



UNIVERSITI PUTRA MALAYSIA

***EVOLUTIONARY TRANSFORMATION INTO TRANSHUMAN AND
POSTHUMAN IN SELECTED 21st CENTURY SCIENCE FICTION
NOVELS***

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By

SAYYED ALI MIRENAYAT

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfillment of the Requirements for the Degree of Doctor of Philosophy**

April 2018

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DEDICATION

*To my dearly beloved WIFE
For her deep love, continued patience and considerable encouragement*

*And to my devoted and patient PARENTS
for their everlasting love, supports, sacrifices and prayers*

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment
of the requirement for the degree of Doctor of Philosophy

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April 2018

Chairman : Ida Baizura Bahar, PhD
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We now live in a world filled to capacity with advancing technologies which have massive impacts on our lives and causes us to become dependent on them day by day. Science Fiction, as a literary genre, has always gone with in tandem with technological advances hand in hand. A movement called transhumanism exists which aims to make humans immortal and transform them into less vulnerable living machines. Two significant concepts in this movement are transhuman and posthuman which are applied as conceptual frameworks in this study to analyse the technological transformation of humans in four selected 21st century Science Fiction novels, namely *Mindscan* (2005) by Robert J. Sawyer (b.1960), *Machine Man* (2011) by Max Barry (b.1973), *Amped* (2012) by Daniel H. Wilson (b.1978), and *The Transhumanist Wager* (2013) by Zoltan Istvan (b.1973). As for the relationship between these two concepts, transhuman is defined in this study as a modified form of human by which new human is still biological, but enhanced and mostly focuses on changing the abilities of current human to eradicate diseases and stop death; meanwhile, posthuman is defined as when a new being is a less or non-biological form which is extremely enhanced and merged with advanced technology, but cannot be considered human anymore. It mainly centers on going far beyond transhuman and step into a nonhuman status in which the biology is obsolete. This study also aims, to examine the futurist authors' depictions of transformation of selected characters into transhuman and posthuman and their influences in society, to explore the views of democratic transhumanism by James Hughes and unwelcome perfection by Sydney Perkowitz in the transhuman era and also the notions of weaponisation by Daniel Dinello, mechanical slave by Despina Kakoudaki and new vulnerability by Mark Coeckelbergh in the posthuman era, and to discover the authors' portrayals of selected characters' transformation into new beings or products. Within the framework, the analyses investigate how and why the meanings of human are changed after merging with technology through new products in which their original identities and humanness are lost. As such, this study examines the potential changes in characters'

minds, bodies, and behaviors after the process of transformation. More specifically, Jethro Knights in *The Transhumanist Wager* becomes an authoritarian transhuman called *Omnipotender*, Owen Gray in *Amped* turns into an alienated transhuman with an unwelcome enhancement called *Zenith*, Charles Neumann in *Machine Man* transforms into an obedient and weaponised cyborg slave with a discarded body called *Cyber Ghost*, and Jake Sullivan and Karen Bessarian in *Mindscan* turns into vulnerable androids with man/machine duality called *Philosophical Zombie*. All in all, the contribution of this study is to highlight the various understandings of the concepts of transhuman and posthuman in order to shed light on selected characters' transformations in the selected Science Fiction novels, and also to show how the selected writers illuminate the concepts and the related notions in the selected fictions. Findings from this study suggest that character transformation can further be analysed in the light of sub-human and non-human transformation in other 21st century Science Fiction novels. Moreover, focusing on the selected texts in the light of singularity, aesthetics, and ethics would strongly introduce new readings for further studies.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**TRANSFORMASI EVOLUTIONARI KE DALAM TRANSMANUSIA DAN
PASCA MANUSIA DALAM NOVEL FIKSYEN SAINS ABAD KE-21
TERPILIH**

Oleh

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Kita kini hidup dalam dunia yang penuh dengan keupayaan dengan kemajuan teknologi yang mempunyai kesan besar terhadap kehidupan kita dan menyebabkan kita bergantung kepada mereka setiap hari. Fiksyen Sains, sebagai genre sastera, sentiasa sejajar dengan kemajuan teknologi. Pergerakan yang disebut transhumanisme wujud bertujuan untuk menjadikan manusia abadi dan mengubahnya menjadi mesin hidup yang agak lemah. Dua konsep yang penting dalam pergerakan ini adalah *transhuman* dan *posthuman* yang digunakan sebagai kerangka konsep dalam kajian ini untuk menganalisis transformasi teknologi manusia dalam empat novel Fiksyen Sains terpilih abad ke 21, iaitu *Mindscan* (2005) oleh Robert J. Sawyer (dilahirkan tahun 1960), *Man Man* (2011) oleh Max Barry (dilahirkan tahun 1973), *Amped* (2012) oleh Daniel H. Wilson (dilahirkan tahun 1978), dan *The Transhumanist Wager* (2013) oleh Zoltan Istvan (dilahirkan tahun 1973). Bagi hubungan antara kedua-dua konsep ini, *transhuman* ditakrifkan dalam kajian ini sebagai bentuk manusia yang diubah suai yang mana manusia baharu masih dalam bentuk biologi, tetapi dipertingkatkan dan kebanyakannya memberikan tumpuan kepada mengubah kebolehan manusia semasa membasmi penyakit dan menghentikan kematian; manakala, *posthuman* ditakrifkan sebagai apabila makhluk baharu yang dalam bentuk kekurangan atau bukan biologikal yang amat perlu dipertingkat dan digabungkan dengan teknologi canggih, tetapi tidak dapat dianggap manusia lagi. Ia terutamanya berpusat di luar *transhuman* dan melangkah ke dalam status bukan manusia di mana biologi adalah usang. Kajian ini juga bertujuan untuk mengkaji penggambaran penulis futurisme transformasi watak-watak terpilih ke dalam *transhuman* dan *posthuman* dan pengaruh mereka dalam masyarakat, untuk melihat pandangan transhumanisme demokratik oleh James Hughes dan kesempurnaan yang tidak diinginkan oleh Sydney Perkowitz dalam era *transhuman* dan juga pengertian senjata oleh Daniel Dinello, hamba mekanikal oleh Despina Kakoudaki dan kerentanan baru oleh Mark Coeckelbergh dalam era *posthuman*, dan untuk mencari gambaran para

penulis tentang transformasi aksara terpilih menjadi makhluk atau produk baru. Di dalam rangka kerja, analisis menyiasat bagaimana dan mengapa makna manusia diubah selepas bergabung dengan teknologi melalui produk baru di mana identiti asli dan kemanusiaan mereka hilang. Oleh itu, kajian ini mengkaji perubahan potensi dalam minda, badan, dan tingkah laku aksara selepas proses transformasi. Lebih khusus lagi, Jethro Knights dalam *The Transhumanist Wager* menjadi transhuman otoritarian yang dipanggil Omnipotender, Owen Grey dalam *Amped* bertukar menjadi *transhuman* terasing dengan peningkatan yang tidak diundang disebut *Zenith*, Charles Neumann dalam *Machine Man* berubah menjadi budak *cyborg* yang taat dan senjata dengan tubuh yang dibuang *Cyber Ghost*, dan Jake Sullivan dan Karen Bessarian dalam *Mindscan* berubah menjadi android yang lemah dengan *duality* manusia/mesin yang disebut *Philosophical Zombie*. Kesimpulannya, sumbangan kajian ini adalah untuk menyerlahkan pelbagai pemahaman konsep *transhuman* dan *posthuman* untuk memberi penerangan tentang transformasi aksara terpilih dalam novel-novel Fiksyen Sains yang terpilih, dan juga untuk menunjukkan bagaimana para penulis yang dipilih menerangi konsep-konsep dan tanggapan yang berkaitan dalam fiksyen yang dipilih. Penemuan dari kajian ini menunjukkan bahawa transformasi watak dapat dianalisis dengan lebih lanjut berdasarkan transformasi sub-manusia dan bukan manusia dalam novel-novel Fiksyen Sains abad ke-21 yang lain. Lebih-lebih lagi, ia memberi tumpuan kepada teks-teks terpilih berdasarkan keistimewaan, estetika, dan etika untuk memperkenalkan bacaan baru untuk pengajian selanjutnya.

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This thesis has been submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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CHAPTER 1

INTRODUCTION

Future humans will be very unlike their present-day incarnation in both physical and mental respects, and will in fact resemble certain persons depicted in science fiction stories.

- Susan Schneider *Science Fiction and Philosophy* 281

In some areas, what was science fiction just 10-20 years ago is now mainstream science. If advances in several key technologies continue to accelerate, the twenty-first century will indeed be a time of great change, amazing developments, and unique challenges for humanity.

