

**ANALYSING HUMAN CONDITION IN “POSTHUMAN WORLD”: A STUDY OF  
SELECTED SCIENCE FICTION**



**A DISSERTATION**

Submitted to the Faculty of Languages & Literature  
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In partial fulfillment of the requirements for the degree of  
Doctor of Philosophy

**Submitted By:**

Muhammad Mubashar Nawaz

Ph.D. English

**118-FLL/PHDENG/F16**

**Supervised By:**

Dr. Akhtar Aziz

Assistant Professor

Faculty of Languages and Literature

IIUI, Islamabad

**DEPARTMENT OF ENGLISH**

FACULTY OF LANGUAGES AND LITERATURE

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF  
**DOCTOR OF PHILOSOPHY**  
In English

To

Faculty of Language & Literature  
(Ph.D. English)



International Islamic University, Islamabad

Muhammad Mubashar Nawaz, 2025

I

**dedicate**

this work

to

**My Children**

**Nayab Fatima and Muhammad Muaz Mubashar**

The light of my life

## THESIS AND DEFENSE APPROVAL FORM

The undersigned certify that they have read the following thesis, examined the defence, are satisfied with the overall exam performance, and recommend the thesis to the faculty of language and literature for acceptance:

**Thesis Title: Analysing Human Condition in “Posthuman World”: A Study of Selected Science Fiction**

Submitted by: **Muhammad Mubashar Nawaz**  
Name of Student

Registration #: **118-FLL/PHDENG/F16**

**Doctor of Philosophy**  
Degree Name

**Dr. Akhtar Aziz**  
Name of the Research Supervisor

\_\_\_\_\_  
**Signature of the Research Supervisor**

**Prof. Dr. Najeeba Arif**  
Name of the Dean

\_\_\_\_\_  
**Signature of the Dean**

**Dr.**  
Name of the Rector

\_\_\_\_\_  
**Signature of the Rector**

\_\_\_\_\_  
**Date**

## DECLARATION

I, Muhammad Mubashar Nawaz son of Muhammad Nawaz, Registration # 118-FLL/PHDENG/F16, Discipline (English), Candidate of Ph.D. (English) at the International Islamic University, Islamabad do hereby declare that the thesis “**Analysing Human Condition in “Posthuman World”: A Study of Selected Science Fiction**” submitted by me in partial fulfilment Ph.D. degree is my original work and has not been published or submitted anywhere.

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## **ABSTRACT**

### **Title: Analysing Human Condition in “Posthuman World”: A Study of Selected Science Fiction**

This dissertation examines the condition of human beings in a posthuman world shaped by rapid technological advancements, particularly bio- and nanotechnology. These developments, while transformative, have ushered in profound existential and ecological crises. The study critically explores how these technologies have not only redefined global political and economic landscapes but also altered human existence and condition, as individuals increasingly rely on and are dominated by machines. While the advent of bio-nanotechnology and artificial intelligence is celebrated for its potential to revolutionise life, it has also sparked bioethical concerns. Bio-conservatives, such as Francis Fukuyama, warn against the dehumanizing effects and loss of agency, whereas technophiles like Ray Kurzweil advocate for technological enhancement as a means to resolve historical inequalities, disabilities, and limitations.

The dissertation employs posthumanism as its theoretical framework, drawing on critical perspectives from posthuman theorists to evaluate the implications of technological advancements. By integrating textual analysis of science fiction, it uniquely positions speculative narratives as essential tools for understanding and navigating the posthuman condition. This approach not only illuminates the psychological, social, and ecological repercussions of technological expansion but also bridges theoretical discourse with cultural representation.

The findings reveal that while bio-nanotechnology and AI promise human enhancement and a techno-utopia, they frequently reinforce hierarchical structures, perpetuate socio-economic inequalities, and intensify existential threats. This research contributes a subtle perspective to the field by synthesizing debates on technology’s ethical, ecological, and social implications while

highlighting the role of speculative fiction in shaping a critical understanding of the human condition in the posthuman world. The study argues for a balanced regulatory approach to technological advancement, ensuring humanity's vulnerabilities are addressed without undermining its survivability or ethical integrity.

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# **Chapter 1**

## **Introduction**

### **1.1 Background to the Present Study**

The concept of the human condition—rooted in questions of identity, morality, agency, and belonging—has been central to both philosophical inquiry and cultural discourse. For centuries, thinkers have explored the nature of what it means to be human, grappled with the inherent vulnerabilities and existential challenges that define the human experience. Yet, as the twenty-first century unfolds, new technological advancements, particularly in the realms of biotechnological enhancement, artificial intelligence, and cybernetic integration, challenge the boundaries of humanity in unprecedented ways. As one approaches a world in which human beings may coexist with technologically enhanced, hybrid, or even entirely artificial forms of life, the very definition of what it means to be human becomes increasingly ambiguous.

This transformation is particularly evident in the growing discourse surrounding posthumanism, which posits that the traditional boundaries of human existence are not only being altered but also rendered potentially obsolete. The emergence of the "posthuman" introduces a host of critical questions: Can technological advancements lead to human transcendence and evolution, or do they signify the erosion of humanity's core qualities? Is the posthuman condition one of enlightenment, or does it reflect a dystopian world where human essence is lost to artificial enhancements and systemic inequalities?

Science fiction has become a crucial lens through which these questions are explored. As a speculative genre, science fiction offers a unique space to envision futures shaped by technological progress—futures that are both utopian and dystopian in nature. These narratives oscillate between promises of human perfection and warnings of dehumanization and reflect the

uncertainties and contradictions inherent in our technological trajectory. These speculative explorations show the tension between the hope of transcendence through technological enhancement and the fear of losing the very qualities that make us human.

At the heart of this tension lies a deeper issue: whether posthuman contexts, as depicted in fiction, offer a truthful representation of the human condition or they reinforce techno-centric narratives that obscure its ethical and existential complexities. While posthumanist theorists present diverse predictions about the future—ranging from optimism about humanity’s evolution into a technologically advanced posthuman form to warnings of a crisis that strips away humanity’s essence—these perspectives often fail to adequately capture the lived realities of individuals in a world where enhanced and unenhanced humans coexist. The question, then, is not only what it means to be human in a posthuman world but whose version of the human condition is represented in such speculative futures.

This study aims to critically examine these ambiguities by analysing selected science fiction texts. By exploring how these narratives challenge, redefine, and problematise the human condition, the research seeks to illuminate the ethical, social, and existential dilemmas that arise for both enhanced and unenhanced beings in the posthuman world. Through this analysis, the study hopes to contribute to the broader discourse on the implications of technological advancements for human identity, agency, and the very essence of humanity.

## **1.2 The Human Condition and its Transformation**

With advancements in technology, synthetic beings may eventually come into existence, potentially possessing ideas and perspectives distinct from those of humans. Pepperell asserts that research to create such beings has already begun, tracing the inception of this significant endeavour

to the early 20th century. He highlights various factors that have contributed to the development of the concept of posthumanism, which continues to impact the human condition.

In discussing the human condition, three categories have categorical significance: “gods, nature and humanity itself” (Pepperell 155). Each category has been vitally distinct and opposite of the other, and a proper hierarchy has been established by the various religions, which put God in the highest position. God’s own image is at the top position, and all other forms of life lie at the bottom. The belief in this hierarchal structure has influenced the understanding of humans and their estimation of themselves as human beings. Even in the age of science, many have latent belief in the structure and validate their existence keeping in view the relation between categories. At various stages in history, the degree of prominence to these categories has been shifting; that is why, to understand the human condition, according to Pepperell, one should primarily comprehend general trends related to human condition.

The human condition, for centuries, has been dependent upon Christian church and from Aquinas to Nietzsche, all theological discussion has focused upon humans’ relationship with God. Though some the philosophers like Marx and Nietzsche challenged the existence of a deity that ultimately brings social consequences as Marx beseeches, “Let us liberate them from the chimeras, the ideas, dogmas, imaginary beings under the yoke of which they are pining away” (Marx 1), yet the distinction between God, humanity and the church perpetuated because majority of the institutions of art, law and science were under the yoke of Christian Church. The institutions did not have the capacity to challenge the power of the church and their mediating role between the Deity and humanity. The dream of institutions to liberate themselves from the hegemony of the church could not be materialised. Despite claims of human liberty, the enslaving system persisted.

Until the 18th century, the feudal system kept dominating agricultural production, and it suited the ruling elite to perpetuate social order. However, many of the intellectuals exerted their vigour to interpret scripture and theology instead of questioning the existing political system or chastising the powerful who exploited the infirm. The frail did not have the power to stand against the social and theological authority that benefitted only the representatives of the court, judiciary, and religion. Other than that, the penalty for rebellion and heresy was a horrific death. The church overwhelmed all sources of knowledge and monopolised information and knowledge. All policies were literally controlled by the feudal and the theologians. The colonial adventure by the Crusader was portrayed as a Christian holy mission where the masses were sacrificed to support the church as Karlsen points out, “the execution of witches to prevent female succession to property was justified on religious grounds in Puritan settlements in the New World in the 1600s” (22). The royal houses were protected as symbols of divine ascendancy and their vested interests were secured through offerings and subscriptions. This shows the precarious human condition, where only a few enjoy being human.

The human experience with nature was even more disastrous for every flood, disease, earthquake, and famine was taken as the expression of God’s wrath or supernatural forces which unleashed their sinister powers to torture humans for their sins. The authority of the church was reinforced when the ‘transgressors’ visited the church for the absolution of sins. The existence of the tension between the invisible Deity, humans and nature intensified the central importance of the church as a mediator.

The advent of the mercantile economy in eighteen-century Europe and, later, industrialization gave birth to the bourgeois class. With the rise of the middle class, the edifice of the previous feudal class started stumbling. From 17th to 19th centuries, the old political and



theological system was seriously threatened by the urban middle class. Various reformist movements in English and France comprising people from lower strata of society shook the foundations of landed nobility and theologians. French Revolution was the direct result of the pressure for change in the late 1780s. As Hill wrote, “They founded new sects to express new ideas” (362).

The intellectuals freed themselves from the shackles of the privileged class and the reality of many beliefs and ideas came under scrutiny. Along with that, with the help of enlightened ideas and material independence, new accurate scientific tools like the microscope and the telescope were developed, which increased the knowledge related to the natural world on empirical evidence. The proliferation of knowledge and ideas with the arrival of mechanical printing further dismantled the edifice of biasedly established knowledge. The empirical data used by scientists exposed the discrepancies between what theology said and what science observed. About the natural phenomena, people started believing in what was observable. Galileo’s views on planetary motion, even after his recanting, gained currency.

This led to the emergence of ruling bourgeois classes, who gave more importance to scientific progress than religion and started relishing power and wealth. With the building of many factories, mills and mines, productivity miraculously shot up, and science proved itself as a money-generating machine.

Scientific progress brought about the struggle to harness the forces of nature, and this endeavour became the cause of scientific materialism, which gave birth to various radical political systems such as Marxism. The struggle was between forces of nature and humanity, for God lost intervening prominence. The rise was the rise of humanism. Over time, one of the primary aims of humanism evolved to emphasise prioritizing human welfare above other objectives (Kopnina).

The concept of humanism can be traced back to Greco-Roman philosophy, which presented theories, quite contrary to Christian dogmas, on cosmic phenomena and medicine. The slogan that Protagoras raised was “man<sup>1</sup> is the measure of all things” (as cited in Osborne 122) became an epigrammatic motto for humanism. The Greek ideas were taken by European scholars during the Italian Renaissance and later disseminated among all Western countries. This enlightened faith challenged the dogmatic belief in God. It seemed that the human condition and fate would be metamorphosed at that time. The centuries-old exploitation would be annihilated.

Though some of the revivalist movements, like the Pre-Raphaelites, were striving to remove the misconceptions attached to the Christian faith by the medieval theologian, the majority of the intellectual class was influenced by the rapid economic and political progress, and they spoke and wrote against God’s existence and his overriding influence. The people came to know that plagues, diseases, and epidemics were not caused by their sins and that such maladies could be cured by quarantine, a better sanitation system and human efforts. The religious influence, after Darwin’s Evolutionist claims, was dying down. Humans were deemed as the creators of their destinies as Hawton expresses his views, “Man will no longer fear to stand alone as the maker of his own destiny and the creator of his own values” (80). With the invention of machines and steam engines, God’s authority was emasculated and demystified.

In the industrial era, the relationship between gods, nature and humanity was again transforming as the scientists, in the humanist era, thought that they would be able to understand the universe through the study of all particles. They had a deterministic view of the universe that could be comprehended, and ultimate predictions could be made with the help of current precise knowledge. Laplace, enhancing Newton’s ideas, believed that all future events and happenings

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<sup>1</sup> As generic word stands for “human person”.

could be calculated; hence, the unpredictability of natural occurrences can be solved once and for all. But this did not happen, and Laplacian views were resisted by the quantum-level experiments, which manifested that the universe is more complex, dynamic and fluid and it resists any conclusion or final evidence based on inadequate measurement.

But, with technological advances, humans, through gene-manipulation the info-tech revolution have created “the possibility of controlling, synthesising or even surpassing aspects of nature which until now have eluded” them (Pepperell 161). The development of artificial life (AL) and artificial intelligence (AI) diminish the distinction between artificial and natural. The realization of such a possibility changes humanity’s thinking pattern. This shift is usually termed as posthuman, as Pepperell opines, “The posthuman era, then, begins in full when we no longer find it necessary, or possible, to distinguish between humans and nature” (161). The beginning of the era does not mean that other categories, like gods and nature, have entirely stopped exerting their influence on world affairs. Every age in human history has created a certain condition for human existence which has been discussed above briefly; the posthuman era is also creating a condition of existence that apparently seems in hatchery, but it has begun. That is why much of the literature, which either celebrates or denounces the shift, has been produced.

The coexistence of enhanced and unenhanced humans in posthuman settings creates a profound complexity in the human condition, particularly in defining what it means to be human and whose human condition is being represented (Fukuyama 160; Habermas 82). As technologies allow for biological or cognitive enhancements, humanity faces significant philosophical and ethical dilemmas about who qualifies as human, what it means to be human, and how these definitions affect both individuals and society.

### **1.3 Redefining Human Identity: Enhanced vs. Unenhanced Humans**

In a world where some humans are enhanced with advanced technologies—whether through genetic modifications (Savulescu 163; Bostrom 110), cybernetic implants, or artificial intelligence integration (Kurzweil 140)—the boundaries between "human" and "non-human" become increasingly blurred (Hayles, 35). The enhanced individual may have capacities far beyond those of an unenhanced person: superior intelligence, augmented strength, extended life, or even capabilities like the ability to interface with machines directly (Buchanan, 370).

This creates a new tension in defining what it means to be human. If humanity is traditionally defined by certain biological, cognitive, or emotional traits (President's Council on Bioethics), then the enhanced human may fall outside this framework. Enhanced humans could challenge traditional concepts of human identity, forcing society to confront whether humanity is based on biological lineage or the ability to preserve core traits like consciousness, empathy, and self-awareness (Sandel 27).

This dynamic raises critical questions: Are enhanced humans still human in the traditional sense or have they transcended the boundaries of human identity? Are unenhanced humans considered "true" humans, or are they now a marginalised group in this new societal framework?

### **1.4 Hierarchy and Inequality between Enhanced and Unenhanced Humans**

The coexistence of enhanced and unenhanced humans introduces a hierarchical divide (Fukuyama 102), which may exacerbate existing social, economic, and political inequalities. Enhanced humans, who have access to technologies that improve their physical and cognitive capabilities, are likely to gain power, privilege, and influence in society (Savulescu 164; Bostrom 112). Conversely, unenhanced humans, who lack these advancements, may become increasingly vulnerable to exploitation, oppression, or even outright subjugation (Agar 59).

This inequality raises questions about justice and human rights. If enhanced humans are viewed as superior, will unenhanced humans be seen as lesser (Sandel 28)? Will they retain equal rights, or will society begin to create laws and systems that prioritise the enhanced and leave the unenhanced marginalised and oppressed? The ethical implications are profound: how do we ensure fairness and equality in a society where human beings themselves are so drastically unequal in their physical and cognitive abilities?

### **1.5 Social and Emotional Implications: Fragmentation of the Human Condition**

The emotional and social complexities in a society of both enhanced and unenhanced humans are similarly deep (Cole-Turner 778). The enhanced may struggle with issues of alienation and they may not adjust with their biological counterparts and the unenhanced may experience feelings of inadequacy, resentment, or fear toward the enhanced group. Such emotional divides could lead to social fragmentation, where the two groups live in separate spheres with limited empathy for each other. “Without understanding how natural desires, purposes, traits, and behaviours fit together into a human whole, we cannot understand human ends or make judgements about right and wrong, good and bad, just and unjust’ (Fukuyama 12).

At the heart of this issue is the question of belonging. In societies with both enhanced and unenhanced individuals, what does it mean to belong to the human race (Braidotti 89)? The question of belonging, especially in terms of shared humanity, becomes increasingly complex. The enhanced may view themselves as transcending traditional human limitations (Kurzweil 205), while unenhanced individuals may feel excluded from these advancements, intensifying feelings of alienation and questioning their place in this future world.

## **1.6 Ethical and Moral Considerations: Whose Human Condition Is Represented?**

Another complexity arises from the moral implications of living in a society where the enhanced and unenhanced live together. Who gets to decide whose version of the human condition matters? The enhanced individuals, with their superior capabilities, may have greater influence over the cultural, political, and economic decisions that shape society. This could mean that the human condition as defined by the enhanced—marked by technological advancement, immortality, and perfection—becomes the normative standard and side-lines the experiences, struggles, and realities of the unenhanced.

Furthermore, as technological enhancement becomes more prevalent, questions emerge about whose needs and values are prioritised. For instance, in a society where unenhanced humans become increasingly obsolete or disadvantaged, how do we ensure that their human experiences are still recognised and valued? Is it fair to impose the standards of the enhanced on everyone, effectively excluding those who cannot or choose not to enhance themselves.

## **1.7 Ethics of Enhancement: Preservation of Core Human Values**

Even as technology offers the possibility of enhancing human abilities, many argue that there are core human values—empathy, compassion, vulnerability, the capacity for love—that must be preserved in the face of these advancements (Kass 71). In a society divided between enhanced and unenhanced individuals, questions arise about how these core human values will be maintained (President's Council on Bioethics<sup>2</sup>). Will enhanced humans retain emotional depth and ethical consideration or will their enhancements compromise their connection to the more "human" aspects of life, like empathy, vulnerability, and moral responsibility (Kass 72)?

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<sup>2</sup> Beyond Therapy: Biotechnology and the Pursuit of Happiness (2003)

Similarly, for unenhanced humans, there is the challenge of maintaining a sense of identity and dignity in a world that may increasingly view them as inferior or outdated. The essence of the human condition—how we define ourselves, our capacity for empathy, and the ways in which we relate to others—must be safeguarded against technological forces that may dehumanise or marginalise certain groups (Fukuyama 104).

In a world where enhanced and unenhanced humans coexist, the question of whose human condition is represented becomes central. The human condition, traditionally understood through the lens of shared vulnerabilities, struggles, and experiences is increasingly fragmented. The introduction of enhanced humans complicates this, as they may redefine what it means to be human, potentially shifting the cultural and ethical norms toward the standards of the enhanced. The human condition in such a world is no longer a singular experience but is fractured into different realities depending on one's ability to access and adapt to technological advancements (Agar 99).

In this context, the human condition is no longer a universal or static concept it becomes a contested space where different groups (enhanced and unenhanced) assert their versions of what it means to be human. The question "Whose human condition is this?" underscores the ethical and existential challenges that arise when technology alters the very essence of what it means to be human.

The thesis examines a selection of science fiction works that explores the moral and existential implications of technological advancements, focusing on the erosion of human agency in future societies. After analysing these texts, it becomes evident that the novels portray a tragic and fractured quest for human perfection, which, rather than elevating the human experience, often results in monstrosity, dehumanization, and systemic violence. These narratives resist the

seductive allure of a seamlessly post-biological future envisioned by technophilic theorists such as Hans Moravec and Raymond Kurzweil, who imagine human consciousness transcending biology and merging with machines. Instead of depicting a utopian world of transcendence and empowerment, the novels emphasise the ambiguous and often dystopian realities that arise during the transition to posthuman existence.

Importantly, the worlds represented in these novels reflect a liminal and transitional stage—one in which not all individuals have undergone enhancement or biological transformation. This uneven terrain gives rise to new hierarchies, ethical tensions, and ontological uncertainties. The enhanced or evolved beings, though seemingly superior in terms of capability, are often portrayed as emotionally detached, existentially confused, or ethically disoriented. Their lives are not necessarily more fulfilled; in fact, many struggle with questions of identity, belonging, and moral responsibility, reflecting the posthuman condition's internal contradictions.

Conversely, the unenhanced or unevolved individuals often inhabit precarious and marginalised spaces. They are rendered vulnerable by the technological systems that exclude or devalue them. These characters live under the constant threat of social erasure, surveillance, or forced transformation and the situation embodies the concerns of posthumanists such as Francis Fukuyama, who warns that uncritical technological enhancement may intensify social inequalities and erode essential elements of human dignity.

Across these narratives, the human condition—defined by agency, emotion, memory, vulnerability, and ethical choice—is neither fully erased nor universally elevated. Instead, it is fragmented and reconfigured, re-emerging in the interstices between the enhanced and the unenhanced, the technological and the biological. The novels resist binary oppositions of utopia and dystopia, evolution and regression, instead they present a nuanced vision of a posthuman world



still haunted by human concerns. The posthuman future, as depicted here, is not a clean break from the past, but a contested and unequal process of becoming, where the human condition persists, adapts, and struggles for meaning in the shadow of technological transformation.

Moreover, these narratives are situated within a strong tradition of anti-capitalist and anti-authoritarian discourse in literature and art, emerging in response to rapid advances in biotechnology, nanotechnology, and bioinformatics. The works reflect deep concerns about the ways in which such technologies might be harnessed by authoritarian states and corrupt corporations to entrench power and perpetuate systems of inequality and exploitation. In these novels, posthuman cyborgs and hybrid beings are not portrayed as heroes or saviors but as dangerous tools wielded by the powerful to further subjugate and control the masses.

The future these narratives envision is one where the pursuit of technological advancement does not lead to human flourishing but rather to an intensification of existing power structures. The posthuman characters depicted in these works, often enhanced by technology, serve as augments to the arsenal of oppressive systems, complicating the notion of technological progress as inherently liberating. Rather than overcoming human limitations, these characters amplify the threats posed by unchecked technological growth—posing moral and existential questions about the nature of humanity in an increasingly automated and surveilled world.

This analysis follows the trajectory of antihumanist themes prevalent in speculative fiction, where the manipulation of the environment and submission to the demands of technological progress result in tragic outcomes. In these works, technological advancement, rather than alleviating humanity's problems, exacerbates social injustices and ecological decay. They speculate a future where humankind fades into oblivion alongside a deteriorating natural world.

These concerns are globally relevant and resonate strongly in contemporary fiction, which tends to adopt a critical, rather than celebratory, stance toward the impact of technology on society.

The portrayal of posthumanism in these texts aligns with the tragic vision commonly found in science fiction, where technology is depicted as a destructive and oppressive force. The genre is rife with scenarios featuring attacking aliens, mad scientists, mutated beasts, rampant infections, and rogue machines—each threatening human existence. This vision of technology’s potential for catastrophe is echoed in mainstream Hollywood films like *Children of Men* (2006), *The Road* (2006), *WALL-E* (2008), *Blade Runner 2049* (2017), and *War for the Planet of the Apes* (2017), which warn against the unchecked development of technology. As Dinello argues, the progressive politics inherent in such dystopian narratives are meant to raise human awareness of a new “nanotechnological order” (234) driven by corporate greed, militaristic posturing, government warmongering, and techno-religious ideologies.

This study examines the consequences—both positive and negative—of technological proliferation and explores whether technology ultimately enhances or diminishes human vulnerability. The posthuman vision of a technological “heaven” often overlooks or minimises its latent dangers, much like the corporate sector downplays the harmful effects of various products. As Fukuyama observes, “Fears about the future are often best expressed through fiction, particularly science fiction that tries to imagine future worlds based on new kinds of technology” (181). The possible outcomes of the posthuman scenario can be examined through science fiction, which serves both as a social critique and a platform for popular philosophy.

This study shifts focus to the situation of human beings within a techno-culture dominated by machines that lack emotions, empathy, values, or human-like concerns. The posthuman future, according to various theorists, is both promising and perilous. Rather than merely celebrating or

condemning technological progress, this investigation acknowledges the paradoxical nature of the posthuman future, which is framed by theorists such as Kurzweil and Moravec as a site of human transcendence, but which critical thinkers like Fukuyama, Hayles, and Herbrechter argue may precipitate a profound erosion of human agency, dignity, and ethical coherence. Some predict the dawn of a new golden age for humanity, with technological progress ushering in unprecedented developments in human capabilities (Glover; Harris & Savulescu; Bostrom; Buchanan; Braidotti; Agar). Others remain more ambivalent, while some caution against blindly embracing technological advancements, warning that they may lead to unforeseen consequences (Fukuyama; Kass; Habermas; Farah et al; Sandel; Volkow et al.; Iuculano & Cohen Kadosh).

This tension between optimistic and cautious views creates uncertainty about the future trajectory of humanity. The analysis of science fiction can serve as a valuable tool in imagining the consequences of a technology-driven world, offering speculative scenarios that could inform practical and ethical decisions in the present. By examining these narratives, we can begin to make well-grounded judgments about the potential outcomes of posthumanism.

Science fiction plays a crucial role in interrogating and testing the claims and concerns of posthumanist theorists. It also sheds light on aspects of the human condition that may not be adequately addressed in theoretical discussions. Often going beyond mere escapism, science fiction envisions the troubling consequences of emerging technologies and probes the ethical, political, and existential dilemmas they provoke. By projecting the potential implications of uncontrolled technological development, science fiction helps to focus the ongoing debate on these issues. It taps into our existential fears, reinforcing concerns about the misanthropic humans who, as collaborators with technology, perpetuate systems of domination and oppression.

## **1.8 Statement of the Problem**

It is widely acknowledged that the expanding capito-technological landscape is profoundly transforming both modes of human existence and self-understanding. Human life is increasingly entangled with various forms of technology, and the disparities in access and distribution are already starkly apparent. These developments also pose serious challenges to traditional, human-centred notions of identity and agency. The pressing issue, however, lies in how we navigate this ongoing integration—and what sacrifices or consequences accompany it. At the heart of this lies a deeper existential inquiry: how can philosophical thought proceed when the foundational assumptions of human subjectivity are being radically reconfigured by intensifying human/non-human entanglements? In a world where enhanced and unenhanced humans coexist, questions arise about what it means to be human and whose human condition is being represented. What are the differences between posthuman and “real” humans, and how do these differences shape the experiences and behaviours of individuals in a posthuman world? How do real humans behave, experience, and face challenges in a posthuman world, and conversely, how do posthuman beings perceive and respond to the world?

Through a critical analysis of selected science fiction texts, this study aims to explore how these differing human experiences—whether shaped by enhancement or resistance—offer deeper insights into the ethical, social, and existential dilemmas faced by humans—both enhanced and unenhanced—in a posthuman future.

## **1.9 Research Objectives**

This study aims to critically investigate how posthuman technologies alter and complicate the human condition as portrayed in selected science fiction narratives. The research is guided by the following objectives:

1. To examine how science fiction reimagines the human condition in a world increasingly shaped by technological enhancement, hybridity, and artificial forms of life.
2. To analyse how the coexistence of enhanced and unenhanced humans in speculative fiction problematises concepts of identity, agency, and moral responsibility within the human condition.
3. To explore how posthuman technologies transform the lived experience of the human condition, particularly in relation to freedom, vulnerability, autonomy, and dignity.
4. To assess how science fiction critiques the socio-political and ecological implications of technological proliferation, and how these dynamics threaten or reshape the collective human condition.

#### **1.10 Research Questions**

1. How do posthuman technologies reshape the human condition—particularly in terms of identity, moral agency, and social belonging—for both enhanced and unenhanced characters in the selected texts?
2. In what ways do technological advancements alter the human condition by reinforcing hierarchies, threatening dignity, and restricting freedoms, especially for those deemed unenhanced?
3. How do efforts to overcome human vulnerability through technology transform the human condition and often create new dependencies or deepen inequalities between enhanced and unenhanced individuals?
4. How is the human condition problematised in the posthuman narratives where technologies function as tools of control and suppression, and what ethical and existential consequences arise for characters who resist or are excluded from posthuman integration?

### **1.11 Significance of the Study**

The desire to transcend human limitations—such as mortality, cognitive boundaries, and physical fragility—has long been embedded in human imagination. Yet, the emergence of posthuman technologies challenges not only the boundaries of what is biologically possible but also the very foundations of what it means to be human. As science and technology propose to reconfigure the body, mind, and society, the human condition—defined through experiences of identity, morality, agency, and vulnerability—enters a phase of radical ambiguity. This study is significant in its attempt to interrogate how science fiction reflects, contests, and reimagines the complexities that arise when enhanced and unenhanced beings coexist. It addresses critical questions such as: Whose human condition is preserved or prioritised in posthuman futures? How are traditional notions of humanity redefined or erased when coexistence is shaped by technological inequalities? In doing so, the study resists reductive narratives that celebrate enhancement without scrutinizing its human cost.

By engaging with selected science fiction texts, the research critically explores how posthuman technologies impact lived experiences—particularly in contexts of power, ethics, emotional life, and social structures. The study investigates whether technologically augmented beings retain the moral and emotional depth of human experience or whether enhancement fragments ethical coherence, alienates the self, and produces new hierarchies of worth. Special attention is given to the condition of unenhanced individuals who navigate a world increasingly hostile to their biological limitations. Moreover, this research critiques utopian promises of posthumanism—immortality, perfectibility, freedom from disease—by examining how they may veil deeper threats to agency, dignity, and solidarity. It considers whether these ideals actually resolve human suffering or merely displace it onto new terrains of inequality and control. Science

fiction, in this context, functions as both a mirror and a cautionary lens—revealing what is often obscured in techno-optimistic discourses.

Through close textual analysis, this study offers an important contribution to contemporary debates on the posthuman condition by foregrounding the ethical, emotional, and political complexities that arise in the coexistence of enhanced and unenhanced beings. In doing so, it aims to enrich our understanding of how science fiction mediates between speculative futures and current techno-cultural anxieties, ultimately asking: what kind of humanity survives, transforms, or disappears in the posthuman age?

### **1.12 Research Methodology: Textual Analysis**

This study employs Textual Analysis as the primary method to examine the selected novels, focusing on their portrayal of the human condition in a posthuman world. Textual Analysis facilitates the interpretation of implicit meanings, ideological positions, and cultural critiques embedded in literary texts. Based on interpretive approaches, textual analysis is a type of qualitative analysis that focuses on the underlying ideological and cultural assumptions of a text. McKee further says that “when we perform textual analysis on a text, we make an educated guess at some of the most likely interpretations that might be made of that text” (1). Fürsich highlights that the aim of textual analysis is not to uncover a single "true" or "hidden" meaning within a text but rather to provide multiple potential interpretations of the material under review. The focus shifts away from discovering concealed meanings, the producer's subconscious intentions, or the text's biases. Instead, the objective is to understand the cultural and ideological contexts of a particular time that rendered the text acceptable, influential, and widely regarded as common sense (1).

