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SCIENCE FICTION AND FUTURE HUMAN: CYBORG, TRANSHUMAN AND POSTHUMAN

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Abstract. Since science and technology are intertwined with literature, a great number of writers have created different depictions under the label of Science Fiction which mostly shows various aspects of future human, life, culture, and society. Science Fiction will be exemplified through a number of notable Science Fiction stories in this paper; afterwards, it will outline various notable critics' notions about future forms of humans including cyborg, transhuman and posthuman, to examine two goals of immortality and superiority in Science Fiction. In sum, this is a literary review paper which presents an overview on Science Fiction and offers a broad discussion on the transformations including cyborg, transhuman and posthuman to distinguish these concepts from each other: transhuman as a transcended human, posthuman as an obsolete human, and cyborg as a machine man.

Key words: science fiction; cyborg; transhuman; posthuman; transformation.

INTRODUCTION

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. 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. Moreover, humans have discovered cures for many diseases that used to be incurable in the past and also different scientific ways are now available to promote human health and appearances. Advances in medicine have led to greater human longevity and more comfortable lifestyle, to the extent that the human desire for immortality has increased. 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 humanness and humanity? What will happen to their moralities and behaviors? Therefore, technological advances may have both promising and discouraging pictures in the human mind. Meanwhile, many scientists promise a utopia (a perfect life in a perfect society) and immortal life through advanced technology; in

this case, Science Fiction helps us to imagine possible consequences [6, P.15]. This literary genre will be explained in the next section broadly.

SCIENCE FICTION GENRE

Science Fiction (henceforth SF), as a literary prophetic genre, tries to explore different predictions through fiction and depict the influences of cutting-edge technology on the future human societies. It typically deals with imaginative terms in the areas of science and futurology. 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 and fictional events 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 [21, P. 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. As an interdisciplinary literary genre, SF creates a unique language by which writers visualise human future life and predict its positive and negative consequences. 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" [3]. It means that, whatever SF depicts in a time, it will turn into the fact one day.

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 [1, P. 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 technology's dehumanisation that causes the denial of humanness or traits which make us human. In such novels, 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, and information and non-biological or mechanical limbs.

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' disabilities, vulnerabilities, and illnesses 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 [2].

Here, the revolutionising of humans generally refers to upgrading human body and mental abilities, but in SF stories, it has been depicted both as a liberating and frightening opportunity, carrying both 'superhumanisation' and 'dehumanisation' [5, P. 5]. Thus, a number of problematic features in human enhancement processes are shown through different definitions in SF literature. Necessarily, it is common to distinguish enhancement and medical treatment; however, some medical treatments lead to 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 have to try to go beyond their natural boundaries to transform themselves into beings different than what they currently are. This might be a dream to open the door of longevity, superhumanity, and even immortality for them. In the wake of that, many 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 human extinction is the same 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. [18, P. 9]

According to Rubin, whether such transformation will result in human extinction or enhancement is a significant area which must be deeply studied. There might be no way back if humans step into the transformation process. In the next section, this paper will discuss the transformation process expansively.

TRANSFORMATION: GOOD OR BAD?

As discussed in the previous section, many SF stories show that human transformation and enhancement can be possible and accessible through advanced technology. There are three kinds of enhancements in SF: the first one is enhancement of the existing functions that we already have, such as in *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 bionics or cyborgs, such as *Machine Man* (2011) by the Australian writer Max Barry (b. 1973); and the third one is replacing of the whole body with an artificial one along with uploading of mind in it, such as *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. Following this, Albert Einstein states, "I fear the day that technology will surpass our human interaction. The world will have a generation of idiots". Thus, many scientists and philosophers, such as Bostrom, believe that we must update ourselves with new technologies or must stop technological process in order to prevent ourselves from becoming less smart than technology.

Transformation is one of the most controversial terms in SF as it might be 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" [11, P. 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 two destructive dangers by which he can be used as a slave [12, P. 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, "humans have been subsumed into weaponised systems and themselves function as the slave-like tools of technology" [6, P. 3]. The reason is that human body will be made of 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.

TRANSHUMAN AND POSTHUMAN

Several contemporary thinkers and futurists, such as Hans Moravec and Ray Kurzweil, describe

technological progression in human life as transbiological progression or postbiological evolution [15, P. 5]. The reason is that technological advancement steps beyond our biological boundaries and transform us into immortal and enhanced humans. Herein, there are scholars and scientists called transhumanists who aim to reach human enhancement and immortality. They believe that by "making better people" we will make "the world a better place" [8, P. 35]. They think that, through advanced technology, we will prepare a situation to enhance human body through medicine, genetics, biotechnology, replacement of body limbs, and even human brain and finally human beings will be able to turn from the current position into transhuman and posthuman in order to become happier and healthier with more fulfilling life. 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" [4]. 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 of 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 [2].

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 [18, P. 9].

Transhumanists believe that we need to be redesigned to stop our extinction if we want to prevent human apocalypse [18, P. 9]. Vernor Vinge, one of the most prominent transhumanists, predicts that human era will end as soon as superhuman intelligence is created or, 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 [5, P. 5]. In this new era, "our biological portion will become obsolete which already mentioned, [that is called] the posthuman era" [5, P. 5]. 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. Susan Schneider (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 [19, P. 24].

Generally speaking, 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 replacing 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) and, when non-biologically transformed by mechanical or artificial limbs or devices, they are called cyborgs. This transformation is 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 unwantedly transforms into a giant housefly. Some other science fictional characters transform into bionic humans 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. Similarly, there are many other examples in SF in which the body is transformed by technology.