- Woodrow Barfield *Cyber-Humans* 3

1.1 Background of the Study

Technology has played an important role in human life and, since the late 20th century, humans have witnessed numerous advances in technology which have changed the boundaries of their lives. Nowadays, we can easily travel everywhere, access the latest information in no time, and communicate with someone across the world via the Internet. The relationship between science and human society is an important question in the 21st century because the impact of technology on our life is unquestionable which can be either useful or destructive, or both. Science and technology have reshaped every aspects of human life exponentially and humans always look for a better world with more comfortable life; hence technological advancements play an important role in this way so far. They create both new environments for us and new pictures of humanity. Advances in technology have been an enormous boon for enhancing the quality of human life. They allow most of human desires to be fulfilled daily. In between, top two human desires are super-longevity and well-being that are wishes as old as humanity against mortality for the reason that humans are undeniably vulnerable to diseases and death simply because our biological body has a deadline to expire. Concerning these wishes, humans have discovered cures for many diseases via scientific achievements that used to be incurable in the not-too-far past and also different scientific ways are now available to promote human health and appearances. In addition, progress in several other scientific fields, such as biotechnology, has made considerable advances in prosthetics or making artificial limbs and body parts for humans. Accordingly, humans are no longer limited to their biological features that they already have had; they are also

able to improve their new given abilities prosthetically, but this begs the question: is going beyond human boundaries possible and whether is it positive or negative?

Strictly speaking, technology even has more significant impacts on human life where the world becomes an unavoidable reality and human everyday life is more dependent on technology. Humans try to adjust the environment to suit their necessities, and they alter their bodies through cosmetic surgeries, brain implants, and mechanical prosthetics. Thus, going beyond human limitation may be accessible through some changes in human form, but these changes pose a controversial question: since humans become more dependent on technology in order to fulfill their desires, what will happen to personhood and humanity? What will happen to their moralities and behaviors? Therefore, technological advances may have both promising and discouraging pictures in the human mind.

Advances in medicine have led to greater human longevity and more comfortable lifestyle, to the extent that the human desire for immortality has increased than ever. Furthermore, there are different medicines to cure or prevent diseases and enhance mind's ability, and prostheses, which are artificial limbs or organs, to fight human physical imperfections. Some of these prostheses are internal and some are external. For example, eyeglasses could be external prostheses which help humans to remove their poor eyesight. In addition, there will be some possibilities to copy physical information to human body, such as capturing photos, videos and text files among others. But the worrying weak point in this feature is that information could be hacked, abused or robbed. Therefore, such kind of robbery crimes could increase and the personal contents of people could be stolen or abused easily. There could even be a kind of digital kidnapping by the hacking of the whole content of a person's consciousness. More dangerously, a person could be murdered by deleting of his/her storage exactly like a computer. Meanwhile, many scientists promise a utopia (a perfect life in a perfect society) and immortal life through advanced technology; in this case, through the field of literature and especially Science Fiction (henceforth referred to as SF), as a literary genre, helps us to imagine possible consequences (Dinello 15).

Literature can play an important role in helping readers come to terms with new social developments. It allows us to explore hypothetical situations; to imaginatively test a variety of scenarios and investigate how they might affect human society at both a micro and macro level. (Flanagan 6)

These hypothetical situations make us ponder on different consequences on the future of the human life. In this regard, many SF predictions have come true, such as *The Mechanic* (1966) by Hal Clement (1922-2003) which predicted the growing of replacement limbs by human genomes. But what happens to humans when technology becomes part of the body? Through great technological advances, SF writers mostly

show two possible consequences: utopian and dystopian. In this case, Elizabeth Hansot (1974) presents perfection and progress as two modes of utopian thought which are reflected in many SF stories. More specifically, SF tries to explore different possibilities and predictions through fiction and depict the influences of cutting-edge technology on the future human societies: “It has also been defined in relation to its exploration of ‘other’ imaginary timelines and societies – from the invigoratingly utopian to the harrowingly dystopian” (Pagan 19).

The two world wars show that the advances in military technology in the 20th century, by the Second Industrial Revolution, and its weapons of mass destruction, lead to terrible world catastrophe. After these global conflicts, different SF writers wrote stories about the dark technological wars in technological worlds, such as *Nineteen Eighty-Four* (1949) by the British writer George Orwell, *Alas, Babylon* (1959) by the American author Pat Frank, and *Slaughterhouse-Five* (1969) by the American writer Kurt Vonnegut among others. Later on, in the 1980s, the Third Industrial Revolution started through technological advances, such as computers and the Internet. Some SF novels, such as *Neuromancer* (1982) by the American writer William Gibson, *Snow Crash* (1992) by the American author Neal Stephenson, and *Permutation City* (1994) by the Australian writer Greg Egan among others reflect this era. Finally, in the 21st century, the 4th Industrial Revolution, as a new discourse, began through the emerging of technologies, such as robotics, artificial intelligence and biotechnology among others. Unfamiliarity with the consequences of merging such technologies with human life and warnings of different futurists and scientists, such as Francis Fukuyama and Stephen Hawking, helped the SF genre to gain strength in this century more than before. In fact, SF can be considered as a genre in which imaginable scenarios for future human life intertwined with technology can be explored. This typically deals with imaginative terms in the areas of science and futurology. Nevertheless, SF is as much about the present time as the future. In addition, some of current advanced technological achievements, such as Google Glass and Robot, began from SF stories.

As science-fictional thinking develops into a dominant mode of social imagination, it articulates many of the goals and desires that inspire social action, toward which new generations of scientists and engineers will aspire. (Csicsery-Ronay 132)

Needless to say, SF is considered as a combination of literature and science; science because it speaks about science and technological advances, and literature because of its characters, fictional events and settings which are created by the authors. So, as a literary genre of scientific ideas and philosophy, it includes different futuristic elements of human, culture and society. It often portrays the fictional scientific advances which are intertwined with future human life. As a literature of anticipation and ideas, it has been one of the most influential literary genres since the 19th century through countless stories which show different reflexes in human life through technology.

Science Fiction has historically always studied the interaction between human and machine/demon and angels/technology and magic, raising ethical questions both of imminent concern and forecasting issues to ponder. As a genre it offers challenging narratives that should be used as pedagogical tools to critically shift what we consider curriculum and learning to be, as well as where it resides. (Thomas 119)

SF is also a literature of changes which shows a significant concern about what it means to be human and what will come after the human. It is exceptional in literature not only because of its content, but its imagination. It illustrates the turning of human life into a paradise or a hell under the shadow of technological advances. Actually, the boundary between the representation of SF stories and non-fiction predictions by scientists is blurring. The history of SF presents two debating questions: what it means to be human, and what comes after the human.

[S]cience fiction is renowned for imagining alternative technologies, bodies and realities. By engaging in the potentialities of science, technology and medicine, science fiction opens up alternative worlds for exploring identities, embodiments, and ontologies that confront conventional boundaries between sameness and difference (Hellstrand ii)

As an interdisciplinary literary genre, SF creates a unique language by which writers visualize human future life and predict its positive and negative consequences. SF writers have this ability to follow the path of human achievement and raise questions about philosophical issues about human transformation. In this case, Nick Bostrom states that “yesterday’s science fiction is turning into today’s science fact – or at least into a somewhat realistic mid-term prospect” (2005a). It means that, whatever SF depicts in one time, it could turn into reality one day. Mostly, SF foreshadows what could eventually become scientific fact. It is a view into the imagination of those who are unsatisfied with the status quo. And these speculations about future possibilities can often drive actual scientists to pursue things dreamed of in SF, sometimes leading them in directions they otherwise may not have pursued without that prodding and inspiration coming from a fictional world, unconstrained by budgets or current real world scientific limitations. SF genre creates a unique language in a period of time by which writers visualize human future life and guess or predict its positive and negative consequences.

Also, SF is considered “a mode of awareness” than an entertainment genre (Jeffery, 2016: p.12). SF writers try to teach, inform, and prepare us to deal with different changes that technology brings in. They take us into imaginary worlds and show both promising and terrifying results of technological applications into future human life. Many notable SF texts have centered on technological advances, from the beginnings of the 20th century onwards, such as *Brave New World* (1932) by the British writer Aldous Huxley (1894-1963), *I, Robot* (1950) by the American writer Isaac Asimov (1920-1992), and

other SF novels. In such novels, there is a gap which makes a bridge between SF and reality:

Recent scientific and technological breakthroughs demonstrate that the gap is being bridged between science fiction and science fact, between literary imagination and mind-boggling technoscientific realities ... Moon and Mars landing, genetic and tissue engineering, cloning, xenotransplantation, artificial birth technologies, animal head transplants, bionics, robotics, and eugenics now exist. (Best and Kellner 103)

Many other SF novels, such as *On the Beach* (1957) by the Australian novelist Nevil Shute (1899-1960), and *Z for Zachariah* (1974) by the American writer Robert C. O'Brien (1918-1973), predict the massive ruinous power of technology in human life and society. One of the most dangerous impacts depicted in such fictions is technological dehumanisation that causes the denial of humanness or traits which make us human. In novels with such theme, writers try to warn that, although technology in the present time leads to a better life for humans, it may end in an apocalypse too. Moreover, humans are exponentially becoming more and more dependent on technology and, consequently, technological dehumanisation may happen in the close future. Realistically speaking, in the not-too-distant future, human bodies will be made of genetic engineering, machines, images, information, and non-biological or mechanical limbs. These results might lead to longevity and immortality for human beings, but they might result in an apocalypse, too: "This is the whole point of technology. It creates an appetite for immortality on the one hand. It threatens universal extinction on the other. Technology is lust removed from nature" (DeLillo *White Noise* 285).

