# The World Will Never Be the Same: Scrutinizing "Posthumanism" in Ramez Naam's *Apex*
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## Abstract

This research discusses "Posthumanism" by scrutinizing the relation between technology and literature with drawing up on the works of Francis Fukuyama, Katherine Hayles, Cary Wolfe and Ramez Naam. This research is divided into two fundamental parts. The first part is a theoretical one. It introduces the theoretical background about the term Posthumanism. It starts with showing the history and elaboration of the term Posthumanism according to different critics and writers according to their literary studies. In addition, this part makes the role of Posthuman critics and thinkers clear by clarifying their essential studies that lead to the supremacy of digital literature. The second part sheds light on the impacts of technology, features and its consequences in the future. Moreover, this part provides a full analysis of Ramez Naam's Novel *Apex*. In the light of *Posthumanism*, *Apex* deals with two different— and somewhat antithetical – shapes of Posthumanity to show how futuristic technology is reflected in the novel.

**Key words:** Posthumanism, Technology, Literature, Ramez Naam, Apex.

# Introduction

The human-technology relationship becomes an increasingly essential topic to research as technology continues to develop and pervade human life at an ever-increasing rate. Hence, the great improvements in technology do not only affect the material world in which people live but also the way people think about the world around them and their own identities. As Charlie Gere states in *Digital Culture*, " One of the results of this accelerating rate of growth is that it is increasingly hard, if not possible, for us to fully grasp what is going on and issues—for example, questions of nuclear power and nuclear weaponry, industrial production and its effects on the environment, diminishing energy reserves… More dramatically, they are in the process of transforming not just our world, but our selves, how we understand who we are" (8-9).

The union between humans and technology leads to a great worry about the world in which people live, too. Early literary examples of artificial humanoid and intelligent systems show in broad perspectives the kinds of thematic concerns that cyborgs, androids, and intelligent networks like supercomputers bring up for the present notion of the posthuman, understood as a condition in which the human and the machine are blending to a greater extent.

There is a drastic change in the concept of technology during the twentieth century and the future. Humans no longer control technology but humans become colonized under the domination of it. Technology not only reaches to the items that human use and all aspects of life but it reaches to the humans' identity and their minds. Since the development in the technological field, there is a widespread of using genetic engineering, which leads to the creation of clones and cyborgs. Moreover, it becomes normal to deal with technological concepts such as artificial intelligence, cyborgization Algorithm, data controller and avatars at the present day.

This research aims to illustrate the great development of the Posthuman concept in the modern literary text. It also investigates the historical background of the term according to some essential contributions of thinkers and critics who have controversial attitudes towards Posthuman term. Moreover, this study illustrates the human severe apprehension of facing the technology developments. It, also, sheds light on the impacts of technology,

features and its consequences in the future. Moreover, it provides a full analysis of Ramez Naam's Novel *Apex*.

## Posthumanism: Theoretical Background

Posthumanism is a philosophical attitude of how diversity and adjustments rendered in the world. As the conception and history of both domination and the "human", it is distinctive from those established through humanism. Whereas humanist attitude generally considers the human is sovereign, Self-Governing, Free, independent, aware, exceptional in aspect of change, a Posthumanist perspective power and domination of human is scattered through other forces of which the human take part in but does not entirely dominate. Posthumanist philosophy clarifies the human as (a) biologically changed and rely on the ecology around him; (b) having no peculiarity that is notably human but is instead made up of bigger growing ecological community.

The notion of Posthumanism has long been associated with the humanities discipline in the late twentieth century, along with other "Post" movements. For instance, scholars writing about Posthumanism share many presumptions with thinkers and authors' writing about Post-modernism , Poststructuralism, and Post-colonization ;especially, Posthumanism distributes their criticism about the archival and analytical differences of the category of "human". Posthumanism appeared as a reaction to the centralization of humanity and the allegation of human uniqueness in western thought and academic studies. Tom Idema explains what human will face is the danger of powerlessness:

> By now, these reflections and humanity and technology coalesce into a familiar posthumanist story. Posthumanism, however, can be more broadly described as a discourse that questions the relationship between the human and the nonhuman. Whereas defnitions of posthumanism vary, most of them share a resistance to placing humanity at the center of thought and the universe; a rejection of a strict opposition between human and nonhuman; a refusal to accept the human form as fxed; and a proclivity to speculate about a future in which humans, for better or for worse, have transformed into different beings.(2)

The exploration of the term Posthumanism is an intellectual movement of the late 19 and 20 centuries.  The prefix "Post" of Posthumanism, meaning "after" does not mean a

posthumanist thought of the human appeared after humanism, but it clarifies the idea of posthumanist perspectives of humanity continuing in rigidity with a humanist perspective. The history of humanism and Posthumanism movements are not computational, as noted by Kathrine Hayles' well-known claim in her book *How We Become Posthuman: Virtual Bodies in Cyberbank* (1999) "we have always been posthuman" ( 291).

The concept of Posthumanism comes from the prefix " post ", meaning " After" and the word " humanism ' is derived from the Latin word "Humanitas", which was first used by Cicero, which means education that benefits a civilized man. After that, the definition of the concept of "humanism" has been modified according to the different rational movements. At its essential level, Posthumanism "after or beyond" humanism—is an important issue that looks for drawing up and reformulating the condition of humans in the techno-era.

Mainly, Posthumanism is a generic term used in several theoretical and critical discussions. It is hard to find a specific definition of the term shared by all various approaches that used it, as "Posthuman" shows to provide different groups of phenomena, some in progress and others only predicated or imagined. The examination of the "Posthuman" subject has entailed many thinkers such as Neil Badmington, Rosi Braidotti, Donna Haraway, Katherine Hayles, Cary Wolfe,  Barad, Francesca Ferrando, and Ramez Naam. Therefore, this part explores what the "Posthuman" term is, and affirmatively grasps the term as a way to understand the techno-human subject.