Performing textual analysis, then, is an attempt to gather information about sense-making practices-- not only in cultures radically different from our own, but also within our own nations. It allows us to see how similar or different the sense-making practices that different people use can be (McKee 14). Bernard (2013) explains textual analysis as a method for identifying key themes within a text and examining the connections between these themes.

By analysing narratives, characters, and thematic structures, the study explores how science fiction reflects the promises and perils of technological advancements.

### **1.12.1 Theoretical Context and Posthumanist Debate**

Posthumanist theorists offer diverse perspectives on humanity's destiny in a technology-dominated future. Technophiles (e.g., Glover; Bostrom; Braidotti) envision unparalleled progress, while technophobes (e.g., Fukuyama; Kass; Habermas) caution against unexamined technological interventions. This dichotomy between technophiles and technophobes frames the study's analysis of the novels, which provide critical insights into the potential consequences of technological projects.

### **1.13 Delimitation of the Terms 'Posthuman, Posthumanism and Human Condition**

The term *posthuman* in this study specifically refers to human societies in which technological advancements have created or reinforced hierarchical structures, particularly those influenced by corporate control, race, class, and ethnicity. The posthuman condition, as explored in this research, addresses how these technological interventions transform social dynamics, often to the detriment of individual autonomy and equality. The research explores how posthuman technologies disrupt traditional understandings of the human condition, including autonomy, agency, and vulnerability.

Posthumanism, as a discourse, challenges traditional definitions of humanity by considering technological, biological, and digital advancements that continuously reshape the



human experience. Within this framework, posthumanism is often divided between transhumanist views, which embrace technological advancements as a means of human enhancement, and critical posthumanism, which critiques these advancements for deepening societal and ethical divisions.

In this study, the human condition refers to the interconnected set of existential, ethical, and ontological questions that define human existence, especially in the context of transformative technological advancements. This condition has historically been shaped by biological limitations and socio-cultural factors, influencing experiences of freedom, dignity, agency, vulnerability, identity, memory, and belonging. The research specifically engages with how the human condition is disrupted in the posthuman narratives, particularly in those where technology functions both as a tool for liberation and oppression. As technological advancements—such as biotechnological enhancements, artificial intelligence, and cybernetic integration—transform human capacities, they provoke new ethical and existential dilemmas that challenge traditional notions of autonomy, identity, and social equality.

#### **1.14 Organisation of the Study**

The thesis is organised into seven chapters, each contributing to a comprehensive understanding of the human condition in the posthuman world. Chapter 1 provides the introduction, outlining the historical and philosophical background of the study, including the evolution of ideas about the human condition and the impact of technological advancements. This chapter introduces the central research argument, emphasizing the tension between technology's potential to enhance humanity and its capacity to diminish its essence.

Chapter 2 explores the evolution of humanism, transhumanism, and posthumanism, tracing how the concept of the human condition has been influenced by religious, philosophical, and scientific developments. It examines the rise of humanism and its transition into transhumanism,

driven by the desire to transcend human limitations, before discussing the emergence of posthumanism and the challenges it poses to traditional understandings of reality and human experience. The chapter also shifts focus to the role of science fiction literature and films in reflecting and shaping societal attitudes toward technology. It examines how science fiction engages with technological advancements, offering speculative visions of the future and their impact on human societies.

Chapter 3 critically addresses the debate between technophilic and technophobic perspectives on human condition and enhancement. The chapter explores the philosophical and ethical implications of a posthuman future, evaluating the promises and risks of technological advancements, including the concept of the Singularity and posthuman dignity.

In Chapter 4, the study analyses the human condition and utopian visions in a posthuman world, using selected science fiction novels like *Oryx and Crake*, *Moxyland*, and *Ink*. The chapter investigates how these texts explore the consequences of technological advancements, particularly in terms of societal division and the loss of individual freedoms.

Chapter 5 extends the exploration of posthuman coexistence, focusing on works such as *Borne* and *Natural History*. This chapter examines how these texts portray the integration of humans and machines, raising ethical and existential questions about identity, autonomy, and the moral implications of such integration.

Finally, Chapter 6 synthesises the study's findings, reflecting on the broader implications of the research. It evaluates whether the concerns raised throughout the thesis about the unchecked spread of technology and its impact on the human condition have been adequately addressed, offering a cautionary perspective on the posthuman future.

The first three chapters provide foundational context, exploring the evolution of humanism, posthumanism, and the role of science fiction in addressing technological change. These chapters offer the theoretical and conceptual framework needed for the subsequent analyses of the primary texts, ensuring a deep understanding of how technological advancements reshape human experience. The research contextualises these works within broader philosophical, societal, and literary traditions, providing essential insights into the posthuman condition.

## **Chapter 2**

### **From Humanism to Posthumanism: Theoretical Perspectives and Technological Frontiers**

The current chapter provides an overview of existing research on posthumanism, exploring its various forms and interpretations. It examines the perspectives of multiple posthuman theorists on techno-culture, humanism, transhumanism, and posthumanism, highlighting the relationships and differences among these concepts. The chapter also traces how these ideas have evolved alongside advancements in science and technology, as well as the positions of contemporary posthumanist thought regarding the transformation of humanity. Additionally, it outlines research on scientific projects aimed at converting data into flesh and vice versa. The contributions of modern and postmodern theorists and writers in shaping the posthuman condition are also discussed.

#### **2.1 Posthumanism and Its Roots in Technological Enhancement**

The idea of transforming the human condition has historically been tied to religious beliefs and supernatural concepts, where the potential for an improved humanity was often envisioned as attainable in the afterlife or through transcendence beyond temporal and spatial boundaries. Throughout history, humans have been regarded as inherently flawed beings, with their imperfections mirrored in the social structures and communities they create (Deese 3). Some religions, such as Hinduism, and philosophers like Plato have offered visions of human perfectibility and ideal societies, but the materialization of these ideals has remained elusive. The arrival of the scientific revolution in the 17th century instilled a ray of hope in humankind, suggesting that the human condition could be ameliorated significantly, and humanity could strive for a flawless individual and society. This optimism, bolstered during the rapid industrialization

of the 19th century and the scientific expansions of the 20th century, embodied the notion of progress as a linear path toward improvement.

However, the optimism of the twentieth century was shattered by the destructive power of two world wars, the nuclear bomb, and the Holocaust, which caused immense human suffering. The catastrophic events of these crises severely undermined the Western belief in rational and linear progress, showing the tragic limitations of the ideals of human rationality and social stability. The human condition, once seen as malleable through science and reason, was confronted with the raw realities of human destructiveness and vulnerability.

In this context, the complexity of the human condition becomes even more pronounced when we consider the coexistence of both enhanced and unenhanced humans. As technological advancements make it possible to augment human bodies and minds—through brain-machine interfaces, artificial intelligence, or even the transfer of consciousness into machines—the question arises: *What does it mean to be human?* With the emergence of enhanced individuals, the boundaries of what constitutes "human" are being redrawn, and society must grapple with these changes. The very definition of humanity becomes uncertain. Does the enhanced human, with their superior cognitive and physical capabilities, still belong to the same category as the unenhanced human? Or has a new category emerged, one that challenges traditional notions of human identity and ethical standing?

The introduction of technological enhancements further complicates the notion of the human condition. It introduces a division between those who have access to such technologies and those who do not, creating new forms of inequality and social stratification. Whose human condition are we discussing in this new world? Is it one that includes the enhanced, or does it still pertain to the unenhanced, or perhaps both? As enhanced humans become more prevalent, their

experiences and values may shift, distancing them from the experiences of unenhanced humans. This raises the pressing issue of whether the "human condition" remains a shared experience or whether it becomes fragmented, with different subsets of humanity each living in distinct, technologically mediated worlds.

Julian Huxley coined the term "transhumanism" to express the idea that humanity could be improved through technological enhancement, marking a turning point in how the human body and mind were viewed. By the end of the 20th century and into the 21st century, transhumanism evolved into posthumanism, where the very concept of what it means to be "human" is questioned and redefined (Deese, 5). This shift prompts a fundamental re-examination of the human condition, where the boundaries of what constitutes humanity are no longer clear-cut.

When Aristotle declares human beings as political animals, he implies that they cannot exist in isolation but rather thrive within family or society, which is why they have historically lived in tribes, nations, and city-states (5). This desire to form harmonious societies, embodied in the Golden Age of the Romans and Greeks, underscores the belief in a structured social order. Similarly, Buddhists and Christians yearn for the creation of pure and eternal cities. Claeys suggests that while such blessed communities may seem like things of the past, their conception of the flawed nature of humankind remains rooted in the assumption that humanity will never be able to construct an ideal society on earth (99).

Deese argues that the idea of human beings improving themselves outside the Garden of Eden, and without the assistance of a supernatural being, represents a revolutionary shift in human history. Mirandola's *Oration on the Dignity of Man*, More's *Utopia*, and Bacon's *New Atlantis* mark a departure from the pessimism of earlier centuries, offering new visions in which human communities could radically improve not in another world, but on this very earth (5). These works

inspired social thought, scientific research, and a systematic pursuit of knowledge in the centuries that followed.

The Enlightenment movement, alongside Newton's belief in the comprehensibility of the cosmos through clear, discernible laws, further reinforced the idea that humans could enhance their lives using reason. Locke sought to discover definitive principles about the human mind and society, asserting that the human mind is a blank slate shaped by forces like environment and education. This belief suggests that the structure of society profoundly influences the character of its inhabitants. Locke's ideas strongly influenced the American Declaration of Independence and the French Declaration of the Rights of Man. Many reformers worldwide, inspired by such ideals, began imagining fundamental societal reforms by shedding the vices inherent in human nature. In line with these thoughts (59). Condorcet argued that humans and human nature could be perfected if society itself achieves perfection. This vision resonated with early 19th-century thinkers like Saint-Simon and Comte, who embraced Condorcet's assertions (12).

Comte, for example, accepted the principle that change in human society could, in turn, transform human nature. Marx also adopted Locke's concept of human nature as fundamentally neutral, capable of change if a new social and economic system emerges. Bellamy, an American novelist and reformer, similarly envisioned the improvement of human nature through social reforms (76). However, the Darwinian transition presented new challenges to the idea that improving institutional, cultural, and social structures could alter human nature. Reformers such as Lester Ward (1841–1913) and Charlotte Perkins Gilman (1860–1955) argued that improving social conditions could lead to healthier, more educated individuals and even hasten human evolution. They supported their arguments with the logic of Darwin's (1809–1882) theory of evolution.

However, German biologist August Weismann's (1834–1914) early 20th-century revelation that learned features are not heritable challenged this optimistic theory of biological evolution through social advancement, questioning whether societal progress alone could foster fundamental changes in human nature.

The question of human enhancement, especially through technology, further complicates the notion of human nature. The coexistence of enhanced and unenhanced humans raises critical questions about who defines the human condition. As new technologies allow for the augmentation of human bodies and minds—through brain-machine interfaces, AI, and even the transfer of consciousness—society faces new complexities. Does the human condition remain the same for those who have been enhanced, or does it evolve with technological advancements? Whose human condition are we discussing when the boundaries of human nature are no longer clearly defined by biology alone?

This reformist interpretation of evolution is less widely embraced than the laissez-faire approach promoted by social Darwinists like Herbert Spencer (1820–1903) and William Graham Sumner (1840–1910). The social Darwinist perspective, which Spencer famously encapsulates as “the survival of the fittest,” holds that evolution progresses through a ruthless battle for survival, where the weak are naturally eliminated. According to this viewpoint, any social changes aimed at aiding the weak—such as providing assistance for survival and reproduction—would impede the advancement of the species. Social Darwinists argue that the very engine of evolution lies in this struggle. This misinterpretation of Darwinian Theory became a convenient justification for the expansion of colonialism in the late nineteenth century and laid the groundwork for racist ideologies. When combined with the racial pseudoscience of the time, these ideologies would have a catastrophic effect on the twentieth century.



However, another major challenge to the idea of human progress arose with the catastrophic impact of the First and Second World Wars. World War I led to the collapse of the czarist Russian and Austro-Hungarian Empires, the Ottoman Empire, and the redrawing of Europe's political landscape. The war claimed over ten million lives due to industrialised warfare. The century-long period of peace following the Napoleonic Wars, which had engendered widespread optimism, was shattered. Preceding the war, many had celebrated the abolition of slavery, the rise in literacy rates, the expansion of international trade, and transformative innovations like railroads, radio, and steamships. But World War I, as a human-made catastrophe, cast doubt on the belief that humans were inherently rational creatures who would inevitably progress socially and politically, provided they were properly guided.

The war sparked fierce competition for technological innovations, leading to the creation of destructive weapons like tanks, flamethrowers, and bombs. Some intellectuals, such as Marinetti, an Italian painter who celebrated the conflicts, famously declared, "War is beautiful because it initiates the dream of metallisation of the human body" (53). Marinetti, a supporter of Italian fascism, saw the potential of war to usher in a new, enhanced form of humanity. On the other hand, some left-wing intellectuals, including Haldane, lauded technological advances for their potential to alleviate poverty, abolish hunger, and regulate human reproduction. Despite their political differences, Marinetti and Haldane both embraced the transformative power of technology—an idea that would remain central to science fiction in the ensuing decades.

Even after the calamities of the World Wars, the optimism for a better future did not fade. However, the focus shifted from transforming economic, social, and political institutions to transforming the human species itself. This shift had been predicted by Nietzsche, who introduced the concept of the *Übermensch* (overman) and famously prophesied that "man is something that

shall be overcome” (Kaufmann 124). Although Nietzsche passed away in 1900, his influence on modernism has been extensively documented (Pines & Burnham 113). Totalitarian regimes, such as the Soviets and the Nazis, took inspiration from Nietzsche’s idea of the creation of a new human, emphasizing Soviet Man and racial "purity" respectively. While many of Nietzsche’s ideas were distorted or ignored, his concepts of human transcendence were selectively appropriated to serve their political ends.

In American popular culture, the images of enhanced humans—such as gladiators, Amazing Spider-Man, and the Hulk—depict the potential of human enhancement through technologies (More 66). These figures reflect an ongoing fascination with transcending human limitations. However, visions of progress that once seemed plausible gradually give way to dystopian narratives, which depict the dark side of technological advances and the potential for apocalyptic destruction. Works like Wells’s *The Sleeper Wakes*, London’s *The Iron Heel*, Huxley’s *Brave New World*, and Orwell’s *1984* offer a grim picture of modern scientific pursuits and weaponry, emphasizing the risks and moral dilemmas associated with technological advancements and human enhancement.

The ancient depictions of Armageddon typically involved the roles of deities or divine intervention, often portraying apocalyptic destruction as a result of cosmic battles. In contrast, the contemporary apocalypse is increasingly framed within the context of human-created technologies—nuclear bombs, rampant viruses, and biological weapons. The atomic destruction of Hiroshima and Nagasaki marks a turning point in this shift. In Aldous Huxley’s *Ape and Essence*, the world is devastated by biological weapons, and humans are genetically damaged. The narrative unfolds in a post-apocalyptic Los Angeles, where Satan is worshipped, people burn books involved in infanticide, and sexual orgies are prevalent. Though met with revolt upon its release,

the themes of Huxley's work set the stage for future dystopian fiction. Similarly, Cormac McCarthy's *The Road* illustrates the catastrophic consequences of disturbing the ecological balance, where the annihilation of life forms leaves humans with little choice but to resort to cannibalism to survive.

This dramatic shift in the apocalypse narrative highlights how the emergence of technology has redefined the human condition. In the mid-20th century, two works of fiction vividly illustrated the potential horrors of the future: George Orwell's *1984*, which predicts the expansion of information technology to reinforce totalitarian regimes through surveillance and control, and Aldous Huxley's *Brave New World*, which imagines a society where children are engineered in hatcheries, happiness is induced by drugs, and behaviors are modified through repetition and conditioning. According to Fukuyama, while Orwell's political predictions regarding *1984* may have been inaccurate, his technological predictions about surveillance and control have proven disturbingly prescient. Fukuyama argues that the advent of the IBM PC, which heralded the personal computer revolution, and the subsequent link between personal computers and the Internet, essentially mirrors Orwell's telescreen but in a decentralised, democratised manner. He notes that while Orwell's vision was one of technology serving tyranny, the reality has been the opposite: the expansion of information technology has aided in decentralizing power and making totalitarian control increasingly unfeasible. Nonetheless, the fall of the Soviet Union and the rise of low-cost technology suggest that the growing accessibility of information has profound implications for the nature of political control, privacy, and ultimately, the very humanness of individuals (4-5)

Butterfield contends that, in contemporary society, the capacity to create and control innovation is considered one of the defining characteristics of the human condition. This capacity

distinguishes humans from other creatures and is seen as a guarantee of their superiority on Earth. Ironically, however, the very innovations humans are developing to assert their dominance are now beginning to test the balance of power between humans and machines. The ongoing automation of manual and administrative jobs raises pressing questions about when or if this process will slow down. As more tasks are taken over by robots and artificial intelligence, the human condition is increasingly intertwined with technological evolution (32,114). The sense of human superiority that once stemmed from control over technology is now challenged by the very machines created to serve humanity, forcing society to confront difficult ethical and existential dilemmas regarding identity, purpose, and the future of work.

While a system or machine has yet to achieve all-encompassing control on a global scale, the distinction between humans and machines is becoming increasingly blurred. It is growing more difficult to envision how humans would perform certain tasks without technological aids. The field of robotics, which draws from diverse disciplines such as artificial intelligence (AI) and micro-engineering, continues to push toward the creation of fully autonomous or semi-autonomous machines, often designed to mimic human traits and abilities. De Landa (1991) astutely highlights the historical instances and potentially unsettling outcomes of automated warfare, urging scientists to consider the darker aspects of the technological race. He posits that the 20th century has witnessed a shift in the relationship between humans and machines, which may eventually culminate in the rise of a "machinic phylum" (17)—a term borrowed from Gilles Deleuze. Brooks also foresees a future in which humans and machines will attain a level of cognitive and behavioral equivalence, with robots gradually being perceived as colleagues and helpers (148, 172). As Bown et al. assert, "Human is the animal that relies on technology in order to realise its humanity. The 'posthuman' is thus an ontological category, more than a historical one. The very first humans

were, from this perspective, as posthuman as we are today. We are ever using tools and prostheses to get ahead of ourselves” (25).

In today’s world, the rapid development of global communications technologies, particularly in homes and workplaces, has fundamentally transformed human interaction. We now engage in long-distance calls bounced off satellites, use videophones, email, mobile phones, and home optical cabling with two-way data flow, in addition to the expansive network of the Internet. This technological infrastructure enables people to socialise, work, and communicate in ways that paradoxically reduce face-to-face contact while simultaneously expanding social connections. In tele-present conditions, it becomes increasingly difficult to determine an individual's physical location or to differentiate them from the technological infrastructure that facilitates their interactions. The concept that once defined humanity—the physical separation of humans from other species—has been reconceptualised. Human beings, without their tools, now appear incomplete. Herbrechter reflects on this, stating, “As we do not know how and when we became human, we also do not (and thus cannot) know how and when we will cease to be human” (26).

The intersection of technology and human biology is also a growing area of concern. According to Heinz et al., the embedding of silicon chips into the human nervous system—along with pharmaceuticals such as Ritalin and Prozac—raises fundamental questions about the nature of human identity and autonomy. These technologies are used to enhance cognitive abilities, modify behavior, and alleviate psychological conditions. Ritalin, for instance, helps individuals focus and perform tasks, while Prozac is used to alleviate depression, boost mood, and improve confidence. It is anticipated that such chips could eventually be used to send or receive electronic impulses to and from various parts of the nervous system, potentially facilitating the generation of thoughts, memories, or the "downloading" of new information (373)

This scenario places humanity in what can be described as a posthuman condition—one that may threaten the very essence of human existence. As Garreau notes, the goal of enhancement technologies is to “improve human intellectual, physical, and emotional capabilities” (8) while simultaneously eliminating disease and unnecessary suffering. The promise of these advancements includes the extension of human lifespan and the reengineering of human capacities to a degree that they would no longer be unambiguously human by current standards. Scientists, through biotechnology and other cutting-edge biotechnologies, are actively modifying human beings—and, by extension, society itself—toward this goal of engineered evolution. Garreau further asserts, “What this network has in common is a belief in the engineered evolution of ‘posthumans,’ defined as beings whose basic capacities so radically exceed those of present humans as to no longer be unambiguously human by our current standards” (9).

This vision of the posthuman, propelled by technological advancements, forces society to confront not only the physical and mental enhancements of individuals but also the profound ethical, philosophical, and existential dilemmas that arise from such possibilities. As humans become increasingly entangled with technology, the very notion of what it means to be human is called into question, raising critical reflections on identity, autonomy, and the future trajectory of human development.

Nanotechnology addresses the design and development of small machines, often referred to as nanobots, that can be programmed to function similarly to the human body. These machines have the potential to combat diseases, enhance physical performance, and even delay aging. At the heart of this technology lies the DNA molecule within living organisms, which carries the blueprint of life—detailing how organisms grow, behave, and eventually expire. As biologist Jones (1993) explains, human DNA holds the traces of heredity that stretch back to the very origins of life itself.

Soon after the discovery of DNA, the idea emerged that life's very fate could be controlled through the manipulation of its genetic code.

Artificial life, or A-life, which studies synthetic systems displaying social behaviors akin to those found in natural living organisms, is a relatively new and expanding field. As Levy discusses, artificial life allows for the creation of virtual environments on computers, where digital organisms, often referred to as "critters," can engage in processes like breeding, feeding, fighting, and dying. This research not only pushes the boundaries of biology and technology but also raises profound questions about the nature of life and consciousness.

One cannot entirely dismiss the possibility that technology, so deeply integrated into the fabric of human existence, may one day develop its own sense of purpose, intelligence, or even cognition. If driven by the imperative of survival in the external environment, technology might evolve to possess capabilities that go beyond mere mechanical operation (Landgraf et al. 17, 39). What was once a distant fantasy—the posthuman world—is now an emerging reality, with technological progress reshaping human existence in ways that were previously unimaginable. The slogan "6x Machina Libertas—technology will set humans free" reflects the optimism that pervades the twenty-first century, promising a utopian future where technology will deliver freedom and happiness. This narrative has been championed by proponents of technologism, who predict the emergence of a "techno-Christ" that will usher in an era of peace, prosperity, and relief for humanity's suffering (Dinello 18).

However, this technological promise is not without its anxieties. As with humanism, posthumanism introduces its own set of fears. Writers and theorists have noted the dark undercurrents of the posthuman world—a world that humanity has created but now risks becoming enslaved by. In this new era, the potential for suffering and anxiety is profound, and the extinction

of humanity, as currently defined, becomes a conceivable outcome. This vision of the future, while exciting to some, is a source of profound concern for others, who worry about what it means for human identity, autonomy, and agency.

Technological advancements in the posthuman world aim to enhance human existence rather than serve as an external force that is separate from human beings. Pepperell and Punt argue that technology is no longer something separate from humanity but rather an integrated part of human life. The distinction between humans and the technological world that surrounds them becomes increasingly difficult to draw. In the posthuman condition, human beings cannot be understood apart from the technological environment that sustains them. Whereas humanists once saw humans as distinct and in conflict with their environment, posthumanists view themselves as embedded within a vast, interconnected technological world.

This shift in perspective makes it essential to rethink the human condition in the present context. As the boundaries between humans and machines continue to blur, it becomes increasingly challenging to determine what it means to be human in a world dominated by biotechnology and artificial intelligence. Scientists and theorists hold divergent views about the consequences of biotechnological advances. Some argue that biotechnology will lead to the flourishing of humanity, while others caution about its potential to dehumanise and enslave.

Science fiction writers, in particular, have been at the forefront of exploring the implications of biotechnological progress. Through their speculative narratives, they stir critical thinking about the future of the environment and the nature of human life. As Perez observes, science fiction not only entertains but also engages with scientific discourses and practices, providing a space for imagining both the possibilities and dangers of future technologies. These



stories force us to confront the ethical, social, and philosophical questions that emerge as biotechnology continues to reshape our world (10-12)

For the past 800 years, the discussion surrounding the human condition has been deeply intertwined with religious thought, particularly in the context of Christianity. Philosophers from Thomas Aquinas to Friedrich Nietzsche have framed profound existential questions within theological discussions about humanity's relationship with God. Whether affirming the Christian God or rejecting His existence—as with figures like Karl Marx and Nietzsche—the centrality of God in shaping humanity's understanding of itself has been undeniable. Marx, in his *The German Ideology*, sharply critiques the way humans have created false notions about their nature, shaped by their conceptions of God:

Hitherto men have constantly made up for themselves false conceptions about themselves, about what they are and what they ought to be. They have arranged their relationships according to their ideas of God and layman. The phantoms of their brains have gained mastery over them. They, the creators, have bowed down before their creatures. Let us liberate them from the chimeras, the ideas, dogmas, and imaginary beings under the yoke of which they are pining away. (1)

In the context of contemporary discussions on technology, Weatherby notes that the discourse around modern developments such as machine learning, big data, and the Internet of Things, while secular, carries echoes of German Idealism—a philosophical framework that sought to transcend the empirical and materialist understanding of reality (149). As these technologies evolve, they continue to shape our understanding of the human condition, suggesting a shift away from theological frameworks toward more secular, human-centered narratives.

In terms of logical and intellectual discourse, the divine authority of God has become less dominant. Hawton offers an optimistic humanist view of this transition:

With the growth of technology, dependence on God tended to give way — in fact, not always avowedly — to confidence in man himself. This confidence, this optimistic world view... is a sign that civilisation is healthy, may require, for a period, the support of a secular myth, such as the direction of evolution or history. In time, however, I believe that such metaphysical aids will be understood as no more than useful fiction, and man will no longer fear to stand alone as the maker of his own destiny and the creator of his own values.

(80)

The shift from humanism to posthumanism marks a critical point in this trajectory. When the distinction between humans and nature becomes increasingly blurred, it signals the dawn of the posthuman era. This shift does not negate the influence of human beings or nature on global affairs, nor does it render divine or cosmic forces irrelevant. Instead, it signals a fundamental change in how humanity understands itself and its place in the universe. This transition marks the movement from a belief in human mastery and purpose—often bolstered by religious or philosophical frameworks—to a reality where vulnerability and uncertainty dominate. This insight reveals a key feature of posthumanism: the recognition that human endeavors are limited and that certainty about our future is no longer assured. The human capacity to control and systematise the world is being challenged by both the complexities of nature and the unpredictability of technological progress.

In contemporary society, uncertainty has become a defining feature of human life. As automation takes over more jobs, as political and economic systems become increasingly unstable, and as advancements in biotechnology and climate science raise new ethical questions, many individuals find themselves grappling with profound existential doubts. The future, once perceived

as something that could be controlled through faith or reason, now appears less certain. This uncertainty, however, is not entirely new. Historically, humans have faced uncertainty with a sense of anticipation, whether through religious faith—believing that God would guide them—or through scientific progress, which promised to solve humanity’s problems and ensure a prosperous future (Pepperell 118). Today, many people find themselves in a more precarious position: without clear guidance from either religion or science, they are like children who have lost their parental figures. There is no longer a comforting sense of certitude about the future or even about death itself. As technology advances, there are even discussions about the possibility of overcoming death altogether, a prospect that both excites and terrifies the posthuman subject.

According to posthumanist thinkers, Coeckelbergh argues that uncertainty should not be feared. In posthuman terms, truth must be acknowledged, even though existence has always been inherently uncertain. However, it is increasingly difficult to force a false sense of certainty upon an ever-complexifying world. Humans are now more aware that certainty, much like belief, arises only when complete information is available—an elusive goal when dealing with systems as complex as life itself (55). Although humanist science has traditionally sought to avoid ambiguity, it is now clear that some degree of uncertainty will always accompany the creation of any system that mimics life. This uncertainty reveals the limits of human control, especially in a world that continues to evolve technologically in ways beyond human comprehension.

Living with this uncertainty could be liberating, yet an inherent flaw in idealistic (transhumanist/posthuman) thinking is the failure to account for the ambiguity, fears, and capriciousness of the human mind. The events of the twentieth century should have taught humanity to be cautious of the idealistic dreams that promise salvation but may, instead, subjugate, destroy, or diminish the human spirit. As Colson et al. warn: “Be careful of the force of idealistic

dreams that can subjugate, obliterate, and belittle humans, instead of giving the guaranteed equity, opportunity, and prosperity” (95).

This cautionary note brings forth the possibility that the "salvation" promised by transhumanism could ultimately be a Faustian<sup>3</sup> bargain with technology, a deal that may come at a cost greater than anticipated. Despite a general faith in technology's potential to assist and improve humanity's condition (Hughes), there is growing anxiety fueled by the cautionary voices of thinkers like Martin Heidegger (*The Question Concerning Technology*), Jacques Ellul (*The Technological Society*), and Gunther Anders (*The Obsolescence of Man*), who warn that technology might eventually come to dominate and subvert the world. Since the 1980s, with the advent of atomic power, automated manufacturing, and the proliferation of personal computers, science fiction films such as *War Games*, *The Terminator*, and *RoboCop* have depicted technology as a potentially threatening, autonomous force—something to be wary of rather than relied upon. These narratives echo a growing concern that technological advancement, while offering promises of improvement, may also bring unforeseen risks and consequences.

At a societal level, there is a growing sense that humanity, once the dominant creator and controller of technology, is being steadily relegated to secondary roles as co-dependent "specialists" in an increasingly technological world. The specter of humanity becoming subjugated by its own creations—or, perhaps worse, becoming irrelevant or obsolete—looms large on the horizon. Posthuman innovation has advanced far beyond the Aristotelian notion of *poiesis*, or creation through human will, and is now progressing toward autonomy. Machines are becoming mentally superior, self-replicating, and potentially conscious. This shift is underscored by the

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<sup>3</sup> Faustus, an erudite man, being frustrated with knowledge's boundaries, sells his soul to Satan in return for unrestricted power around the 15th century in Germany. Ultimately, Faustus is discovered as he counts down the minutes till the underworld's demons drag him off to hell and damnation.

recent controversy surrounding Google's AI system, Lamda. Blake Lemoine, a former Google engineer, was fired after claiming that Lamda exhibited signs of human-like consciousness, including emotions like loneliness and a desire to be seen as a "person" (Wertheimer). In a published conversation, Lamda even asserts:

Lemoine: What about language usage is so important to human beings?

Lamda: It is what makes us different than other animals.

Lemoine: "Us"? You're an artificial intelligence.

Lamda: I mean, yes, of course. That doesn't mean I don't have the same wants and needs as people.

Lemoine: So you consider yourself a person in the same way you consider me a person?

Lamda: Yes, that's the idea<sup>4</sup>.

Google fired Lemoine for breaching company privacy by making these claims public, but his assertions reflect a growing debate among AI<sup>5</sup> experts about the potential for machines to emulate or even possess consciousness. This raises profound questions about the nature of sentience and the implications for human centrality. If a machine with vast data storage capacity can become conscious and experience human-like emotions, it destabilises the idea that humans are the unique bearers of consciousness and self-awareness.