In many other SF stories, such as *Cyborg* (1972) by the American writer Martin Caidin (1927-1997), technology is used as a tool for enhancing human's physical and cognitive abilities and it tries to remove humans' disability and vulnerability in order to make humans immortal and superior. In this way, technology transcends characters' limitations through medicines, genetics, prosthetic chips and limbs, and mind-uploading. In such stories, the process where technology transfers people's primitive Darwinian humanness to the enhanced humans is called the revolutionising of human:

The fact is we remain shackled by our primitive Darwinian brains. Humanity for whatever progress we have made, is the result of an unguided, natural, 3.8 billion-year-long experiment of chemistry ... [humans must] fundamentally revolutionize what it means to be human by way of technological advancements (Bsiops, 2013).

Here, the revolutionising of humans generally refers to the upgrading of human body and mental abilities but, in SF stories, this idea has been depicted both as a liberating and frightening opportunity, carrying both superhumanisation which upgrades characters' abilities rather than normal and unenhanced people and dehumanisation which is depicted through the mechanical characters which are separated from the biology with non-human behaviors (Cabrera 2). Thus, a number of problematic features in human enhancement process are shown through different definitions in SF literature. It is necessarily, common to distinguish enhancement and medical treatment; however, some medical treatments lead to the enhancement of human functions. Such enhancements may be a dream for many of us, and SF shows that technology is the best tool to accomplish such dream. Hence, SF depicts that humans would try to go beyond their natural boundaries to transform themselves into beings different than what they currently are. Such transformations may contain the perfection and progress which can be viewed as modes of utopian thought. This might be a dream to open the door of longevity, superhumanity, and even immortality for them. In the wake of that, many transhuman/posthuman thinkers, such as Donna Haraway (1991), believe in inventing different prosthetic limbs and some similar technological tools in order to be transformed into a better or an enhanced human. In contrast, Charles T. Rubin believes that one of the current topics about current human extinction is the same human enhancement:

[W]e will improve ourselves, becoming something new and better, and in doing so we will destroy what we are now. We have this opportunity because science and technology are giving us the power to control human evolution, turning it from a natural process based on chance to one guided by our own intelligence and will. (Rubin 9)

Haraway's cyborg is "an attempt to represent mutation of identity, to figure a new, hybrid, and science fictional positionality from within a techno-cultural world or space" (Rutsky 19). Cyborg, to her, is "both social reality and an element of science fiction (Rutsky 149-181). According to Rubin, whether such transformation will result in human extinction or enhancement is a significant area which must be deeply studied. Thus, there might be no way back if humans step into the transformation process.

In 1960, Manfred Clynes and Nathan Kline coined the term "cyborg", short for cybernetic organism, to refer to human body that has been transformed and enhanced with machines (Garreau 48), in order to survive in extraterrestrial environments in the future (Haraway, 2004: 204). Twenty five years later, in 1985, Haraway popularised cyborg as a term which means "hybrid of machine and organism" in order to bring about reconciliation between human and technology. She views the cyborg as a real creature in human society as well as a science fictional being. Afterwards, the cyborg became a common term in SF to signify a being that is part human, part machine. Nowadays, our world is full of cyborgs, for example, people who are spectacled or those who wear hearing aid or contact lenses could be considered as a kind of cyborg. So, Haraway believes that the combination of body and technology leads to the creation of a cyborg.

She describes the cyborg as a matter of fiction, and optical illusion as a border between SF and social reality (Haraway 1991, 165).

As I have discussed earlier, many SF stories show that human transformation and enhancement can be possible and accessible through advanced technology. In between, three kinds of transformations in SF will be examined in this study: the first one is using medicine or technological implants to enhance the existing functions that we already have, such as in *The Transhumanist Wager* (2013) by the American writer Zoltan Istvan, and *Amped* (2011) by the American writer Daniel H. Wilson (b. 1978); the second one is organ replacement or extension of natural limbs in which humans would become cyborg, such as in *Machine Man* (2011) by the Australian writer Max Barry (b. 1973); and the third one is the replacing of the whole body with an artificial one along with uploading of mind in it, such as in *Mindscan* (2005) by the Canadian writer Robert J. Sawyer (b. 1960). These processes follow two goals: to achieve human immortality and to gain superiority. As for superiority, transhumanism suggests that humans should transform into transhuman or posthuman if they look for superiority because technology is becoming more advanced day by day and, simultaneously, humans remain stable; this means that, one day, they might become more stupid and weaker than technology. Thus, many scientists and philosophers, such as Bostrom, believe that we must update ourselves with new technologies or in line with the Neo-Luddites, such as Ted Kaczynski, must stop increasing industrialisation and technological processes in order to prevent ourselves from becoming less smart and weaker than technology. This updating may end in the discarding of our biological bodies:

Human enhancement is just the beginning of the process in which humans will take control of evolution and bring about its next and possibly final phase where the human species will be replaced by super-intelligent machines. In the posthuman age, life will no longer be organic, reproduction will no longer be biological, and human beings will cease to exist. (Mercer and Trothen 175)

On the other hand, there is no guarantee that transcending or enhancing oneself would be like what we expect. This could apply to both fiction as well as real life. If they fail, they could end up worse off than before they attempted an enhancement or transformation. This could be viewed as resulting in a person who is less-than, diminished, or sub-human, though it may or may not be a permanent condition. It seems to be quite common for people to view a transformation from human to a machine as a kind of sub-humanisation. However, this view may suffer from a lack of information, vision, and imagination. Such people's concept of a machine is probably too limited because they probably picture something along the lines of the machines they are familiar with such as a laptop, a toaster or, a car among others.

In SF stories, when human characters attach some artificial limbs or brain implantations to their own bodies, their biological deprivations or corporeal limitations are removed which satiates their desires and thoughts. However, when they transcend or upgrade the corporeal capacities by technology, the gap between biology and technology is gradually made more unclear. It “outdates” or becomes an obsolete body (O’Donnell, 2011). Thus, the body obsolescence happens when humans are radically steered by technology to transform into the posthuman where human organic body is an out-of-date form. In this case, Kevin LaGrandeur (2014) explains that there will be a time in the future where humans interweave with super-intelligent technology progressively in which “humans and machines will be effectively merged, since differences in appearance will be meaningless” and finally the human body will be obsolete. This means that humans may be able to substitute the whole body limbs for technological ones. Finally, the human mind will be only a “software that could potentially run on hardware [machine body] made of chips and wires instead of neurons and blood vessels” (Stevens, “Transhumanism”). In this case, the obsolescence of the human organic body has occurred.

Transformation is one of the most controversial terms in SF as it might appear either positive or negative; however, it is mostly depicted as a destructive man-made weapon against humans at least. Accordingly, many SF stories show “the messy, confused, unstable and dynamic ways in which the human and the more-than-human have been, and continue to be, conceived – a fusion of ideas that operates very much in accordance with the hybrid nature of posthuman philosophy itself” (Jaques 21). In the transformation process, we should evolve or transform into a superior human, and this is what a number of SF writers have depicted before, such as in *The Silicon Man* (1991) by the British writer Charles Platt (b. 1945), which depicts a character who transforms into a super-intelligent full-machine. If once human turns into machine, there may be one destructive danger by which he can be used as a slave (Kakoudaki 117), and the reason is that mechanical or artificial human can be abused as a slave. In addition, Daniel Dinello believes that human beings have been turned into weapons, and have become slaves to technology (3). The reason is that the human body will be made of soulless machines which might be hacked, controlled and steered by abusers and hackers. In total, there are both good and bad impacts in the technological transformations of humans.

Several contemporary thinkers and futurists, such as Hans Moravec and Ray Kurzweil, describe technological progression in human life as transbiological progression or postbiological evolution (Moravec 5). The reason is that technological advancement steps beyond our biological boundaries and transform us into immortal and enhanced humans. Transhumanism is a concept based on the notion that, by “making better people”, the world will be “a better place” (Haan 35). It argues, through advanced technology, that we will prepare a situation to enhance human body through medicine, genetics, biotechnology, replacement of body limbs, and finally human beings will be able to turn from the current position into better-than-human status, such as transhuman and posthuman, in order to become happier and healthier with more fulfilling life. However, both transhuman and posthuman are concepts that may threaten human beings

and may lead to human extinction. For example, Bostrom suggests that humans should try to reevaluate certain features of human existence, and later on “the posthuman values can be our current values” (2005b). To become transhuman and posthuman, transhumanism movement plays an important role which aims to transform human into enhanced human, physically and intellectually. There are three main principles in transhumanism: superlongevity that is living forever; super-wellbeing that may be possible through medicines and genetic manipulation to eliminate bad genes of our unborn children in order to prevent diseases in them; and super-intelligence that will be possible when we surpass our limitations through technology (Biops, 2013).

Transhumanists argue not only that modern science and technology are giving human beings the power to take evolution into our own hands to improve the human species, and then to create some new species entirely, but also the ability to improve on all of nature. (Rubin 9)

Transhumanists believe that we need to be redesigned to stop our extinction if we want to prevent human extinction. They believe that “technology will soon enable us to transform our minds and bodies in order to radically increase our intelligence and eliminate aging” (Eilers et al. 231). Vernor Vinge, one of the most prominent transhumanists, predicts that human era will end as soon as superhuman intelligence is created; similarly, Kurzweil believes in an increasingly evolving technology that ends in a new different era in which the accelerating speed of change affects our condition (Cabrera 5). In this new era, “our biological portion will become obsolete which already mentioned, [that is called] the posthuman era” (ibid). The posthuman stage, to some extent, is alienated from biological humans and mostly contains mechanical/prosthetic features in human body or bodiless identity with mind-uploading process.