This concept aims at shedding light on how the writers, philosophers and critics handled the Posthumanism idea through their points of view and in what way they are similar and different in their treatment of the Posthumanism concept from other critics. Even arriving at a precise definition sounds to be a hard work and a problematic exercise, although critics and theorists agree that Posthumanism means after humanism, what this shows or comprises really in accurate terms is up for debate.

In *Cyborg Manifesto*, Donna Haraway (1985) confronts the barriers of partition (animal-human, machine/ human, Male/Female) and instead asks for hybridity by using the conception of the Cyborg; this is considered one of the important texts for Posthumanism. While in 1995, Robert Pepperell discusses in his book *The Post-human Condition: Consciousness Beyond the Brain* that Posthumanism is a cycle after humanism distinguished by what he names a deep transformation of and change of our traditional perspective of the human " general convergence of biology and technology " (iv).

Equivalently, in the *Introduction to the Palgrave Handbook of Post-humanism in Film and Television*, Michael Hauskeller 2015, sums up the idea of "Posthuman" as "the surpassing of human concept condition "(1). The humanist idea has long directed our understanding of our nature and place in the world in western thought. Robert Pepperell claims the evolution of Enlighten humanism and its construction of the human condition by conferring the social, political, and economic changes that led to its emanation. Moreover, he shows how the human condition changes over time and has been affected by social construction, and how now, in what he names "the high technological era" (161). The union of human biology and technology is the title of the expeditions of the diversity in our understanding of human nature and human qualities. One of the courses for the lack of unanimity and multiplicity of meaning is the ambiguous interpretation of the prefix "post" when used with the concept "humanism".

Following Pepperell, "our perception of the human condition- delineated him as the notion of what it is to be human- has historically categories as gods, nature, and humanity itself "(Ibid 155). The three categories have been arranged hierarchically to create the human condition throughout history molding our perceptions of who we are as human beings and our place in the world concerning non-humans.

Another outstanding contribution to this field is N. Katherine Hayles's (1999*), How We Became Posthuman.* In this book, Hayles explains the nightmares of the technophile community, it does little to change the idol of technology in society or it unmask its role as a helper to social and ecological troubles. Moreover, Hayle's use of "Informatics" relates computers to the social system. She explains the Posthumanism era as:

> In this account, emergence replaces teleology; reflexive epistemology replaces objectivism; distributed cognition replaces autonomous will; embodiment replaces a body seen as a support system for the mind, and a dynamic partnership between humans and intelligent machines replaces the liberal humanist subject's manifest destiny to dominant and control nature. (288)

For N. Katherine Hayles Posthumanism consists in the linked notions that consciousness is merely an informational pattern, owing nothing importantly to its embeddedness in the human body or broader discursive contexts and that the seamless articulation of humans and

machines or the invention of intelligent machines (information processors not importantly different from humans ) are both equally possible " (63). Hayles means that Posthumanism leads to the end of the human and human is inevitably situated within the emergent processes through which consciousness and the machine and environment are constituted.

In 2000, Pramod Nayar defined "human" and it relates to humanism assure rationality self - lenition, but also makes clear that such construct depends on exclusionary Practices2014:

> The human is traditionally to be a subject Cone who is conscious of his or her/self marked by rational thinking/intelligence, who can plot his/ her course of action depending on her needs desires, wishes, and a result on his ) of his / her actions, produces history. Human has traditionally been treated as male and universal. it is always treated in the ( the human ) and as a set of featly Singular of Conditions rationality, authority autonomy and agency. (5)

Francis Fukuyama, 2002 in his famous book *Our Posthuman Future*, alerts people to the negative side and harmful effects of future advances in biotechnology and genetic engineering, which help human modification. He shows that the control of biotechnology is a crucial political manner. "Countries must regulate the development and use of technology politically, setting up institutions that will discriminate between those technological advances that promote human flourishing, and those that pose a threat to human dignity and well-being"(182).

Moreover, Fukuyama argues that the moral status of human embryos is higher than that of human cells or human tissues because they pass "the potential to become a full human being. He means that "The human's identity as a neutral tool whose effect depends on the interpretation and application especially after economic modernization for the human in the future or response to injustice, identity politics have shaped the dynamics of the world of Politics as revolutions and the civil rights " ( 160 ).

James Katz presents in his book *Machine that Becomes Us*, (2003) the effects of uniting humans with machines. He explains the idea of "Cloud Computing" which is one of advanced-technology concepts which helps to access data "the ability to remotely process information…"(95). He draws the shape of life in which the interference of technology dominate the whole life " the concept of domestication has achieved currency in approaches

to un distending how information and communication technologies ( ICTS ) find a place in people's lives. Derived originally from more general studies of the process of consumption, this framework can provide a useful way of bringing together a range of assumptions about, and perspectives on, our relationships with ICTS " (43).

Similarly, in 2007, Karen Barad points out that Posthumanism is opposed to the idea of traditional humans:

> Posthumanism doesn't presume the separateness of any-'thing,' let alone the alleged spatial, ontological, and epistemological distinction that sets humans apart. The posthumanist subject eschews binaries such as human/nature, and nature/culture. It also resists the concept of an exceptional and essential self" (136).

In her extensive work on Posthuman theory, *What is Posthumanism* (2009), Cary Wolfe indicates that the Posthumanism term has many definitions. Posthumanism, on the other hand, generates different and even irreconcilable definitions— The term Posthumanism itself seems to have worked its way into contemporary critical discourse in the humanities and social sciences during the mid-1990s, though its roots go back, in one genealogy, at least to the 1960s" ( xi-xii ).

In addition, Cary Wolfe defined Posthumanism as "Posthumanities respond to the redefinition of humanity's place in the world by both the technological and the biological or "green" continuum in which the "human" is but one of life form among many? exploring this radical repositioning" (357). Therefore, Cary Wolfe explores bioethics, cognitive science, animal ethics, gender, and disability to develop a theoretical and philosophical approach responsive to our changing understanding of our world and ourselves in the present or the future.