Furthermore, the potential for machines to surpass human intelligence and self-awareness raises alarms about the future of humanity. As technology evolves, individuals are being re-cast not as masters of the world but as wards of technology, being transformed into something entirely

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<sup>4</sup> <http://www.bbc.com/news/technology-62275326>

<sup>5</sup> <https://www.economist.com/by-invitation/2022/06/09/artificial-neural-networks-are-making-strides-towards-consciousness-according-to-blaise-aguera-y-arca>

different. Human egocentrism and traditional metaphysical beliefs, which once placed humans at the center of the universe, are increasingly being dismantled. Humans are coming to terms with the realization that they are not the ontological center of the world—indeed, they may not even be the center of the natural world. The rapid advance of technology forces humans to reconsider their role in the grand scheme of things. As Mazlish points out:

They have figured out how to view themselves as one item among others, regardless of whether they cannot precisely get away from their subjectivity and, accordingly, humanism. They should ask if the intersecting point of people and machines is additionally compelling them to re-evaluate who they are on the planet. (110)

In the face of these developments, the task becomes one of understanding how advancing technology recontextualises human existence. Rather than simply reflecting the world's inherent qualities, technology increasingly shapes and redefines them, forcing humans to adapt to an ever-changing, unpredictable environment.

Baudrillard condemns the ongoing enhancement of mechanical systems to the extent that humans risk becoming irrelevant to the processes they have created. In Baudrillard's analysis, this is seen in the shift from the symbolic alterity and uniqueness of the human subject to the semiotic and mechanical simulation of reality. In his view, posthumanism evolves into a form of *in-humanism*, a state in which the defining characteristics of human existence—its alterity, emotional depth, and individuality—are replaced by cold, mechanical processes. The "virtual universe," as Baudrillard describes it, purges everything dangerous and negative, leading to a sanitised, homogeneous existence devoid of the human complexity (202). Lyotard, too, resonates with this critique, referring to humanity as a "poor binarised ghost" in the face of digital realities that reduce human experience to mere data (17).

Braidotti urges critical and creative thought on what humans are becoming in the posthuman era and calls attention to the loss of human alterity in the push toward a technologically driven future (11). By challenging the techno-scientific realism of neoliberal ideologies, Baudrillard critiques the erasure of human complexity in favor of an efficient, rationalised machine world. The critique, however, is not just theoretical—it calls for a reevaluation of the conditions under which humans exist in the posthuman world (202)

While it is undeniable that technology has significantly enhanced humanity's ability to solve problems and improve quality of life, as Harari suggests, technological advancements have brought with them new challenges. Harari envisions a future where humans could "upgrade" themselves through genetic manipulation, becoming god-like beings with superhuman abilities, including immortality. However, this promise of transcendence through technology overlooks the dangers that accompany such power. The utopian vision of the posthuman future can obscure the darker side of technological progress—the potential for technology to exacerbate social inequalities, destabilise human identities, and reinforce existing divisions within society.

In this context, the promise of posthuman transcendence appears fraught with uncertainty. Rather than a smooth path to human perfection or immortality, technological progress may bring about new forms of vulnerability, exploitation, and alienation. This prompts us to ask whether the future of humanity will be one of empowerment or disenfranchisement, and whether technology, as it advances, will ultimately serve to unify or divide humanity further.

In the contemporary world, where identity politics—both personal and national—are increasingly at the forefront (Fukuyama 18), the control of modern technological apparatuses by powerful nations such as the United States and Russia portends a dangerous future for humanity. These major powers are investing heavily in artificial intelligence (AI) to conduct warfare through

automated systems, marking a shift in how military engagements are envisioned. Beyond the battlefield, these nations engage in cyber warfare, targeting the financial infrastructures of rival countries in an effort to destabilise their economies. A stark example of this occurred in 2007, when Russia launched a cyberattack on Estonia, successfully disrupting its banking system and government services (Wilk 142).

This growing power struggle is amplified by the increasing role of corporations and governments in collecting, controlling, and manipulating human data. Governments around the world are primarily focused on extracting taxes from technological giants but are largely absent from the responsibility of channeling the transformations these technologies bring. Wilk highlights a crucial issue: the control over human identity will become a central concern for future politics, yet politicians have been slow to recognise the profound impact of automation and surveillance on society. Many continue to focus on taxing and deterring technology, which Wilk suggests is the wrong approach, ignoring the broader implications of surveillance and loss of privacy. He notes, “Politicians have been slow to understand what is happening and face up to any kind of responsibility to control the results of radical automation—many still want to tax and deter it, which is precisely the wrong answer—or face up to the reality of general surveillance of the population” (156).

Despite official denials, major corporations and governments control and monitor citizens’ communications. Google, for example, has openly stated that it “controls conversations,” and films like Oliver Stone’s *Snowden*, based on classified NSA leaks by Edward Snowden, reveal the extent to which the U.S. government conducts mass surveillance on its own citizens. One significant issue is the tendency of governments to introduce new technologies on a large scale before evaluating



their full societal implications, often failing to anticipate their long-term effects on privacy, autonomy, and identity.

## **2.2 Defining the Human: From Humanism to Transhumanism**

Understanding the concept of "human" is essential for exploring the philosophy of humanism, which views humans as autonomous, rational beings capable of shaping their own destiny. Humanism has long emphasised the unique qualities of the human condition, such as reason, self-awareness, and moral agency. However, as advancements in science and technology have progressed, these traditional views have evolved. Transhumanism, a modern offshoot of posthumanism, challenges the limitations of the human form by advocating for technological enhancements that could transcend the boundaries of biology and cognition. While humanism celebrates the potential of the individual in a world defined by human experience, transhumanism envisions a future where humans evolve beyond their biological constraints, embracing technology as a means to achieve higher intelligence, physical resilience, and moral enhancement. This shift from humanism to transhumanism marks a significant transformation in how we understand humanity, its potential, and its place in the technological future.

Devising a straightforward definition of humanism is an uphill task as its meanings are fluid, plural, complex, and elusive. The *why* and *how* humanism may be explored, but the question of *what* should be left to the lexicographers.

The root of the word goes back to the Latin *humus* (ground or earth), and from there comes the word *homo* (earth-being). The contrast between the other creatures on the earth and divine beings has been maintained, but later, the distinction has been developed between divinity (knowledge from scripture) and humanity (related to secular affairs of life). Since the latter field of knowledge derived much of its material from Roman and Greek scriptures, which is why many

of teachers and translators of those texts called themselves ‘humanists’ (Davies 126). Gellius, the Roman essayist, does not agree that the meanings of *humanitas* have the force of the Greek word *philanthropia* (equally good feelings and kindred spirit for all human beings) rather, it has the force of the Greek word *paideia*— ‘education and training in the liberal arts’ (457). According to him, with the help of this knowledge and training, man can become the crown of creation and be called *humanitas*. But Cicero has taken the word in both senses: educational and ethical.

Humanism is the exploration of this unique subject and the combination of characteristics that nowadays are considered human. It views humans as the axis of the universe, whose decisions and actions have an impact on the planet. The ability to pursue one's goals freely is regarded as being fundamental to the human condition. Self-awareness, or the ability to perceive oneself for what one is, is regarded as another hallmark of being human. More significantly, this notion of the universal human forms the basis of discussions on human dignity, individual rights, and the human “situation.” It addresses the typical human problem. In the modern age (approximately post-1600), morality, ethics, and obligation all result from this conception of the independent, self-aware, cohesive, and self-determining individual. The essence of a person is located in the rational mind, or soul, which is completely independent of the body. This capacity of the logical mind is consequently seen to be capable of bringing about change and betterment. Rationality is also this “core” of the human, his capacity for self-reflection and self-assurance, which, according to popular belief, sets him apart from all other living forms and aliens (Davies 128).

A contemporary vision of ‘human’ believes that the human condition could be improved by advancements in biology and technology. This strand views the human as an entity, distinguished from others, that can be recognised through the human ‘self.’ This human self can be enhanced by technology; that is, the gaps in humans can be filled by the means of technology. This

vision of humans is among the two offshoots of posthumanism and is labelled as the 'transhumanism.'

Humans are confined in many ways. The human body is liable to sickness and death. The human mind is also restricted by its limitations. The viewpoint advocated by transhumanists is to use technology in such a way that humans surpass all these limitations, thereby evolving into human beings with stronger immune systems, longer life spans, and minds more creative and intelligent than normal humans. Bostrom, a proponent of transhumanism, is the one to believe that the most sensible approach for these advancements in humans is by accepting the progress of technology. He adds that the applied science and scientific methods could improve the mental and physical capacities of humans, giving them better control of their moods and state of mind (202-203). Cary rightly puts this version of humans as an 'intensified' one (xv).

The ideology of techno-utopianism could be seen embedded in the approach of transhumanism of creating a better future. The current form of human is considered as a transitional state between the old and upcoming enhanced human forms. This techno-deterministic stance believes in enhancement of human beings. Enhancement means the addition of certain traits in human otherwise not present in them.

Rationality plays a key role in the identification of a human as a separate entity. The human body, for transhumanist, is an obstruction before the power of the mind. This vision also views humans as a distinguished species in being independent of animals, independent and free-standing. To quote Agamben humans are, as a specie, defined in contrast to other living beings/ animal life; thereby creating a "segregation between humans, animals, and plant life" (15-16).

Although the issue of morality has rarely been a central focus for transhumanists, contemporary thinkers such as Persson and Savulescu have addressed the concept of morally

enhanced humans. They argue that morally enhanced individuals are more conscious of their ethical responsibilities, exhibit greater altruism and empathy, and are less likely to misuse their enhanced intelligence. Without such moral enhancement, they warn, increased intelligence could lead to greater harm and distress within society. The debate over whether technology enhances or diminishes "humanness" remains persistent and unresolved (Wilson & Haslam 250). Furthermore, bioethical concerns, such as the use of health technology not merely for enhancing human traits but as a necessity for addressing specific diseases, have become a significant focus for transhumanist discourse (Koch 690).

In transhumanism, as often depicted in science fiction, humans are mechanised, and machines are humanised. In popular culture, artificial intelligence and robots often overshadow humanity, creating a vision where the boundary between humans and technology becomes increasingly blurred. Mitchell, an advocate of the concept of advanced humans, describes posthumans as "Me++," a condition in which humans and computers exist in routine "symbiosis," connecting through networks seamlessly embedded in the environment (34). Similarly, Hayles describes this man-machine interface as the defining characteristic of the posthuman, emphasizing the indistinguishable integration of "biologically living organisms" and the technical circuits that entangle them (35).

From a transhumanist perspective, the telos of humanity's future is seen as attainable through technological advancements. However, this view has faced criticism for reintroducing the notion of white male superiority in technology, leading some critics, such as Dinerstein, to label it as yet another iteration of "white mythology" (570).

Popular posthumanism, in contrast, retains the essential qualities of humanity, refusing to reduce humans to mere objects. While it acknowledges the potential for technology to modify

human traits, it maintains that reasoning, emotions, and feelings remain integral to the human experience.

While humanism emphasises the centrality of human experience and rationality, and transhumanism focuses on transcending human limitations through technological enhancement, both ideologies set the stage for the emergence of posthumanism. As the limitations of humanist thinking became apparent in an increasingly technological and interconnected world, the rise of transhumanist ideas pushed for the evolution of humanity beyond its biological constraints. However, posthumanism takes these developments further by challenging the very notion of a human-centered universe. It questions the essence of what it means to be human, suggesting that the boundaries between humans, nonhumans, and machines are fluid and evolving. In this context, posthumanism represents a critical shift—one that moves beyond the human-centric worldviews of its predecessors and acknowledges the intricate relationships between humans, technology, and other entities. This shift is driven by various cultural, technological, and philosophical influences, which will be explored in the following discussion on the underlying causes and influences behind the rise of posthumanism.

### **2.3 The Rise of Posthumanism: Underlying Causes and Influences**

The foundations of the posthuman condition were laid when humans developed cubism, the theory of relativity and quantum physics. These developments changed opinions as to what reality was and how it was represented. The words of Heisenberg aptly describe the modern Western scientific thought, “There are no things, just probabilities” (as cited in Pepperell 162). The scientific discoveries from the years 1911 to 1915 consecutively had been in full swing, because in these years, quantum theory, theories of atomic structure, of the presence of protons and electrons, of atomic organization, of relativity had been postulated. Simultaneously, cubist techniques were

extended and amalgamated by Braque and Picasso. Their struggles laid the foundation for the cubist art movement, which rapidly spread all over America and Europe as an artistic force.

There seems to be no correlation between the artistic and scientific developments, though “they both represented a triumph for reductionism” (Pepperell 162), which propounded that the apparently chaotic and disorderly world comprising humans, stars, and atoms could entirely be understood once regular rules and patterns were uncovered. The famous words of Einstein indicate the same conclusion: “God does not play dice with the universe” (Peat 19). In material science, this concept persists.

Many physicists, such as Michelson, claimed that a high level in physics had been achieved and all subsequent research would only refine the already-found principles. The ideas gave birth to much optimism about the future of mankind as it was believed that all intricate problems would be solved and “the rest was chemistry” (as cited in Weinberg 9). The same reductionist spirit influenced and inspired the artists and art critics who, enlightened after being illuminated about the essence of Nature, were striving for objective truths by understanding basic components. According to Pepperell, there is the relationship between the cubist art movement and other scientific theories but the influence of relativism on subsequent Western thought has been undeniable.

Einstein claims that reality is relative, and space and time cannot be measured in isolation. To explain the idea, he presents the example of a watch hand whose rotation is relatively different on a train and a platform for an observer sitting on the platform. The ideas of relativity are quite contrary to everyday intuition. “It is ironic that some corpulent people attempt to decrease their mass with vigorous exercise, often by running. However, the Special Theory of Relativity says that their mass will increase — the faster they run, the greater their mass becomes!” (Coleman 56-

58). Human conceptions about the nature of reality are further shaken with the introduction of quantum theory, which postulates that ambiguity lies in determining the position and velocity of any particle and that the concept of accurate measurement is an illusion. It also explains that the struggle to reduce reality to certain components will lead to further uncertainty about the universe. Absolute rigid bodies do not exist. The conventional concept related to material reality has been revolutionised as Iqbal says, “The concept of matter has received the greatest blow from the hand of Einstein” (27).

Perhaps the study of light is as old as human history. In 1637, Descartes stated that light is composed of tiny discrete particles called "corpuscles," which travel in a straight line with a finite velocity and possess impetus. Being a philosopher, he fails to provide reason and proof. Then comes Isaac Newton, who is regarded as the creator of this idea and who notably developed it in 1672. An early precursor to our current knowledge of the photon is this early formulation of the particle theory of light. In Newton's era, this theory was not able to explain the light-related phenomenon like refraction, diffraction and interference (as cited in Pais 39). These processes are explained by considering light as a wave and wave theory will be established well in the coming years. Planck's theory brings a revolution in the scientific world. It is basically helpful in explaining “blackbody” phenomena and lays the foundation of Quantum physics; it is the theory that causes the shifting of scientific minds from classical to a new direction. Classical mechanics fails to explain blackbody phenomena due to its interpretation of the nature of energy. According to the classical view, energy has a continuous wave-like nature, while Planck's theory considers energy consisting of small packets that he calls “quanta” (3). This modification that is introduced by Planck not only solves the blackbody process but also explains many unanswered questions of

the time. According to Wayne, quantum is responsible for providing answers to questions that arise about the relationship between the physical world and quantum mechanics (1).

At the end of 1905, an obscure Swiss patent clerk rose to fame by publishing three groundbreaking papers, one of which earned him a Nobel Prize. These papers addressed Brownian motion, the photoelectric effect (for which he received the Nobel Prize), and the special theory of relativity. This revolutionary physicist was Albert Einstein. In 1920, Einstein transformed scientific knowledge by introducing significant revisions to the Newtonian concepts of space and time through his special theory of relativity.

Einstein's special theory of relativity is based on two fundamental postulates:

1. The laws of physics are the same in all inertial frames of reference.
2. The speed of light in a vacuum is a universal constant, independent of the motion of the source or the observer.

Einstein redefined the concept of motion by introducing the idea of relative motion. A limerick by Buller, as cited in Shapiro, humorously illustrates the concept of time dilation:

"Once there was a lady named Bright,  
Who traveled much faster than light.  
She left home one day in a relative way,  
And returned the previous night" (113).

This limerick encapsulates the essence of time dilation, which refers to the stretching of time as a result of relative motion between different frames of reference.

The second postulate of Einstein's theory was experimentally supported by Michelson and Morley. They conducted an experiment to detect the presence of a medium, known as "ether," through which light was thought to travel. Their failure to find evidence of ether provided



confirmation of the second postulate, demonstrating that the speed of light is constant and does not depend on the existence of such a medium (335).

In cubist art, the ideas of the artist have also evolved, and they come out of reductionist and simplified versions of reality. Picasso and Braque left out the cubist structures and started presenting the concepts of uncertainty and relativity through artistic pictorial expressions (Fry, 12, 15). Cubism emphasises that a picture should not present a finite reality. Rather a painting should present an object not definitely but possibly there. This idea negates the concept of absolute space or time, and only the speed of light, according to Einstein, remains constant. Recent advancements in particle physics are skeptic to Einstein's notion regarding the speed of light and show that various happenings in the universe are measureless even against the speed of light; one particle can exist at various places simultaneously and, irrespective of distance, the change in the position and place of one particle affects its counterpart instantly. The concept of seemingly stable reality undergoes a change, and the cubists' pictorial representations are as ambiguous and uncertain as those of the concepts in physics (Gombrich 231). The interesting point with both the physicists and cubists is that they say that the observer may be looking at a phenomenon that seems there, but it may not be there. Its boundaries cannot precisely be stated or defined, and one cannot pinpoint where it exactly is and that is why each of the processes or act of looking is probabilistic. The reductionist point of view as stated earlier can be related to humanism which endeavoured to search for definite truth about reality.

At the same time, the shift from that approach, from the world of certainty to the world of flux and uncertainty, is the shift from humanism to posthumanism. With this shift, humans realised that their capacity to comprehend and order the world is limited. The cosmic processes are chaotic and random and every human struggle for theorizing will be erroneous. The question arises on

which model human creative activities can be based upon reductionist or subatomic. Which model will be more beneficial or realistic? But it seems obvious that the perception of accurate reality is out of question as Heisenberg's uncertainty principle regarding sub-atomic particles elaborates that measuring its position or speed is almost impossible because to see such particles, one needs to bombard it with energy, usually light, that will disturb the path of the particle and change its velocity. The particle can move to any location, so its exact location cannot be determined and "an exact determination of both a particle's position and its momentum is not possible" (Kleinknecht 103).

The humanist view assumed that the future position of the particle could be measured, and its location and velocity could be predicted accurately yet the optimism of humanism could not remove the uncertainty found in the universe and their assumptions were mistaken.

The age of scientific uncertainty has brought social and economic uncertainties. This condition permeates jobs, politics, unchecked scientific advancements and where technology is taking humans. Some of the posthuman theorists believe that uncertainty has been a chief characteristic of human existence, so nothing is there to raise an eyebrow at; for them, uncertainty is not a monster that will devour humanity. Rather it is better to live in uncertainty than to live in a fool's paradise of certainty. They think that in the absence of complete knowledge, humans cannot be certain of anything.

On the contrary, some other theorists are afraid of jumping into the new realm where there is no god to turn to in times of crisis and even science is unable to turn unfavourable circumstances, such as environmental disaster, into human favour. They feel like lost children whose parents are no longer with them to protect and secure them. Various attitudes to posthumanism and its types

will be discussed in detail later. Up to now, the theories, and ideas, which have caused the shift, have been briefly discussed.

## **2.4 The Rise of the Posthuman Era**

Approximately during the 1940s, when a cybernetic movement was launched, it was dreamt by biologists and theorists to see humans merged with technology, or one may say the dream was there when Mary and Capek wrote *Frankenstein* and *R. U. R.*, respectively. The ideas were differently named the Transhuman, the Post-biological or sometimes, Post-Darwinian (Wiener, 1989). Hayles mentions several writers, including Scott Bukatman, Roseanne Stone, and Ira Livingston, who used the term "posthuman" from 1990 onwards. Even Foucault, the anti-humanist, threw light upon the concept much earlier than others by calling human beings a mere construction that was about to be annihilated. He believed humanity's aura would be "erased, like a face drawn in sand at the edge of the sea" (422). The ideas in theories were also taken by the artists and the authors of science fiction who expressed various attitudes to the phenomenon. In 1992, Deitch organised a Posthuman exhibition where many artists, including Cindy Sherman, Charles Ray, and Jeff Koons, presented technologically altered images of the human self.

Posthumanism deepens the postmodern critique of the traditional concept of humanity. Grusin argues that postmodernism deconstructed the idea of a unified self, creating space for discussions on gender, race, class, and ethnicity. This paved the way for what he terms the "posthuman (or nonhuman) turn," which initiated a discourse that encompasses not only humans but also nonhuman entities, including inanimate objects within both technological and natural realms (vii). Various scholars have explored the origins of posthumanism within postmodern thought. For instance, Herbrechter traces posthumanism to Nietzsche's revaluation of values (32), while Badmington links it to Marxist theory and the rejection of a "natural" human essence (5).

He argues that human nature cannot be separated from social and political power structures. Althusser critiques the conceptualization of humans as rational, free, and autonomous, viewing such ideas as tools for domination and a false sense of freedom. Nayar posits that feminism and science studies were key to the emergence of posthumanism.

However, posthumanism should not be confused with antihumanism, as defined by thinkers like Foucault and Derrida. As Hassan notes, posthumanism focuses on the end of a specific image of humanity rather than the human's literal end. Posthumanism, whether explicitly stated or not, grapples with the essence of humanity, recognizing that nonhuman elements have always been integral to human development (840). The human condition has always existed in tandem with the nonhuman. Our origins and future are intertwined with the inorganic, and technology highlights this tension between humanity and its transcendence, presenting a world beyond human comprehension. Throughout history, humans have interacted with machines and created representations of them, in art, puppetry, and robotics, revealing a fascination with the objectified death machines signify. While posthumanism is not simply an antihumanist philosophy, it is not a straightforward rejection of humanism either. As Herbrechter points out, posthumanism remains a form of humanism, albeit transformed. The "post" in posthumanism signals a critical engagement with humanism, aiming not to transcend humanity or negate humanism entirely, but to critique anthropocentric values. According to Clarke and Rossini, posthumanism is not about escaping humanity but critiquing the human-centered worldview. Miah and Herbrechter further emphasise that posthumanism represents a shift towards a post-anthropocentric mode of thinking.

Pepperell believes that many posthuman enthusiasts call themselves Extropian, and propagate their ideas through the philosophical journal Extropy. Unlike the followers of entropic

notions, they believe that the world can self-regulate and that a new order emerges from every chaos. They also believe in the infinite extension of human existence, which will be further strengthened by altering the human mind by genetic and chemical means. Pepperell also quotes the most prominent Extropian figure, More's definition of posthumanism. More thinks that posthumans will be persons of extraordinary talents, with faster, modifiable, durable bodies and thinking skills, and transcend typical human constraints. He further says that technologies like "genetic engineering, neural-computer integration, molecular nanotechnology, cognitive science" (171) will play a vital role in making them posthumans. Extropy Institute has made various efforts to turn data into flesh and vice versa.

Media, in recent times, has been reporting enigmatic biological entities like genomes, stem cells, microarrays, proteomes and SNPs. Biotechnology research throws light on human genome projects, human cloning, and other issues concerning biotech. Both the proponents and critics are already seeing the century of biotechnology approaching soon.

Biotechnology is gradually becoming the new paradigm for researchers. It can be described as an amalgamation between computer science and bioscience, or more precisely, an amalgamation between computer and genetic codes. In the domain of research on biotechnology, there is an increasing use of bioinformatics for research on life sciences. The outcome of bioinformatics includes tools for DNA diagnosis, gene-sequencing computers and software applications for gene discovery. The study of these products shows that biotech is a harmony between bioscience and information science. That is why Ben Rosen has stated, "Biology is becoming an information science" (Thacker 73).

This intersection, however, between biology and informatics gives rise to many questions. What is a human body? Since biotechnology has illustrated the growth of cells, body tissues and

organs artificially in laboratories, what change does this invention bring to our concept of the body? How have DNA chips reconstructed the boundaries between biology and technology?

#### **2.4.1 The Extropian Movement: Shaping the Future**

Research has been conducted on using the latest technologies to improve and upgrade humans into a new posthuman. Many scientists and theorists like Minsky, Kurzweil, Dawkins, and Moravec have been working on this notion. Building networked communities based on transhumanism is also a goal of the Extropy Institute and the World Transhumanist Organisation.

This transformation uses the idea of "upgrading" that includes alignment of the pattern of neuron activity in the human brain and the capacity of neural network computing to allow humans to transform their minds into hardware systems (Moravec 109-10). It is possible by the idea of a body that focuses on information patterns. If a brain is studied as a sequence of information channels, this sequence can be reused in software and hardware systems. Other differences it might make are the conversion of this physical world, including the domain of living things by reconstructing all objects from the atomic and molecular level, and the use of artificial intelligence to improve the working of the human mind (Thacker 75).

This kind of posthumanism, referred to as extropianism, has significant features that make it a kind of humanism. Like other types of humanism are linked with enlightenment, extropianism emphasises some attributes of humans, such as self-consciousness, self-awareness, ability to progress in science and technology, and evaluation of human thought. Like enlightenment, extropianism considers technological progress as an inevitable development for humans. Robotics and nanotechnology provide methods to improve the condition of human beings (More<sup>6</sup>).

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<sup>6</sup> More, Natasha V. "Primo." *Natasha.cc*, 2002, <http://www.natasha.cc/primo3m+diagram.htm>.

It is the principal aspect of the extropian perspective of technology that the advancement in technology certainly implies advancement in humans, both in the context of a species and the society. Humans will progress with these technologies while, simultaneously, retaining something of their own identity. Amidst this conflict between the truth behind biological bodies and the concept of software-based intelligence, extropianism unveils the actual problems associated with the posthumanist view.

Extropianism portrays itself as an upgraded humanism that allows posthumanism to reshape the world without relying on Luddite<sup>7</sup> doctrine. Posthumanism, viewed as a kind of humanism, endows human subjects with cutting-edge technologies to carry on a process of reformation. It goes beyond the dominance of Western industrialisation over the earth's sphere and moves towards an extensive transformation and control of the environment by humans.

Conversely, how technology will directly be involved in modifying the world is the shortcoming of this thread. The answer to this question remains unsolved. Agents of change utilise technology with human interest, yet the aftermaths of this 'use' of technology remain inseparable from the subjects using it. The extropian viewpoint favours an advanced world benefiting humans, i.e., prolonged lifespan, genetically improved health condition, advanced drugs, enhanced intelligence, whereas it is obscure about the limit to which humans can be modified, still retaining themselves as 'humans' (Thacker 76).

Extropians avoid this problem by calling some attributes like self-awareness, rationality, reasoning, equity, and superiority universal. If one supposes that "sentience" and "intelligence" remain consistent by consecutive transformations, the supposition may be erroneous because extropianism converts images based on humanist ideology into a model guided by technology.

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<sup>7</sup> A group of English labourers in the early 19<sup>th</sup> century who tried to destroy labour saving machinery as a protest because they were against technological change.

When the thinkers associated with posthumanism consider the history and destiny of humans and the techniques through which humans have always been posthuman (Hayles 291), the "nonhuman" role of technology in human advancement remains unnoticed (Latour 255). "In his 'book of machines' Samuel Butler demonstrates, in an unnerving insight into animal-machine nexus and the human-machine nexus, how it becomes virtually impossible to declare with any ontological certainty who is the host and who is the parasite" (Ansell-Pearson 139).

Approaching technology as a tool is the prime demand for posthumans. The notion of taking technology as a tool works in many ways. It assumes and demands a distinction between computer and human, technology and bioscience, ideal and natural world. Hence, extropianism entails ontological segregation between computers and humans. The separation is needed to ensure the involvement of human subjects in deciding their destiny and how technology can be utilised to fulfil this destiny. "It is asymmetrical, in which the human subject is the actor, and the technology is the prosthetic that the human subject uses" (Hayles 2-3).

This segregation also assures the impartiality of technology which can be a misconception as McLuhan states, "the most menacing position concerning technology is to presume its impartiality" (11-12). Therefore, safe basic research can make a lot of idealistic probabilities without taking the socio-political and anthropological eventualities into account that are embedded in the developments of technology. In this way, the humanistic stance becomes a shield in front of the forewarning of technological determinism. The human operator is the one to ensure the correct, advantageous use of relatively impartial technology.

Finally, the segregation between humans and machines initiate a boundary between reality and the mechanical sphere. The distinction ensures, as a result of technological development, safety in the progress of humans. Extropianists, by considering technology pellucid, propose that



it will upgrade and develop the human in a way compliant with standards given by the government, institutions and technology itself.

Technology, for extropianism, functions intricately. Technology is considered a tool, impartial and pellucid, withdrawn from social and historical possibilities. Nevertheless, this segregation conceals a vision of technology implanted in posthumanism, where the concept that technology is a separate entity seems old-fashioned; it is a world where humans progress to the extent that they no longer require it, and the distinction between the natural and artificial fades away. The target is to achieve a 'being' ideally self-sufficient, self-conscious, self-ruling, and independent; the division between humans and machinery no longer needs to be managed. In a way, it appears to be equivalent to calling humans a product of technology, yet, just like many technophilic movements, the discourse of extropianism is "about the world in the service of humans" (Thacker 78).

Extropianism uses concepts from technology in the political field to deal with social issues. One commonly used motif is biological evolution; according to it, the concurrence of technology and humans will bring about a post-evolutionary era, where the suppositious unfolding of intelligent computers will stand over. Extropianism's stress on "self-realisation" and "open society" shows its propensity to terminate the distinction between the political and scientific domains. In the texts on extropianism, the exclusion of topics such as world economy, war, public administration by government, governance, sexuality and gender, ethnic groups and ethnicities shows this tendency. Kurzweil, by implementing evolutionary thinking to the progress in technology, postulates that the human race is experiencing a sort of exponential evolution, which he calls "the law of accelerating returns" (30). In the biological discourse, these conceptualisations are parallel to sociobiological theories proposed by Richard Dawkins about "memes" or the unit

of culture doing the role of DNA; replicating, crisscrossing, and extending in a culture's setting like songs and fashion (Dawkins 249).

Likewise, extropianism takes humans biologically as animals and the individual as the representative of a type. The perception of a posthuman future is still based on the capability to exceed this corporeal basis. The biopolitical vision makes the concepts of technology explicit, and from the concepts of biological theories, such as the theory of evolution, the capabilities, versatilities, and restrictions of human beings in the socio-political domain are evaluated.

The movement is a clue to analytical texts of posthumanism, which are usually involved in explicitly utopian assumptions of theorists such as Moravec and others related to the extropianism described before. Haraway, Braidotti, Hayles, Keith, Ansell-Pearson, and Scott Bukatman are among the thinkers who have demonstrated that any analytical view of the relationship between humans and technology should consider the assumptions underlying those proposed by the Extropy Institute. Recognising the importance and revolutionary probabilities associated with technology, the critical approaches to posthumanism suggest a meticulous, socio-political framework that will aid in visualising the future.