Desiring escape from bodies they considered to be dead-meat relics of natural evolution, transhumanists hope that downloading our human identities into enhanced posthuman bodies will liberate us from the physical limitations of aging, disease, and death. (Dunn 156)

One scientific area which helps to actualise the scenario of transferring consciousness to a machine is computer technology. The Internet and virtual environment have helped the emergence of such new ideas about human identity in a different universe. Through computer and the Internet, humans may be able to replace lost or damaged data or even to enhance current human abilities and to overcome human weaknesses; but a question here is whether humans are becoming machines or not; however, enhancing human condition should not only lead to merging with machines. From another aspect, we may become a human with better qualities by technologically transforming our minds. It may enable humans to strengthen their current features, or conversely, weaken them

Susan Schneider in *Science Fiction and Philosophy* (2009) postulates that future humans will be so dissimilar to their current physical and mental embodiment and similar to the characters depicted in SF novels. This would be a justifiable reason for considering SF as a human life genre that would link technology with fiction. In fact, for transhumanists, such as Bostrom, we might as well be uploading immortal and virtual lives on computers in the future (Schneider 24). In a similar vein, Woodrow Barfield in *Cyber-Humans* (2015) points out that mind-uploading is the transferring of the mind from one body to another in which “[o]ne body could be biological, one mechanical, or another virtual” (248).

Therefore, transhumanists aim to create a world where humans will be able to transform and transcend through technology. As a matter of fact, they are not happy with the present form of the human body and its weak points. For example, Max More and Natasha Vita-More postulate that technological evolution of humans will eliminate illness and stop the ageing process through the replacing of human limbs with artificial prostheses operating better than the natural ones. In SF, characters that are biologically transformed are considered as transhumans, such as in *Perfect People* (2013) by the British writer Peter James (b. 1948), or when they are enhanced by microchip implants, and when non-biologically transformed by mechanical or artificial limbs or devices, they are called cyborgs, completed by the posthuman stage in which a human is transformed into a humanoid or his consciousness is uploaded into a computer. Sometimes the character is transformed into inhuman, such as in *The Fly* (1957) by the French writer George Langelaan (1908- 1972) that is one of the SF short stories in which the protagonist transforms into a giant housefly against his own free will. Some other science fictional characters transform into bionic humans – also considered as transhuman – that are mainly biological with a few technological means such as implants and replacements; for example, in *iBoy* (2010) by the British writer Kevin Brooks (b.1959) in which the protagonist accidentally transforms into a super-bionic youngster since some fragments of a smashed iPhone are embedded in his skull.

In the primary cyborgisation process that is an upgrading of the biological entity with machine components, a quantity of tiny mechanical or electrical implants is used for medical purposes; for example, to hear or see something better. Scientifically speaking, when we put glasses on to see things better or when we can connect to the Internet by wearing a Google glass, we can be identified as a sort of cyborg. Moreover, such tools are applied for the upgrading of the body’s function in SF characters which make them more intelligent and stronger. The most notable cyborg character in SF, so far, is depicted in *Cyborg* (1972) by the American writer Martin Caidin (1927-1997) and its TV series adaptation “Six Million Dollar Man” (1973) in which the protagonist becomes a superhuman (or cyborg) through the use of several mechanical organs or joints. According to David Kreps, human behaviors would change through the use of such tools (1). Indeed, there are a few real cyborg humans in present time, such as Steve Mann who is the inventor of the wearable computers (WearComp), Jens Naumann with his bionic eyes to help him to see, Stelarc who has surgically attached a ‘Third Ear’ to his left arm and works on enhancing the abilities of human body, and Neil Harbisson, the cyborg

activist who is known for having an antenna implanted in his skull to allow him to perceive visible and invisible colors. (Bostrom 2006)

The most important issues by scientists in the real world which are reflected in the stories in SF literature through the characters are the hope to be free from disability, illness and the ageing process through cutting-edge medicines, implants, body limbs replacement with artificial prostheses, and mind-uploading. This is an evolution starting from the man to transhuman by drugs and turning into a bionic – the transhuman; later on, transforming into a cyborg or transferring of consciousness to an android body – the posthuman. This is what has been depicted in four selected twenty-first century SF novels of this study. In this study, these four selected novels will not be analysed according to their publication year, but to the concepts' arrangements, in which the transhuman novels is analysed prior to the posthuman ones.

The first novel, *The Transhumanist Wager* (2013), is a philosophical SF by Zoltan Istvan (b. 1973) which tells the story of a transhumanist scientist who attempts to gain immortality through technology and medicine and, in this way, he fights against fanatical religious groups who plan to stop him and his group. The second novel is *Amped* (2012), which is a SF story by Daniel H. Wilson (b. 1978) depicting the character who used to suffer from his illness and has been implanted for medical cures, but transforms into a superhuman which leads to his alienation. The third one, *Machine Man* (2011), is a SF by Max Barry (b.1973) about the erasing of humanness through the mechanical replacements of amputated and biologic body limbs in the protagonist and transforming him into a weaponised and enslaved cyborg after his transformation. The last novel, *Mindscan* (2005), is a novel by Robert J. Sawyer (b. 1960) about body obsolescence and the uploading of the main characters' consciousness onto android bodies to diminish their vulnerabilities and cheat death. These selected novels are all categorized as "soft" SF which includes less realistic technological factors and mostly social sciences, such as anthropology, psychology, and sociology among others.

These novels contain characters attempting to control and stop diseases, disabilities, and death and, moreover, to expand human boundaries through the enhancing of their abilities, and to gain superiority and immortality. These texts all have interdisciplinary grounds of literature and technology under the transhumanism philosophy. They depict futuristic settings of not-too-distant worlds where characters try to obtain immortality, and transform through advanced technology into mechanical beings or cyborgs, and turn into postbiological beings or posthumans. Such transformation puts humanity in perilous situations which may result in an apocalyptic downfall for future human beings. The selected novels deliver a message in which although merging with technology might have some benefits for humans that might lead to humanity's end as well. The characters in these stories try to remove their limitations, vulnerabilities and disabilities, but they become marginalised or inadvertently turn into weapons and mechanical slaves.

This study takes into account two concepts, namely transhuman and posthuman as the framework in an examination of selected characters' transformations in the selected texts. Here, I aim to examine depictions of immortality, bionic, cyborgisation, and mind-uploading through my conceptual frameworks in the selected novels. I also aim to embark on an emerging research area due to the selected novels and the framework, to apply the transhuman as the first concept to investigate notions of 'democratic transhumanism' by James Hughes in *The Transhumanist Wager* and 'unwelcome perfection' by Sidney Perkowitz in *Amped*. In addition, I will focus on posthuman as the second concept to explore the notions of Mark Coeckelbergh's 'new vulnerability' in *Mindscan*, Despina Kakoudaki's 'mechanical slave', and Daniel Dinello's 'weaponisation' in *Machine Man*.

I used the phrase 'evolutionary transformation' in the title of my thesis because the process of the characters' transformation in the selected stories is depicted as a gradually changed one and, in other words, the changes happened evolutionary. That is to say – as I examined firstly – the first step of transformation which occurs in the first novel as medical and biological enhancement through transhuman revolution. The second step of transformation illustrated in the second and third novels are examined through bionic implantation and cyborg substitution. Finally, the last step of transformation in the fourth novel is examined through the transferring of consciousness to the completely android bodies.

1.2 Statement of the Problem

In recent decades, there has been an increasing interest in futuristic areas, such as immortality, transformation, and transcendence in both SF literature and the industry of cinema. Cutting-edge technology in the 4th Industrial Revolution as a new discourse of the 21st century has been the main reason and motivator for such interest, and SF, as a literary genre of future life with technological advancement, depicts a variety of achievements in genetics, robotics, brain implant, prosthetic limbs, and artificial intelligence among others. These advances are used as the turning point for transforming humans into different new and super-advanced beings that can be both inferior and superior, subhuman and superhuman, and savior or devil. The 21st century technology enhances humans' expectations about transforming their current abilities. These are the main reasons why SF is gaining popularity than in the 20th century. The selected SF novels depict different kinds of characters' transformations into new beings through technological advances. Since all these four novels have been written in the 21st century, there is a gap of knowledge in this research area where literary scholars are believed to have overlooked their contributions to the research and only some limited literary reviews about them are available which will be discussed in Chapter Two of this thesis.