Francesca Fernando philosophically defined Posthumanism in her book *Philosophical Posthumanism* as a new and important idea of present-day academic issues. Posthumanism has considerable interest and reflections around the globe. It has become a basic notion in current academic discussion as she says" 'Posthuman is often evoked in a generic and all-inclusive way to indicate any of these different perspectives, creating methodological and theoretical confusion between experts and non-experts" (1). Francesca also adds that Posthuman" has become a broad term to include:

"Posthuman" has become an umbrella term to include (philosophical, cultural, and critical) posthumanism, transhumanism (in its variants as extropianism, liberal and democratic transhumanism, among other currents), new materialisms (a specific feminist development within the posthumanist frame), and the heterogeneous landscapes of antihumanism, posthumanism, and met humanities. The most confusing areas of signification are the ones shared by Posthumanism and transhumanism. There are different reasons for such confusion. Both movements arose more specifically in the late Eighties and early Nineties. (1)

As David Roden, Posthuman Life 2015, illustrates that "Speculative posthumanism (SP) – the primary concern of this book opposes human-centric thinking about the long-run implications of modern technology" (21). Rosen identifies critical Posthumanism as it is a wide-term-based attack on the supposed anthropocentrism of modern philosophy and rational life. Likewise, Badmington (2003) "critical posthumanism is a response to this displacement of human-nonhuman dualisms within the most advanced academic humanities – a complex re-conception of a human subject presumed autonomous and self-present "with a view to the deconstruction of anthropocentric thought" (24).

Before moving further, it is essential to put into consideration what the term "Humanism ' means. At the standard level, humanism is related to the intellectual movement, started by critics or writers such as Petrarch, Machiavelli, and Thomas More, which competed in the study of the great classical authors. It is defined as a philosophy that rejects ideas of the divine or supernatural and considers human being central. John Addington Symonds, author of the *Renaissance in Italy: The Revival of Learning* was the first one who called learning ( 1897 ), the idea of humanism, and the concept was coined from this time. He and his writings examine and emphasize the role of the logic of humanist perspectives of self-hood that were requested now in history because they coincided with religious skepticism, which distinguished Enlightenment ways of thinking.

The core of humanism was a new and vital awareness of man's dignity as a rational being separate from theological determinations, as well as a belief that classic literature alone revealed human nature in all its unelected and moral freedom. It was partially a reaction to religious authority, and partly an attempt to find a common ground for all that was going on.

Humanistic ideology suggests that the right way to achieve happiness is to give yourself the license to figure out happiness and to achieve your deepest interests and what you want in life.

After knowing what the concept of human means, it is important to distinguish between the concepts "Posthuman" and " Posthumanism" which are occasionally used variably but should be considered independent and different terms, similar to " human " and " humanism. The term "Posthuman" refers to a technologically mediated human subject whose life has been altered by techno-science in some way, whether chemically, surgically, or mechanically. "Posthuman" refers to the state of being a human who is modified by technology. In contrast, Posthumanism is a critical definition that tries to deprive the humanist subject of his / her status. According to Nayar, it accomplishes this by the offering of the human "that poses the idea of human" anew conception they now in the Techno-era alteration, hybridized living forms and fresh discoveries of the human.

One of the philosophical ideas is that Posthumanism is an emerging ideology of the current trend that takes a futuristic approach to improve human life. The notion of Posthuman is widely accepted in all sectors of human endeavors such as arts, science, health, technology, and so on.  Posthumanism deals with the notionss of the exitence of human and the "Post-human" in a chaotic and pre-apocalyptic world. Posthumanism does not advocate for human enhancement through its writings, but it puts its theory into practice. Through the progress and dominance of science and technology at the end of the twentieth century, a Posthuman world was born, but it went unrecognized and unheard in their writings, a few intellectuals addressed the crisis of the rising post-humanist society, although post-humanism was not incorporated as an exclusive element of their work. Francis Fukuyama's key work *Our Post Future Book* (1999), it was one of the first commendable books of Posthumanism theory. It reveals the rise and inevitability of science in human life is the symbiotic relationship between man and technology specifically, in the field of biotechnologies and genetic engineering and the enhancement of human bodies. Post-humanism was formed as a coherent concept during the dawn of the twenty-first century.

The continental philosophical tradition is the main source of the word "Posthuman." since "Posthuman" and Posthumanism are distinct philosophical positions; their definitions vary depending on the context. "The word "Posthuman" and Posthumanism initially originated in postmodern literature in interest surrounding related subjects," claims Ferrando (2011). According to postmodern theory, this indicates that both names have certain historical roots

and hierarchies. The terms "Posthuman" and Posthumanism are similar; they both refer to a hierarchy of non-fixed human identities but have different connotations depending on the tradition. Advanced robotic technology, nanotechnologies, and bioethics are only a few of the subjects covered by Posthuman. "Posthuman" or Post-human is a concept originating in the fields of science fiction, futurology, contemporary art, and philosophy that means a person or entity that exists in a state beyond being human. As a result, post-humanity is defined as being more than a human and is a form of hybridization with other beings. In the Anthropocene age, the concept of the "Posthuman" has gained popularity.

According to Nick Bostrom's (2013) definition, a "Posthuman" is a creature with at least one ability, and its broad capacities include cognition, health, and emotion. Such capabilities had a significant impact on human life and affected the earth's biosphere. The transition from being human to being a "Posthuman" is the result of growing social awareness of rapidly advancing technological advancements, as well as modern political advancements relating to the hazards of terrorism, the bounds of economic globalization, and general safety concerns.