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 rift between organic and mechanic is increasingly made more obscure". It "outdate" or obsolete body [17]. 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" [20]. In that case, the obsolescence of the human organic body has happened.

CYBORGISATION

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 [7, P. 48], in order to survive in extraterrestrial environments in the future [10, P. 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 cyborg as a real creature in human society as well as a science fictional being. Afterwards, 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. Haraway believes that the combination of body and technology leads to the creation of a cyborg. She describes cyborg as a matter of fiction, and optical illusion as a border between SF and social reality [9, P. 165].

In total, cyborgisation is an upgrading of the biological entity with microchip implants and 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 upgrading the body's function in SF's 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 some mechanical organs or joints. According to David Kreps, human behaviours 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.

In sum, cyborgisation is a process under the posthuman concept because it finally leads to posthuman due to its non-biological features; nevertheless, due to the process of distinguishing between cyborg and posthuman, LaGrandeur (2014) proposes a simple definition to resolve any ambiguities about them. He describes cyborg as a transforming project through different evolving technologies. This process continues and goes beyond, and finally intertwines with machines to be called cyborg. In that case, humans will be easily transformed through the use of prosthetics to upgrade their bodies and functions. However, as discussed earlier, the concept of the cyborg may include every simple intertwining of biology with machine.

CONCLUSION

One of the aims of SF is to study the interaction between human and technology. Since technology is considered as the best tool to upgrade human abilities and life, a number of SF novels warn against present advancing technology which may lead to an apocalypse instead of the revolutionising of human. Thus, after the merging of human with technology, there is an obscure line between superhumanisation and dehumanisation. Transhumanists believe that it might be a dream to gain longevity, superhumanity, and even immortality for humans. Following after, Haraway, as a proponent, suggests creating prosthetic limbs to be transformed into an enhanced human, but Rubin, as an opponent, addresses human transformation through technology as a point for extinction.

As transhumanists follows, in the transformation process, humans must transform into superior humans than inferior beings, but Kakoudaki postulates that, once humans transform into machine, they can be used as slaves who are inferior to untransformed humans. Similarly but from another angle, Dinello proposes that humans transform into weapons and are used as slavish tools of technology. In contrast, scientists, such as Moravec and Kurzweil, postulate such transformation as postbiological evolution which must be done in order to make better people and better world. Transhumanists suggest that humans need to be redesigned to prevent extinction if

and human face apocalypse. In this case, Kurzweil believes that the human organic body must become obsolete and enter the posthuman stage in order to extend life after leaving behind an out-of-date form called the obsolete body. Finally, Haraway suggests cyborgisation of the human body to preserve our own body with some needed substitutions for useless body limbs that could be considered as a project of transformation.

References

1. Best, Steven; Kellner, Douglas. *The Postmodern Adventure: Science, Technology, and Cultural Studies at the Third Millennium*. The Guilford Press, 2001. Print.

2. Biops: British Institute of Posthuman Studies. "PostHuman: An Introduction to Transhumanism." *YouTube*, 5 Nov. 2013, Web. 5 May 2015.

3. Bostrom, Nick. "A History of Transhumanist Thought". *Journal of Evolution and Technology*. Vol. 14, Issue 1: April, 2005a.

4. Bostrom, Nick "Transhumanist Values". *Review of Contemporary Philosophy*, 2005b, 4:87-101.

5. Cabrera, Laura Y. *Rethinking Human Enhancement: Social Enhancement and Emergent Technologies*. Palgrave MacMillan, 2015. Print

6. Dinello, Daniel. *Technophobia: Science Fiction Visions of Posthuman Technology.* University of Texas Press, 2005.

7. Garreau, Joel. *Radical Evolution: the Promise and Peril of Enhancing Our Minds, Our Bodies – and What It Means To Be Human.* Doubleday, 2006. Print.

8. Haan, Marilou De. *I Am A Cyborg: Identity, Peripheral Reflexibility and Transhumanism*. 2013.

9. Haraway, Donna J. *Simians, Cyborgs and Women: The Reinvention of Nature.* New York: Routledge, 1991.

10. Haraway, Donna J. *The Haraway Reader*. Routledge, 2004.

11. Jaques, Zoe. *Children's Literature and the Posthuman: Animal Environment, Cyborg.* Routledge, 2015.

12. Kakoudaki, Despina. *Anatomy of a Robot: Literature, Cinema, and the Cultural Work of Artificial People*. Rutgers University Press, 2014. Print

13. Kreps, David. *Cyborgs: Cyborgism, Performance and Society.* Lulu.com, 2007. Print

14. LaGrandeur, Kevin. "What is the difference between Posthumanism and Transhumanism". 2014. Retrieved from http://ieet.org/index.php/IEET/more/lagrandeur20140729

15. Moravec, Hans. *Mind Children: the Future of Robot and Human Intelligence.* Harvard University Press, 1999. Print.

16. More, Max; and Natasha Vita-More. *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future.* Willey Blackwell, 2013.

17. O'Donnell, Ryan P. "Posthuman: Exploring the Obsolescence of the Corporeal Body in Contemporary Art." 2011. Web. 9 May 2015.

18. Rubin, Charles T. *Eclipse of Man: Human Extinction and the Meaning of Progress*. New Atlantis Books, 2014. Print

19. Schneider, Susan. "Future Minds: Transhumanism, Cognitive Enhancement and the Nature of Persons". New York: Springer, pp. 844-856, 2009.

20. Stevens, Greg. "Transhumanism and the Search for Digital Immortality." *The Kernel RSS*. 14 Dec. 2014. Web. 19 May 2015.

21. Thomas, P.L., Ed. *Science Fiction and Speculative Fiction – Challenging Genre.* Sense Publisher, 2013.

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