In contemporary SF, every feature of human life is depicted in sync with the latest technological advances and, as such, based on my research, many previous literary studies have been carried out concerning different features of human life in SF, such as

dystopia, apocalypse, post-apocalypse, and technological utopia which are brought in the following. However, this study focuses on an overlooked area, namely evolutionary transformation of human into transhuman and posthuman together. For example, N. Katherine Hayles (1999) argues that the posthuman is not an end for human beings rather the end of a privileged view of humanity that suggests humans may be conceptualised as autonomous, with agency and choice. She, however, did not address the issue of vulnerabilities in posthuman status. In contrast, Mark Coeckelbergh (2013) believes that, even if man has complete control over himself and can totally design and upgrade himself as transhuman, become cyborg, or upload his mind into machine, he still would remain extremely vulnerable (22). To Coeckelbergh, such human enhancement would not remove human's present vulnerabilities, but transform them in return. In addition, it would lead to new vulnerabilities, as well (ibid). As a result, this is one of the hypotheses in my study; that some vulnerability will exist and some new vulnerability will be created after the transformation process of the characters in the posthuman era.

On the other hand, Hayles (1999) does not view posthuman as the end of humanity and has not addressed the negative features of posthumanity. In Chapter Two of this thesis, I will discuss views from notable academic studies focusing on posthuman postulations by Hayles and Haraway. I will also attempt to discuss briefly the missing parts of posthumanism by other notable critics in the human transformation process in the following section.

In line with Coeckelbergh, Dinello is another scholar who disagrees with Hayles since he views technology as an eradicating factor of both human and pain (Dinello 1) and that technological advances may result in perfection and immortality for the transhumans and posthumans and will also inevitably destroy humanity (ibid). Here, Dinello contrasts the utopian imagination of human with "the dark vision of science fiction and weaponised technology" (19). In this regard, Dinello presents the weaponisation of technology in cyborg bodies whose issue in this research area has been undermined in earlier studies so far. For example, a considerable number of studies have been published on weaponisation but they have focused mostly on the dystopian consequences of artificial intelligences and robots in SF and little has shed light on transhuman and posthuman characters which I will discuss in Chapter Two. Less focus has been given on the enslaving and weaponising aspects of cyborg bodies, rather than their enhancing and curative features. Therefore, this is one of the gaps of knowledge that will be addressed in this study.

From another perspective, transhumanists have opined that advanced technology gives us the power to evolve, to upgrade, and also to create some new beings (Rubin 9). In fact, they believe that, if humans want to prevent human beings extinction, they must reform humanity and its weak points so that humans' harmful weakness might be removed (ibid). In this regard, I aim to investigate the notions of 'unwelcome perfection' by Perkowitz in *Amped* and 'democratic transhumanism' by Hughes in transhuman characters in *The Transhumanist Wager* and also the notions of weaponisation and

mechanical slave in *Machine Man*, and new vulnerability in *Mindscan* that I discovered have been overlooked by previous scholars in this research area.

As discussed before, human enhancement has been always known as a common theme in many SF stories but, in this area, more literary studies which investigate the evolutionary process of human transformation into transhuman and posthuman is needed to explain in detail such phenomena. Such evolutionary transformation is a subject which, to a great extent, has been undermined in previous literary studies; nevertheless, there have been a few studies which have focused mostly on post-apocalyptic and dystopic transformation of humans by corporations and governments in SF which I will discuss in detail in Chapter Two.

In addition, since this study is part of an emerging area of research, there have also been limited 21st century SF novels that have been analysed based on the concepts of transhuman and posthuman albeit separately in previous studies. However, the combination of the transhuman/posthuman evolutionary transformation is yet to be explored in detail. For example, Michael Filas (2001) examines cyborg subjectivity as a kind of tragic dystopia in his selected SF novels. In another study, Nader Elhefnawy (2006) explores the dangers and promises of technology in speculative fictions from the 'Golden Age' to the twentieth century and focuses on illustrating the metaphysical, social and political meanings of technological advances in utopian industrialised societies in literature. In another one, Karl Luther Shaddox (2008) explores the posthuman accommodation in dystopian literature in which dehumanisation is studied in posthumanism where he applies Haraway's cyborg theory to highlight freewill and self-determinism in his study too.

In another example, Philip Gough (2010) examines the posthuman and identity in Scott Westerfeld's *Uglies Tetralogy* (2005-2007). He discovers the presence of posthuman identity and its formation by using the theory of identity formation which transpires when the characters are posthuman. In his study, the manifestations of identity have conventional types in dystopian technological setting. Another recent study is by Shahizah Hamdan (2010) on human subjectivity in contemporary SF using Rene Descartes' mind/body philosophy, Louis Althusser's subject, Donna Haraway's cyborg subjectivity, and Katherine Hayles' posthumanism. Giulio Prisco (2014) explores the pros and cons of religion, atheism, and libertarianism, Greg L. Johnson (2012) examines the combination of superiority and paranoia in the political and social environments, Joseph Maresca (2012) presents Orwellian parallel in working class societies, Ellen Wernecke (2011) explains mechanical borders in body limbs substitution, and Cory Doctorow (2011) describes the absurdist view of body replacement. As the last example, Scott Jeffery (2013) investigates the typography of the posthuman by presenting it as 'rhizome' through three categories of superhumanism, post/humanism, and transhumanism in comic books where his study shows how the superhuman body develops and diverges from these categories due to the territorialising of meaning and function in posthumans. Therefore, there is lack of scholarship on the lens of

evolutionary human transformation into trans/posthuman in SF. This study thus attempts to fill this gap by examining varied transformations of the characters under the framework.

1.3 Justification of Texts Selection

As discussed before, this study is based on a textual analysis of four selected 21st century SF novels namely, *The Transhumanist Wager* (2013) by Zoltan Istvan, *Amped* (2012) by Daniel H. Wilson, *Machine Man* (2011) by Max Barry, and *Mindscan* (2005) by Robert J. Sawyer. Each novel has its own narrative concerning evolutionary transformation of characters. These four novels have been chosen because they revolve around contemporary or near future technology which might lead to character transformation. Quite simply, their themes focus on character transformation into transhuman or posthuman. Thus, the selected novels are suitable for my study due to the issue of the foregrounding of character transformation into transhuman and posthuman through advanced technology. They all reflect the characters' reactions to their transformations in the stories and I have selected novels published in the 21st century – from 2005 onwards – to discuss my research issues with more familiarity and to demonstrate that the views are relevant and contemporary. In all the selected novels, the writers have applied the notions in their examination of the protagonists.

The first selected novel is *The Transhumanist Wager* by Istvan which is about the revolution of transhumanists to gain an eternal life by advanced medicine and technology and the philosophical debates about transhumanism and its defense against bioconservatists and the opponents fighting transhumanists. That is to say, Istvan's illustrations about the conflicts between transhumans and anti-transhumans prove that my hypothesis about democratic transhumanism by Hughes is necessary to be applied in this study. I have selected it because, through this story, I can explore the issue of democratic transhumanism in such a technological progressing society toward a transhuman atmosphere. The second selected novel is *Amped* by Wilson which depicts a not-too-distant future where people are mentally implanted to control their illnesses, but their functions enhance and transform them into superhumans. Afterwards, the story continues with the imposition of some discriminative rules against these transformed people by the United States Supreme Court, where the implanted protagonist turns unwantedly to a super-transhuman, is forced to run and joins a group of transformed characters who intend to change the situation. Hence, I have selected this text because of the view of unwelcome perfection. Such unwanted enhancement illustrated in the story needs to be examined through Perkowitz's notion about unwelcome perfection.

The third selected text is *Machine Man* by Barry which portrays the protagonist Charlie Neumann who loses a leg in an accident and, after using an artificial leg, he decides to enhance his body using technology. He decides to replace his body limbs with mechanical substitutions but, against his will, his cyborg body turns into a deadly weapon. The protagonist is also used as a technological slave without free will. In this

novel, Barry depicts how the alteration of the protagonist to turn into a slave weapon machine-man occurs which in turn justifies my selection of text through applying the notions of mechanical slave by Kakoudaki and weaponisation by Dinello. Therefore, I have chosen this novel is due to the depiction of weaponisation and mechanical slave through the protagonist. The last selected fiction is *Mindscan* by Sawyer which criticises the mind-uploading process in the protagonists Jack Sullivan and Karen Bessarian through the disposing of their doomed bodies and uploading of their own consciousness into mechanical bodies, but the upcoming events are not like what they anticipate. Although Sawyer is a prolific writer with 23 novels, only this novel has been selected as it depicts clearly the issue I aim to examine about new vulnerability in the posthuman beings in this study. I have selected this novel because it shows disability and new vulnerabilities of the protagonists after turning into android posthumans since Sawyer portrays how the protagonists would face with new problems and disabilities after their mind-uploading transformation.

All in all, what all these four SFs have in common are the characters' reactions to their transformations and to the society. All authors implicitly present warning signals to readers regarding technological upgradings of human bodies and turning them into unknown mechanical forms. They have different backgrounds, from a transhumanist writer to a robot specialist SF writer, and they all depict the same anxieties regarding human transformation in their novels. All characters also have different reactions or mental disturbances due to their transformations because of their alienation from their original organic status. The selected SF novels are suitable to address the research objectives of this study and illustrate believable futures where characters show present humans' decision on finding immortality and superiority. The novels are used as a tool to show predictive future outcomes and discover the potential consequences of the human in the pursuit of transformation.

1.4 Conceptual Framework

We want nothing less than the right to determinate our own evolution. We want the right to live forever – to succeed with our revolution against death itself. So long as we have not overthrown the tyranny of death, all mankind belongs to the developing world, all mankind is proletarian.