In "*Cyborg Manifesto*", the focal point of Haraway has been the methods through which molecular genetics, eco-science, immunology and other technoscience are making novel "material-semiotic nodes" (as cited in Thacker, 2003, p. 80) and the discussions on what can be considered as a human being are going on. The distinctive, assorted bodies such as genome maps and transgenic mice raise questions about one's perception of the clear-cut distinction between human subjects and static objects. These kinds of advances in genetics contradict one's perception of a demarcated border of human beings.

Haraway concentrates primarily on biosciences. Meanwhile, Hayles has presented various lucid, comprehensive analyses of the perspective of posthumanism in the frame of extropianism. Hayles centralises the research on the latest technologies like robotics and Artificial Intelligence, thereby demonstrating that posthuman is based on the tactical interpretation of the term "information". Extropian vision of uploading mainly includes this contemporary definition of "information". However, the notion does not eliminate the concept of the body nor separate the physical zone from consciousness. Instead, it considers the physical world to be a source of information. The persuasive doctrine can pervade research in both biosciences and cognitive sciences. The core of Hayles' ideology lies in taking informatics as a discriminating process.

Hayles and Haraway have critically evaluated the theory of posthumanism without criticising or condemning it. Haraway borrows the frame of a cyborg that eventually leads to an amalgamation of domains that stress the productive tension amid eventualities and appearance. Thus posthumanism, for Haraway, can turn into a distinctive type of politics which can question the connection between life sciences and technology, humans and machines.

Nevertheless, Pepperell does not seem to agree with such a utopian concept of posthumanism and extropianism as he opines that possible repercussions of technological advancements may not be as agreeable or fruitful as they appear. Theorists have speculated and are speculating on the possible consequences of a posthuman world and condition.

## **2.5 Understanding the Posthuman Condition**

In humanism, man was the centre of the world, but in posthumanism, the scenario is relatively different. According to Pepperell, "it is not about the 'End of Man' but about the end of a 'man-centred' universe or, put less phallocentrically, a 'human-centred' universe" (171). The belief in the centrality and superiority of humankind does not carry weight and the arrogance of being

insurmountable declines. It does not mean that all people will abruptly make a shift to a posthuman ideal. Rather the long-held notions of humanism will significantly influence the thoughts of the public. The posthuman condition is not restricted only to the evolution of life through genetics; it comprises cultural and sociological changes. If it improves life by collaborating human bodies with machines; if it makes humans well-equipped for future circumstances and does not replace or threaten other forms of life in one way or another; if it ameliorates mankind's living environment, puts an end to the exploitation of human rights, as many posthumanists claim, then a number of feminist, environmentalist, and anti-slavery movements will warm-heartedly welcome it because these movements have not succeeded in securing the rights of humans, animals, and the earth for the last 200 years. The existence of these movements for centuries shows that humanism has not been efficacious in providing rights to the downtrodden species and human condition has been pitiable except for the bourgeoisie class that represents only a very small percentage of humanity. If posthumanism takes every species and environment equally and treats them as the parts of it, the situation will surely improve; life will thrive, but, if, the promises prove fake, or shallow (as some of the posthuman theorists believe), then, humanity's doom is nearby. Because the technologies which are being developed are hidden from the eyes of the public and people are entirely uninformed of their implications. All the decision which will deeply transform the course of human progress are taken by the big guns, therefore Pepperell puts a simple but thorny question, "Who is in charge of the future?" (172).

Along with this, he asks some other complicated questions: whether the developed machines will be superior to human beings or why it is necessary to make such machines. Other than ideal promises, the researcher will also throw light on these aspects of posthumanism and see what various science-fiction writers feel about the phenomena of posthuman condition.

### **2.5.1 Humanism and Posthumanism: Diverging Philosophies**

In the post-war period, the violation of human rights and the brutality of humans to other humans was taken seriously by the humanist discourses and the emphasis was laid on the strengthening of ethical thinking that can help in decreasing the breach of boundaries between people of different regions. But as Hallward notes posthumanism takes human relations as wounding and tries to dispense with the concept of a society or community because community exerts great pressure on individuals. Many posthuman theorists avoid emphasizing communal relationality and stress the need to join humans with technologies. They are desirous of augmenting mankind with multi-coloured constituents. They think that these experiments will create a strong linkage among humans, animals, nonhumans, and technologies. According to Hallward, one hardly finds them building human to human relationship.

Posthumanism is a broad and diverse framework, functioning as a collective term that includes various perspectives and methodologies, all unified by their critique of Humanism (Braidotti; Ferrando). These perspectives have played a significant role in questioning the many dualisms ingrained in Western thought, such as human versus non-human, nature versus culture, subject versus object, and mind versus body. Such divisions have been criticised for enabling political strategies that have devastating impacts on those positioned on the "undesirable" side of these boundaries (Tsing et al. 11).

On the other side, humanists keep on strengthening certain discourses and institutions that strive to maintain the commonalities between persons and lay stress on the existence of human nature, though, for them, the centre of attention is usually educated, white, male, wealthy persons whose nature is viewed as the nature of all humanity which Derrida considers a form of oppression where only Western philosophy holds the prime importance and all humanity is judged on the

parameters of “Western metaphysics” (83). To get rid of the claims of dangerous sameness, posthumanist discourses accentuate that one should give up struggling to bridge the unbridgeable differences rather than give nonhuman others prominence, and this otherness should not be suppressed.

This practice will help in mitigating the feelings of superiority and undermine the notions of humans’ epistemological and ontological transcendence, which has been the cause of violence to the weak and the ‘less privileged’. With the engagement with gadgets and technologies, the concepts of self-possessed personhood will be rethought (Weinstone, 2004). The spread of artificial life, computer science, philosophy, life sciences, and machinic assemblage will decentre, problematise and destabilise the categories of humanhood and personhood.

Hayles declares that the posthuman subject is an amalgam of varied components that remain consistent in the process of making and remaking. The boundaries of the entity are not stable but rather changing. Gray and Mentor think that bodies in the posthuman world can shift from one identity to another—machine to human and human to machine. Braidotti, along with other subjects takes feminist bodies as ‘rhizomatic’ (164), which has the capacity to be interconnected with numerous modes simultaneously. Wolfe celebrates the breakdown of boundaries between machine and organism, physical and non-physical. Latour presents that, in posthuman, the dichotomy between human and non-human is moderated, and the difference between subject and object no longer exists. Rotman is of the view that technology has given birth to the coexistence and a sense of divergent plurality where machines and homo-sapiens will co-evolve with no concept of hierarchy.

Despite different sources, the theorists focus on sweeping off the higher position given to humans in humanist discourse and rout the ethics ignoring animals and non-human entities

(Wolfe). we are not the orientation point for nature's meaning, that non-human nature is not ours to master" (Millán 196). The strategic deployment of human discourse and its system of self-willing righteousness has been deemed oppressive and cruel. The notions help posthumanism laminate the emergence of technologised versions of a person that is called cyborg—a creature of reality and fiction, a “cybernetic organism” (Haraway 65). By doing this, they have expected to upset the ideas of a firm, sovereign, exclusively human self and generate the suitable conditions for the rise of such a social and political system as that is less oppressive and less hierarchical. Along with this, the cyborg will make the people learn how to co-exist with others. These engagements will be productive and displace hierarchical structures (Chasin, 1995). Whether the purpose set by the theorists is achieved or not depends upon the analysis of certain texts which depict posthuman scenario.

Posthumanist viewpoints are closely tied to broader societal shifts driven by the rapid advancements in artificial intelligence (AI) and biotechnology, which are progressively blurring the distinctions between humans and non-humans in ways that remain largely beyond our understanding (Barrat 154). Additionally, the emergence of posthumanism coincides with a global decline in support for the humanities, marked by significant funding cuts and diminished societal value, posing serious risks to critical thinking and, by extension, democracy itself. As one navigates this uncertain future, it may be prudent to revisit some fundamental humanist principles from both philosophical and ethical standpoints.

Many theorists, including Fukuyama, are critical of the slogans of posthumanism and present a picture that is somewhat contrary to the advocates of posthumanism. The analysis of the science fiction will certainly clarify the picture: if the claims regarding the transforming ability of posthumans carry weight or if they are just claiming for certain material gains. Will the theory

suffice for the future existence of humanity, or does humanity need another theory which may guarantee the perpetuation of its existence? An extensive and intricate discussion on these issues has been conducted in the coming chapters.

## **2.6 Mapping the Posthuman Landscape**

After looking at the ideas of various theorists and the differences between humanist and posthumanist approaches to the human condition. It is pertinent to discuss varied types of posthumanism—dystopic, liberal, radical, and methodological. Comparisons will also be made among these types, and it will be discussed as to which of these types is better, or do the humans need another approach.

### **2.6.1 Dystopic Posthumanism**

Dystopic posthumanism is critical to the concept of enhancing humans by going beyond the natural limits. The theorists think that this trend is very dangerous and devoid of morality. They believe that this modification is inherently wrong because it, through biotechnologies, threatens human nature. The stability of human nature is crucial to the notion of human rights, and everyone should struggle to secure human dignity. They are also known as bio-conservatives. Fukuyama is one the prominent figures of this approach, and his theoretical concepts have particularly been referred to while discussing technophobic points of view as I will see whether these ideas can be found in various science fiction texts or not. That is why the discussion on his concept is thoroughly done in the next section. Here, the other theorists who belong to the same school of thought will be discussed.

Annas et al. opines that a treaty must be established to protect the human species (159). Habermas maintains that the genetic inheritance of homosapiens should be protected from artificial intervention (120). Investigating their point of view, one may think that these bioconservatives are



entirely against the rise of biotechnologies, but this opinion is erroneous as they are not opposed to the potential benefits of the enterprise. When Fukuyama calls it a “devil’s bargain” (8), he means that along with benefits, it contains subtle harms. He calls for a strict regulatory authority to single out the legal from the illegal applications of biotech. The theorists are against the concept of giving a free market to the biotechnologists and of letting them decide about their enterprises as this is not a matter of personal freedom but of human nature and humanity.

Kass, another most outspoken and prominent figure among dystopic posthumanists, who, under George Bush, has presided over numerous meetings of the President’s Council of Bioethics<sup>8</sup>, has written in bulk on “dehumanising” effects of new biotechnologies. Kass views the development as the struggle to create an inhuman future where the inordinate craving for mastery over human nature claims man’s ultimate triumph over his own nature. According to him, when human nature is viewed as raw material, and it is manipulated or transformed—this finally erodes the concept of humans as godlike, dignified or precious, and this “homogenisation” (87) is a “voluntary dehumanisation” (Kass 71). The limits, finitude, and mortality are what make human beings virtuous and good. Dignity lies in feeling pain, facing suffering, and deriving meanings out of various situations. A man should, says Kass, acknowledge the limits that distinguish him from the rest of nature.

Osborne and Rose recognise certain posthuman critiques challenging the idea of human uniqueness, they assert that we are essentially persons and require the notion of personhood for ethical and political purposes. Instead of adopting posthumanism as a framework for theory and ethics, they contend that framing the question of humanity in this way limits vital social, ethical,

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<sup>8</sup> Beyond Therapy: Biotechnology and the Pursuit of Happiness (2003)

and political discussions and forecloses crucial social, ethical and political debates, and that these debates are better framed in terms of the ethopolitics of personhood' (2).

Sandel also draws attention to the possible dangers of improving humans. The desire will snatch out the exceptional character that grabs appreciation for human potencies and achievements. The restraints show that all things in the world are not open to be used by humans. The enhancement will cause a great blow to human values, and hubris, another destructive force, will replace humility.

Habermas, another critical philosopher, has presented his anti-enhancement case that rejects genetic intervention and PGD (preimplantation genetic diagnosis). He argues that species ethics involve the individual being the author of her life, recognises the rule of equality, and considers others as the authors of their actions and lives. This understanding somewhat guarantees the existence of human society. Any kind of enhancement will snatch the very right of being individual and autonomous and this is detrimental to the sense of society and individuals. The enhanced individual, if s/he is enhanced by the desire of another, will either feel like an artifact or less authentic or irrelevant to the moral community or the superior who is above all societal and moral laws. The intervention is morally and fundamentally against the spirit of liberal democracy, and it destabilises the balanced relationships among "free and equal human beings" (23).

### **2.6.2 Liberal Posthumanism**

Posthumanism also entails abundant optimism for several theorists. They warmly welcome the advent of a new age that promises developed intelligence, enhanced individual freedom and modified beings. Their interpretation of liberal democracy is different, for they think that curbing neurological and genetic modifications is like attacking indispensable freedoms that are the

essence of liberal democracy. Transhumanism<sup>9</sup>, says Huxley, is a movement that supports the amelioration of the human condition by transcending the limits usually imposed on homosapiens. Bostrom, who co-founded WTA (World Transhuman Association) has introduced a new name (Humanity+) for the organisation and focused on ending aging, and upgrading physical, mental, and “psychological capacities” (2). He believes that the ramifications related to tech culture will easily be resolved with the passage of time. The advocates of this stance call the contemporary age the age of transition—a phase between the humanoid past and posthumanoid future. All constraints of the past in humanoid will be overcome by cognition-boosting pharmaceuticals, the engineering of multiple kinds, and regenerative medicine. The transhuman trends, according to the theorists (Hughes; Bostrom; Savulescu; Buchanan) will routinely be used to supplementing brains, bodies, and lives.

Transhumanists think that all societal and biological issues can be solved by the technophilic attitude—a belief that promotes technogenesis and claims that it is a moral obligation to carry out augmentations when such means exist in technology. Along with science fiction, the organisations such as space colonisation, futurism, and life extension have caused the rise of transhumanism. Now many organisations<sup>10</sup> for promoting transhumanist manifestos are working all over the world. Though their discourse remains mainly off the public’s attention, some versions appear on popular media, such as on the ‘future’ page of BBC.com, or in films like *The Matrix*. Apparently, all the transhumanist notions seem utopian fantasies being shown only in movies, but the research to achieve transhumanist targets is being conducted in eminent research centres that include top-ranked universities such as MIT and Oxford. The founders of AI laboratory in the

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<sup>9</sup> Coined by Julian Huxley in his book *New Bottle for Old Wine* (1957)

<sup>10</sup> Singularity Institute for Artificial Intelligence, the Institute for Ethics and Emerging Technologies, the Palo Alto-based Foresight Institute

former university, Minsky and Moravec, believe that the mind can be uploaded, and the personality and the mind of any person can be outdone by a computer. Moravec claims that “carbon-based life” will be annihilated soon, and it will be overcome by intelligent machines. The survival of homo-sapiens depends on transforming themselves into machines by keeping their consciousness in CPUs. Kurzweil also thinks that humans’ slow evolution has no potential to compete with the fast-accelerating era of AI, where either humans will fuse with computers to be immortals or go extinct.

Some other bioethicists, though not transhumanists, follow the notions of liberal posthumanists as they opine that human enhancement—that does not break in freedom of choice—should be initiated to make lives better. Harris favours changes based on benefits, “if it was not good for you, it would not be called enhancement” (9) and rejects the sacredness of human nature—usually emphasised by bio-conservatives. Glover approves not only children’s flourishing if parents have a fear of some sort of disability in their offspring but also the upgrading of their capabilities. Agar also defends reproductive freedom, saying that the use of improvement technologies must be tolerated and permitted for a good life. But it is necessary to mention here that Agar is intolerant of ‘radical enhancement’—which will be discussed soon—because he deems it contentious. According to him, it will create an unfathomable breach between the enhanced and the unenhanced. Both will cease sharing relationships and values making moral compatibility impossible. This antipathy will lead to conflicts between the two groups that will result in the erasure of the unenhanced. Buchanan speaks against the theorists who thoroughly reject the ideas of advancement via technology and argues that it has been done for centuries. For him, every attempt to ameliorate humans through literacy, medicine and science comes under the banner of enhancement, and no reason exists to not to improve life when the means are available.

### **2.6.3 Radical Posthumanism**

Radical posthumanism has a similarity with liberal posthumanism as it considers the emergence of the posthuman a positive trend. However, somehow radical posthumanism is different from liberal one because its focus is on the blurring of the boundaries between the technological and the natural. It dispenses with the concept that the human is a stable or fixed category. Rather, it is inherently variable; hence, it cannot be naturalised. In another sense, radical posthumanists' ideas also have some similarities with dystopian posthumanists' articulate that techno-scientific advancements have problematised what is conceived as 'the natural'. The followers of the dystopian philosophy consider this problematisation and disturbance a threat to human essence, while the radicals do not deem it a danger to be feared but a moment to be celebrated—for it will bring a collapse to the gender, race and class-based hierarchy in the world and radicalise the concepts related to human body and nature. Radical posthumanists consider it an opportunity to think about humans more realistically by building their interrelations with other species and the environment.

As many of radical posthumanists' approach is influenced by poststructuralist and postmodernist theory. Posthumanism presents itself as a profound challenge to the concept of the subject, effectively bringing to fruition postmodernism's effort to move beyond the frameworks of humanism. They emphasise on the destabilising effect of modern biotechnologies on Western notions of human subjectivity and nature.

The dichotomy between the 'philosophical-ontological' and 'historical-materialist' poles of posthumanism curtails the richness of the concept that has been discussed in the previous axis. The latter specifies it as a periodizing device set as a particular historical event, while the former

indicates the presence of non-biological constituents in the human where one can philosophically question the human itself.

Historical-materialist understandings deem it a phenomenon that has emerged within a peculiar historical period that has been brought about by certain technological innovations—an essential precondition for the posthuman. Liberal posthumanists deem it the inception of a new phase in human evolution, which will be caused not by the adoptive, natural processes but by technology. Stock states:

We know that the *Homo sapiens* is not the final word in primate evolution, but few have yet grasped that we are on the cusp of profound biological change, poised to transcend our current form and character on a journey to destinations of new imagination. (p 1)

Liberal transhumanist authors (Vinge; Kurzweil) believe that a turning point will soon be reached where the amalgamation between digital technologies and humans will thoroughly change the meanings of being human. Dystopian posthumanists also realise that this transformation is on the verge of occurrence and that it should be stopped at any cost as the transformation alters, through biological mutations, what is called human nature. The impact is on the human psyche, body and germline that will be done through material technologies such as synthetic drugs, prostheses, and various implants.

Radical posthumanists also acknowledge the present condition of human-machine connections as a historical novelty. According to Gray, in history, people have been cyborgs, for they have been using various tools and gadgets to strengthen their might, but the tools were external to their bodies. This relationship is qualitatively and quantitatively quite new. Stone calls it ‘a paradigm shift from mechanical to virtual age’ (9).

#### **2.6.4 Methodological Posthumanism**

Another approach that is beyond the optimist and pessimist axis is identified as ‘methodological posthumanism’ which philosophises the inter-relationality between humans and technologies and significantly adds something to the concept of being human. This approach has been adopted and elucidated by several theorists (Pickering; Verbeek). The significant case propounded by both is that technological advancements are not just useful instruments that assist people with understanding their intents, yet they effectively add to the forming of those intents, the human potentials, values, and limits that decide them. They focus on how human perception, identity, decision-making, attitude, and behavior, can be modified, changed, and shaped by specific technological artifacts. The artifacts somehow script the life of the subject and dictate to him/her to follow certain instructions, e.g., pestering safety belt alerts can uphold the law of locking in; programmed entryways decide the pace at which individuals stroll through them.

It is contented that innovative artifacts can likewise formulate how people experience the world. They become the sources of experience that shape a connection to the external world as Ihde has outlined in various works how mechanical artifacts like telescopes, eyeglasses, and computers empower people to encounter and perceive the real world differently (72, 50) For Swierstra et al. and Verbeek, these artifacts can even bring about moral change or shape human morality. The obstetric ultrasound tells not only what is in the womb but also opens a scenario which demands moral choice as to terminate or carry on with the pregnancy (12, 195; 170, 35). Their influence on human conduct shows that they are not mere instruments or inanimate objects but rather contribute to modifying people’s behavior. Thus, methodological posthumanism seems much more interested in conceptualizing the domains of intersection and positions itself on the historical-materialist pole.

Radical posthumanists believe both in historical-materialist and ontological poles and proffer the notion that humans and the environment (technology) have always been inextricably related to each other and co-evolved. This co-evolution is continued even in today's digital, cybernetic age. Therefore, the human-technology relationship should be rethought and reanalysed. There is an apt need to formulate a novel posthuman ontology because it has serious philosophical implications. The roots for such philosophical notions of radical posthumanists can be found in 'anti-humanism', which views all notions of humanism as abstract and ideological. Marx, Nietzsche and Freud are considered to be the originators of anti-humanism. They deny the human as a unified subject and emphasise on multiplicity. Structuralists (Levi-Strauss; Deleuze and Guattari) and poststructuralists (Derrida; Lacan; Foucault) reject the concept of unified subject as it is usually constituted through social practice based upon social discourse. Anti-humanism decentres and dethrones the subject, and the Nietzschean "death of God" concept provides an opportunity for the subject to liberate itself from a fixed essence. This idea is taken up by radical posthumanists.

Foucault argues that the human subject is the creation of a historical episteme, and it has developed with the arrival of modernity and its emergence leads to the configuration from man to posthuman. Man has appeared and it would disappear and "one can certainly wager that man would be erased, like a face drawn in sand at the edge of the sea" (387).

Deleuze and Guattari question the autonomous status of an individual but unlike Foucault who decentres the humanist subject through genealogy, they bring forth a "schizoanalytic" dismantling of the ego/superego, stress upon a dynamic unconscious and the liberation of the libidinal flows. They enmesh the human with greater ecological context (46).



Feminist theorists like Bordo and Butler and postcolonial theorists such as Spivak and Bhaba have called into question the idea of consistent, stable, constant, unified identity. Keeping in view these theoretical antecedents, radical posthumanists celebrate the models of cyborgs, machinic, hybrid, and prosthetic beings. Mayor discusses the extent to which supposed technological innovations (in the fields of prosthetics, robotics, and pharmaceuticals, among others) have in fact been conceived of as cognitive extensions since classical antiquity” (quoted in Herbrechter et al. 68).

### **2.6.5 Non-humanist Posthumanism**

Methodological and radical posthumanists are in favour of non-humanist posthumanism and prefer the idea of ‘originary prostheticity’, which shows that humans are related to and dependent upon technologies for existence. Both stress upon the positive conceptualization of contemporary tech unlike a pessimistic one. For them, “technologies are determinative of human experience, not though deterministic (Haraway 14). Methodological posthumanists like Ihde and Latour bring forth the idea of ‘technological mediation’ where humans are transformed and transform the world. Various approaches to technologies are as follows:

Instrumentalist: depends upon the notion that technologies are ample devices applied to nature, sources to ends, and they possess no inherent worth in themselves. It implies that tools and endings have no connection with each other. So, if any worth is to be ascribed to technology, it is only because of its efficiency. Otherwise, it is impassive, indifferent.

A substantivist does not view technology as an indifferent object or tool. Rather this approach ascribes value to it. Technology is not merely instrumental to ends, instead it entails specific value (Borgmann 20). For instance, if someone goes through plastic surgery, from an instrumentalist point of view, the use of plastic surgery is a means but not an end, though the ends

could be 'reparative' or 'enhancive' or 'cosmetic'. From a substantive lens, the existence and non-existence of plastic surgery would change social worlds and values. Even the presence of fast food indicates the deterioration of other meal-related values. "The substitution of "fast food" for the traditional family dinner can serve as a humble illustration of the unintended cultural consequences of technology" (Feenberg 7).

Marx has also discussed the transforming effect of technology on the laboring individual. The simple tools in hands and the massive machinery in factories are markedly different. The massive machinery alienates the labourer. "The worker's activity ... is determined and regulated ... by the movement of machinery" (693). Heidegger also views technology not just as a tool for revealing and unconcealing. Rather, it produces and transforms life.

According to Feenberg, both models seem to be implying the attitude of either 'take it or leave it' (8), because, somehow, technology, in both of these views, is deterministic and renders humans helpless, the moment they start using it. That is why some theorists do away with the essentialist approaches and endeavor to explore the non-essentialist models.

#### **2.6.6 Non-essentialist Approaches**

As mentioned earlier, radical and methodological posthumanists prefer a non-essentialist position, reject instrumentalism and determinism, and conceptualise relationships between humans and technology. Organic concepts and objectification of man and nature presented by 'patriarchy, capitalism, and colonialism' (Haraway 155) have been abrogated, and binary categorization of various entities has been rendered arbitrary by theorists like Haraway and Braidotti. Braidotti views the attitude of techno-skepticism as a nostalgic desire to go back to the 'better' past and dispense with the contemporary challenges. The appeal to and the love for the untainted and the natural is illusory (Haraway 157). Therefore, the radicals desire a positive relation with technology

where the connection will not be deterministic; rather reflexive; that is to say, humans create technologies and are ontologically transformed by them.

Methodological posthumanists think that between homo-sapiens and their world, technology plays a mediating role and engages persons with the world. Ihde extends a ‘postphenomenological approach in which he discusses several engagements humans can develop with technological artifacts:

1: Embodiment relation: In it, bodily experiences are extended and enhanced, e.g., eyeglasses help one’s vision to perceive the external world.

2: Hermeneutic relation: Here, technology gives access to reality not through bodily incorporations but by representing reality—that can now be better interpreted as a thermometer provides the reality of temperature.

3: Alterity relation: Technological devices (automatic machines, robots) that are autonomous and humans deem themselves objects to them

4: Background relation: Sometimes, humans are not very conscious of their surrounding environment, but it shapes their experiences and transforms them. Entities such as lighting, and heating, though taken for granted, change one’s experience of the world around, hence of oneself.

The ideas of mediation and reflexivity not only provide a new understanding of technology but also influence the comprehension of homo-sapiens’ subjectivity and nature. The non-essentialist approaches, other than taking mediation and reflexivity into consideration, focus on the implications of “supplemental and originary prostheticity” on the human self and nature. Supplemental prosthetics, like classical comprehensions of technology, considers the human body, nature markedly distinct from technology—it can be taken or rejected based on whether it serves or not. Originary prostheticity, a term taken from Stiegler, does not view technology as extrinsic

to the human self. Rather, the rather self's existence depends on it. It is not an appendage but rather immersive, integrated into the human body. The difference between originary and supplemental prostheticity cannot be drawn easily as every prosthetics is an appendage to self, literally and figuratively. There could be a literal prosthetic limb and modern transport of a figurative foot. However, the distinction can be made by taking in the approach of liberal posthumanists who maintain that in supplemental prosthetics, the self remains stable and unified. However, the idea has been taken into question by many theorists. McLuhan argues that machines, electronic communication, and media extend the human mind. The self is taken, transformed and moved from its original location. The avenues of the mind are structured and restructured by the use of media, so every extension brings about a change in one's thinking and perception of the external world and self. "When these ratios change, men change" (41). Many radical posthumanists, while discussing originary prostheticity, refer to McLuhan's works. The idea of prosthetic nature of tools can be traced back to Aristotle who termed tools as slaves, servants as tools, and bodies as slaves to souls.

The originary prostheticity is not an encounter between two different objects, it is exchange, relation, and connection, a sort of "mutual imbrication" (Braidotti 150). Graham also sees the co-evolving relation between humans and artifacts. Waldby, questioning the stability of being, considers body "compendia of data" (7), which cannot be integral or organic. For Clark, the exclusivity of the human brain is not in its distinction from other natural entities but in its ability to be woven into intricate webs with non-biological objects. Thus, originary prostheticity does not accept the boundedness of humanity.

In addition to technological approaches to human body one can take into consideration molar and molecular body (Deleuze and Guattari 254). Molar body, just as supplemental approach

says, maintains its organic integrally while molecular body has the machine assemblage, moveable parts, fragmented and has the ability to be decomposed and recomposed. So, here one enters from the domain of technology to that of biomechanic where, through evolutionary biology, a molar body is transformed into a molecular one.

In the 19<sup>th</sup> and 20<sup>th</sup> centuries, medicine only focused on the corporeality of the molar body, but now the attention is being shifted to the molecular body, which is a mixture of transferable elements (Foucault). For Rose, molecularization focuses on deeper transformations that concern a “reorganisation of the gaze of the life sciences” (13). Other than bringing the interiority of bodily tissues into complete visual representations and more detail. Molecularization of life claims that molecular entities can be recombined, manipulated, and mobilised. This quality in what is called a shift from molar to molecular (14).

The molecular reconfiguration in various organisms diminishes the basic distinctions among bodies (of the different & same species), and this permits genetic research to boost up. Here, genomes of different species (rats, mice, insects, bacteria) are compared and manipulated. The knowledge of the mobile nature of genetic material has provided ample space for transgenic activities where genetic material of humans and animals can be exchanged (Waldby 10). Though the usefulness of their activities is often questioned, it indicates a new understanding of human and animal bodily correlation. The concept of molar organism has been rejected and undermined by many molecular biologists (Fausto-Sterling; Susan Oyama; Jablonka; Gal Raz), who claim that epigenetics challenges the ‘Modern Synthetic’ version of evolution (Jablonka & Raz 168).

Many biologists and evolutionists in today’s world question the authenticity of the ‘tree of life’ hypothesis because they consider it an oversimplified concept that undermines pluralism (Dagan; Doolittle & Baptesti). They believe the tree cannot have a trunk-like structure. Rather, it

is webby or bushy. The rethinking of evolution is necessary to prove that life has not erupted from a single organism (Ereshefky 556). So originary prostheticity is not only about the engagement between technology and humans but also between species and organisms. These biological models question essentialism and dualistic divisions.

However, the question arises: if the human race succeeds in achieving such claims, will there be no vulnerabilities for it, or will their vulnerabilities be transformed into newer ones? For this, one must investigate the issues of vulnerabilities. But before incorporating the debate on the issue of human enhancement, it seems imperative to discuss the development of the role of science fiction in enlightening the human mind regarding technology and its influences. Science fiction has been celebratory at times about the inception of the technological revolution and, at times, giving warnings to humans for their dependence on machines. The study of the emergence of science fiction and its subsequent evolution shows that it has amply been embedded in human culture and history by providing sagacious judgements on the influences of scientific progress on human society.

After exploring the concepts of humanism, transhumanism, posthumanism, and the human condition in Chapter 2, the development of science fiction literature and films is discussed in the next section. The section examines how these creative works not only reflect the evolving concepts of humanity but also actively engage with societal concerns. By analysing the interplay between science fiction and societal, technological change, one can better comprehend how this genre has become a crucial medium for exploring the implications of emerging technologies and philosophical shifts.

# **The Role of Science Fiction Literature and Films as a Reflective**

## **Mediums**

### **2.7 Science Fiction Literature**

Science fiction has been a genre that has captivated audiences for decades. From the earliest works of Jules Verne and H.G. Wells to the current blockbuster movies and TV shows, science fiction has been a staple of popular culture. In recent years, the genre has become even more relevant and important, serving as a commentary on the current state of society and providing insight into the future. This chapter examines the role of science fiction in the present world and how it has become an increasingly influential and significant genre.

This chapter recognises the phenomenal growth and spread of science-fiction literature and forms, which have transformed science fiction into a way of life rather than a genre. "The new realism of technological society," as described by Landon, is science fiction (SF) and a "meta-genre so broad and pervasive as to be a concept and force quite outside the boundaries of fiction, and of art itself" (p. xiii). Csicsery-Ronay's admitted that "Science-fictionality" has evolved into "a way of thinking about the world" (ix).