Braidotti (2013) added that Anti-humanism and Antianthropocentrism combined to create the "Posthuman" philosophy. The opponents of anti-humanism reject the idea that man is the center of the universe and its representative, but they criticize the advancement of ecological justice and the primacy of species. As a result, the "Posthuman" shift greatly promotes the introduction of the nonhuman world and holds great potential for the new materialistic paradigm. Important boundary breaches between the abiotic and biotic, culture and nature, as well as matter and discourse, have been caused by this extension.

In accordance with Braidotti, the entity of humans ended as a result of many critiques ended by feminist, poststructuralist, and postcolonial perspectives. Because we are not more human in technique or degree, to begin with, we cannot say that the "Posthuman" is a new universal. "Posthuman" has emerged as a crucial term in today's debates from an ontological, epistemological, scientific, and biotechnological perspective. In their disagreement over post- or trans-disciplinary approaches, "Posthuman" theorists analyzed and explored the many concerns.

There are only a few key initial "Posthuman" theory truths because of several worries. One of the most crucial aspects of "Posthuman" thought was how it questioned humanities and humanism in general. It is difficult to comprehend the complexity of people, our relationship with animals, and technology in the Anthropocene approach since the "Posthuman"

philosophy is a fragmentary argument. Man has imagined achieving animal superiority with the aid of technology ever since the dawn of human advanced civilization. He thinks he can manipulate technology to realize his aspiration to be superior.

According to Pepperell(2003) "Ironically, this sense of superiority and uniqueness is being challenged by the very technologies we are now seeking to create, and it seems the balance of dominance between human and machine is slowly shifting." (3). "posthuman" has also changed rationale of the notion of man. According to a well-known posthumanist theorist, John Weaver (2010), the goal of machine-human fusion is to merely increase or augment human capacities. Therefore, combining humans with machines is intended to improve human qualities like longevity and cognition. The ability of humans to remain active and healthy has risen as a result of posthumanization due to genetic engineering and bio meddling. The influence of abilities increases man's mental capacity.

To add, Ihab Hassan also indicates in his article " Prometheus as performer Towards a Posthumanist Culture"  that " the human form including human desire and all its external representations- may be changing radically, and thus must be re-visioned five hundred years of humanism may be coming to an end as humanism transforms itself into something we must helplessly call posthumanism"( 830-850). From this point of view, Ihab Hassan explains that the death of man is both death of humanism and the rise of the machine. Therefore, man becomes a tool for the machine in the Future.

Finally, Ramaz Naam declares in his book "More Than Human Embracing the promise of Biological Enhancement" that the human race could gain a great interest in embracing the modification of the body by using advanced technology, which is the way that transforms the human mind and power. Moreover, he shows and analyses the moral and behavioral dilemmas affected by twenty-first-century science. He shows that Posthuman people use technology for different purposes. So, the first purpose is to follow their imagination and passions to be different or to fulfill their needs as he states in his book" More than Human "The ultimate limit on what people will do with gene therapy may be science or technology but simply human desire and imagination. If someone wants to make their skin glow For a few weeks, the technology will be there to allow it" (Ibid114).

Thus, the Posthuman movement has also encouraged the technologies attributed to nanotechnology, artificial intelligence, genetic engineering, robotics, neuroscience, and cybernetics which it is considered- to be new ways of changing our understanding of what it

means to be "human. Recently, Posthumanism literature has become an important part of science Fiction and Digital Literature. Furthermore, the writings of "Posthuman" writers have achieved a word-winning status, best- selling and prizes. Concerning the characteristics of Posthuman literature, it is distinguished by enhancement, enactment of a new understanding of the self and others, essence, identity, life, and agency.

Furthermore, the Posthuman theory has flourished, comprising various movements and schools of thought. It has embraced Transhumanism, Antihumanism, Metahumanism, Philosophical and Cultural Posthumanism, and New Materialism. The most confounding areas of connotation are the ones shared by Posthumanism and Transhumanism. There are various explanations behind such disarray. Both movements appeared particularly in the late Eighties and early Nineties, with interests around points.

Basically, Transhumanism is known as a movement that confirms the radical change of human's biological capacity and dignity by using technologies, such technology would change human cognitive ability as well as enrich human robustness and extend human life span. According to Max More, a transhuman philosopher, defined in 1990 "Transhumanism is a class of Philosophies of Life that seek the Continuation and acceleration of the evaluation of intelligent life beyond its currently human form and human limitation by means of science and technology, guided by life-promoting principles and values" (2).

According to Bostrom (2002), Transhuman is generally illustrated as a movement that has grown progressively over the past two decades. It advocates an interrogative approach to evaluate and alter the human condition with advanced technology. The augmentation choices of humans include expansion of life span, eradication of pain, elimination of diseases, and enhancement of human intellectual, physical and emotional abilities; other Transhumanism ideas are constructing intelligence-machines, space colonization along with enhancing the human condition. Then, humanists' notions are not limited to that only, but they include economic, social, and cultural improvements. Transhumanists wish that humans use advanced technology, science, and all advanced means to change their identities from humans to Posthumans. Humans need to have greater capacities than they have now.

James Hughes views that many other ethical principles that happen often reflect a reactionary belief to recent technologies; the transhumanist view is influenced by an important vision to tackle technology policy more effectively. Generally, this vision seeks to expand human ability to live healthier and longer lives, improve memory and other

intellectual abilities, and emotional experiences, raise the subjective feeling of well-being, and generally take more control of human life.

Future technology advancements have the potential to be extremely beneficial, but they also hold the risk of becoming incredibly harmful if not employed properly, with the very real prospect of the extinction of intelligent species at the extreme. These changes are widely known as human augmentation which might be so important that they bring about new life forms with different attributes as to be anticipated as other than humans. On the other hand, a technologically activated version of development is referred to as the Posthuman.

Transhuman is the chain that relates humans with Posthumans. Accordingly, Posthumanism and Transhumanism, both share a mutual perception of the human as an unstable and wavering condition but they do not share the same origins and perspectives. Finally, the dilemma of Transhumanism and Posthumanism is surely enigmatic and far from knowing all facets of both perspectives.

