflection of this life

"Through me you enter into the city of woes

Through me you enter into eternal pain,

Through me you enter the population of loss.

. . .

All hope abandon, ye that enter here!" (III. 1-7).

This implies that hell is a foil to heaven as it is the city of Lucifer as oppose to the city of God. It is a place of eternal pain, torment and sufferings, as there will be no escape for its prisoners once entered. Echoing the thought of the Frankenstein's monster which is

mentioned previously, it can be said that humans create their own hells inside of themselves by losing hope and faith in everything. Before ending, I would like to share the story of the wisdom of King Solomon from the *Hebrew Bible*. He was the ruler of Israel, to whom one day two women came for fair judgement over their rights of an infant child. As both of them were claiming to be the mother of the baby, Solomon wanted to divide the baby into halves to give each of them their fair share. Thus, the true feeling of the real mother got revealed as she cried out saying, "Oh, my lord, give her the living child, and in no wise slay it" whereas the impostor said, "It shall be neither mine nor thine; divide it" (Kings 3:16-28). The king gave his judgment by saying that a true affectionate mother would let go off her right over her baby rather than having it killed, hence the first woman was given the baby. The significant part of this story is that, even in that ancient time the king found the true mother of the baby without using any modern scientific method such as DNA testing or anything of that sort just by using his comprehension of humanity and wisdom which cannot be expected from an artificial intelligence all the time. Humans have come to this modern era by struggling with the natural forces whereas the machine-men got everything quite ready since their birth. Anyone who can read can be an intellect, but to be wise someone needs more than some bookish knowledge. Similarly, a programmed AI might draw just like a human being, do hard mathematics and solve equations of science faster than humans or might copy the human gestures to show emotions but it will never be able to perceive the idea of beauty, or create melodious music or heart touching poetry because of their lacking of the 'human essence'. Without that quality their arts will always be lifeless. John Keats, in his poem "Ode on a Grecian Urn" has said, "Beauty is truth, truth beauty,—that is all/Ye know on earth, and all ye need to know"(49-50). In this context, the truth is the naturally produced "human essence", compared to the special capabilities of artificial intelligence. Only when humans can create intelligences with that specialty, then they will be called humans as well

instead of machine –men. As Ralph Waldo Emerson said in his essay Nature, "Love of beauty is taste. The creation of beauty is art" (Emerson 171).Hence, the human species has the ability to survive on their own unlike the automatons, and they will always be dependent on humans to some extent.

The analysis of all these texts in the three chapters gives evidence to the fact that in order to be a real human; a person must be in possession of three qualities: life, a complex mind connected with a complex brain and humanity. Therefore, I want to conclude by arguing that, the literary representations of the ongoing debate sides with the species which has a sense of humanity, regardless of being a human or a robot.Thus, it can be inferred from my reading of these texts that neither The Frankenstein's Monster not Mr. Hyde belonged to the category of artificial intelligence such as the robots of Asimov, rather they were the alter personalities or another being trapped into a non-human body. As oppose to them, Victor Frankenstein and Dr. Jekyll may be two brilliant minded- innovators, but that does not make them real humans as they have a lacking of the most essential quality – humanity.

[25,108 words]

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