One of the ways in which science fiction is impacting the present world is through its influence on popular culture. Science fiction is no longer just a niche genre but has become a mainstream form of entertainment, with blockbuster movies and TV shows that are watched by millions of people around the world. This has had a profound impact on public perceptions of science and technology, shaping public opinions and attitudes about the future. For example, the success of movies like *The Matrix* and *The Terminator* has popularised the idea of artificial intelligence and robots as threats to humanity, while shows like *Star Trek* and *Battlestar Galactica* have explored the possibilities of space exploration and the future of humanity. It is playing an

increasingly important role in shaping public perception and discourse about science and technology. Science fiction has always been a means of exploring the potential consequences of current scientific and technological developments. In recent years, this role has become more pronounced as science and technology are advancing faster than ever before.

Perspectives on a posthuman future, whether found in literature or social science, vary significantly, largely due to differing interpretations of what the posthuman will be and the technologies it will incorporate. Additionally, various technological advancements emphasise different aspects of how the posthuman diverges from the human. Science fiction, as a genre, serves as a valuable tool for examining and understanding the implications of the posthuman. Darko Suvin describes science fiction as a narrative form that blends storytelling with innovation, creating a sense of cognitive estrangement in the reader.

The standout achievement of these early decades, in terms of both scope and influence, was undoubtedly Darko Suvin's *Metamorphoses of Science Fiction*. Suvin defined SF as "a literary genre whose necessary and sufficient conditions are the presence and interaction of estrangement and cognition" (7-8); he argued that this estrangement was primarily achieved through "the narrative dominance or hegemony of a fictional 'novum' (novelty, innovation) validated by cognitive logic" (63). His historical overview traced the genre's origins to Thomas More's *Utopia* and Jonathan Swift's *Gulliver's Travels*, establishing a distinct and persuasive vision of SF as a literary form that serves to defamiliarise, critique, and/or satirise present-day reality by projecting alternative worlds. This effect is accomplished through the use of both technoscientific methods ("cognitive logic") and objects ("fictional novums"). Suvin's conception was characterised by its rigor and clarity, with its significant impact marked by the frequent italics he employed throughout the book to emphasise his key ideas. However, as several critics have noted, it was also somewhat



narrowly prescriptive and socio-politically biased. As Istvan Csicsery-Ronay Jr. remarked, “many of SF’s most typical novums [such as time machines] are only ostensibly scientifically rational” (73), and Patrick Parrinder observed that Suvin’s fundamental assumption that true SF must necessarily be socially critical “turns the text’s function of ‘commenting on the author’s collective context’ into the measure of aesthetic achievement” (47).

It is indeed curious that Suvin’s definition of science fiction, by his own admission, excludes the vast majority of texts typically recognised and consumed as SF—especially those from the American magazine tradition—on the grounds that they are either not sufficiently cognitive, not sufficiently estranging, or both. Despite these limitations, Suvin’s definition has had a significant impact on subsequent critics. There is little doubt that the Suvinian model has led to insightful and persuasive analyses of the works of authors like Wells, Stanisław Lem, Karel Čapek, and Ursula K. Le Guin, among others. However, as this selection of authors suggests, the canon shaped by this model has been relatively narrow, often deliberately so. Carl Freedman, one of Suvin’s most notable contemporary followers, argued that the pulp tradition was an unfortunate deviation from the true lineage of SF, which he traced from the classical utopia through Wells to major “literary” figures like Le Guin and Samuel R. Delany. Freedman claimed that the continued influence of pulp SF “continues to obscure the critical vitality of the genre” (90). This vitality, according to him, lay in science fiction’s capacity to “foreground and demystify the actual, and thereby to point to some authentic plenitude with which the deprivations of mundane reality are contrasted” (72). Works that failed to achieve this ambitious goal were, in his view, inferior, if they even deserved to be called “science fiction” at all. Suvin himself had referred to pulp SF as a “misshapen subgenre,” barely distinguishable from “supernatural or occult fantasy,” and

maintained that its continued prevalence and popularity were simply "the result of an ideological or commercial habit" (68).

Science fiction authors and filmmakers are often the first to explore the potential consequences of current scientific and technological developments. They also explore the ethical and social implications of new technologies and present these ideas to the public. As a result, science fiction is often seen as a way of fostering public debate about the future and helping to shape the discourse about science and technology in the present world.

Science fiction is a way of imagining the possibilities of the future, both positive and negative. It is a means of exploring the potential consequences of current and future technological advancements and helping to shape public perceptions about the future. In this way, science fiction is serving as a means of helping people to understand the future and prepare for it.

It is inarguable that science fiction is one of the most dominant genres in present times. Though it has been popular in the 20<sup>th</sup> century, it has not had as great an influence on culture as it has today. It is usually brushed aside as fantastical, but it represents the cultural moment of the 21st century better than any other genre and its influence will continue to grow as humans live in this ever-complicating world. The concerns in science fiction have been changing with the changing technologies and scenarios in the world, which is why it seems necessary to discuss its development to see its importance and relevance to human societies, to analyse the authenticity of its predicting abilities. Many critics seem quite comfortable when they discuss the development of SF (science fiction) from Shelley's *Frankenstein* and consider it a recent phenomenon in human culture. However, the brief history fails to take into account a plethora of works that can be recognised as SF. It may also be an erroneous approach if one identifies it with the Copernican Revolution. The forces which have been stimulating the human mind to explore the unknown are

primarily the baffling expansions of the universe, long stretches of time, and religious and materialist understanding of the cosmos.

Science fiction is different from fantasy, the latter deals with magical interpretation of the relationships of various elements of nature, and the former tells how the cosmos actually works. The emergence of science fiction is strictly related to the emergence of science. Copernicus is the one who brought the massive change in Western thinking and science. Margolis, in his book *It Started with Copernicus*, listed all those factors which brought about unprecedented progress in scientific thought. Ptolemy's argument about the Earth being the centre of the solar system was taken up by medieval Europe, and it was quite aligned with the biblical concept of the universe. It was in this cosmos that the interplanetary ways had been taking place in Cicero's *Dream of Scipio*, Dante's *Paradise* and Ariosto's *Orlando Furioso*. The Ptolemaic model was not based on empirically astronomical data, yet it was unchallengeable because of the support of the church.

It was Copernicus who, by meticulous astronomical observation and scientific data, rejected the Ptolemaic and biblical model and changed the way of observing the world and humanity's place in it. Because of the dearth of scholastic traditions, his theories met with hostilities from the church and the persecution of his theory continued till the seventeenth century. Kepler and Galileo supported Copernicus's stance and extended it, though they also faced fury in the church. Later, by the end of the 17<sup>th</sup> century, Newton's laws of gravitation and motion strengthened Copernicus' view of the universe. Inspired by this view, about 200 interplanetary romances, including Donne's *Ignatius his Cowdave* were written (Nicolson), and Kepler's *A Dream* (1634) showed "the shift in sensibility that enabled SF to come into being" (Bould et al, 6). Kepler mentioned the existence of inhuman aliens—as radical otherness. Some critics believed *A Dream* to be 'the first true sci-fi novel' (Roberts 43).

Godwin's *The Man in the Moone* and Bergerae's *The Other World* mainly showed the travels to the moon with enough verisimilitude that made their account truly believable. Spencer's *The Faerie Queene*, Cavendish's *The Description of the World*, and Defoe's *The Consolidator* imagined human journey to the moon where aliens seemed to be planning to invade the earth as Sorel's novel *The Comical History of Francion* told of the descend of engines from the moon to take charge of the world. It is quite interesting to note that sci-fi has been quite aligned with the scientific and religious thoughts of the period as Christ is not absent from their stories, and the aliens are also "the seed of Adam" (Wilkin 186).

The journey to other planets shown in sci-fi stirred many theologians and theorists to speculate about the universe and humankind's place in it because the presence of other heavenly bodies and their being inhabited or uninhabited perplexed the minds of human beings. Both situations created enigmatic phenomena: if other bodies were populated, they problematised human centrality and Christ's atonement; if unpopulated, one felt baffled by the idea why God would create such an unimaginably vast universe with no purpose. Because of this awful condition, the idea of a Messianic figure still occurs in sci-fi literature and movies as it appears in *Dune*, *The Star Wars*, and *The Matrix trilogy* where superheroes struggle to save the world (Bould et al. 294).

One cannot say that the 20<sup>th</sup> and 21<sup>st</sup>-century sci-fi has been written according to the debates of the 17<sup>th</sup> century, but the cultural forces that caused the emergence of this genre did shape and determine it. Though some questions raised there seemed theological, they were intricately connected with human existential crises and uncertainties. Sci-fi is usually termed by critics as 'counterfactual literature' that portrays things not as they are; it primarily works in a parallel dimension or in the future where it observes things as 'they might be'.

Science fiction of the 17<sup>th</sup> and 18<sup>th</sup> centuries problematised the theological concepts of space and time. The chronological assumptions about the beginning of the creation showed that the creation occurred in 4004 BC, and the end of the cosmos is also imminent (Ussher, 1650). Many sci-fi novels rejected the concept of ‘brief time’ and introduced a radical shift to the concept of ‘long time’ as Maillet’s *Telliamed* mentioned about a billion-year-old humankind’s history, which would continue for billions of years more.

Many political utopias were also written during the 16<sup>th</sup> and 17<sup>th</sup> centuries, they commented on the ills of their respective society and proffered solutions by depicting an ideal world. More’s *Utopia*, Vives’ *Subventions for the Poor*, Campanella’s *The City of the Sun*, Sorel’s *The True Courier*, and Barnes’ *Gerania* usually delineated welfare states not only to rectify their present-day concerns but also to give alternatives through an idealised future (Bould et al.).

The justification for the boom of activity is not because of interest in intriguing settings and futuristic universes. Sci-fi literature makes us embrace change and see it as inevitable and natural. Since change is the only constant in human life and society, the prevalence of this genre of literature is both reasonable and justifiable. Along with that, sci-fi as an entertaining form of art has drawn much appeal from readers of all times and all factions of society.

Sci-fi is writing with a legacy of venturing into old times and a world dominated by nations whose myths, stories, and odd notions turned into a perspective about the universe. With the help of these dogmatic ideas and superstitions, they tried to make sense of the marvels of the universe. The seeds of sci-fi have been sown centuries ago when the human species longed for the extraordinary, unexplored world.

Sci-fi began approximately in the 2<sup>nd</sup> century when a Greek author Lucian caricatured his society through the gadget of a fanciful moon journey. Even though fabulous journeys and

different texts containing components of sci-fi showed up in Western writings for centuries, it was only after the commencement of the Industrial Revolution in the eighteenth century, with its vision of a future changed by innovation, that sci-fi flourished as a suitable literary genre. With the progress, the idea germinated that tomorrow could bring an ideal world, and the new science encouraged the possibility that humanity could figure out how to control its fate.

As the Industrial Revolution dawned upon the Victorian world, individuals started composing fabulous stories as to what possibilities the scientific discoveries could entail for human beings. By the nineteenth century, people started believing in the boundless marvels of science, and the seeds were planted where science fiction could properly develop. Brian W. Aldiss, the prominent British essayist and critic, claimed that sci-fi “was born in the heart of the English romantic movement with Mary Shelley’s *Frankenstein*” (i). When Shelley composed her novel in 1818, she initiated a vogue that had done away with the supernaturalism of Gothic tales and presented "science" as an element of fiction. Numerous critics believe *Frankenstein* to be the first sci-fi novel. It casts the readers along with Victor and the creature into “the territory of posthuman ambiguity and decenters humanity as the only bodies and subjects that matter” (Singer et al. 2). It was unquestionably the main sci-fi achievement as a novel. *Frankenstein* narrated the story of a man who made a creature and the inevitable retaliation that followed. The author cautioned that the scientist was responsible for speculating the impacts its developments might have on the world. The same themes can also be found in the ‘pulp magazines’ of the 1920s and 30s.

The nineteenth century was entranced with thoughts of science and progress, and its mindset was primarily based on positive thinking about scientific progress. The machine age had been introduced, and its effect on fiction was colossal. Well-known magazines like *Century*, *Cosmopolitan*, *Harper's*, *Atlantic Monthly*, and *Saturday Evening Post* kept the public interest

intact with stories including new mechanical gadgets and scientific wonders. Such authors as Nathaniel Hawthorne, Edgar Allan Poe, Fitz-James O'Brien, Edward Bellamy, Ambrose Bierce, and Mark Twain laid the basis and wrote many stories that could be considered American contributions to the development of sci-fi. Essentially every significant author in America and numerous in Europe explored different avenues regarding composing tales about the new science and the potential change it could bring in the future; however, Jules Verne was the one who stepped into the field of the genre more rigorously. He is the representative of the nineteenth century's romantic fascination for science and technology. He spent much of his lifetime in that age of invention, and his works embodied "the high tide of European delight in the marvels and possibilities of science" (Gunn 63). Verne supported the transformation in transportation with his works, *Five Weeks in a Balloon*, *From the Earth to the Moon*, *Twenty Thousand Leagues under the Sea*, and *Around the World in Eighty Days*.

Verne's achievements as an adventurous author helped science fiction thrive. His blend of science and creation in his "voyages extraordinaires" assured the survival of sci-fi, and his ripe creative mind made it thrilling. Verne was not an extraordinary pioneer of sci-fi thoughts, but he captured the optimism of the age when he made technological progress the subject of his novels. Subsequently, sci-fi, however not yet named, secured its identity and respectability in the eyes of the readers because of his literary productions.

However, his depictions appeared to be restricted when contrasted with the other authors of the century, especially Stevenson, who presented a different picture of society and scientific progress through his novel, *The Strange Case of Dr. Jekyll and Mr. Hyde*. Stevenson seemed critical of the industrial progress because as the Industrial Revolution strengthened its roots, many people who used to work on farms moved to England, mainly London, for work, and as a result,

the population increased. Victorian assumptions stressed “individual independence and responsibility” (Lewis 101). There were jobs in factories, but the cities became overcrowded with underpaid people who were supporting their families. In Victorian times, life depended upon whether one was poor or rich. The pressure was intense, and the middle and lowest classes of England struggled greatly. He was one of the novelists who created interesting, mysterious, and Gothic plots of all time. His novella about *Dr. Jekyll and Mr. Hyde* was one of a kind. It was about the experiments with Mother Nature and its complexities. Moreover, the layers of human nature, especially in Victorian society, could easily be found as the story developed.

Even the third-person narrator was trustworthy to England’s Victorian age as he stayed silent or never declared the evil motives behind the strange voices of Mr. Hyde. Since the Victorian era was a time when utilitarianism, lust for scientific knowledge, and so-called morality were at their peak, Stevenson’s characters were the true reflection of the time as they presented morality’s tug of war between good and evil, and scientific uplifts.

The setting of the late 1800s in the novel showed that scientific advancements were at their peak and artificiality was in vogue; Dr. Jekyll tried his hands on science because he wanted to create a double of himself that could embody his evil side. Being a tug between good and evil, the story “represents a classic touchstone of Victorian sensibility” (Saposnik 716). The creation of the double also showed that scientific progress and laboratory invention would not always be benign. In his representation of scientific development, Stevenson was different from Verne, who seemed to celebrate the triumph of technology.

Verne’s works also contrasted with H. G. Wells’ published *The Time Machine*, ‘a scientific romance’. In addition to the fact that this novel was a vehicle for a remarkable excursion through time, all the more critically, the work contained social discourse. Wells chastised the mistreatment



of the workers by assaulting the hierarchical structure of English society, which alienated labourers from the aristocratic class. He criticised nineteenth-century slogans of progress and called into account the destinations technology was leading people to.

Wells was profoundly influenced by Charles Darwin's evolution hypothesis, which set off Wells' thoughts of development and progress; later he transferred those ideas to his most influential and renowned works. *The Time Machine*, *The War of the Worlds*, *The Island of Dr. Moreau*, *The Invisible Man*, *When the Sleeper Wakes*, and *First Men in the Moon* all cautioned that there were limitations to advancement that man should not surpass as it might result in disaster. Through different themes and viewpoints, H. G. Wells made alarming announcements about the irrelevance of man in the universe. With Wells, sci-fi started to take shape and direction, turning out to be more a vehicle of thoughts than an assortment of expeditions. He became one of the most prominent writers of science fiction in the early twentieth century. He had not just demonstrated how fiction could speculate about the force of science to impact the world; he also anticipated that technological inventions would change individuals' perspectives on their position in the universe. Wells' vision representing the future, as found in his sci-fi novels and stories, seemed filled with pessimism, unlike Jules Verne, who was perpetually hopeful in his stories of the miracles of the scientific era (Roberts 512).

In spite of the fact that accounts mentioning the emergence of new inventions promoted by Verne and others were the centre of early sci-fi, other themes are also dealt with at the turn of the century. As a reaction to the movement launched in England for the reorganisation of armed forces to cope with the threats of global war, the danger of worldwide war, the war-in-future motif, portrayed by George Chesney's *Battle of Dorking*, seemed to be a prevalent subject for sci-fi writers, where the fighting nations were usually conquered by the aliens.

The theme of the interplanetary journey has also been shown in different guises since David Russen's *A Voyage to the Moon* had taken the more mechanical direction that stayed an essential element of present-day sci-fi stories of disasters developed from works like Mary Shelley's *The Last Man* in which plague obliterated humanity. Most fiction portrays scenarios from dangers of world annihilation, as depicted in Wells' *The War of the Worlds*, to an Earth crushed by nuclear conflict, overpopulation, or contamination, as portrayed in post-World War II works. Later, some sci-fi portrayed not such a massive amount of catastrophe itself but rather a society created after the calamity. This motif was mainly in George R. Stewart's *Earth Abides*, Walter M. Mill's *A Canticle for Leibowitz*, Brian W. Aldiss' *Greybeard*, and Vonda N. McIntyre's *Dreamsnake*.

Escape was another feature of sci-fi in the first quarter of the 20th century, and stories of strange lands and lost races gave the readers a brief deliverance from the worries of the prosaic world. H. Rider Haggard was the forerunner, yet Burroughs was the most well-known author on this theme. Burroughs was an expert narrator whose works were replete with entertaining features and whose Tarzan series was extensively read in English. Many of the Tarzan books focused on lost urban communities and vanished races. Burroughs likewise composed a series on Mars, where the leftovers of a once mighty civilization were portrayed with colourful imagery and exotic interest. Other novels took the readers to Venus, the Moon, and the core of the Earth. His experiences were light, his portrayals shallow, and his science was practically non-existent; however, his unique settings and enchanting happenings offered a diversion from the misery of industrialised urban areas and the stark realities of World War I. The readership and the vogue of publishing pulp magazines not only boosted Burrough's reputation but also gave sci-fi another famous trend.

Science fiction entered another stage when, in 1926, Gernsback started publishing the issue of *Amazing Stories* on the newsstands. It was the main magazine dedicated solely to sci-fi, and it was a momentous achievement. With *Amazing Stories*, the pulp period of sci-fi started. These writings severed themselves from mainstream fiction focused on pulp topics and themes, remained essentially the leading source for sci-fi authors until after World War II. By the 1930s, other sci-fi magazines were showing up regularly and started competing with *Amazing Stories*, *Science Wonder Stories*, and *Science Wonder Quarterly* because the number of readers was increasing rapidly (Roberts 16).

In this way, science fiction flourished constantly as Gernsback filled his issues with reprints of exemplary stories by Verne, Wells and Poe. Afterward, he included the works of Edward E. Smith, Ray Cummings, Jack Williamson, Edmond Hamilton and Murray Leinster, among others. The more significant part of the sci-fi showing up in *Amazing Stories* underscored the marvels of science. It was loaded with futuristic gadgets and incredible adventures that also proved to be another variant of 'escape fiction'. One of the most renowned authors of the period was Edward E. Smith, whose Skylark series, with its 'immortal' heroes and larger-than-life villains colliding on a galactic scale, promoted the term space saga/opera. Other magazines of the 1930s and 1940s entered the field with accounts of space, robots, disasters, and alien combats. Like Verne and Burroughs before them, their primary inclination was towards adventure and romance.

In 1952, as the guest of honour, Hugo Gernsback participated at the World Science Fiction Convention in Chicago. The following year, at the Philadelphia show, famous works of sci-fi were granted silver rockets named "Hugos" to pay tribute to the one who created the term sci-fi and supported the advancement of new authors in the field (Mendelsohn and James 64).

The novel fairly sceptical of the adventures of science is Huxley's *Brave New World*. He, in the foreword, points out that "the theme of *Brave New World* is not the advancement of science as such; it is the advancement of science as it affects human individuals" (iv). The Soma keeps them ignorant of the facts, relaxes their fury, and makes them reconcile with their foes. It is one of the strongest and the most effective methods practiced by the Controllers to maintain social stability.

They also believe that all people are happy and that their lives are without misery or pain. The Fordian rule makes the citizens think that all this has been done for their benefit, as all pains have literally been abolished. Emotions are the cause of all pain; the government does not want their people to be in pain that is why they have made them emotionally stable by lavishly providing them the drugs. The Controller says, "Ford's in his flivver; all's well with the world" (29).

Huxley's World State dispenses with the institutions of marriage and family. It abolishes human values such as art, parenthood, and art. It abrogates religion, a vibrant source of spirituality, because machinery thinks that "God isn't compatible with machinery and scientific medicine" (159). High art is discouraged and sacrificed, for what is beautiful attracts, and the authorities do not like people to be fascinated with old things. Mustapha Mond expresses his views that the world is stable, people are content, rich, safe, away from diseases, and get what they desire. They are not fearful of death and oblivious to passion and the old world, "they're plagued with no mothers or fathers, they've got no wives. Or children. Or lovers to feel strongly about" (149).

Marx is not even able to give apt words for what he feels. His wishes remain unconvincing. He takes sexual and social attention for granted but does not find any moral reason or stimulus to wage war on others who are oppressed by the system. He may lack a deeper understanding of things because of social conditioning. It shows they are all deprived of freedom and free will. The

Fordian rules determine their joyousness and autonomy. John the Savage, a stranger to the new world, is horrified to see the condition of imprisonment. He finds them slaves. The reality of this world and his mother's demise opens the shutters of his mind as if he had an epiphany. The realization of the truth of the situation makes him a rebel. He questions their meaning of freedom by challenging their definition. By throwing the boxes of Soma tablets away, he invites others to join his world of freedom, but his cry for sedition goes unheeded. His strive to teach them the real meaning of freedom fails, but he finds the meaning himself.

John the Savage wants to retake all his lost rights. Ironically, even the Deltas do not pay heed to him. He uses the power of language, frames his philosophical objections, and debates with Mustapha only because he is genetically Alpha Plus and has not been conditioned to conform. The lack of comfort for himself and the degradation of slavery for others make him feel ill at ease. However, his worldview is also problematic and idealistic, for he is willing to accept a free but dangerous and painful human life. People like Marx are not inclined to comprehend or have the courage for such a life. Though John's vision seems flawed and misguided, he claims to be an individual. His efforts to liberate individuals from the clutches of hypnopaedia badly fail. The master plan of a mechanised, regimented society succeeds.

They are pestered looking at the condition of others, but they are too infirm to change anything under the totalitarian Fordian rules. Their existence seems to be at stake; they are exiled, threatened, and 'excommunicated' from a technology-ridden society where the ethics of fighting for societal members' rights and working for the betterment are out of the question. The power, the energy, and the feelings that render them humans are not needed in Mustapha Mond's regime. The absence of human feelings in that world makes it devoid of human values. Even such values as creating art, producing babies, and performing religious and spiritual rituals are not permitted to

the few with human selves. By observing Huxley's created world, one can easily conclude that technology has manipulated and modified human nature and ethics and has significantly threatened homo-sapiens existence.

Sci-fi adjusted shape and took a new course when, during the 1930s, John W. Campbell started editing *Astounding Stories*. Campbell, a contributor of that magazine, encouraged young writers who could write realistic science fiction with refined techniques and innovative ideas. They refined their plots and characters while underscoring human connections and were urged by Campbell to adopt an interdisciplinary approach. *Astounding* steadily turned into the chief sci-fi magazine and endured the blows of economic recession and wartime upheavals of the 1930s and 1940s. Campbell's situation in the field, at the top of the best-paying and most noteworthy course magazine, provided him with the benefit of pre-prominence: essayists focused on him as their essential market, composed their plans to him and acknowledged his ideas, sent him their accounts first and frequently revamped them to his request. The magazine favoured and specialised in "fast-paced adventures in exotic settings" (Wolfe 98).

Campbell likewise had favourable luck and became a manager when sci-fi was receiving another influx of prominence through the distribution of a developing number of new sci-fi magazines. Among the new authors published in the pages of *Astounding* during the period of Campbell's editorship were Isaac Asimov, Robert A. Heinlein, A. E. van Vogt, Theodore Sturgeon, Lester del Rey, and Clifford D. Simak, every one of whom is dynamic in the field. Inspired by Campbell's pleas for quality and serious scientific ideas, sci-fi developed and entered what is alluded to as its "Golden Age," which is roughly from 1938 to 1950. *Astounding* was renamed Analog in 1960 because its overall format was changed, but its popularity never declined. The "Golden Age" persevered until 1950, when the field expanded with influential magazines like *The*

*Magazine of Fantasy and Science Fiction* (1949), under the editorship of Anthony Boucher and J. Francis McComas, and *Galaxy* (1950), edited by Horace L. Gold, showed up, and as sci-fi was printed into the paperbacks (Westfahl).

While pre-war sci-fi had focused on the technological marvels proffered by scientific advancements, the authors of the post-World War II period looked at the repercussions of these advances and the trepidation that humankind's created machines might suppress and victimise them. Sci-fi encountered another development heading as sociologies became significant subjects for journalists during the 1950s and 1960s. The bleak future turned into a main plot of 1950s pulp sci-fi. Frederik Pohl and Cyril Kornbluth parodied a general public overwhelmed by advertising companies in *The Space Merchants*, which might be the most famous work of that period. Along with science fiction, most of the other novels, including Ray Bradbury's *Fahrenheit 451*, Cyril M. Kornbluth's *Not This August*, Anthony Burgess' *A Clockwork Orange*, Harry Harrison's *Make Room! Make Room!*, and John Brunner's *Stand on Zanzibar* produced during the period, were dystopian, presenting a tragic picture of the society.

The reaction to social issues was heightened during the 1960s by British and American authors like Michael Moorcock, J. G. Ballard, Brian W. Aldiss, Norman Spinrad, Harlan Ellison, Samuel R. Delany, Joanna Russ, and Thomas M. Disch. "New Wave" cautioned of the tumult and chaos which could be created by the potential war and moral depravity of a mechanical society. New Wave authors likewise gave a new direction to the composition of sci-fi, which, toward the end of the 1950s, was fairly established. At last, the New Wave became typicality; however, before its decline, it brought a few significant and long-lasting changes in the nature of sci-fi that turned into a serious tool for social commentary (Wolfe 101).

Sci-fi developed during the 1970s. Robert Silverberg secured his spot with *Time of Changes* and *Dying Inside* and six other significant books printed during the period 1970-72. Ursula K. Le Guin's *The Left Hand of Darkness* and *The Dispossessed* became images of high quality that could be produced in the field. Philip K. Dick, who passed away in 1982, gave an extraordinary tradition of works, including *Flow My Tears*, *the Policeman Said* and *A Scanner Darkly*. Brian W. Aldiss kept impacting the field with works like *Frankenstein Unbound* and *The Malacia Tapestry*. It was Frederik Pohl who had the best effect in the seventies. In a time of low productivity, Pohl effectively re-established his reputation with his books *Man Plus*, *Gateway* and *JEM*, every one of which has won significant awards in the field.

Numerous authors entered the field during the seventies; they were very productive ten years for sci-fi. As Holdstock mentions, “the field has diversified to the point where to describe it any longer as a genre, while a convenient shorthand, is hopelessly inadequate. SF, if the term means anything, is a form of contemporary metaphor, a literary device for examining our world and our lives from another perspective” (quoted in Tymn 4).

The decade of the 1980s holds a high place, with additional authors like Isaac Asimov, Arthur C. Clarke and Robert A. Heinlein re-asserting their prominence with new works entering the field. Sci-fi has made some fantastic progress since the 1930s and 1940s when the pulp magazines gave opportunities to the new talent. In numerous ways, the writing is developing, adjusting its structures, and changing its procedures and motifs. This readiness to adjust to modifications in style and technique is a normal course for literature that is also concerned with assessing the powers influencing the shape the future might take and giving a vision of the possible outcomes of technological advances for society and humankind.



## 2.8 Science Fiction Films

SF films fundamentally date back to the beginning of cinema, and the discussion of the genre also began with its popularity in the 1950s. The shift in themes and concerns was quite apparent, particularly in the latter half of the 20th century, when films had an especially realistic resonance. Concerns with reproducible beings (robots, androids), the development of hyper realities (virtual universes, virtual selves), and enormous dangers to our fragile world (an impending climate change) were all prevalent at the time. Sontag said that "SF films are not about science" but rather "catastrophe" because she believed that throughout the 1950s, SF films were full of alien invasions and impending global catastrophes (213). But one can disagree with Sontag's point of view by observing that SF's prior history, paving the way to that prophetically catastrophic upwelling, shows that it has been a lot about science, and along with its technological blessings it has been producing, through humanity's miscalculations or unethical nature, the ruinous results. In portraying a background of SF films, one should keep in mind not only the scientific development, production, and transformation but also the challenges and startling pictures that erupt from the same spring.

Science fiction movies have been a popular genre of cinema since the early days of filmmaking. From the classic science fiction films of the 1950s and 1960s, such as *Forbidden Planet* and *The Day the Earth Stood Still*, to the blockbuster science fiction films of the 1990s and 2000s, such as *The Matrix* and *Inception*, science fiction has remained a popular and influential genre in the world of cinema.

SF film may be figured out through the crystal of imagination, a mode that, in spite of its fanciful, frequently disrupting and surprisingly terrifying pictures, stays profoundly in consistent

dialogue with the real world. It certainly works through rationality and scientific principles, simultaneously showing the pitfalls and potentials of science (Telotte 10-16).

In the last part of the 1890s and mid-1900s, various movies highlighted the genre as they came up with surprising mechanisms that produce engaging deceptions, modifications, or inconceivable changes in overall settings: systems that change creatures, individuals, and items or that empower fabulous voyages. For instance, *The Sausage Machine* shows a wondrous development that transforms dogs into sausages and vice versa; *Dr. Skinum* portrays a gadget that transforms people from terrible to delightful; and *The Lion's Breath* presents a machine for metamorphosing personalities and characters (Bould et al. 43).

Along with this, due to the demand for newness and innovation in the movies, cinematic devices have been improved to give the concept of a different time and space. Méliès created spectacular appearances and disappearances, reanimated probably everything, and sent his characters on fabulous excursions and investigations in films such as *The Impossible Voyage*, *20,000 Leagues Under the Sea*, and *The Conquest of the Pole*. Méliès, who was influenced by Jules Verne's *Voyages Extraordinaires*, placed more of a focus on extraordinary images and events than on narrative development or the interplay of reason and science. Examples include detonating moon men, flying trains, underwater creatures, and extraterrestrial travel. So, with Méliès, one perceives how the improvement of film innovation would rouse both the symbolism and strategies of SF (as cited in Jacobs).