During the technological development and science fiction era, Posthuman novels appeared and shed light on different aspects of human life through using technology. As a result, many writers and critics follow N. Katherine Hayles Franceso Ferrando, and Fukuyama's steps such as Rosi Bradalli (2013) Cathrine Hayles (1999) Ramez Naam (2005) N. Badmington (2000)..

## Naam: The Egyptian-American Novelist and Critic

Ramez Naam (2005) is one of the writers and novelists of Posthuman theory. Ramez Naam was born in Cairo, Egypt.  He moved to the United States at age of 3 years old, he worked at a Microsoft company. Naam is an Adjunct professor at Singularity University, where he gives lectures on energy, climate, and development. In 2012, he wrote his first novel in The Nexus Trilogy, which is named *Nexus*. In 2013, he launched *Crux* and finally *Apex* (2015). Naam received the H. G. wells Award for contributions to Transhuman in 2005. He also won the Prometheus Award and he was named assigned the John W. Campbell Award for Best New Writer in 2014. His last novel Apex received the Philip K. Dick Award in 2015.

Naam comes out with new Posthuman ideas and drastic vision about the future. These ideas are the use of Nano-drugs and Brain hacking. Additionally, he explains how the world will face the misuse of technology. To add, Naam is listed among effective American writers of contemporary Literature. Basically, Naam lists the three innovations and goals of scientists'

studies of Posthumanism or Tencho-human. First, is to heal sick and injured people. Second, is to improve them by gaining the power and third, to alter human capacity.

The critic clarifies that the enhancement of human capacity leads to positive changes in society "improving human memory, attention, communication abilities would lead to new scientific discoveries and faster innovation, economic growth and technologies we cannot anticipate today"( 8).

Moreover, Naam reveals the argument over human alteration is deeply an argument over human freedom. He imposes questions about that debate; will individuals and families have the right to alter their minds and bodies? Or will the state hold that power? By imposing these questions, Naam sheds light on another point which is the idea of political democracy towards the Posthumanism view. He discusses two different models. The first model is the democratic society and the second is a totalitarian society and the role of government to indicate the enhancement and alteration of notions. The former model shows that people determine their choice to alter or not, not the state. In the later model, the government is much more responsible for the limit of freedom of people.

Overall, the argument over enhancement turns into an argument in western democracy. The attitude toward using genes or serums becomes a point of controversy in different countries.

Basically, Neuro-technology as mentioned in *Why Neurotechnologies? About the Purposes, Opportunities, and Limitations of Neurotechnologies in Clinical Applicants* as Thomas Stieglitz defines it "Neurotechnologies describes a field of science and engineering in which the nervous system is interfaced with technical devices". (1).

Moreover, the alteration of the human mind will help positively in the educational process and helps in activate the economy of the society. Additionally, The enhancement of mind will affect human performance in terms of speed and concentration in performing his work and the idea of improving all aspects of life to make human more smarter or happier and perhaps even live longer, and all of these puzzles lead to the future of the nervous system and the human mind alteration in light of its association with emerging technologies, and how artificial intelligence. Technology will be the supernatural that reshapes the human mind and develop artificial brains. Moreover, the mental health of people may be healthier than before and need less time and less effort from teachers and institutions. The productivity of learned

people will increase. In fact, people who have better memories and intelligent minds will gain more wealth and make more productive than others make.

Although the idea of mind alteration is so competitive, it has aggressive consequences as well.  Shortly, countries have different attitudes and reactions towards the use of mind-enhanced drugs; some countries, for example, the United States and Western Europe may ban any type of non-therapeutic mental alteration. On the other hand, China, India, and much of Asia become its homeland of it and this will may lead to wars among countries or it will be some more advanced countries and some others will not.  The writer puts an ethical consideration of mind alteration idea because he clarifies the utopian vision of human enhancement and he shows the dystopian one.

## The Plot of *Apex*

*Apex* is the third volume of *The Nexus Trilogy*. It starts during the presidential election of US President Stockton in 2040. Lies and secrets cause a wave of rage, moving from mind to mind. Riot police attack neurally connected protestors. Armies are ready for taking action. There is a riot against the authority. Posthuman revolution breaks out. Consequently, a good bloodline of Nexus-children is rising into their abilities. Additionally, Sue Yong Shu becomes mad because of the bad treatment of her masters towards her. This authority not only controls her but also controls the world.  By all these riots and political unrest, Shu tries to end the electronic system and the entire world and reforge everything in her vision.

## Posthumanism in *Apex*

Apex is one of the best thrilling novels that examine the role of advanced technology and science.  Naam shows society after the release of an advanced Nano-drug called "Nexus". Naam reflects this futuristic vision to clarify that humans can be different from the Posthumans. According to  Katherine Hayles, Posthumanism is explained, in her book *How We become Posthuman…* as "My reference Paint for the human is the tradition of liberal humanism; the Posthuman appears when computation rather than possessive individualism is taken as the ground of being, a move that allows the Posthuman to Seamlessly articulated with intelligent machines" (33-34).

Thus, Posthuman beings are different "humans in their qualities and degrees.  Therefore, the role of a literary text is to represent the narrative construction of Posthuman and the human.  Moreover, Naam portrays how the world will change after using progressive

technology in the future.   He highlights different reactions of humans towards using technology.  He depicts three aims of users of technology as follows: (1) People who embrace the technology and use it safely and positively. (2) People who use it for personal benefits and revenge.  (3) People use it to make political anarchy and riot.