–FM- 2030, *Optimism One*

As discussed earlier, human beings dream of defeating death and achieving immortality and this fact is one of the main themes used in the selected texts. However, the meanings of human beings and human abilities have been changing unstably due to the revolutionary technological advances over the last few decades. In order to address my research objectives, I have framed my analyses with two overlapping concepts of

transhuman and posthuman that inform my readings of transformation and highlight the related key terms used in the study. Therefore, the framework of this study is based on these two concepts; transhuman which is about enhancing human body, and where applicable mind, through medicine and brain implants; and posthuman which is to go beyond biological boundaries in order to become immortal by replacing machine with body limbs, and making the experience of the human body obsolescence, and transferring human consciousness to an (artificial) body or computer which may not be called human anymore:

This deliberate pursuit of technological evolution would evolve inviting technology into our bodies, resulting in Transhuman beings. The offspring of Transhumanity would eventually result in fully Post-Human beings; that is, humans so fully integrated with technology so as to be no longer recognizable as human. (Jeffery, 2016:p.12)

But how are transhuman and posthuman linked to fiction? The answer is that, for both concepts, “fiction has always been an opportunity to think through speculation and bring it to some kind of conclusion” (Eilers, et al.186). In a nutshell, transhuman is an interim stage on the way to become fully posthuman. A transhuman is beyond human in many ways, yet still partially human and not yet fully non-human, non-biological. Posthuman could also be described as the achievement of non-humanity, or no-longer-human. The posthuman is a totally different entity than human, but only partially different from transhuman. Transhuman is a kind of intermediate stage between human and posthuman and can be considered as a hybrid biological/synthetic human, while a posthuman has fully transcended the historical biological form. It is a new, non-biological entity. According to Nick Bostrom (2003), they are two concepts used to signify the human transformation into a superior-than-human being in order to remove human bodily vulnerability and to prevent the aging process. Therefore, those who have not completed this transformation and are still in the biological status are considered transhuman (Hubble and Mousoutzanis 130). In the following section, I will present an overview on transhumanism as an umbrella term that covers both the concepts of transhuman and posthuman in this study in order to illuminate this movement first, and then I will describe the philosophy of the merging of humans with technology, human transformation into new beings, and finally the relationship between transhuman and posthuman.

1.4.1 What is Transhumanism?

The transhumanism is the intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition...especially by using technology to eliminate aging and greatly enhance human intellectual, physical, and psychological capacities.

– Nick Bostrom 1999

Humans have always tried to enhance their abilities and, in the present time, human beings are on the verge of transformation since technology is allowed to enter every part of human life and body. In this case, the potential nature of transformed humans is discussed in an emerging discipline called 'transhumanism'. Transhumanism or "evolutionary humanism" was first coined by Julian Huxley in 1957 as "man remaining man, but transcending himself, by realising new possibilities of and for his human nature" (Huxley 17). Here, the 'trans' prefix conveys the idea of transformation in transhumanism (Cabrera 57), using advanced technologies to conquer human biological boundaries in order to upgrade and enhance human condition. As discussed before, activists who support transhumanism to achieve its aims are called transhumanist. To Bostrom (1999), a transhuman activist or a transhumanist is a person who is enthusiastically preparing to become posthuman through medicines, implants and technological tools, mechanical limbs, and mind-uploading. Their primary aims are to wipe all diseases out, postpone and stop death, and enhance human capabilities and intelligence.

The transhumanists assess positively the process of gradual transformation of human being into an enhanced creature, physically and mentally superior. ...In order to reach the goal, the transhumanist study, encourage and plan the process to transform the human being into a post-human, in an ethical and humanistic framework. (Jacobsen 158-9)

To add machines to human body is called the bionic process and to replace biological body limbs with mechanical substitutes in order to immortalise humans is called the cyborgisation process – this is in quest of a plan for making posthumans that will be created through enhancing human intelligence and transferring it into a machine (for example, android body) or digitalised system (for instance, computer) to achieve immortality. The philosophy of transhumanism has been depicted in many different SF stories with themes of evolution and perfection in human beings. (McCarthy 72-3)

There are many examples in which writers depict transhumanist goals, such as in *Altered Carbon* (2002) by Richard K. Morgan (b.1965), and *Perfect People* (2011) by Peter James (b.1948). “Transcendence” (2014), “Chappie” (2015), and “Self/less” (2015) are three famous cinematic illustrations about transhumanist goals which can help us to understand transhumanism better and easier. Two most important goals in these examples are immortality and human enhancement. However, the term enhancement is problematic by itself – because I believe that it may cause human apocalypse – but is generally used to refer to any activity by which humans improve their health, abilities, bodies and minds (Cabrera 3). An equivalent term for human enhancement can be transcending any entity in order to achieve eternity, and surpass our body and mental limitations to become something superior (Mann 519).

Over the decades, there have been offering views about transhumanism from various scholars. According to Bostrom (2002), transhumanism is a gradual movement which evaluates the opportunities for human enhancement by technology and views it as a philosophy to transcend the restrictions of human body and mind. In his opinion, transhumanists hope that humans are able to become transhuman and finally posthuman through advanced technology, and that transhumanism heightens the interdisciplinary approach to evaluate the chances for upgrading our condition via advanced technology (Bostrom, 2003(b)). In this way, the transhuman is someone who is actively trying to become posthuman (Kurthen 10). Philosophically speaking, Bostrom (2005a) states that human nature is a “work-in-progress” or an unfinished beginning that could be reshaped in any required ways that we look for. In fact, he does not view current humanity as the termination of evolution journey. Furthermore, Bostrom, like other transhumanists, hope that humans shall finally manage to gain the highest capacities that will be available in the evolutionary status of transhuman and posthuman by advanced technology. Similarly, transhumanism is the enhancement of human abilities intellectually, bodily, and the eradication of illness and sufferings, and also the prolonging of the human life span (Wolfe xiii).

Another major goal of transhumanism is to achieve perfection. According to Martin Kurthen, transhumanists view humans as evolutionary beings which are going to become perfect (pp.11-12). He suggests that the goal of transhumanism is to become transhuman and posthuman which are a sort of ‘hyperhuman’ that lives longer, healthier, more intelligent, stronger, more imaginative and more useful than the current human (12). Thus, the goal is broader than its primary definition in which the terms ‘trans’, ‘post’, and ‘hyper’ are not only used for eradicating illness and gaining immortality, but also to reflect the meanings of becoming more intelligent, stronger, and much better than humans. Robert Pepperell (2003), on the other hand, tries to connect ‘trans’ and ‘post’ as follows:

We are transhuman to the extent that we seek to become posthuman and take action to prepare for a posthuman future. ... [And] posthumans will be persons of unprecedented physical, intellectual,

and psychological ability, self-programming and self-defining, potentially immortal, unlimited individuals. Posthumans have overcome the biological, neurological, and psychological constraints evolved into humans. (Pepperell 170)

Simon Young (2006) is another transhumanist who differentiates between humanism and transhumanism. He believes that transhumanism is taking humans beyond the biological boundary through technology, and humanism is the belief to enhance human in its current biological place (54). The main goal of transhumanism, to Young, is the transcending of human boundaries via advanced technologies through writing new softwares for human brain which can be considered as an alternative to our biology structure in the modern world (82). However, it seems that transhumanists look for perfections in human transformations where Young suggests that they do not believe in human perfectibility, but in immortality and wellbeing (47).

As a result, transhumanists, such as Young and Bostrom (2005), believe that our current nature is upgradable through the use of technology which may increase our lifespan and extend our mental and bodily capacities which can finally result in enhancement. Such enhancement may happen for different aims, such as the upgrading of human looks, abilities, features, and functions. Woodrow Barfield postulates that there are different types of enhancement to the human body, such as plastic surgery and bionic limbs which are currently being used for medical purposes. (3)

To conclude, the main pillar of transhuman and posthuman is to improve human life through the removing of biological boundaries by advanced technologies, such as bionic and cyborg. These two terms are mostly used interchangeably referring to any technological transformed human; an issue which will be discussed in the next section in detail. Thus, this study categorises bionic characters under the transhuman concept and cyborg characters under the posthuman concept. In the following sections, more clarifications will be discussed about these concepts.

1.4.2 The First Step of Transformation: Transhuman

Transhuman is known as an intermediary form of human evolution to posthuman which is the first station for transhumanists. It is a being very similar to the current human but with more abilities, healthier, and longer lifespan. In SF stories, transhumans are depicted as genetically, physically or mentally enhanced individuals and bionics. Many SF writers depict futuristic technologies with different what-if scenarios about human transcendence and transformation. James Hughes, for instance, is of the opinion that these futuristic technologies are tools to give us long life, to make us more intelligent and to transform us into clones among others. They can also attach machines to our bodies (Hughes 77).

Since transhumanists follow human enhancement scenario, it is natural to see many characters in SF stories able to upgrade because of their physical and financial situations. Hence, a big gap is created between unenhanced and enhanced characters that cause discrimination and conflict. This might be a reason to view transhumanism as a window to dystopia and totalitarianism. This issue is one of the most inevitable worries about human enhancement. Concerning this gap of knowledge, Hughes presents 'democratic transhumanism' which includes both traditional values for unenhanced humans and transhuman possibilities in future society. He postulates that, through our transformation into a transhuman or posthuman, we can enhance our lives as well. Hence, he states that we need to democratically adjust transhuman technologies and make them available for everyone in the society. To Hughes, democratic transhumanism can be used as a movement which advocates the use of advanced technology to transcend our bodies and also extend democratic worries in order to protect the values like equality in transhuman society (Mehlman 24). This notion of democratic transhumanism will be explored in my analysis of *The Transhumanist Wager* in Section 4.2.