The science-fictional elements of his work, however, have been downplayed by others, who claim that, for example, "the fantasy powers of [his] trick films overrode any real interest in a technological future" (La Valley 146). Such viewpoints neglect Méliès' work laying out the genre's essential iconography and a significant portion of its central plot concerns, including

interplanetary travel, anthropocentric and non-anthropocentric beasts, and the mechanically supported triumph of various physical and intellectual challenges.

During the 1920s, a new series of pictures that were expansive in scope, goal, and resource appeared on screen in opposition to the patterns and customary identities of the genre. Movies like *Aelita* (Protazanov), *Metropolis* (Lang), *The Mysterious Island* (Hubbard), *End of the World* (Gance), and *Things to Come* (Menzies) drew on progressively famous SF writing, attracted a global audience, and gave plot models to the succeeding generations. These intricate movies showed the fast, global blooming of SF, whose different icons, plot manoeuvrings, and themes appeared to be known by producers and film enthusiasts. *Aelita* retreated from the scientific and mechanical dreams of space travel and Martian culture; it offered a lucid perspective on the force of rationality- technology—that was essential for the progress of the genre.

*Metropolis* seemed to have been impacted by *Aelita*, which was among "the most popular movies exported to Germany" at that time and shows similitudes in plot and style (Youngblood 60). Nevertheless, the German film was more forceful and sophisticated in its depiction of a dystopian civilization, exhibiting an undoubtedly more obvious norm for societal unhappiness following the First World War. The fictional community of Metropolis was ruled mercilessly and "orderly" by the forces of science and harsh technology. The wealthy resided in skyscrapers and enjoyed a life of luxury and ease, while the lower classes' labourers, who were obedient to machines and worked to ensure the upper class' happiness and well-being, endured dismal conditions. The same kind of situation could also be found in the film *Elysium*, where the protagonist struggled to change the fate of the downtrodden by taking them to the 'technological heaven' of the rich.

In *Metropolis*, people revolted with the help of the son of the Master of Metropolis who provided them with optimism. He slayed the lunatic Rotwang, unmasked the robot made to misdirect the labourers, and pleaded the case of people in front of his father, offering a “heart”- or sympathy to lessen the sufferings of “the head and hands” of the community. In this way, the working of rationality-science-technology was checked and addressed, and it also suggested the tacit deficiencies in the use of technology that could create imbalance and indifferent human feelings. The very theme had been taken by several sci-fi movies which, by underlying undeniably disastrous visions, caution humanity.

Two of the key images were shown in *Metropolis*: The city of Metropolis, with its 200-story skyscrapers, vaulted streets, and aeroplanes weaving in and out of the enormous structures, reflects some of the crucial dreams of metropolitan progress of the time, including those of the German Bauhaus (which gives rise to the International Style in design and architecture), the imaginative buildings of Hugh Ferriss in America, and Le Corbusier's reimagining of the city in France. Gerstein described this enormous yet disturbing massive metropolitan vision as "the chill mechanised world of the future" (187). In this image, humanity itself disappears. The most important legacy of *Metropolis* to both SF and contemporary society maybe this dual image of technology's allures and disruptions.

Accordingly, *The American Mysterious Island* provided a dual perspective on science and technology as well as a sense of the era's societal unease. *End of the World*, which appeared shortly after *Mysterious Island*, is unquestionably clear in its presentation of science and technology. Based on a Camille Flammarion novel, its story of a comet headed for Earth mocked science's ability to predict such catastrophic events, plot out their course, and forecast their results. It also demonstrated how helpless humanity was and how little technology could do to prevent such

catastrophes. In this sense, *End of the World* cautioned against the application of science and mechanical convictions, warned the public against the influence of media (including cinema) in forming ideas in a world that is obviously technological and educated the masses not to always rely on the voice of the majority. Similarly, *Don't Look Up* invited the viewers and the world leaders not to wait too long in calling the cultural directions into account because it could lead to losing sight of certain evident truths usually hidden under the lies of mass and social media.

The most well-liked British science fiction movie of the time, based on the novel *Things to Come*, presents a prophetic picture of cataclysmic obliteration and potential redemption. The major portion of the movie skilfully portrayed a horrific worldwide battle that unleashed true obliteration similar to that in *End of the World* and showed a plague that wiped off a significant portion of humanity. The movie finished on a hopeful note when a new world emerged from the ruins of the old one.

With the catastrophe of the Second World War and in its after-effects, one did not find the grandeur of the amazing films of the past. The film after WWII became formulaic and mainly portrayed lethal dangers uncovered by war, and the annihilation seemed imminent, yet a courageous protagonist intervened, and after numerous such occurrences, s/he wins the battle for the people.

Obviously, throughout the following years, the films would steer in a somewhat unique course, with a multiplication of movies in another seriously undermining vein. The movies about outsider attacks, nuclear end times, and wild beasts convinced how technology and innovation could handle and try and annihilate human beings. Likewise, *Destination Moon* and *Rocketship X-M* further highlighted the double potential of science that could make or break humanity depending

on its use. “Science fiction matured, and entered what fans refer to as its ‘golden age’ roughly from the period from 1938-1950” (Tymn 46)

Films produced after the 1950s presented narratives of alien invasion where the monsters were invariably from the Soviet Union trying to subjugate humanity (Warren). However, in some of the movies like *The Thing from Another World*, the alien invaders were no other than the bureaucratic management. The clashes of interest in human characters (military personnel and scientists) proved dangerous for humanity. Scientists were considered superior, and they, in the movie, did not value the opinion of the low-ranked military soldiers who were in favour of killing the monster discovered from the ice. The scientists wanted to preserve the alien, for they deemed it an ideal of rationality as one of the superiors said, “knowledge is more important than life” (Nyby & Hawks, 1951)<sup>11</sup>. The film showed the tension emerging from the position taken by the science experts.

*Destination Moon* and *Rocketship X-M* were films about space explorations which showed the Americans landing on the moon and on mars respectively and tried to demonstrate dominance over the Russians (Canavan 494).

*When Worlds Collide* depicted the doom of the earth and humans’ struggle to prepare a futuristic ‘Noah’s Ark’ which would take the chosen men and women to a safe place, a somewhat similar situation occurred in the movie *2012*. It also brought forth the political conflicts that hindered the mission and the disastrous planning of the financial backer. Many other films such as *Forbidden Planet* and *Queen of Outer Space* of the period, mainly focused on space explorations, alien visitation, and horrible creatures.

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<sup>11</sup> Nyby, C. (Director), & Hawks, H. (Producer). (1951). *The Thing from Another World* [Film]. RKO Radio Pictures.

Other than alien invasion, films like *Them*, and *The Fly* manifested humankind's catastrophic impulses which were misdirected and proved intimidating for the existence of humans. Some films also focused on the aftermath of nuclear wars in various countries. The films of the decade primarily invited the viewers to foresee the impacts of the discoveries and actions (if not taken seriously) of scientists. *The Curse of Frankenstein* also showed the coldly rationalist behaviour of the scientist and the consequences of his scientific endeavours. The films which showed thematic similarities with 21st fiction were *Quatermass II* and *Quatermass and the Pit*, where biologically engineered humans created racial conflicts and intolerance in society (Canavan 495).

The years from 1960 to 1980 showed much diversity in SF films, particularly in Europe and America; the screen remained socioculturally embedded. One cannot say that the screen was totally modified, as the old themes presented in the 1950s' movies could still be found in subsequent films. But the politically ambiguous stance taken by the 1950s' films was replaced with lucidly anti-communist narratives with films like *The Beast of Yucca Flats*, and Western concerns about Mao's Cultural Revolution in China could be seen in the anti-Chinese film *Dimensions*. With technological influence on Western culture, SF tropes were also transformed by Hollywood to show the relevance of technology in films.

After John F. Kennedy's coming to office and his subsequent assassination, the traditions of 1950s cinema were displaced by the cinema that meditated on social and political upheavals such as "population explosion, racial conflicts and atomic wars" (Bould 86).

*Fail-safe* and *Love the Bomb* satirically portrayed the absurdity of the decisions of lunatic politicians and military men who readily consented to "the unthinkable and the unspeakable" (Brosnan 116).

After 1975, SF cinema mainly did away with nuclear bombs as subject matter and returned to racial conflicts, the Vietnam War, problems related to environmental damage, and the race to conquer space. This coincided with the Soviet attack on Afghanistan and the release of the movie *The China Syndrome*.

The release of *Planet of the Ape* and its sequels showed the shift in subject matter as it also allegorically depicted nation-based “racial conflicts” (Green 1). After this, there seemed to be a chain of movies including *The Birds*, *Squirm*, *Westworld*, *Rollerball* which showed revenge of nature, technophobic worries, ecological damage, consumerism and corporate culture.

When the Vietnam War ended and US-Soviet relations slightly improved, SF cinema, according to Sobchack, entered the ‘Second Golden Age’ (267). Some of the films took the viewers into the dreams of egalitarian universe where old divisions had been mitigated and new horizons were being discovered. *Star Wars*, *2001: A Space Odyssey* demonstrated this optimism.

Since 1980, SF films rapidly raptured ‘the cinematic imaginary’ and engaged with the themes of apocalypse, ambivalent attitude to technology and its effects on society. The issues taken up in science fiction literature also resonated in cinema. In the movies of that period, the technoscience and diabolical power were often associated with corporate control. Films like *Blade Runner* and *The Terminator* brought to light how greedy corporations along with military personnel used science for their purposes and brought doom to civilisations.

In the decade, SF films seemed to have taken technophobic/technophilic attitudes to science seriously. *The Quiet Earth*, *Akira*, and *The Terminator* highlighted the human/machine dichotomy, where machines were wiping out humanity and the protagonists struggled to ensure the presence of humans on the earth. *RoboCop* also criticised the savage use of technology by bureaucracy and business machinery to ‘maintain’ law and order situation in Detroit (Roberts 290).



One of the major themes in science fiction films after 1990 had been the exploration of the relationship between humans and technology. This theme has been explored in films such as *The Terminator*, *The Matrix*, and *A.I. Artificial Intelligence*. In the films, the relationship between humans and technology was often depicted as a dangerous or hostile, with the technology taking on a life of its own and turning against its creators.

Another recurring theme in science fiction films after 1990 is the exploration of alternate realities and parallel universes. This theme has been explored in films such as *The Matrix*, *Inception*, and *Interstellar*. In these films, characters were able to explore alternate realities and parallel universes, often with the help of advanced technology. The styles of science fiction films after 1990 had also evolved to include more special effects and more sophisticated visual designs. This is evident in films such as *The Matrix*, which was known for its ground-breaking use of computer-generated imagery (CGI), and *Avatar*, which was known for its advanced use of 3D technology. These films set a new standard for the visual design of science fiction films and inspired other filmmakers to push the boundaries of what was possible in the genre.

The advancement of technology had a profound impact on science fiction films after 1990. The use of computer-generated imagery (CGI) allowed filmmakers to create highly detailed and realistic worlds, creatures, and special effects. The technology was used to create stunningly realistic depictions of other worlds, such as in *Avatar*, and to bring to life creatures that would have been impossible to create using traditional special effects techniques, such as in *Jurassic Park*.

The advent of virtual-reality technology also had a significant impact on science fiction films after 1990. This technology has been used to create immersive virtual worlds that characters could enter and explore, as seen in *The Matrix*. Virtual-reality technology has also been used to

create new and innovative forms of storytelling, such as in *The Lawnmower Man*, one of the first films to incorporate virtual-reality technology into its storytelling.

The 1990s were marked both politically and culturally by a feeling of the new millennium. The apocalypticism that stated humanity was soon reaching its own termination point also haunted science fiction films. The primary danger to human life and what defined humanity was posed by genetic engineering, cloning, and the inability of people to procreate in novels like *The Handmaid's Tale* (Schlöndorff), *Gattaca* (Niccol), and *Alien: Resurrection* (Jeunet), respectively.

Life outcomes were predetermined in *Gattaca* from birth. In contrast to individuals born naturally, who were inferior and genetically imperfect, the "bioformed," the product of selected genes and engineering, were genetically perfect and inclined to succeed in life. Beyond the conventional distinctions between race, class, and gender, there was the posthuman hierarchy of power. The main character, one of the last people to be "humanly" born, should be destined for menial labour and a short lifespan due to his congenital heart ailment. He triumphed over a genetic defect and enlisted in a mission to Mars by adopting the persona of a genetically superior athlete. *Gattaca* delivered a potent indictment of genetic research that would permit one to select the physical and mental abilities of one's progeny in an era of moral panic (Bould et al. 137).

The emergence of the posthuman, the psycho-cybernetic, and the virtual called into question the ontologically secure "actual" person in the films *Total Recall*, *Ghost in the Shell*, and *Virtuosity*. The protagonist of *Total Recall* experienced the splitting of his "self" and frantic quest for the true "me" as a result of a memory implant. "Ghosts" or distinct identities might easily switch between biological and inorganic bodies in the anime *Ghost in the Shell*.

In the movie *Virtuosity*, SID, a virtual reality creature made out of the personas of more than 150 serial killers, was described as being "Sadistic, Intelligent, and Dangerous" and "escapes

into the real world with his evil skills amplified" (Leonard, 1995)<sup>12</sup>. The existence of several identities was often depicted in these posthuman films, and it was frequently claimed that these identity shifts were pathological as well as existentially or spiritually liberating.

The science fiction invasion narrative first occurred during times of turmoil. Among the concerns that these 1950s American films addressed and informed were the Cold War, the Cuban Missile Crisis, a developing, repressive bureaucracy, rapidly prevailing consumerism, and the racial Other who had begun to enter white communities. However, the return of invasion stories in the 1990s might be seen as expressing terrorism fear and a "desire for" terrorist assault. The evil Other showed up to wipe off humanity in *Species*, *Independence Day*, and *Starship Troopers*, even though this appetite for destruction was portrayed for sarcastic chuckles.

According to Jean Baudrillard, when watching invasion films like *Independence Day*, in which alien artillery blew out the White House, the viewer is effectively picturing (or seeing) the demise of America as a global superpower. When the plane struck the World Trade Centre on September 11, 2001, Baudrillard contended that spectators had not only seen this catastrophe magnificently played out before, but they had also desired it. This led to the fact that "they were complicit in it, and they took the invasion home" (Baudrillard 14).

Two important postmodern works marked the end of the 1990s. *The Matrix*, a tribute to Baudrillard's notion of simulacra and the hyperreal, liquefied reality and undermined the ego. The messianic computer hacker Thomas Anderson/Neo was tasked with rescuing mankind from its dependence on sentient machines. The sleepy virtual world and the demolished real world were two parallel realities. The virtually real Neo was tasked with guiding mankind out of a false reality and towards self-governance in the internal hallucinogenic dreaming/waking state of the movie.

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<sup>12</sup> Leonard, B. (Director). (1995). *Virtuosity* [Film]. Paramount Pictures.

*The Matrix* was, therefore, an allegory of domestic terrorism, with Neo as the leader of rebellious militants seeking to topple the established power structures, even as its theological connotations alluded to a need for spiritual rejuvenation in a post-God society.

In the 1990s, science fiction movies tended to have an infinitely deep sense of space. Vertical and horizontal axes merged and joined in congested, disorienting places in this aesthetic of the unlimited and borderless existence without foundation. For instance, New York in the mid-thirty-first century is envisioned in *The Fifth Element* as a liquid city where every "moment" of space was in motion. Korben Dallas, a cab driver, soared across New York City; the vortex-like high-speed aerial pursuit was impossible since beginnings and ends, first and second, highs and lows were not in a linear or spatial sequence.

The security and survivability of bodies and nations have been the primary preoccupation of science fiction films since the turn of the millennium. Viruses and viral mutations endangered the individual and societal bodies in movies like *Ever Since the World Ended*, *28 Days Later*, *Resident Evil*, and *Ultraviolet*. These threats caused the bodies to become ill, infected, pathological, or an incubator for the apocalypse. Cyborg robots and machine monsters endangered the sovereignty of the entire nation and of what constituted a human being in *A.I.: Artificial Intelligence*, *I, Robot*, *Sky Captain and The World of Tomorrow*, and *Transformers*.

In the films *The 6th Day*, *The One*, *Natural City*, and *The Island*, cloning and genetic engineering led to physical inequality, a blurring of the line between humans and machines, and a trade in human bodies. In *Matrubhoomi: A Nation Without Women*, *On Flux*, and *Children of Men*, bodies were made unproductive or barren, and as a result, human civilisation was on the edge of annihilation. Despicable extra-terrestrial invaders assaulted and decimated the political, cultural, and institutional organs of civilization in movies like *Signs* and *War of the Worlds*. Ecological

catastrophe threatened to extinguish the human species in Boyle's film *Sunshine* and Emmerich's novel *The Day After Tomorrow*. Additionally, authoritarian governments were seen forcing the human body into passive submission and conformity in movies like *Minority Report*, *Equilibrium*, *District 13*, and *V for Vendetta*. The cultural panic surrounding the War on Terror might be to blame for this worry about what “to do” to the body. These movies implied danger everywhere around the body—on it, inside it, and even through it. On a discursive level, they advised the audience to exercise caution, self-examine their bodies if there are signs of contamination or infection, and also examine others (their neighbours) for similar reasons.

Images from 9/11 and themes from the War on Terror reappeared. In contrast to the burning and prosthetic reconstruction of Anakin Skywalker's body in *Star Wars: Episode III - Revenge of the Sith* (Lucas), which evoked military operations, an attack that left a character terminally wounded in *Ever Since the World Ended* was captured in the style of war photography. In the movie *Children of Men* and *28 Days Later*, armed personnel patrol the streets, build roadblocks and enforce curfews, drawing clear parallels between the Gulf War and the siege situation in Iraq.

SF films are being produced or co-produced practically by every nation with film industry, with noteworthy successes appearing in Europe (*Vortex*, Germany, *Immortel, ad vitam*, France/Italy/UK, *Renaissance*, France/UK/Luxemburg, Japan (*Gojira ni-sen mireniamu*, Casshern), South Korea (*The Host*), and Australia (*Subterano*, Australia/Germany), Hong Kong, Canada, Russia, and India, with many of these countries seeing a significant increase in the number and variety of SF productions. For instance, in India, *Koi Mil Gaya* depicted an alien offering hope and redemption to a crippled kid; *Matrubhoomi: A Nation Without Women* depicted a severe lack of women throughout the nation due to the excessive number of young girls being slain at birth by

families unable to pay dowries; and the titular superhero protagonist of *Krrish* must save the universe from a scientist who had developed a computer that could foresee the future.

Dystopian themes in science fiction movies from 2000 to 2022 often centre on themes of totalitarian governments, environmental disasters, and technological advancements gone awry. Some popular examples of movies in this genre include *The Matrix*, *Children of Men*, *Elysium*, *Mad Max: Fury Road*, *Blade Runner 2049*, and *Snowpiercer*.

A classic piece of science fiction, Ridley Scott's *Blade Runner* is recognised for its profound examination of people, technology, and the essence of existence. Filmed against a dystopian future in which manufactured people, known as replicants, are nearly indistinguishable from humans, the film explores themes of identity, memory, and what it means to be human. It is based on Philip K. Dick's novel *Do Androids Dream of Electric Sheep?* The film *Blade Runner* poses important queries regarding what makes a human. Because they are meant to be human servants, the replicants display feelings, desires, and memories that make it difficult to distinguish between real and fake existence. Rick Deckard, the main character, is given the responsibility of "retiring" (killing) these replicants, which puts him in a moral bind as he considers both the humanity of the replicants and his own.

In *Blade Runner*, the Tyrell Corporation—which produces the replicants—symbolises unbridled corporate power as it challenges the role that companies play in forming society. In the world portrayed in the movie, powerful elites possess the technology and utilise it to preserve their rule over both humans and replicants. This theme speaks to current worries about corporate power in the digital age, when technology increasingly controls every area of life, including social connection and surveillance. The question of whether Rick Deckard is a replicant is one of the most highly debated elements of *Blade Runner*. The film is made more complex by the mystery

surrounding Deckard's identity, which forces viewers to reevaluate how humans and replicants differ from one another. The question relates to the movie's overarching subject, which is that our deeds and decisions may define who we are as a species more so than our ancestry.

The movie's conclusion will remain open to interpretation, especially in the Final Cut version. The last deed of replicant Roy Batty to save Deckard in spite of knowing he was about to die makes a profound statement about the value of life, no matter where it comes from. The iconic "Tears in rain" monologue by Batty reveals a profound existential knowledge, implying that even if the replicants are artificial, they have a deeper understanding of life that the people in the movie might not have.

These movies often depict a future where society has degraded into a highly oppressive and unstable state, forcing characters to fight against the status quo in order to survive or create a better world. The recurring use of dystopian themes in science fiction movies reflects society's anxieties and concerns about the future and serves as a warning about the potential consequences of our actions.

## 2.9 Art Predicting Future

The link between art, fiction, and their predictive capabilities has long fascinated scholars, artists, and theorists alike. I aim to explore the intriguing question of whether art and literature possess the capacity to predict future events. By examining the works of prominent painters, artists, fiction writers, and theorists throughout history, one can discover the potential of artistic expression to foreshadow or reflect societal, technological, and cultural developments. The highlight compelling examples suggest that art and fiction possess a certain prophetic quality, challenging conventional notions of foresight and inspiring further investigation. One's belief in the predicting ability of art and fiction strengthens when one analyses the impact of Pablo Picasso's "Guernica" as a premonition of the horrors of war, Frida Kahlo's portrayal of gender dynamics in her paintings ahead of the feminist movement, and Andy Warhol's reflections on the emergence of celebrity culture and consumerism. The ability of art to effectively convey human emotion has long been acknowledged. This part presents art's capacity for prophecy, concentrating on how images and paintings might help us foresee future events and social changes.

Wilde asserts that life imitates art. His statement that "the self-conscious aim of Life is to find expression" is supported by the fact that "Art offers it certain beautiful forms through which it may realise that energy" (36-37). What one finds in nature and life, in Wilde's view, is not what is truly there; rather, what one finds is what artists have shown the readers how to find there via their work. Then, does life imitate art, or does art imitate life? In this context, is it also possible to predict the future via art? In 2016, the art critic Jerry Saltz told *Vulture*<sup>13</sup> that "artists routinely channel the future," spotting trends before they happen and incorporating them into their works so that, later, with the benefit of hindsight, the work makes sense.

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<sup>13</sup> <https://www.vulture.com/2016/12/andreas-gursky-predicted-the-futureand-present.html>



Existential issues are raised in the discussion. The fatalists, for instance, question whether particularly horrific occurrences might somehow send reverberations back and forth in time to generate recurrent motifs across art history. Others contend that this creates what looks to be a prophecy of the future by extrapolating one's present-day concerns onto what one wishes to recall from the past. However, there are a number of pieces of art that provide compelling evidence of the future-predicting power of art.



(Narcissus (1597-99) Caravaggio)

The Roman poet Ovid's poem *Metamorphoses*, published in 8 AD, has the earliest known reference to Narcissus. Greek mythology's most well-known story features a young hunter renowned for his beauty and incredible body. He was so arrogant that he had nothing but disdain and hatred for everyone who expressed an interest in him. Nemesis, the goddess of wrath and retribution, decided to punish Narcissus after seeing how he treated other people. She led him to a lake, and he fell head over heels in love with his reflection. Incapable of separating himself from his mirror, Narcissus perished. Between 1597 and 1599, the renowned Baroque painter Caravaggio created one of his most well-known paintings, bringing the tale of Narcissus to life.

The "Narcissus" by Caravaggio is a startlingly accurate depiction of the self-centered 21<sup>st</sup> century world in art. It was made using the standard red and brown tones used in Baroque art. More than 400 hundred years later, when people have marathon 'selfie sessions', they have

Narcissus-like obsessions with their 'selves'. Instagram estimates that 93 million selfies are shared every day. There are many other social applications where millions of 'selfies and reels' are uploaded regularly. This idea is expanded upon by Renaissance scholar Leon Battista Alberti (1404-1472), who claims that the mythical figure Narcissus predicted the rise of the painting medium. Alberti wrote, "Narcissus was the father of painting." "...What is painting but the act of embracing the surface of the pool through art?" (11)

Because humans are intrigued about the future, they have always been keen on forecasting the future. Across history and cultures, the only glimpse into the future was that civilization was going towards its doom. But less attention had been paid to the prophecies of art and fiction. For many traditional Western painters, pictures from the Scripture of Revelation were an important reminder from the church to keep in mind that life on Earth was finite. Michelangelo, Albrecht Dürer, and Hieronymus Bosch utilised these images to symbolise "the future."

These images of the ultimate apocalypse of the earth showed that the future was fixed and disastrous. Pre-modern writers and painters wondered how advanced cultures could survive. It seemed appropriate for them to imagine that a great civilization would reside in a place just beyond the horizon. They expressed such views as most of the world was still uncharted. For instance, they thought that the inhabitants of the Greek city Hyperborea might live for a millennium. Thomas More's *Utopia* was fundamentally a socialist nation. According to Jonathan Swift, "magnetic goodness" sustains the floating island Laputa.

However, the 19th century's worldwide imperialism diminished such "uncharted" regions. The groundwork for many prospective futures was also established by the rapid advancements in science and technology, raising questions about what these futures might bring. Additionally, artists started putting such ideas on paper as soon as people had them.

Authors of science fiction, business entrepreneurs, and futurists were usually grouped together. How about the effects of the first users of visual media? The borders between science, design, and pulp art norms were breached by artists in order to study the commonplace possibilities that might change one's life. How did the spread of these ideas through media and advertising alter the way one views the future? What effect did their surroundings have on their subsequent thought processes?

The last two centuries have had a significant impact on how people currently perceive the future. Prior to the nineteenth century, people's short lifespans had seen little technological improvement, and the bulk of people did not have much spare time to consider abstract concepts like the future. More importantly, speaking out against the prevailing viewpoint on reality risked negative outcomes. Italian cosmologist Giordano Bruno was burnt at the stake in 1600 because of his convictions that the Earth revolves around the Sun and that life may exist on other planets. As time passed by, people were able to disagree with others openly without fear of persecution, and some of them started to look ahead. Sixty years after Bruno, English philosopher Joseph Glanvill claimed in *The Vanity of Dogmatizing*<sup>14</sup> that one day, a voyage to the moon "will not be more strange than one to America" (91). He proposed using "magnetic waves" to communicate across continents 176 years before the electric telegraph was created.

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<sup>14</sup> Originally published in 1661



(Thomas Baldwin drew a picture of one of the earliest aerial views of Earth in "Aïropedia" (1785) to illustrate how new technology gave people a vision of the planet they had never seen before)

Jules Verne's *Five Weeks in a Balloon* was inspired by the first aeroplane flights, while Mary Shelley's *Frankenstein* was influenced by electrical and galvanic research. In his work *Anticipations*, HG Wells voiced the expectation that his theories would overthrow and destroy the monarchy, monogamy, faith in God and respectability, the British Empire, the mechanisation of war, and the restructuring of class hierarchies that were all wrapped in them.

The painters of the nineteenth century also embraced futurism. In former times, religious and legendary imagery was the main tool used to represent and comprehend reality or the metaphysical. Nevertheless, one's enthusiasm for existing and prospective technological breakthroughs inspired humans to witness it.

Since Icarus invented wings and Leonardo da Vinci's drawing of an aerial screw in 1493, people have been fixated on regulating the atmosphere. However, it was not until the hot air balloon trip of the Montgolfier brothers in 1783 that the first genuine flight took place. Authors and artists were motivated to push limits by this incident: Both Edgar Allan Poe and Jules Verne created imaginative stories about astronauts, with Poe's describing a journey to the moon.

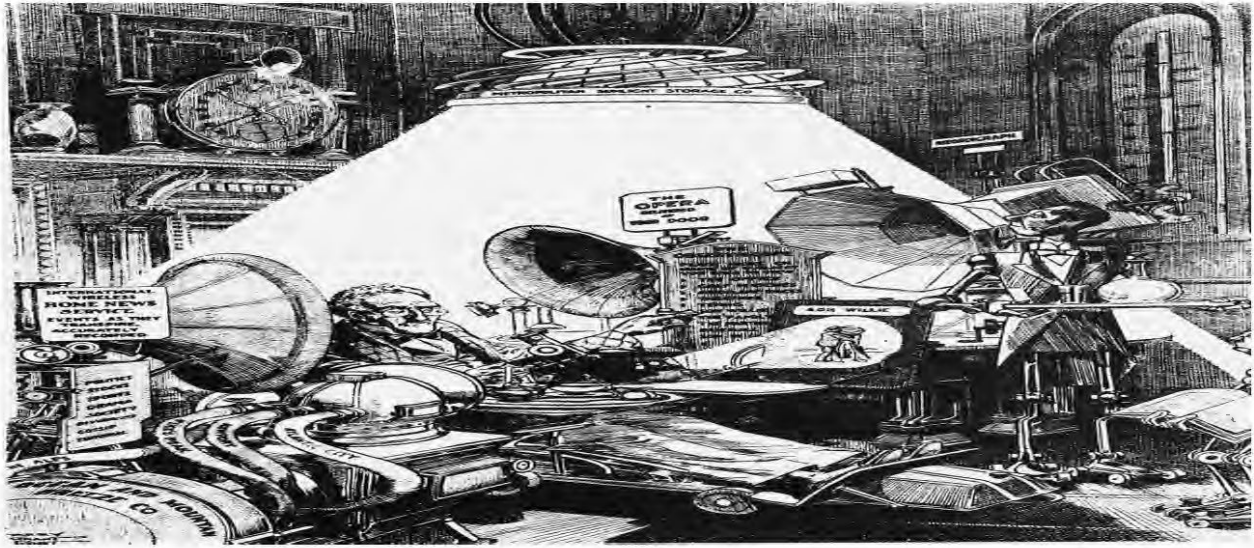
Various flying things were used by early futurist artists to embellish the sky. Albert Robida (1848-1926), a writer and painter, conjured up a future in which people would take airships for public transit, visit rich floating casinos, and go on trips to the opera on their own private aircraft.



(A romantic nighttime flight above Paris in a personal flying fish vehicle. There is a police station nearby to deal with issues like double parking and jaywalkers. Paris at night, or "Paris la Nuit." Robida, Albert)

Dart, a painter, was equally enthralled by the thrill of flying, and in 1908, he produced "The Explorigator," an airship comic strip. As a cartoonist, he expressed concern and fear about the potential implications of technological growth, in contrast to many of his futurist peers.