The presence of Kaden Lane, a specialist in neuroscience, in the novel, highlights the role of technology and scientific advancement.  Basically, it is reflected in the novel through the portrayal of Nano-drug Nexus, this serum is an experiment made by Kaden Lane to enhance the human mind and link human brains together.  Kaden Lane is a scientist who works on an experimental, Nano drug, Nexus, which allows the brain to be programmed, connecting human minds. When Kade works on Nexus, he made many versions as Nexus 1, Nexus 2, and Nexus 5. Nexus is a metallic liquid "with a hundred of millions of nano-structures" (12). That is linked with the brain creating nodes for intra-neural, brain-machine, and brain-to-brain connections such technologies present the notion of Posthuman or cyborg.

According to Donna Haraway, *Cyborg Manifesto* says that the cyborg is a "cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of Fiction" (119). The cyborg appears in the novel through the existence of Su Yong Shu's character. She is a brilliant Chinese neuroscientist who is implicated in the murder of brain control coercion. She suffered from a catastrophic action that left her on the average of death. This action which is her memory is computerized, downloaded, and transferred into a living clone of herself.   "Two months now. Two months since they'd loaded the data cube with Su-Yong Shu's neural map into the quantum cluster. And still the woman refused to speak to them" (365).

Nevertheless, people's reactions toward technology and science differ. They are divided into two elites, the first elite is the supporters of using nexus serum. These elite are divided into two types: people use it for the enhancement of human beings and other uses it for personal benefits. The second elite are the opponents of the general use of Nexus. It is representd in Nexus children's families who is divided into two classes ...the upper class, refuse their kids to link their minds with the lower class children,s minds.And the lower class ,refuse to trust this kind of technology.

The first elite is the supporters of using Nexus serum for the enhancement of human beings and other enhancements that are portrayed in the enhancement of education, economy, and political security. India is the best example of these enhancements, it has a target to boost

itself in many fields and wants to get rid of poverty and ignorance by using the Nexus serum, its government makes a deal with the builder of Nexus Kaden Lane to help them with Nexus for giving him the right to asylum.

Improving education is one of the significant goals of India by using Nexus 5 which has a vital effect that India get benefits from it in different ways in education " Nexus 5 plus some modifications our programmers have made— we're experimenting with different ways to use it in education"(180). India wants to give the serum to its children, as they are the main target that the largest benefits come from. Nexus makes them learn faster and increases their brainpower, which accomplishes human improvements "We want to uplift our people. We want to use this technology for the greatest push in human development the world has ever seen"(84).

As a result of using Nexus, a new bloodline appears with different abilities and mental powers which make them act better. For example, the autistic children such as Jamie who suffers from an autism problem, Earl Miller's son who takes the Nexus and his life completely changes as he can talk, listen, look in the eyes and hug as Miller says to Kade "That stuff you made.The Nexus. It changed him. He and his daddy took it. He got so much better… Lookin' you in the eye, listenin', talkin', huggin"(53).

In addition to education, India has plenty of other goals down the road, it wants to use the Nexus for boosting productivity in engineering and science to help mental health but the prime minister wants the government to focus on making the Indian students and adults able to learn faster. They have coded tools for analyzing communication learning and retention; they are building adaptive systems that use Nexus to diagnose students' mental problems.  In addition, they have libraries of mental lessons curated first-hand memories that kids can absorb and the coders themselves seek a better environment.

As for the economy, although India has the third largest economy on the planet, almost a tenth of its population still live in real poverty, the serum, which boosts and enhances the children makes them better and can get rid  of their poverty faster and create more wealth for the nation:

> But we are also poor—we have the third largest economy on the planet. We have more than our fair share of billionaires. But despite our efforts almost a tenth of our population still in poverty. Only half of our children

complete their primary education - eight years of schooling. And million receive only one or two at best. (84)

As for security, it aims to hunt down security bugs that spy on or control unwitting persons via entering the Nexus code; they have ambitious plans to build provably secure sandbox layers and models to prevent users from giving away too much control. One of the security goals is safety. They want to know the impact of Nexus on a brain over multiple years of life even decades; they have done a lifetime of testing on fruit flies. In the case of mammals, the mice live for two to three years. Moreover, Madame Secretary of India calls for safety and human right and says:

> India introduces a motion to the United Nations General Assembly that recognizes all thinking, feeling beings of human origin or human descent as persons, and explicitly grants everyone the full protection of all international laws and human rights accords, and classifies laws and crimes which unfairly target individuals based on their genetic, neurobiological, or other differences, as the discrimination and hate crimes that they are. (196)

In spite of her important speech, there is no chance it would pass easily without making the U.S. and China angry. Many nations would be afraid of pissing off the U.S. and China and even if it passes the assembly, the U.S. would use the right of Veto.

On the other hand, some characters portray using Nano drug Nexus for their benefit and revenge such as Su Yong, Bo Jintao, Breece, and Chen Pang. First, Sue Yong's character seeks revenge and personal benefits that are represented in her desire to be free and wage a war over humanity, In other words, a world war between humans and Posthumans. In addition, her heavy desire to take revenge on people who hurt her highlights the idea of enslaving people for getting what she, wants from them. She enslaved her husband, first through a program of her creation inside his head. Second is the solider Xu Liang. She begins to search, for the security details around the quantum cluster in his mind.

Furthermore, she plans to control and enslave people at the party, including scientists and Physicists by using her husband Chen and Xu to inject them with Nexus but it is never enough for her:

The Avatar took stock of what she had and trawled their memories for useful tidbits. Then she started the process of rewiring circuits in their minds, neutrally reconditioning them, making them hers. Scientists and technicians were complex, delicate minds. These would require sophisticated rational-emotional resculpting to switch their loyalties while leaving their full range of intellectual faculties – the faculties she needed them for – available for use. And then there would be tasks to assign. There were supplies to gather. She was critically low on nanites now. She needed access to a chemreactor, needed feedstocks, and needed more injectors for the next phases. There was the infiltration to prepare for: alarms to undermine, systems to weaken, network ports to open, bits of hardware to subtly sabotage. And there were other humans to "recruit" to the team, of course. The Avatar smiled. What a splendid dinner party, she thought. The best I've thrown in years. I think I'll host another. (230)

In addition to improving her sanity by searching in memories to discover where she was, and when she enslaved the marine soldier Yingjie who was a mortal threat to her. Moreover, she dissolves her husband's memory. Besides colonel Wang's enslaving, she controls the air base to free a few of her children to liberate the Confucian Fist. Sue Yong reaches out to the Computer Science building with her stuff to take the diamondoid Cube to complete her plan to control the world after she turns it into Posthuman, but the Cube turned out to be fake so she sucked hungrily every possible detail of information from Liu Hua's mind.