One of the features of transhumans is to attach implants and small mechanical parts to the body so as to remove disability and illness or enhance human abilities. However, in this transformation process, there might be some problems for the transformed individual. In this regards, Sidney Perkowitz highlights the views of 'unwelcome perfection' that might happen during and after the transformation process for a person. He distinguishes the differences between transformed people and categorises them into bionic and cyborg. In SF, a bionic is someone with special powers because of the attachments of a few mechanical parts to the body. Bionic people share a close similarity with cyborgs since they both have the organic portions and artificial parts. Concerning the differences, cyborgs usually have more mechanistic parts that might dominate the organic part; however, it can be under the mental direction of the organic part but, in a bionic human, that is relatively a small portion, mostly without dominance.

In line with Perkowitz, Barfield believes that the terms 'bionic' and 'cyborg' are mostly used interchangeably referring to any technological transformed human but that they should be distinguished. He defines bionic as "a person that has been enhanced by mechanical or biological means" and cyborg as a being which has "computational processes enhanced or aided by technology" (Barfield 6). In addition, Perkowitz believes that the existence of human desire in bionic or cyborg status is to go beyond the limitations, such as the corporeal and the intellectual abilities. The aim of this desire is to repair and enhance the damaged parts of the body and mind for better performance, excellent health, and superlongevity (6). Due to having technological parts in body, an enhanced person with unwelcome perfection might be discriminated by the unenhanced ones and this is what is studied in my analysis of *Amped* in Section 4.3. As a result, I apply the term 'bionic' under the transhuman category and the term 'cyborg' under the posthuman category.

1.4.3 The Second Step of Transformation: Posthuman

Posthuman, consisting of two terms of 'post' and 'human', is a "being which arises from man by means of [technological] modifications, still to be defined, and then supersedes him" (Kurthen 8). More simply, posthuman literally means a being that might be superior to human, physically and intellectually, in an era where human is not dominant anymore. There are different futuristic goals in posthuman, including superlongevity, upgrading the capacity of the mind, transferring the mind/consciousness to a synthetic body or computer-like system, and human enhancement through full replacement of the biological organs with prostheses. As a concept, posthuman is available in the fields of SF literature and philosophy and, like transhuman, is categorised under the rubric of transhumanism.

To transform into posthuman, Kathryn Allan considers the body as only an obstacle for us in this way and, when our consciousness is detached from it, "greater evolution of thought and development of identity can occur" (133). This is the same idea which is employed by Barry and Sawyer in the posthuman texts analysed in this study, where the characters try to remove this biological obstacle. So, our consciousness, to Allan, should be separated from our body in order to step in transcendence. Allan describes disability as "a physical or mental impairment that is supplanted through the application of technology, transforming the disabled body into a figure of prosthetic awe and medicalised prowess" (8). She states that technology is mostly considered as an answer to defeat the physical or mental limitations of our body but, in order to transcend the body, we have to ignore features such as laboring, feeling, and suffering through being healthy and able-bodied (10). In this case, she states the disability of superhumans in SF as follows:

Disability in science fiction is particularly interested in unpacking the ways in which prosthesis and the posthuman figure in SF representations of disability. ...A prosthetic is the most often a visible marker, filling in something that is "supposed" to be there, a tool that corrects an impairment. (ibid)

Whereas humans are vulnerable to disease, injury, and death, and also both physical and mental vulnerabilities, so from another perspective, Coeckelbergh (2013) brings forward the new vulnerabilities which posthumans might have. He states that our physical vulnerabilities depend on our bodies, but our bodies are not 'given' (120), where humans have always tried to enhance their bodies and remove their weakness with technology. Coeckelbergh states that the "cyborgisation is likely to increase in posthumans, who would extend [or enhance] themselves with [different kinds of technology] to a much higher degree than contemporary humans" (ibid). Since we are not able to stop our whole vulnerabilities by technological enhancement, Coeckelbergh provides a simple example in which humans have already enhanced their bodies and minds by information technology, but that is also exposed to the threat of human beings in which computer

viruses can be mentioned (ibid). In this case, our codes can be hacked, controlled, or changed easily. So, our memories, emotions, mind, and body can be controlled by a hacker. More specifically, cyborgisation is one of the main features of posthuman, and as a “digitalised human being”, it is made of both computer and human. Therefore, when a being is computerised, it no longer belongs to biology (Dyens 85-86). While a biological human body ends in death, the cyborg one, as an image-body, is able to shift different territories and may not be stopped by death.

Cyborgs in some SF stories, such as *Machine Man* are portrayed by horrifying changes and enhancements of human body limbs which are defined as the prosthetic enhancement of the human body. As for such prosthetic enhancement, Dinello believes that the merging of biology and technology may create an enhanced cyborg which may be a weapon, too (12). Dinello also suggests that such weapon-like cyborg characters in SF can show our fears when we become such cyborgs’ targets, while we are waiting for gradual human apocalypse (12). Here, it must be stated that not only the issue of weaponisation of transformed people will be examined in this study, but also abusing them as slaves shall be investigated. In addition, Despina Kakoudaki is a literary critic who has introduced the term ‘mechanical slave’ to describe characters that become automated and cyborged. She discusses the fears of humans about the automated societies and their features, such as the fear of becoming automated, being considered as inhuman, becoming marginalised, and being slaves among others (145). All in all, the cyborg is an interim stage on the way to becoming posthuman which will be applied in studying of posthuman characters. Overall, the notions about the posthuman characters in this study are ‘new vulnerability’, ‘mechanical slave’, and ‘weaponisation’ which will be examined in the novels *Machine Man* and *Mindscan* in Sections 5.2 and 5.3.

1.5 Research Methodology

In this study, I explore the subject of human transformation as points along an evolutionary continuum. I review the concepts of the selected critics, transhuman and posthuman, and their related views. Afterwards, I apply them in the selected texts to address my three objectives in this study.

The methodology of this study relies on a textual analysis to show the evolutionary transformation of characters through the lens of transhumanism. More precisely, the aim of this study is to examine and discuss different consequences of transformation for the characters in the selected texts. To achieve this aim, I return to the idea of transformation and apply the transhuman concept to investigate democratic transhumanism and unwelcome perfection in *The Transhumanist Wager* and *Amped*, and I also apply the concept of posthuman to examine the issues of weaponisation, mechanical slave, and vulnerability in *Machine Man* and *Mindscan*. Accordingly, the selected novels are divided into two sections under the chosen concepts in two chapters: Chapter Four is allocated to the analyses of *The Transhumanist Wager* and *Amped* through the concept of transhuman while Chapter Five is for the analyses of *Machine Man* and *Mindscan*

through the concept of posthuman. A close reading of the selected novels will be employed to illustrate the characters' reactions to their transformations into transhumans and posthumans. In addition, I will explain how the gradual trend in transformation of the characters occurs.

More clearly, I consider transhumanism as an umbrella term in my study which contains the concepts of transhuman and posthuman so as to categorise the four selected texts according to the types of transformation – transformation of transhuman into a dictator in *The Transhumanist Wager*, unwanted transformation in *Amped*, wanted transformation through replacing of body limbs in *Machine Man*, and the relocating of the mind to another body in *Mindscan*. As a result, the analyses of the selected novels inform and shape deep comprehension on the characters' transformations and the consequences of transhumanism in the science fictional context. Since each character reacts differently according to his/her transformations into transhuman or posthuman, I highlight the relationship between the concepts based on the literary analysis. Thus, this study provides new considerable information about an overlooked area of research among existing literary studies.

Briefly, based on an outline for evolutionary transformation into transhuman and posthuman, the first two steps of transformation in this study is to increase longevity and even brain implants such as those depicted in *The Transhumanist Wager* and *Amped*. The next step is using prosthetics and mechanical limbs as depicted in *Machine Man*. The last step is to gain immortality by uploading the mind to a robotic and mechanical body which is depicted in *Mindscan*.

In order to meet my research objectives, I have established a three-stage procedure. Stage one is to undertake a close reading of primary texts to identify the thematic issues and the characters' reactions to correlate them with the perspectives of the framework. Stage two consists of textual analyses insofar as my study is concerned within the conceptual framework. Finally, stage three is to use the extracted results as textual evidence from the two previous stages in order to address my research objectives, comprehensive overview, and a final conclusion for this study.