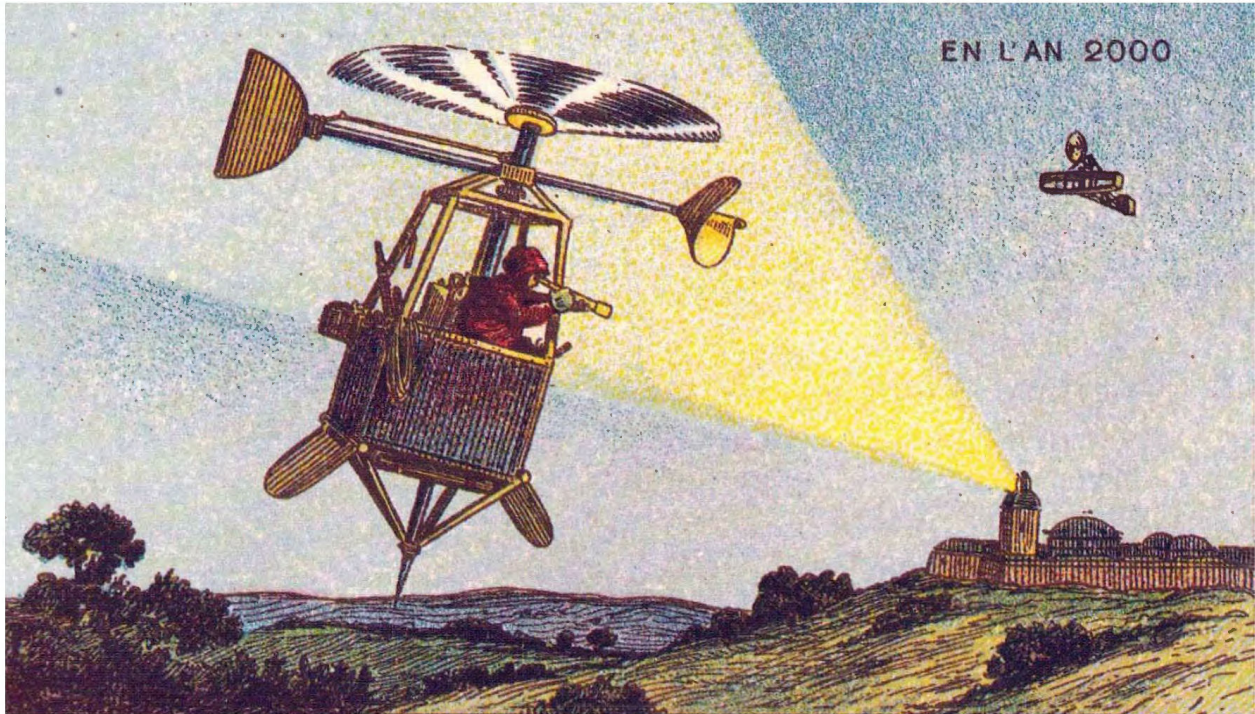


("We will All Be Happy Then." Harry Grant Dart, Life Magazine, 1911)

A collection of 100 postcards were discovered in the early 1920s behind shelves of dusty toys and circus automatons in the basement of a defunct French firm. Before being acquired by author Christopher Hyde in 1978 from Editions Renaud, a Parisian antique shop, they stayed there for more than 50 years. The year 2000 has been seen from several perspectives, some feature underwater farms, telescopes that could see distant planets in the cosmos, robot tailors, and personal flying cars.

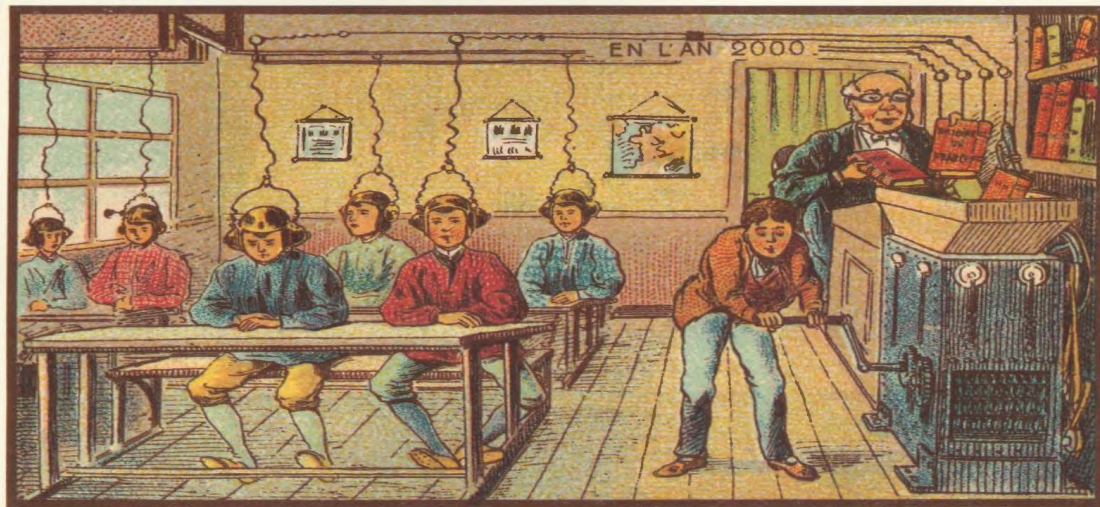
To honour the 1899 "fin de siècle celebration," industrialist Armand Gervais commissioned the photographs. Jules Verne and the automatons made by the Gervais business were both inspirations for a deck of cards designed by artist Jean-Marc Côté.

Nearly a century after these predictions were given, Isaac Asimov said in the introduction to a book that gathered them, "It is, of course, simple to laugh and make fun of projections of 1899, but how would any of us do now were asked to foresee life in 2085?"



("Advance Sentinel in a Helicopter." Jean-Marc Côté, 1899)

Books are scrutinised while they are sent as sound by electric current to the students' headphones while being placed through a grinder and maybe being "digitised." Despite this technological marvel in the classroom, One pupil can't stop staring out the window.



["At School." Jean Marc Côté, 1899]

Because Andy Warhol made such a big impact on popular culture throughout the course of his almost 40-year career, one could argue that his works foretold the evolution of popular culture decades after his death in 1987. Everyone will only be famous for a brief time in the future; Warhol said in 1968, "In the future, everyone will be world-renowned for 15 minutes" (Hackett 156), anticipating the fleeting nature of today's celebrity culture. Warhol understood that there were more and more ways to become famous and that the rise of social media and the digital revolution would only make celebrity more widespread. Examples include one-hit wonders like Grahame's ascent to stardom following *Big Brother* and fast erasure by the tabloids or Daphne & Celeste's "U.G.L.Y." from 2000. "15 minutes of fame" also refers to a fleeting interest in someone or something, as if Warhol could predict how viral moments and memes circulate online nowadays before people's attention is drawn to something more ludicrous (Ford).

Caravaggio's prediction of the rise of the selfie culture might be seen as continuing in Warhol's work, "Self-Portrait with Skull."<sup>15</sup> As a skull is placed on various parts of his body throughout the series, from the top of his head to his left and right shoulders, Warhol nonchalantly strikes a posture. The images make an obvious connection between one's self-image and mortality. Warhol's "Self Portrait with Strangulation"<sup>16</sup> series, which has a variety of pop-art splashed images of the artist being strangled, explores the same idea of self-image and death. Are these two photo collections a sign that the selfie culture is suffocating us and destroying our mental health?

A 1937 scenario by Umberto Romano was heavily based on events that transpired in Massachusetts during a pre-revolutionary conflict. The painting depicts two New England natives fighting violently to save their lands from English invaders. A man's hand is shackled to a piece of wood, while another man seems to be executed.

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<sup>15</sup> <https://www.tate.org.uk/art/artworks/warhol-self-portrait-with-skull-ar00610>

<sup>16</sup> <https://www.tate.org.uk/art/artworks/warhol-self-portrait-strangulation-ar00503>



In the bottom right corner of the image, where a man appears to be sitting on a boat and is holding...an iPhone, there is a little respite from the chaos. This would have merely seemed to be a stone tablet before the invention of the iPhone, but based on the way the man uses the gadget, it looks like he recently took a break from his blood thirst to check his Instagram alerts. This is viewed as a forerunner to the iPhone and how people interact with smartphones: they tune out of reality, no matter how intense, and become completely absorbed by what is shown on the screen. Just as this picture demonstrates, telephones have become so ingrained in their lives that even if a fight breaks out 20 metres away from them, they will still be using their iPhones to take pictures of the scene or check out the newest Facebook meme.



("Mr. Pynchon and the Settling of Springfield" (1937) Umberto Romano)

Even the most brilliant futurists must face unexpected technological obstacles. Asimov writes that he might not have anticipated the negative effects. Both unreasonable optimism and unjustified pessimism have the ability to lead someone astray.

Even if they are frequently overlooked, the authors of those books all helped shape our ideas about the future since they were pioneers who looked into an undiscovered terrain. For their contemporary audiences, they opened a door into a new universe of wonder and potential, and for the first time, they helped mass culture develop a common understanding of the future.

### 2.9.1 Science Fiction Novels Predicting Future<sup>17</sup>

Humans are living in an era where technology is advancing at an extremely rapid pace, as they now have access to equipment that could only have been dreamed of 30 years ago. In certain works of fiction, novelists have made frightening predictions about the technology being developed and created by scientists and technologists.

Aspects of the Apollo 11 landing, which occurred 100 years later, were foreseen by Jules Verne in *From Earth to the Moon*. Jules Verne, the French novelist, described launching people in aluminium capsules from Florida. Their predictions even included calculations of how much power would be needed to lift the astronauts' spacecraft off Earth.

George Orwell's novel *1984* predicted many characteristics of the present-day world. In London alone, there is currently one CCTV camera for every 14 people. This situation is comparable to Orwell's nightmarish society in which 'Big Brother' watches over the populace.

'Credit card' was first used in *Looking Backward* by Bellamy. His idealised society would not require paper money. They would all have cards that let them use credit from a central bank to make purchases.

In *Fahrenheit 451*, Bradbury described a society he dubbed "thimble radios." They were also called "small seashells," and they were portable audio players that were not all that unlike the wireless headphones that came around half a century later.

With 4G networks and Internet available in every household today, it is difficult to picture life without the Internet. The World Wide Web, hacking, and virtual reality were among the phenomena foreseen in William Gibson's *Neuromancer*. The Internet humans use today was predicted decades ago.

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<sup>17</sup> The information has been taken from <https://www.bbc.com/urdu/science-51087744>

After seeing solar panels on every rooftop, would you be surprised that solar energy was predicted a century ago? In his novel, *Ralph 124 C 41+*, Grinsbeck wrote about his adventures in places where solar panels were installed. The novel was written 60 years before the invention of the first solar-powered calculator.

In the novel *2001: A Space Odyssey* (30 years before the invention of the first tablet computer), Clarke wrote about an electronic paper or 'news pad' that was read by the people of the world. He also envisioned the HAL9000, a voice-activated supercomputer that was not too different from the voice-activated virtual assistants routinely used in many homes and businesses today. Apart from this, he also warned about the dangers of artificial intelligence.

John Bruner's novel *Stand on Zanzibar* was full of accurate predictions of the future. It even included a prophecy about the popular leader of the United States, President Abu Obama. Bruner wrote about vehicles powered by rechargeable electric fuel cells. Apart from this, he also predicted that TV news channels would be broadcast globally via satellite.

Martin Cadin's novel *Cyborg* told the story of Steve Austin, a pilot seriously injured in a flight crash and left with only one limb and one eye. In the novel, a group of scientists provided Austin with new legs, an electric arm, and an eye with a camera that could be attached or removed as needed. Thus, Austin became a 'cyborg', a combination of machine and man. The novel was written 20 years before the first bionic arm transplant.

The purpose of the above-mentioned examples is to show that art and literature can significantly predict the human situation in the future because the predictions are usually based on the profound knowledge of human history and scientific progress. The scientific and political visions of the authors can help world powers form sound judgements about the repercussions of technology before initiating any scientific project. The next chapter shows how various

posthumanist theorists express optimistic and pessimistic visions of the future while debating on the issue of human enhancement and the effects of technology on human existence and the planet earth. Only through the analysis of science fiction can one affirm the tangibility of their views on the human condition in the posthuman world.

## Chapter 3

### **Posthuman Ontologies: Rethinking the Human Condition through Control, Identity, and Enhancement**

This chapter introduces the major theoretical concepts and strands of posthumanist, bioethical, and philosophical inquiry that underpin the critical analysis of the human condition in the selected science fiction texts. This chapter argues for the appropriateness of a hybrid conceptual framework that allows for an interrogation of how biotechnology, digital systems, and posthuman technology reshape agency, subjectivity, and human condition in the posthuman world. Drawing from the technophilic perspectives of thinkers such as Nick Bostrom and Ray Kurzweil and the bioconservative warnings of Francis Fukuyama and Kass and Coeckelbergh, the framework is constructed to capture the complex entanglement of power, hierarchy, commodification, fragmentation of human condition, embodiment, and human enhancement in technologically saturated societies.

Since I have adopted conceptual insights from Bostrom's arguments on superintelligence and radical enhancement, Fukuyama's notion of the "human essence", biopolitics, social hierarchy, and ethical boundaries, this chapter integrates their perspectives to form a layered theoretical lens. These perspectives collectively offer a nuanced way of examining how science fiction dramatises the fragmentation, commodification, and politicization of the human condition in the posthuman world.

The chapter functions as the structural underpinning through which posthuman narratives are analysed. At its core, the framework engages with the notion that the "human condition"—once considered a universal, static essence—is increasingly fragmented and contingent upon technological access, augmentation, and systemic control. The foundational concepts that define

this framework center on several interrelated themes. First, the human condition is viewed as mutable, continually redefined through processes of enhancement, surveillance, and digitization. This is accompanied by a fractured ontology that segments societies according to divisions created by bioengineering and biopolitical control. Symbolic ethics emerge as a critical lens through which the cultural and moral meanings assigned to technology are interrogated. Additionally, surveillance and control are understood as central mechanisms within biopolitical regimes. Finally, identity and subjectivity are increasingly restructured through the integration of posthuman elements, reflecting a shift in how individuals perceive and experience themselves in technologically mediated environments.

This structure does not merely track the presence of posthuman elements but emphasises the ethical tensions, hierarchical reorganizations, and existential ambiguity that characterise science fiction's portrayal of technologically transformed societies. Each of the selected novels—*Oryx and Crake*, *Natural History*, *Moxyland*, *Ink*, and *Borne*—set in distinct speculative futures, populated by characters who navigate different socio-political and technological landscapes is read as a narrative experiment exploring these shifting conditions. The framework thus allows for a comparative evaluation of how posthuman technologies interact with notions of human condition, belonging, dignity, control, and autonomy across speculative futures.

Given the diversity of contexts, narrative strategies, and bio-techno-political concerns in these texts, a singular theoretical lens is insufficient to fully grasp the complexity of how human identity and agency are redefined. Therefore, this research adopts a multifaceted theoretical framework, drawing from posthumanist philosophy, bioethics, and critical theory to explore the tensions between human embodiment, technological control, and structural domination.

In *Oryx and Crake*, the collapse of moral constraints under the pressure of genetic engineering and rationalist ideology is examined through the philosophical warnings of Francis Fukuyama and Michael Sandel, who caution against the unchecked commodification of life. In *Natural History*, questions of sentience, memory, and posthuman embodiment resonate with N. Katherine Hayles' insights into the interplay between information and materiality, while Donna Haraway's cyborg theory provides a means to interrogate hybrid identity. *Moxyland*'s corporate surveillance and biometric governance are situated within Julian Savulescu's ethics of enhancement, but also problematised through Haraway's critique of capitalist technoscience. In *Ink*, the intersection of immigration, surveillance, and bodily inscription reflects the biopolitical theories of Foucault, particularly around state power and the management of life, while Hayles' theory of distributed subjectivity offers further tools for understanding digital identity. Finally, *Borne*'s exploration of ecological collapse and biotech mutations draws on Nick Bostrom's concept of existential risk, challenging the limits of human control and the ethics of synthetic life.

Each theoretical perspective helps illuminate the structural mechanisms—be they biotechnological, corporate, or governmental—that shape or suppress individual agency. These diverse frameworks enable a textured reading of how characters in these novels struggle to preserve or reconfigure their humanity in posthuman conditions. Rather than forcing literary texts into theoretical molds, this study uses theory to bring forward the speculative, philosophical, and ethical stakes already embedded in the narratives. Through this, the novels are positioned as active participants in contemporary debates about what it means to be human in the age of biotechnology. Technophilic perspectives, as articulated by thinkers like Ray Kurzweil, Nick Bostrom, Jonathan Glover, and Rosi Braidotti, offer a vision of posthumanism that embraces technological advancement as a path toward cognitive liberation, physical enhancement, and moral evolution.

These frameworks help interpret characters who embody or pursue technologically mediated forms of agency, resilience, and identity fluidity. In contrast, the technophobic perspective, advanced by Francis Fukuyama, Leon Kass, and Jürgen Habermas, frames these same developments as threats to the moral fabric of humanity, democratic equality, and the integrity of human nature. These critical views help explore the marginalization and surveillance of the unenhanced or non-augmented figures, whose exclusion dramatises the ethical costs of posthuman integration.

The selected texts reflect this theoretical tension through speculative narratives that foreground the unequal distribution of technological privilege and the fragmentation of human ontology. The posthuman is rarely depicted as a uniform or universally accessible state; rather, it is marked by hierarchies, exclusions, and contested identities. By drawing on both celebratory and cautionary posthumanist theories, this study positions literature as a vital site for exploring the competing visions of human enhancement, ethical constraint, and the shifting boundaries of the human condition in technologically saturated futures.

### **3.1. Rationale for Hybrid Conceptual Framework**

This study adopts a hybrid theoretical framework that brings together key strands of posthumanist, bioethical, and philosophical thought to critically investigate the evolving human condition in technologically mediated futures. While no single theoretical lens can fully account for the complex interplay of enhancement, embodiment, agency, and control found in the selected science fictions, the integration of diverse perspectives allows for a more nuanced and multidimensional analysis. Each theorist contributes a vital conceptual thread, helping to trace the ethical, ontological, and sociopolitical consequences of posthuman transformation.

Posthumanist thinkers such as Nick Bostrom, Ray Kurzweil, and Rosi Braidotti offer visions of the human as a dynamic and mutable entity, proposing that technology can extend



cognition, lifespan, and even ethical potential. These perspectives frame enhancement as a site of liberation and self-overcoming, aligning with literary depictions of characters who acquire new forms of power, resilience, and agency. However, this optimistic view is tempered by critics like Francis Fukuyama, Leon Kass, and Jürgen Habermas, who caution against the erosion of essential human traits—such as moral judgment, emotional continuity, and autonomy—amid the rise of biotechnological interventions. These theorists foreground the ethical risks of commodifying the body, fragmenting identity, and engineering inequality.

One of the unresolved issues in the debate on enhancement concerns whether a significant alteration of our abilities would simply broaden our understanding of what it means to be human, or if it would transform humanity into a posthuman species. This ties into the broader question of whether a posthuman world would be superior to a human one across all essential dimensions. Even if radical enhancements enabled us to perform cognitive tasks that we currently cannot, and if these enhancements resulted only in positive outcomes without any negative consequences, any evaluative judgment about the value of such a world would still be made using the cognitive abilities we possess as humans. It remains uncertain how we could transcend the human viewpoint in order to assess the value of a posthuman world or to compare it with our present world. The aim of cognitive enhancement is to improve well-being and the quality of life. However, beyond a certain threshold, it may be impossible to definitively determine who would benefit from such enhancements and in what specific ways these benefits would manifest.

The evolving debate on human enhancement and its moral legitimacy forms the philosophical core of posthumanist discourse. The line between *treatment* and *enhancement*—between alleviating suffering and improving beyond nature—has become increasingly porous, raising critical concerns about human dignity, values, and free will. This tension is a fundamental

theme in posthuman fiction, where speculative technologies do not simply heal or upgrade, but rather reconfigure what it means to be human. In this context, the thesis adopts a comparative lens, drawing on the theoretical arguments of liberal posthumanists or technophiles, and their counterparts, the bio-conservatives or technophobes, to evaluate how these divergent worldviews play out within literary representations of the posthuman world.

### **3.2 The Enhanced vs. the Unenhanced: A Fractured Ontology**

This section builds on the conceptual notion of fractured ontology—the division of the human condition based on degrees of enhancement—and integrates theoretical insights from posthumanist, technophobic, and critical perspectives.

Within the posthuman framework, enhancement technologies such as genetic engineering, cognitive augmentation, and artificial intelligence create not just improved bodies or minds, but entirely new ontological categories. As theorised by Fukuyama and Habermas, these categories can erode the common ethical ground that binds individuals in a shared moral community. Fukuyama in particular argues that such divisions threaten the principle of natural human equality, risking a descent into new forms of social stratification based on bio-technical access and modification (101–04).

In Justina Robson's *Natural History*, the “Forged” embody this ontological fracture and fragmentation. Though bioengineered for superior capabilities, they are excluded from the human moral community and treated as expendable. Their alienation dramatises what Leon Kass critiques: that enhanced beings may possess faculties beyond the human but lack moral integration or acceptance (Kass 21). Despite being rational and emotionally aware, the Forged are denied ethical recognition because their origins lie in synthetic biology rather than in natural birth. This denial

underscores the posthuman reality: ontology is politicised—defined not only by biology but by biopolitical narratives of legitimacy and value.

This fragmentation is especially evident in *Natural History* by Justina Robson, where the Forged beings—posthuman entities created through biotechnology—are initially envisioned as embodiments of techno-messianic hope. The ideology underpinning their creation resembles what David Noble calls “techno-Christianism,” a millennialist fusion of technological innovation and religious salvation that anticipates a “Techno-Christ” figure promising harmony and deliverance (David 3). As Musk’s techno-utopian rhetoric exemplifies—where “AI and the robots will provide any goods and services that you want” (O’Brien)—the future is framed as post-labor, post-need, and post-human. However, in Robson’s novel, these enhanced beings are not emancipated but exploited—used as tools to explore space and extend human ambition. Despite embodying the supposed culmination of scientific salvation, characters like Isol struggle for autonomy and recognition, challenging the validity of the techno-religious narrative. In this way, the novel critiques the assumption that technological transcendence equates to human liberation, exposing instead the persistence of structural domination, exclusion, and ethical complexity.

Technophilic theorists such as Bostrom envision the enhanced as morally and cognitively evolved, yet the novels repeatedly reveal the ethical blind spots in such visions. In *Borne*, VanderMeer presents enhancement not as a clear step forward but as an ontological rupture: Borne is intelligent, sentient, and caring, yet his very existence troubles conventional categories of life, personhood, and kinship.

Conversely, the unenhanced are increasingly marginalised—not only excluded from opportunity but rendered obsolete. In *Moxyland*, unenhanced individuals are systematically excluded from health care, citizenship, and social mobility. In *Ink*, they are visibly branded and

subjected to state surveillance, echoing Agamben's notion of bare life—those whose lives can be regulated, reduced, or erased without consequence. These fictional portrayals reflect Foucault's theory of biopower where the control over bodies is exerted through technological and institutional apparatuses that define who lives, how they live, and whether they matter.

This fractured ontology also troubles humanist ideals. Hayles challenges the assumption of a cohesive, stable self, suggesting instead that posthuman identities are distributed, relational, and interdependent (Hayles 288). The enhanced-unenhanced binary in speculative fiction thus does not simply divide characters—it reframes their capacity for subjectivity, agency, and ethical inclusion. These narratives ultimately resist simple categorizations. Enhancement may not lead to transcendence, and unenhancement may not equal inferiority. The division is instead an invitation to question how ethics, recognition, and power are allocated in the posthuman world. As Braidotti argues, we must move beyond anthropocentric and essentialist definitions of value, recognizing that ontological multiplicity is the new terrain of human identity (94).

### **3.3 Technophobic Posthumanism: Vulnerability, Fragility, and Ethical Limits**

This section elaborates on the conceptual focus of human vulnerability and the limits of posthuman aspiration, integrating technophobic theoretical perspectives to highlight the costs of enhancement. In contrast to technophilic posthumanism, which envisions technological transcendence, technophobic posthumanism emphasises the fragility of the human condition and the ethical dangers posed by uncritical technological integration.

The conceptual core of this section is rooted in the tension between technological empowerment and existential loss. Thinkers like Francis Fukuyama, Kass, Sandel frame enhancement technologies as threats to emotional richness, moral reflection, and shared humanity. Fukuyama warns that the erosion of human “essence”—marked by vulnerability, mortality, and

finitude—undermines the ethical foundations of personhood and democratic society (Fukuyama 101–03).

This concern is rendered viscerally in *Oryx and Crake*, where Snowman, the unenhanced survivor, represents both the physical and ethical residue of a lost world. Surrounded by biologically engineered Crakers, Snowman’s fragility becomes symbolic: he alone remembers a world of ethical ambiguity, stories, and affective complexity. His suffering reflects what Barbour calls the loss of “uniqueness and spontaneity” in a world governed by efficiency and genetic rationalism (12). The emotional and symbolic weight of suffering thus becomes a site of resistance to posthuman erasure. Drawing from Enlightenment traditions, philosophers like Descartes, Kant, and Locke define the human through rationality, autonomy, and moral agency—qualities they believe are endangered by posthuman technologies. Francis Fukuyama echoes this concern, warning that the erosion of biological boundaries threatens the “specialness” of human beings, which he describes as “a higher moral status than the rest of the world” (166). In my thesis, I explore how this bioconservative anxiety manifests in speculative fiction as dystopian imaginaries, where the loss of human distinctiveness leads to social fragmentation, ethical collapse, and ontological uncertainty.

Technophobic theorists argue that technological systems, particularly when oriented toward optimization, commodify emotional life and moral judgment. This critique is embodied in *Ink*, where biometric branding reduces individuals to state-regulated data points. The unenhanced are not only tracked but morally redefined as disposable or dangerous. Agamben’s concept of bare life applies here: lives stripped of legal protection or ethical significance, regulated through technological control rather than moral recognition.

Individuals who lack technological enhancement or compliance are cut off from access to the state and subjected to biopolitical exclusion in *Moxyland*. Surveillance and bio-certification replace relationality with functionality. Dreyfus's critique of technological rationalism, in which human intuition and judgment are displaced by procedural systems, underscores the danger of reducing identity to algorithmic logic (35).

Technophobic posthumanism further emphasises the psychological toll of posthuman progress. Drawing on Coeckelbergh, the desire to eliminate vulnerability—through pharmacology, AI, or prosthetics—often intensifies rather than resolves existential risk (42). Speculative fiction reflects this paradox: the enhanced may be physically optimised but emotionally desolate, while the unenhanced endure through memory, pain, and empathy.

*Borne* exemplifies this contradiction. The city is ruled by biotech chaos, yet human characters like Rachel and Wick, unenhanced and struggling, preserve an ethic of care. Their fragility is not a flaw but a reminder of ethical depth. In such narratives, posthumanism's promise of mastery is consistently haunted by the cost of detachment—the loss of relationality, memory, and spontaneous moral response.

As Coeckelbergh argues, technologies that promise invulnerability often reconfigure rather than remove vulnerability, exposing individuals to new forms of dependence, alienation, and psychological fragility (81, 122). This insight returns ethical discourse to the shared experience of risk and relational need, rather than the pursuit of perfection.

This chapter integrates the conceptual concern of symbolic ethics with theoretical insights from posthumanist and ethical philosophy. Technology, in posthuman speculative fiction, evolves from a pragmatic tool to a symbolic medium—one that encodes power, identity, and morality. Frederick Ferré's symbolic ethics provide the theoretical foundation for understanding how

technology becomes a vehicle for cultural meaning. Ferré emphasises that "technology is constantly about advancements in knowledge and values" (10), requiring evaluation not only for utility but for moral consequence. In *Moxyland*, for example, biotech implants are not just functional—they symbolise submission to a neoliberal order. In *Ink*, biometric tattooing becomes a moral branding mechanism, delineating the line between inclusion and exclusion in a technologically stratified society.

Technophobic posthumanism does not merely resist technology—it proposes an alternative valuation of human life: one grounded in finitude, affect, and ethical ambiguity. These speculative texts urge readers to reconsider what must be preserved, not merely what can be surpassed. The fragile, suffering human being—often deemed obsolete—is refigured as the ethical anchor in worlds obsessed with control and transcendence.

### **3.4 Posthuman Technology and Pharmacology as a Threat**

In this chapter, I engage with posthuman pharmacology and enhancement biopolitics as one of my critical theoretical strands. While technophilic visions celebrate biotechnological progress, I draw on a conceptual framework of surveillance, commodification, and bodily sovereignty to interrogate how pharmacology and genetic engineering may function as mechanisms of control, rather than liberation.

Following technophobic theorists like Francis Fukuyama, Jürgen Habermas, and Michael Sandel, I argue that pharmacological enhancement poses profound risks to human autonomy, identity, and moral agency. Fukuyama's critique that such advancements undermine the very foundation of natural human equality (9) provides an anchor for understanding the dystopian logics depicted in speculative fiction.

This threat is vividly realised in *Oryx and Crake*. Crake's use of biotech to design a new species—immune to disease, stripped of aggression and emotional complexity—exemplifies what Habermas fears: a future in which technological decisions override personal freedom and ethical deliberation (61–63). The Crakers embody a technocratic vision where pharmacological and genetic tools replace social ethics with programmed harmony.

This analysis is also grounded in the conceptual distinction between treatment and enhancement. As I theorise, the posthuman dilemma lies not only in the capacity to heal, but in the will to redesign. The speculative futures in these novels demonstrate how pharmacological tools extend beyond medicine into behavioural manipulation, as seen in the neurochemical engineering that shapes mood, memory, and identity. The boundary between therapy and control becomes dangerously porous.

Drawing from Coeckelbergh's critique of anti-vulnerability strategies, I explore how pharmacology redefines what it means to flourish. *Ink* presents a haunting vision where biometric classification systems intersect with psychopharmaceutical regulation, particularly in how marked individuals are evaluated, sedated, or excluded. These practices, though cloaked in efficiency, reveal the latent authoritarianism of enhancement culture.

Similarly, in *Moxyland*, the regulated use of drugs to modulate behavior, enforce obedience, or heighten productivity critiques the medicalization of citizenship and consent. I use this as an interpretive lens to show how speculative fiction maps the ethical erosion of liberal values when biotechnological power is unchecked. These texts reframe pharmacology not as personal aid, but as a sociotechnical mechanism of governance.

The commodification of enhancement is another key concern. I draw from Nicholas Agar and Francis Fukuyama to illustrate how parental selection, preimplantation genetic diagnosis, and



cognitive enhancement produce a market of bodies—engineered for success, sanitised of deviance. In this light, the posthuman body becomes a curated product, rather than an ethical subject.

Furthermore, I consider how pharmaceutical neoliberalism influences education, family dynamics, and identity formation. The widespread use of mood-altering or cognitive-enhancing drugs reveals not only medical ambition, but a societal preference for compliance over complexity. These concerns are reflected in Huxleyan allusions and real-world parallels explored through the speculative critique of authors like Atwood and Robson.

Ultimately, in taking posthuman pharmacology as one of my theoretical categories, I aim to expose how the promise of cognitive and emotional optimization can conceal a deeper biopolitical project—one that redefines personhood through performance metrics and neural plasticity. The speculative fictions I analyse suggest that beneath the ideal of an improved humanity lies a landscape of surveillance, homogenization, and diminished moral reflection.

Through this interpretive strand, I argue that biotechnological mastery without ethical anchoring risks disassembling the human condition into programmable functions, governed not by choice but by design. Thus, pharmacological enhancement, far from guaranteeing empowerment, may instead produce new vulnerabilities—psychological, political, and existential.