As for Bo Jintao's character, Naam portrays his use of Nexus serum for his benefit, as a flashback in *Crux*, he asked Chen Pang to make a backup and to shut Sue Yong down because Chen failed to budge the abomination he would build. So, with no cyber-attack, they accused Sue Yong before, there is no reason to keep Sue running in order not to lose his position because of maintaining his position as a Candidate for Premier, he threatens Zu Li when she mentions the word "Cope" to shut her up forever her apology was not enough for him. He reminds her of her behavior in front of the reporters "you've a very clever way with your words"(147).

Breece seeks for creating chaos by using such technology alongside his desire for revenge, which is portrayed in his attack on Muslims and trying to kill them by using Nexus serum by implanting it in their brains. Furthermore, he uses Nexus to set off a bomb in Chicago and try

to assassinate President Stockton in Washington DC.  In addition, he gets rid of Barnes after; he took control of his brain.  Breece's meeting with Kate and The Nigerian to discuss the test, which involves a Posthuman revolution by, manipulating the Nexus Serum in protests and loyalists' minds in case the court rules for Stockton. The role of the application of this test is to turn every human in this place into an animal with disordered anger emotions. They already lost control over their minds and their bodies. On the contrary, Kate, Breece's friend sees the experiment as a total failure. She thought to cancel it.  In contrast, Breece sees it as an opportunity.

Kate: "that was a test?  it turned them into animals!"

Breece: "I can't, Kate. The opportunity is too big."(190)

Transmitting this Nexus wave by Breece creates chaos which makes the disgrace of the ERD and Stockton and brings up a Transhuman revolution. As a result, his plan yo control the capitol police officer's brain becomes successful, as Breece and his team which include Kate and the Nigerian moved while the capitol slept in the small hours of the night and they hacked everything could be hacked, then wore the chameleonware suits, then moved towards the garage ramp of the Rayburn House Office Building and Breece knew that his hacker friends tool control of cameras so nobody will see them, after that Breece looked over and saw the Nigerian outlined in a man-shaped grid of green lines then gave him the signal yo move forward, silently, lethally. Later on, Nexus is running into police officers' veins and they back with new instructions led by Breece

As for Chen Pang's character, his benefits portray in his desire to abstract the "equivalence theorem" from Su Yong's brain but she preferred to die rather than give it to him. He treats his daughter, Ling, as if she is not a human being, underestimating her and her abilities. Moreover, Chen was afraid of death since his assassination attempt. Chen's meeting with Bo Jintao and Sun Liu assures their suspicion of Sue Yong that she is responsible for the destruction of the city and that she created this attack. All Chen pang cares about is the equivalence theorem. Sun Liu, the Minister, decides to do an immediate wipe of Su's uploaded from the quantum cluster, which is the end of Chen's dreams. He prefers to let her suffer instead of shutting her down. He chooses to torture her because she breaks all his dreams. When Sun Liu suggests that they force her to confess, to tell them everything, Chen chose to do that.

The posthuman scene in *Apex* becomes clear when the narrator explains the controversy that appears in 2040 between the supporters and the opponents of using nano-drug Nexus along with the incompatibility between humans and posthumans. This panorama leads to civil disturbance and world revolution. The narrator argues:

> The war was coming. The war between humans and post-human. The US government had invented the Post-human Liberation Front, and then the PLF had slipped its leash and bitten its creators' hands. They'd turned a bit of staged assassination theater against Stockton into something very close to the real thing, had killed cabinet members, had set off bombs in ERD offices, and had assassinated a wildly popular televangelist and a US Senator who also happened to be the frontrunner for Governor of Texas. They'd killed hundreds of innocents in that church in Houston just hours ago, with the cameras rolling. (62)

Protests appear everywhere in the world, countries against countries and protesters against their political authorities. Naam highlights the first of these protestors are Anne Holtzman and Claire Becker. These women show that Stockton is dangerous to the nation as they say "the strongest terms that John Stockton ordered the deaths of their husbands, that he was behind the assassination attempt on himself in DC, that it was all a sham, that he killed seventy men and women just to take the lead in the race" (371).

In china Zi Li, the famous star, speaks to her fans because she could feel their notions and feelings and she says, "Today, we are China. China is not a place!" she said. "China is not a government! China is the people! If China oppresses its people, then china oppresses itself"(444).

The existence of the Shu fragment, Su Yong Shu, in the novel highlights Naam's reflection on posthumanism. The Shu fragment, controlling her daughter Ling and her husband Chen, reaches to Shanghai quantum cluster. Feng, Kade, and Samantha try to fight Su but finally, Su wins. She uploads herself onto the quantum cluster and consulates herself to carry over the invasion and incursion on humans as the narrator claims:

> The Avatar watched as the data from the diamondoid cube loaded. Test after test came back green. By every indication, this data was a neural map. Now, to read it into the quantum cluster and load her full mind back

into being, piece by careful piece. She felt the song starting in herself again. Felt those emotions. The anticipation. The longing. The glory. Hours to go. Less than a day. Then she'd be united with her greater self. She'd be whole. She'd be swallowed. And the whole world would be theirs. (459-460)

Naam, also, sheds light on the political dilemma, which is full of rage and riots by portraying Rangan's character. Rangan is engrossed in the march on DC through the election of the presidency. He could feel the anger of the nation, and people share the same, hatred and sadness "People beaten by those in authoring police, dictators. Tens of thousands of people run mesh in this crowd, but the mind stream. Sites act as a kind of global mesh used it got stronger" (519).