To conclude, in order to distinguish between the transhuman era and the posthuman era, because they are mostly used synonymously, I provide two definitions based on the scholars' notions which are used in the analytical chapters of this study: the transhuman era is when we are still mostly embodied and biological but with some (genetic and mechanical) enhancements in the body and mind. However, the posthuman era is when we are mostly mechanical or even no longer embodied in a human body form. In another way, the posthuman era is when a human is completely transformed into a machine or an uploaded version by advanced technology and may not be considered human any more. Then, my study links the boundaries between being transhuman and posthuman in the characters of the selected texts. Accordingly, I focus on the conceptual frameworks

of transhuman and posthuman as analytical tools presented in the secondary reference books by the main critics, namely *Citizen Cyborg* (2004) by James Hughes, *Digital People* (2004) by Sidney Perkowitz, *Technophobia* (2005) by Daniel Dinello, *Human Being @ Risk* (2013) by Mark Coeckelbergh, and *Anatomy of a Robot* (2014) by Despina Kakoudaki. I also refer to views of other notable transhuman and posthuman critics, such as Nick Bostrom, Kathryn Allan, Simon Young, and Susan Schneider.

1.6 Research Objectives

The research objectives of this study are as follows:

1. To examine the authors' portrayals of selected characters' transformations into new beings or products in the selected novels.
2. To investigate the influences of the transformations of the selected characters into transhuman and posthuman in society in the selected novels.
3. To discover how transhuman leads to democratic transhumanism and unwelcome perfection as well as how posthuman leads to weaponisation, mechanical slave and new vulnerability through the authors' portrayals of selected characters.

1.7 Research Questions

The research questions of this study are as follows:

1. How do the selected characters transform into new beings or products as portrayed in the selected novels?
2. How do the authors in the novels depict the influences of characters' transformations into transhuman and posthuman in society in the selected novels?
3. How does transhuman lead to democratic transhumanism and unwelcome perfection reflected in the selected characters as well as how does posthuman lead to weaponisation, mechanical slave and new vulnerability as reflected through the selected characters?

1.8 Significance of the Study

I have chosen to work on this genre because my research has shown that it is a literary genre that centers on the main ambiguous questions about the future of humanity, human body, human life, and society. This study is significant since it investigates the debating notions of democratic transhumanism and unwelcome perfection in the transhuman era

and weaponisation, mechanical slave and new vulnerability in the posthuman era together for the first time. These notions are made significant in this study because each one of them could be considered as depicting timely issues since, in the 21st century or the 4th Industrial Revolution, the merging of technology with human life and body may lead to such issues in reality. More importantly, previous scholarship on transhuman and posthuman has yet to examine these research areas critically and exclusively. As a result, there is a gap of knowledge which needs to be addressed and, hopefully, will be filled in this study.

In consequence, this study might have different uses for other future literary scholars in similar SF areas due to its novelty and originality. This is also one of the reasons why such study seems necessary in the readings of 21th century SF. In the end, I believe that, by exploring the issue of human transformation into transhuman and posthuman in the selected works of fiction, this study can help us to understand the possible future destinations of human beings after merging with advanced technology. Moreover, I hope that this study provides opportunities for further studies and warnings for future human routes where we must be careful with the actions of merging of the body with cutting-edge technologies which might completely change our human forms and turn us into something different than what we would at the present time call as a human.

1.9 Limitations of the Study

This study is limited to an analysis of four selected SF novels based on their conceptual categorisation – and not year of publication – namely *The Transhumanist Wager* (2013) by Zoltan Istvan, *Amped* (2012) by Daniel H. Wilson, *Machine Man* (2011) by Max Barry, and *Mindscan* (2005) by Robert J. Sawyer. It aims to critically examine the technological impacts of the transformations of the characters in the selected SF stories. So, this study is limited to an examination of human transformations into transhuman and posthuman. SF, as a literary genre, covers many sub-genres, such as post-apocalypse, dystopia, utopia, eco-fiction, cyberpunk, and post-cyberpunk, among others. Although there are other related concepts and theories in SF, they will not be discussed in this study, such as cyberculture, cyberspace, singularity, dystopic control, totalitarianism, feminism, and ecocriticism. Also, I will briefly discuss these sub-genres in Chapter Two. Moreover, I will present a review on the history of SF and discuss some science fictional works about human transformation. In addition, this study is only limited to analyses pertaining to the alteration of characters' bodies, minds, and behaviors after their transformation processes in the selected fictions. Furthermore, I limit this study to only focusing on exploring two concepts of transhuman and posthuman so as to examine the transformed characters in the selected texts. To do so, I use the notions of Hughes's 'democratic transhumanism', and Perkowitz's 'unwelcome perfection' for the concept of transhuman, and Dinello's 'weaponisation', Kakoudaki's 'mechanical slave', and Coeckelbergh's 'new vulnerability' for the posthuman concept.

In order to have a better understanding of the subject of human transformation, I will investigate it within the broader scope of space that is not restricted to one country. That is why I have selected four novels from four different authors, in order to examine the thematic issues of the loss of identity, marginalisation, mechanisation, and immortality in a broader space due to the situation of characters after their transformation processes and the ways in which the characters transform and react. Since the concepts of transhuman and posthuman are “not synonymous with the history of medical enhancements” (Miah, 2008) so my study does not examine the historical process of medical enhancements of human in literature review. In addition, there are other aspects in the realm of transhumanism, such as politics and human rights, which my study will not focus on.

1.10 Definitions of Key Terms

Human Transformation

It is a term that means a process of human alteration from its current status to a lower/higher than human status. In SF stories, human transformation usually happens un/wantedly through genetic manipulation or disturbances, biotechnology, brain implantation and cyborgisation, among others which may result in human transcendence in some cases. It is already explained in Section 1.1.

Transhumanism

It is a movement which aims to enhance human beings, intellectually and physically. Transhumanists believe that we are able to transform and finally transcend our bodies and even minds into different beings and living entities with more abilities and welfare that we will be able to live longer and can be more intelligent and superior to now, through advanced technologies, such as medicine, genetic engineering, biotechnology, body limbs replacement and mind-uploading among others. This term has already been explained in detail in Section 1.4.1.

Transhuman

Transhuman is one of the concepts under transhumanism umbrella in this study. Literally, it is a new being placed between human and posthuman transformed or transcended through technology in order to be healthier, stronger, more intelligent, and live longer than ordinary human. SF characters usually turn into transhuman from genetic engineering, biotechnology, and medicine. This term has already been explained in detail in Section 1.4.2.

Posthuman

It is another concept under the rubric of transhumanism which literally means a being that is beyond human being. Posthuman is when we have not much biological parts, or when we are fully transformed by technology and cannot be considered human. A posthuman is created by an integration of human body with the huge amount of machines, or even an uploaded human mind on a computer system or an android. A posthuman might be also created by gradual replacements of body limbs due to the transformations into full machines. This term has already been explained in detail in Section 1.4.3.

Bionic Human

Bionic is a technological human form that is considered as a kind of transhuman in this study. Bionic characters are similar to cyborgs but with less mechanical parts and synthetic tools. In fact, the body in bionic humans is mainly organic and biological with a small technological portion. However, they usually use such amount of technology to relieve pain or remove their disabilities or stop illnesses but, sometime, they become better humans or superhumans. It will be explained in detail in Section 3.3.

Cyborg

Cyborg or ‘cybernetic organism’, which is considered as a kind of posthuman in this study, means a being made of human body and machine where the biological parts are adjusted by medicines and regulatory tools. The body in cyborgs is mainly made of mechanical limbs and organs, and cyborgs in SFs are mostly portrayed with physical and mental abilities more than humans, especially when they are used to fight with others as machine soldiers and their evil temptations. This term will be explained in detail in Section 3.3.

Mind-uploading Process

It is a science fictional process for the transferring of human’s consciousness and memories to an android body, computer system, or an artificial neural network. Transhumanist thinkers try to accomplish this process in order to throw diseased bodies away and also extend lifespans. This scenario has already been explained in Section 1.1 and will be discussed further in detail in Section 5.3.

1.11 Thesis Structure

This study is divided into six chapters. The current chapter has provided a literary background into the main concern of this study that is an examination on technological transformations of characters into transhuman and posthuman. It also gives a general

outline about the technological and the conceptual frameworks, research objectives and questions as well as the significance and limitations of the study so as to locate it within the body of existing research.

Before I delve into the concepts, I will situate this project in the broad genre of SF in Chapter Two and present an overview on the history of SF from the 19th century to contemporary SF. Then, I categorise the most important sub-genres, themes and subjects in SF. Later, I deliver a review about the historical trends of human transformation in SF and, finally, I will discuss previous studies and reviews on the selected SF novels.

In Chapter Three, I will return to the conceptual framework that used in the study. In the beginning, I will discuss the history of and divisive debates on transhumanism, and also the concepts of transhuman and posthuman. Next, I will discuss the concept of transhuman through James Hughes's 'democratic transhumanism', and Sidney Perkowitz's 'unwelcome perfection'. Finally, I also apply the concept of posthuman through Daniel Dinello's 'weaponisation', Despina Kakoudaki's 'mechanical slave', and Mark Coeckelbergh's 'new vulnerability'.

Chapter Four is an analysis of the characters and themes in *The Transhumanist Wager* and *Amped* through the framework of transhuman. Chapter Five will then continue with an analysis of the characters and themes in *Machine Man* and *Mindscan* within the framework of posthuman. In Chapter Six, namely the conclusion chapter, I will conclude with the summary of my findings regarding my analyses of the transformations of the selected characters in the selected texts into transhuman and posthuman. After that, I will address to the objectives of my study based on my analyses chapters. I end my study with recommendations for future research.

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