As a result, Rangan makes a lot of trials to spread peace and control the situation with his Nexus, but the riot arouses "Every shooting, explosion," brutality same one on Nexus captured went viral. They ricocheted around the globe, fed. More violence, engaging protesters, driving police to more extreme measures in a feat back loop" (521). He swept over the violence and horror. Finally, his firewall is renewed and his Nexus clots/knobs send countersignal to reject the animosity signals.

Naam shifts to another scene to clarify the role of advanced technology during the riot. During the Presidential speech, Rangan feels the outrage of people and feels displeasure and violence everywhere as the narrator says:

> And he could feel anger building. He could feel the violence around the globe and the frustration of the last few months converging here, heating up as they marched. All around them, there were police, national guard, and homeland security, lining the march route, waiting with riot armor and truncheons and gas masks and armored vehicles, waiting, and ready to clear them, if they left the route they'd declared if they threatened to disrupt the inauguration. Waiting, but not attacking. Waiting, but letting them march. Around the world, it was different. People were dying. Soldiers were firing into crowds. Fireballs were going up. Rangan didn't need to reach out to know that. People all around him were tuning in, passing the feeds and snippets around angrily as they marched, chanting in

solidarity. The images and sensations surged out of people's minds, touching everyone, whether they'd tuned into a feed or not. (518)

Rangan tries to end this riot by using his Nexu mesh to pervade it, but the outburst aggravates He tries to send hindering signals to stop violence and hatred waves. In this time, one of the monks comes and starts sending spiral peace through his Nexus buds but he is killed, during this time, his mind still transmits peace and serenity that changed into something much more delicate.

The final scene of the novel is the evidence that technology can change the world when President Stockton gives a talk, and all people are dosed with the Nano-drug Nexus. Everyone is intoxicated and feels angry. While in In China, the authority tries to remove the Shanghai quantum cluster with nuclear-exploding weapons.

The novel gradually reveals the impact of Nexus on people and the President. During his inaugural Speech. He narcotizes by Nexus drug. He becomes aware of his behavior and actions and apologizes, Shu warns of the nuclear devastation of the university she comes to the administrators of china anesthetizes Nexus, and offers her destruction. The riot is over as the narrator argues, "Countersignals burst out from code in his mind, using the Nexus nodes in his brain as transmitters, coordinating with hundreds of nearby peers on the Mesh, shaping the countersignal to maximize destructive interference, to cancel out the hate broadcast over as wide an area as possible"(527).

The last point that Naam wants to shed light on, after discussing the new technology and its impacts on the world, is the ethics of using technology. He indicates that some countries refuse to use technology illegally. They use the technology for enhancement and alteration, and banns bio-, neuro, and nano weapons as the narrator says, "A peace, a stability, formed of a base so broad, a base of not one brain, not one life, not one perspective, but thousands, complementing one another, embracing one another, encircling and intertwining with one another"(552). The real aim of high technology is to spread peace, enhancement, and endless useful life. The writer highlights this aim by arguing that:

> He was humanity coming alive. Humanity waking up. Humanity reaching consciousness. Humanity reaching transcendence. Humanity casting aside the veil of Maya, humanity pushing through the shroud of illusion, the mask of separation, realizing its true form, its true unity. Humanity

unfolds into its true glory. Every fiber of his being trembled with it, trembled with this new golden state, with this being beyond being, with this joy beyond joy, with this transcendence of all he'd known, all he'd experienced, with this glimpse of true Nirvana. With this glimpse of the true Posthuman. (552-553)

## Conclusion

In conclusion, *Apex* is one of Naam's future means of portraying "Possible" depending on modern studies and researchers as he argues "Like Nexus and crux before it, Apex is a work of fiction but based as accurately as possible on real science" (599). Naam clarifies the positive and negative aspects of using advanced technology in the future. Moreover, he highlights its impacts on humanity. Besides, he depicts how the world will change. Furthermore, the novel discusses the political dilemma in different countries; finally, Naam reveals the ethical and unethical aspect of using technology. He presents the aim of using high-tech is to enhance humanity not to destroy it.

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# المستخلص

يناقش هذا البحث منظور «ما بعد الإنسانية» من خلال توضيح العلاقة بين التكنولوجيا والأدب اعتمادا على أعمال الكتاب فرانسيس فوكوياما وكاثرين هايلز وكاري وولف ورامز نعام. ينقسم هذا البحث إلى جزئين أساسيين. الجزء الأول هو الجزء النظري. إنها الخلفية النظرية حول مصطلح "ما بعد الإنسانية" ويبدء هذا الجزء بإظهار الخلفية التاريخية وتوضيح مصطلح "ما بعد الإنسانية" وفقًا لنقاد وكتاب مختلفين وفقًا لدراساتهم الأدبية. بالإضافة إلى ذلك ، يوضح هذا الجزء دور نقاد ومفكري "ما بعد الإنسان" من خلال توضيح دراساتهم الأساسية التي تؤدي إلى تفوق الأدب في عصر الرقمنة. الجزء الثاني يلقي الضوء على تأثيرات التكنولوجيا وخصائصها ونتائجها في المستقبل. علاوة على ذلك ، يقدم هذا الجزء تحليلاً كاملاً لرواية "ابيكس" للكاتب رامز نعام. في ضوء ما بعد الإنسانية ، تتعامل أبيكس مع شكلين مختلفين – ومتضادين إلى حد ما – لما "بعد الإنسانية" لإظهار كيف تنعكس التكنولوجيا المستقبلية في الرواية.

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**الكلمات المفتاحية:** ما بعد الإنسانية، التكنولوجيا، الأدب، رامز نعام، ابيكس