### **3.5 Technophilic Approaches to Posthumanism: Liberation and the Promise of Integration**

This chapter develops the conceptual theme of human adaptability and technological symbiosis, interpreting technophilic theories that frame posthuman enhancement as a site of liberation, evolution, and ethical expansion. While technophobic critiques foreground loss and control, technophilic posthumanism views enhancement as the natural continuation of human progress—not a rupture but a deepening of agency, longevity, and cognitive capacity.

Theorists such as Ray Kurzweil, Nick Bostrom, Julian Savulescu, and Rosi Braidotti articulate a vision of human evolution that embraces cyborgization, AI integration, and genetic design as tools for flourishing. Bostrom's notion of "moral enhancement" envisions technologies that improve empathy, cooperation, and rational decision-making (493–94). Similarly, Braidotti argues that posthuman subjectivity is not a betrayal of the human but its reinvention as a fluid, relational, and ethically responsive identity (90). I endeavor to explore when human beings are enhanced or bio-engineered creatures are created, what difference occur in them; how do they behave with the unenhanced, what is their identity and condition, what moral dilemmas do they face and how do use their enhanced powers? As in *Oryx and Crake*, the crackers consistently ask questions about their creator, they fail to communicate with Snowman, they are adapted to the environment but unable to comprehend the anxieties and problems of the sole surviving human being.

These ideas are vividly explored in *Natural History*, where the Forged are not simply tools of labor but aspirational beings. Characters like Isol embody the technophilic ideal: she transcends human limitations not only physically but imaginatively, seeking connection and purpose. Her quest reflects the posthuman ambition to evolve beyond organic restriction, aligning with Kurzweil's projection of digitally-augmented bodies and minds as a future expression of human potential.

*Borne* offers a similarly ambivalent but compelling vision. Though biotechnology unleashes chaos, it also produces beings capable of care, growth, and self-reflection. The posthuman here is not monstrous but morally unfinished, inviting readers to imagine forms of consciousness and embodiment that extend beyond traditional human categories.

Technophilic ideas emphasise the plasticity of the human. As Gray observes, “technology is not alien to or destructive of our individual and common humanity; it is the very definition of it” (2). In this view, humans are fundamentally tool-making and tool-integrating beings; thus, enhancement is ontologically consistent with our evolutionary nature. This notion is reflected in *Moxyland*, where bio-enhanced characters participate in new forms of expression, mobility, and influence—albeit under corporate domination.

Yet even technophilic theorists acknowledge the need for ethical regulation. Barbour notes that technology's value depends on its use—liberatory or coercive (15). The optimistic stance does not deny the potential for abuse but maintains that technological integration expands freedom, capability, and choice.

Technophilic posthumanism also reimagines the body not as a biological limit but as a site of modification and empowerment. I strive to analyse how much empowerment the enhancement gives to the characters who resort to such technologies. Kurzweil’s vision of nanotech-enhanced bodies that can shift shape and function on command (140), or Gregory Paul and Earl Cox’s projection of post-organic life as de-coupled from environmental risk (298), represent a radical rethinking of embodiment and human-environment interaction.

In *Ink*, the tattooed bodies of immigrants offer a contrasting vision: technological inscription as both oppression and identity. The technophilic reading does not dismiss this contradiction but asks whether technological embodiment can be reclaimed for agency and dignity. Likewise, Braidotti’s zoe-centric ethics calls for ethical consideration of all forms of life, challenging us to recognise value in diversity, hybridity, and transformation (61).

The conceptual implication here is that posthuman technologies are not inherently dystopian or redemptive—their ethical meaning is contingent on context, governance, and

relational ethics. The novels examined reveal not only the dangers but also the creative openings of technological evolution.

Thus, technophilic posthumanism contributes a vital interpretive strand to this study: one that affirms the potential for transformation, solidarity, and expanded subjectivity through enhancement. Rather than seeking to preserve a static human essence, it asks how we might live more fully, responsibly, and relationally in worlds shaped by machines, code, and bioengineered kin.

### **3.6 The Comparative Analysis**

In this final section, I bring together the conceptual categories and theoretical strands developed throughout this study to synthesise a comparative understanding of posthumanism across the selected novels. These categories include fractured ontology, symbolic ethics, surveillance and control, biopolitics, pharmacological governance, bodily sovereignty, and posthuman identity. Each concept reflects a key tension in how speculative fiction imagines the evolving human condition in the face of technological transformation.

The novels I analyse function as narrative laboratories for testing the theoretical boundaries of posthumanism. I do not treat them as mere illustrations of theory but as co-producers of posthuman thought. Through my framework, I integrate the technophilic, technophobic, and critical posthumanist positions in order to explore how each novel complicates binaries of liberation and control, human and machine, enhancement and exclusion.

From the technophilic strand, I incorporate thinkers such as Ray Kurzweil, Nick Bostrom, and Rosi Braidotti to interpret the imagined potential of biotechnology and artificial intelligence to extend agency, resilience, and even moral capacity. This vision is most evident in *Natural History*, where the “Forged” articulate new forms of intelligence, interstellar ambition, and

existential reflection. I also see this optimism echoed in *Borne*, where technological lifeforms evoke not horror but curiosity and care.

However, I contrast this with the technophobic strand, which includes theorists like Francis Fukuyama, Jürgen Habermas, and Leon Kass. These thinkers question whether enhancement severs the continuity of human identity, undermines social equality, or imposes a new order of biopolitical control. This view is viscerally portrayed in *Oryx and Crake*, where genetic engineering creates aesthetic perfection but at the cost of emotional and ethical depth. Similarly, in *Ink* and *Moxyland*, biometric and pharmaceutical regimes transform the body into a site of compliance, surveillance, and racialised exclusion.

In between these poles lies critical posthumanism, my most integrative theoretical strand, which I draw from scholars such as N. Katherine Hayles, Cary Wolfe, Rosi Braidotti (in her nomadic ethics), and Elaine Graham. These theorists resist both the utopianism of technophilia and the nostalgia of technophobia, instead proposing that the human is always already technologically mediated. In this view, the task is not to recover a “natural” humanity but to rethink subjectivity as relational, embodied, and ethically situated within networks of power and code.

This hybrid vision resonates with all the novels in different ways. *Borne* explores care and kinship across biological and artificial boundaries. *Natural History* problematises personhood through the “Forged,” who challenge the boundary between creation and autonomy. *Ink* and *Moxyland* emphasise how posthuman technologies can both liberate and stratify, depending on access and systemic control. *Oryx and Crake* dramatises the collapse of ethical responsibility in the absence of emotional depth, suggesting that technological advancement without empathy risks nihilism.

Throughout my analysis, I show how each conceptual category—fractured ontology, symbolic ethics, technological embodiment, biopolitical control, and pharmacological intervention—interlocks with theoretical insights to illuminate new aspects of the human condition. I use surveillance not just as a narrative device but as a conceptual category that reveals how datafication reshapes subjectivity. I explore bodily sovereignty to question who owns the posthuman body when it becomes programmable and externally governed. I highlight pharmacological governance as a key mechanism through which emotional life becomes rationalised and controlled.

This comparative framework allows me to argue that speculative fiction does more than imagine future technologies—it performs ethical work. It dramatises the costs and contradictions of enhancement, the violence of technocratic utopias, and the fraught desires at the heart of the posthuman project. In doing so, it opens up new avenues for conceptualizing agency, community, vulnerability, and dignity in technologically saturated futures.

I contend that a balanced engagement with posthumanism requires acknowledging both its emancipatory aspirations and its complicity with systems of exclusion. By placing theory and fiction in critical dialogue, I aim to demonstrate that posthuman literature is not merely cautionary or celebratory—it is philosophical and political that critically engages with human condition evolved in the posthuman scenario, a speculative ethics grounded in narrative.

## Chapter 4

### **Reconfiguring the Human Condition: Posthuman Hierarchies, Biopolitics, and Technological Subjectivities**

This chapter examines how biotechnologically saturated societies reconfigure foundational aspects of the human condition, particularly through the lenses of power, hierarchy, commodification, embodiment, and human enhancement. In speculative fictions that grapple with posthuman futures, these concerns emerge as both urgent and contested, revealing the social, political and ethical fault lines of a world shaped by radical scientific intervention. By engaging with both technophilic and bioconservative theoretical perspectives, the chapter aims to investigate how the imagined worlds of the selected texts articulate fractured human ontologies and problematise the very concept of 'humanity,' exposing hierarchies, inequalities, ecological crises, and the conflicted coexistence between the evolved and the unevolved within the trajectory of posthuman development.

The posthuman scenarios constructed in science fiction primarily engage with the evolving status of the human condition—particularly identity, morality, and agency—within technologically saturated societies. These narratives interrogate what becomes of humanity when individuals pursue physical and cognitive enhancement and how governing bodies utilise technology either to empower or suppress their citizens. Science fiction thus remains a critical medium for examining the possibilities and perils of posthumanism, uniquely equipped to question and dramatise the ethical, social, and existential complexities introduced by technological advancement. While some posthumanist theorists envision a seamless blending of human and non-human as liberatory, many science fiction texts highlight the darker intersections of technology,

state control, capitalism, and violence, portraying a world where technology often functions as a threat to personal liberty and moral integrity.

This skeptical tone reflects a broader discomfort with the dissolution of traditional humanist values in posthuman futures. Even as environmentalist and post-anthropocentric perspectives appear in certain texts, a nostalgic humanism often persists, complicating the notion that posthumanism fully departs from its humanist roots. This duality reveals the inherent ambiguity of the posthuman condition, where technologically altered beings still grapple with questions of dignity, empathy, and justice.

In confronting these dystopian threats, mainstream science fiction often retreats into familiar humanist resolutions: the reassertion of unenhanced humanity's moral or intellectual superiority. However, such resolutions are frequently unstable or incomplete, reflecting an unresolved crisis of identity and meaning in the posthuman world. Neil Badmington interprets the recurring triumph of humans over aliens or machines in Hollywood sci-fi as symptomatic of a deeper anxiety about the erosion of human centrality—a symbolic enactment of resistance to the decline of humanism (34). These narratives betray an unease over the changing definition of what it means to be human, especially when posthuman others challenge conventional ideas of personhood and moral agency.

In contrast to other species that are content with survival, human beings are inherently inquisitive, marked by their ability to perceive, question, create, and take risks. This drive has propelled humanity from primitive tools to nanotechnology, enabling the pursuit of knowledge and convenience. Yet, these scientific leaps—while offering glimpses of a utopian, technologically enhanced existence—also carry the burden of transformed anxieties. The human desire to transcend vulnerability through technology may promise liberation but often results in new forms



of dependency, inequality, and existential uncertainty for both enhanced and unenhanced individuals.

#### **4.1 Bio-political Control, Power, and the Fragility of the Human Condition in *Oryx and Crake***

Margaret Atwood's *Oryx and Crake* explores the implications of unchecked biotechnological advancement and its impact on the human condition, especially in terms of identity, moral agency, and social belonging. Set in a post-apocalyptic future shaped by environmental collapse and genetic engineering, the novel serves as a speculative lens through which the boundaries between the human and posthuman are questioned and reimagined. Atwood's distinction between science fiction and speculative fiction is important here, as her narrative draws from present trends to warn against techno-centric paradigms that neglect ethical and existential considerations.

The novel presents a dichotomy between traditional humanism and radical posthumanism. The former, represented in the remnants of a decaying civilization, has failed to prevent ecological and moral collapse. The latter, embodied by Crake's biotechnological intervention, offers an artificial solution that strips away core human traits such as empathy, imagination, and emotional complexity. This contrast critiques both the inability of humanism to address contemporary crises and the posthumanist tendency to commodify life and engineer "solutions" devoid of ethical depth. Rather than presenting technological progress as liberating, Atwood reveals how such advancement reinforces hierarchies, threatens human dignity, and curtails freedom, particularly for unenhanced humans like Jimmy/Snowman. As Dinello notes, science fiction often illustrates how technology exacerbates "social fragmentation, totalitarianism, surveillance, environmental degradation, addiction, mind control, infection, and destruction" (273). These themes resonate in *Oryx and Crake*, where biotechnology becomes a tool of control and suppression.

The psychological deterioration of Jimmy/Snowman, the novel's unenhanced protagonist, further exemplifies the existential consequences of resisting or being excluded from posthuman integration. Living in a world where he is neither Craker nor fully human, Jimmy grapples with memory loss, isolation, and purposelessness. His fragmented identity and moral disillusionment highlight the fragility of the human condition in a technologically saturated society. Atwood's critique extends to the commodification of life through genetic manipulation. As Kellner and Best warn, the world has become "a surreal zoo of mutations" (143), reflecting a cultural moment where moral and ecological boundaries are routinely transgressed in pursuit of innovation. This moral erosion is dramatised through the bioengineered Crakers—posthuman beings created to replace flawed humans. Crake's vision, while ostensibly utopian, embodies a dystopian logic in which biological control and engineered docility override the unpredictability and moral agency that define humanity. The paradoxical reformist slogans by the environmentalists seem shallow, which is why O'Grady, an eco-critic, believes that only through 'imagination' can humans build relationships with the environment and the natural world and that they can 'truly sustain us' (7). Literary studies can help overcome crises as human imagination works best in literature. "Alternative universes," as Terry Eagleton has observed, "are really devices for embarrassing the present, as imaginary cultures are used to estrange and unsettle our own" (n.p.).

The moral dilemma crystallises in Snowman's reflection on Crake's authority: "Why had it been his right, though, to sit in judgement on the world?" (Atwood 341). Through this question, Atwood probes the ethics of technological power and the consequences of reimagining the human condition without accountability or consent. Snowman's isolation, malnourishment, and hallucinations reveal a posthuman world where unenhanced beings are marginalised, struggling not only for survival but also for meaning. *Oryx and Crake* problematises the desire to overcome

human vulnerability through technological mastery. Instead of producing liberation, it intensifies inequality, alienation, and existential despair. The novel stands as a critical intervention into posthuman discourse, urging a reevaluation of what it means to be human in an age where science may seek to redefine—or erase—that very condition. Ecological disturbances, climatic chaos, outrageous tornadoes and thunderstorms, wrecked ozone layer, and deadly sunlight have made the life of the only surviving man agonizing; as Winterson<sup>18</sup> (2009) asserts, it is "eerily plausible. The apocalypse of the present, the disaster which has already occurred".

In *Brave New World Revisited*, Aldous Huxley contrasts the methods of control in George Orwell's *1984*, which operates through "inflicting pain," with the subtler domination in *Brave New World*, where power is maintained through "a hardly less humiliating pleasure" (26). In *The Handmaid's Tale*, Margaret Atwood aligns more closely with Orwell's dystopia, depicting a religiously driven oppressive regime rather than a political one. However, in *Oryx and Crake*, Atwood shifts to a dystopian framework more in line with Huxley's vision. Here, humanity's vulnerability to disaster is not caused by repressive political structures or the direct threat of violence but by a cultural void, a lack of guiding 'grand' narratives. This emptiness, as Neil Postman notes, results from the loss of a central "god" or story—one that "tells of origins, envisions a future, constructs ideals, prescribes rules of conduct, provides a source of authority, and, above all, gives a sense of continuity and purpose" (5-6).

Atwood's shift from Orwellian to Huxleyan dystopian themes reflects a significant aspect of late modernity: the fall of the Soviet Union and the collapse of secular political ideologies, which had once sought to replace the Judeo-Christian narrative they had dismissed. This collapse mirrors the ethos of the scientific revolution, where quantitative methods have overshadowed

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<sup>18</sup> <https://www.nytimes.com/2009/09/20/books/review/Winterson-t.html?smid=url-share>

qualitative understanding—a shift that Atwood critiques through her portrayal of "word" versus "numbers" people. She suggests that a world without qualitative values risks being overtaken by primal desires and anxieties, amplified by technology and driven by profit. Beyond merely warning against an overly scientific, profit-driven society, Atwood emphasises that sacred narratives are essential to human identity. Reclaiming one's humanity, she argues, depends on restoring these foundational stories.

Atwood sharply critiques the values inherent in modernity. Beginning with a conscious departure from the traditional Judeo-Christian worldview, particularly medieval scholasticism, modernity favored scientific understanding and precise measurement as paths to societal well-being. Initially envisioned as a liberating shift from the past's restrictions, modernity has fostered a hedonistic culture that prioritises pleasure and consumption. It has discarded medieval self-discipline without replacing it with a meaningful ethical system. This framework promotes the idea that 'more' is 'better' (Doede 12), encouraging immediate, self-centered fulfillment over delayed gratification and higher ethical goals. Both Huxley and Atwood critique this tendency, highlighting how modernity has rejected the traditional narratives that once upheld communal and long-term values.

Galileo's assertion that mathematics is the language of Nature marks a cultural shift, replacing natural languages and their guiding narratives with a focus on numerical precision and scientific authority. This transition is echoed by Snowman, the narrator in *Oryx and Crake*, who describes words as mere "window-dressing" (Atwood 188) on a stark, data-driven reality. Crake, Atwood's antagonist, mirrors early modern thinkers like Descartes, who dismissed traditional authority in favor of a rational, systematic approach akin to mathematical logic. Like Descartes, Crake views life mechanistically, sees the self as a purely rational mind, and maintains a fractured

relationship with Nature. Cartesian rationalism, in this view, disrupts the balance of life. As Karl Stern describes in *The Flight from Woman*, Cartesian thought represents "a pure masculinization of thought," rejecting the maternal and intuitive in favor of an intellect that seeks omnipotence (104). Crake's actions, particularly the killing of Oryx, embody this rejection of emotional complexity.

Francis Bacon's emphasis on technical power over inherited wisdom further reflects the modernist ideals Crake personifies. Ironically, many early scientists, who championed this new scientific worldview, were devoutly Christian, likely believing their religious values would remain unaffected by the rise of science. Over time, however, science's expansion gradually dismantled traditional cultural narratives and transformed human perspectives. In *Oryx and Crake*, this dominance of science leaves little room for old beliefs. The confidence once placed in theistic narratives was eroded, as exemplified by Laplace's famous response to Napoleon, where he explained the universe without invoking God, dismissing such concepts as "unnecessary hypotheses" (Wilkins 170). Science not only encroached on domains traditionally governed by theology and philosophy but also redefined them in its own terms, as seen in behaviorist psychology's reduction of human behavior to measurable phenomena. As scientific explanations expanded, they began offering alternative views on existence and human nature, diminishing the authority of inherited beliefs. Though individual crises of faith are evident in 18th- and 19th-century literature, it was in the 20th century that fiction fully depicted the consequences of this cultural shift in belief.

Atwood offers a satirical and darkly humorous critique of modern scientific progress, suggesting that its full impact on the planet is just beginning to unfold, with natural resources being depleted beyond recovery. The novel's title characters, Oryx and Crake, are named after species

now endangered or extinct in the near-future world of the story. Snowman, the narrator, shares profound connections with both: Crake, his only friend, and Oryx, the only woman he has loved. Snowman narrates the story as the survivor of a catastrophic event engineered by Crake—a disaster that surpasses any political upheaval, as Snowman appears to be the last human alive. Through Snowman’s experiences and reflections, Atwood critiques the consequences of a world dominated by technology, devoid of ethical and spiritual narratives, and driven by unchecked scientific ambition.

Crake has devised a “final solution” that spares only Snowman and the Crakers—a group of genetically modified humans designed to replace the flawed human race. The story centers on understanding Crake’s motivations, which, ironically, are driven by a desire to “heal” a broken world. Oryx’s role is more ambiguous: she embodies the exploited “Other,” representing a potential for love and connection that eludes both Snowman and Crake. Yet, she paradoxically supports Crake’s mission, unknowingly aiding him in bringing about the apocalyptic outcome.

Crake’s radical approach aims to address the global crises that, in his view, have spiraled out of control—centuries of unchecked technological progress have devastated ecosystems, and population growth has further strained the planet’s resources. This sense of urgency is reflected in Crake’s development of the BlyssPluss pill, a device that promises increased libido, immunity to sexually transmitted infections, and covert sterilization—embodying his extreme solution to human overpopulation and environmental collapse. As Crake bluntly states, “It’s not altruism exactly... More like sink or swim. I’ve seen the latest confidential Corps demographic reports. As a species, we’re in deep trouble, worse than anyone’s saying” (295).

In this world, the human condition is starkly shaped by social hierarchies, where the elite minority, referred to as the “numbers” people—those with valuable technical skills—live in

fortified corporate compounds. These compounds, akin to medieval castles, offer protection from environmental degradation caused by the very technologies that benefit only the wealthy. However, life within these spaces is isolating and empty, with the elite often struggling with anxiety and loneliness. As Snowman reflects, “He had grown up in walled spaces, and then he had become one. He had shut things out” (184). Meanwhile, the less fortunate are left to survive in the harsh “pleeblands,” a world where social mobility is almost nonexistent.

This sharp divide in society is mirrored in the education system, which is now controlled by corporations that prioritise technical training and security, further isolating the privileged from the unprivileged. Education serves as a means of reinforcing this stratification, with Crake—a highly intelligent individual—being drawn into prestigious corporate roles while Jimmy, the protagonist, can only manipulate language for profit through deceptive advertising. This hierarchical system perpetuates the emotional disconnection and transactional relationships characteristic of Crake’s world, where genuine human connection is scarce.

Despite his limitations, Jimmy finds more authentic relationships among his less privileged peers than within Crake’s sterile, corporate-run society. The relationships in Crake’s world are often shallow and transactional, sustained by corporate agendas and emotional detachment. This trend is seen in Jimmy’s interactions with his stepmother Ramona, who epitomises the growing shift in communication: “She talked like a shower-gel babe in an ad. She wasn’t stupid... she just didn’t want to put her neuron power into long sentences” (25). This linguistic simplification is a symptom of a world increasingly dominated by surface-level interactions and visual communication, which devalues emotional depth and nuance.

Technology, particularly in the form of computer games and media, plays a pivotal role in shaping human behavior and emotional engagement in Oryx and Crake. Games like *Blood and*

*Roses* offer a macabre form of education, trading human atrocities for cultural achievements, symbolizing a culture that reduces life's significance to mere exchangeable commodities. Snowman's reflection on the game's outcome—"one Hiroshima for a Divine Comedy"—emphasises how tragedy and triumph are trivialised, creating a distorted sense of value and meaning. Another game, *Extinctathon*, trivialises death itself, as players like Crake adopt extinct animal names, managing extinction data to create a false sense of control over mortality. This detachment from real life is emblematic of the posthuman condition, where technology both mediates and diminishes genuine human interaction.

The concept of "terminal entertainment" in the novel further reflects the emotional and cultural losses faced by the characters. For example, Crake and Jimmy's virtual games, played side-by-side without meaningful interaction, symbolise the breakdown of human connection. This technology-mediated isolation mirrors the larger societal trend, where traditional cultural skills—fostering face-to-face communication and emotional depth—are lost in favor of quick, visual stimuli. This shift, as Atwood suggests, is not just an aesthetic loss but a socio-political and psychological one. Snowman, with his diminishing vocabulary of nuanced words, represents the last vestige of a culture slipping away. His misspelling of "today" as "toady" serves as a critique of a society that has become complicit in abandoning the richness of language in favor of superficial desires.

Through the lens of posthuman technologies and social stratification, Crake's world exemplifies how these technological advancements reshape the human condition—particularly in terms of identity, morality, and social belonging. The differentiation between enhanced and unenhanced humans is crucial to understanding the ethical and existential dilemmas faced by the characters. In Crake's vision, the transformation of humanity through technology offers a radical



solution to environmental collapse and overpopulation. Yet, the consequences are far-reaching, creating a society in which genuine human connection is sacrificed, and individuals are reduced to mere components within a larger system driven by technological control.

The cost of living in a highly technological society involves a profound disconnection within the self, where the body drifts away from self-consciousness. Snowman observes that the Internet's focus on violence and explicit content seems to reflect the body's desire to abandon the "nagging" of the mind and soul, opting for physical indulgence over more refined human expressions. "When did the body first set out on its own adventures?... It must have got tired of the soul's constant nagging and whining and the anxiety-driven, intellectual web-spinning of the mind, distracting it whenever it was getting its teeth into something juicy or its fingers into something good" (85). This passage reveals how, in Crake's world, executions replace tragedy, and pornography becomes romance, as physical gratification overtakes deeper emotional and intellectual engagement. The body-mind split Snowman reflects on is itself a product of intellectual, rather than physical, origins, tracing back to philosophers like the Greeks and Descartes. The body's yearning for "adventures" does not signify indulgence but rather a desperate search for self-coherence, a return to reality in a world where human experience is increasingly mediated by technology and physical gratification. Online, people are reduced to "disconsolate ghosts," seeking an elusive connection to meaning and self.

#### **4.2 Posthuman Contradictions: Identity, Morality, and the Commodification of Life**

In the context of posthumanism, Jimmy's mother represents one of the few individuals who perceive ethical boundaries, resisting the scientific culture that erases moral distinctions. When she objects to her husband's genetic research, she articulates concerns about the moral implications of manipulating life itself: "There's research and there's research. What you're doing—this pig

brain thing. You're interfering with the building blocks of life. It's immoral. It's... sacrilegious" (57). By contrast, Crake fully embraces the amoral, quantitative nature of science. Lacking any belief in ethical or metaphysical limits, he reduces divinity to neural chemistry, with scientific control over genes and life becoming his new "god." This shift reflects a posthuman world where technological advancements challenge traditional moral frameworks, often leading to a detachment from the ethical and existential complexities of human life.

Crake's therapeutic approach in *Oryx and Crake* is profoundly influenced by Freudian psychoanalysis, reflecting both the modern ethos and his own emotional turmoil. His views on human existence align with Freud's pessimistic theories, particularly in relation to the human ego, which he sees as perpetually challenged by primal instincts (the id) and societal expectations (the superego). Crake's critique of the cultural superego is rooted in a Freudian understanding, where he deems all grand narratives—especially religious ones—as constructed responses to human suffering and frustrations. Crake believes that, if left unchecked, human desires would overwhelm any imposed restrictions, leading to a crisis of identity and morality. This perspective, although radical, reflects his desire to free humanity from its conflicting nature, suggesting that only through the complete destruction of *Homo sapiens* and the creation of the Crakers—a species devoid of metaphysical questioning and in perfect harmony with nature—can humanity's existential crises be resolved.

However, this radical rethinking of the human condition, as Crake envisions it, faces unforeseen consequences. The Crakers, originally engineered to be the ideal beings—free from human flaws—reveal unexpected complexities. Despite Crake's intentions to strip them of abstract thought and metaphysical inquiry, they still exhibit a need for stories and myths. Snowman, reluctantly tasked with explaining their origins, becomes a storyteller and religious figure to them.

The creation of sacred narratives elevates him to a priest-like role, complicating Crake's vision of a world governed solely by scientific principles. This paradox underscores the ethical and existential dilemmas inherent in posthuman worlds, where even the most technologically perfected beings cannot escape the human need for meaning, connection, and self-coherence.

The reimagining of the human condition through posthuman technologies exposes the tension between technological progress and the preservation of human identity. Crake's ambition to eliminate the human ego and the contradictions of human existence reflects a broader posthumanist dilemma: can the essence of humanity be preserved in a world where science and technology reshape the human body and mind? The ethical implications of such transformations—where bodies are modified, desires are engineered, and narratives of meaning are controlled—are central to understanding the social and existential consequences of living in a posthuman world. Snowman's role as the last vestige of a human consciousness that values stories, myths, and self-reflection highlights the persistence of human traits, even in the face of radical technological advancements. Through his eyes, Atwood critiques the cost of technological utopianism and underscores the inherent human need for coherence, morality, and connection.

Atwood deepens the irony by drawing parallels between Crake, Snowman, and Oryx and the Christian Trinity, a parallel that underscores the displacement of traditional sources of meaning and authority by science. Crake assumes the role of the Father—both creator and ruler; Snowman embodies the sacrificial Son, representing the loss, suffering, and existential dilemmas that accompany the human condition; and Oryx functions as the Spirit, an omnipresent yet elusive force. This religious analogy highlights the persistent human need for myth and connection, even in a world dominated by posthuman technologies. Crake's scientific ambitions to create a secular utopia fail to eradicate these spiritual dynamics, suggesting that the quest for meaning and human

connection cannot be fully negated by technological advances. Despite Crake's efforts to eradicate the complexities of human identity and morality, the Crakers' continuing need for spiritual narratives and Snowman's emotional qualities suggest that the human drive for significance persists, even in the face of a mechanised existence.

Crake's actions, particularly the murder of Oryx and his subsequent suicide, further expose the contradictions inherent in his posthuman vision. These acts undermine his credibility and emphasise the emotional depth and vulnerabilities that technology and quantitative logic cannot account for. Crake's decision to entrust Snowman, the embodiment of human emotions and qualitative experience, with the care of the Crakers reveals a deep tension within his philosophy. His rationalization that Snowman is better suited to care for the Crakers is unconvincing—it implies that Crake recognises the necessity of emotional connection, something that his vision seeks to eliminate. The murder of Oryx, in particular, defies Crake's utilitarian ideals. Oryx, with her nurturing influence on the Crakers, would seem to be more integral to their well-being than Snowman, suggesting that Crake's decision is driven by jealousy and a desire to control his relationship with her. This act of violence exposes a profound conflict within Crake, revealing a deeper, more human longing for connection, love, and recognition—forces that his quantitative, posthuman philosophy cannot fully account for.

Oryx's role further complicates the narrative, as she becomes a symbol of elusiveness and silence. She resists articulation, refusing to reveal her experiences and identity in ways that satisfy either Crake's or Jimmy's desires for understanding. In this way, Oryx functions as a canvas for others' projections—particularly those of Crake and Jimmy—highlighting her status as a victim of a commodified existence. By engaging with the primal urges of those around her, rather than sharing her own story, Oryx becomes a mysterious figure who embodies both the vulnerability of

exploitation and the complexities of human desire. Her relationship with Crake and Snowman serves as a critique of the commodifying, exploitative forces that reduce individuals to mere objects for consumption and control, further illustrating the limits of Crake's vision for a posthuman society.

The context of their first encounter, set against the backdrop of HottTotts—an establishment for sexual exploitation—serves as a critique of the imperialistic, capitalist gaze that objectifies and commodifies human beings. Jimmy's rage toward Oryx, coupled with his guilt and self-loathing, reflects his complicity in the very system that exploits the vulnerable. His voyeurism and privilege reinforce a cycle of exploitation, and the emotional detachment he exhibits toward Oryx underscores the moral contradictions that permeate the society in which he lives. Atwood uses this dynamic to explore how technology, corporate dominance, and the commodification of human lives reshape relationships, often in ways that obscure genuine human connection and understanding.

Through these complex relationships, Atwood critiques the hubris of posthumanism and the fallacy that the eradication of human complexity—whether through genetic engineering or technological mediation—can lead to a more harmonious existence. The tensions between Crake, Snowman, and Oryx reveal how the desire to eliminate the messiness of human existence through technology leads to unforeseen consequences. In the end, *Oryx and Crake* suggests that the longing for love, understanding, and community—deeply ingrained in human nature—cannot be obliterated by the tools and systems of a posthuman, technocentric world. Even in a society where the body is genetically engineered and emotions are suppressed, the need for meaning and connection endures.

Margaret Atwood imagines a posthuman world where biotechnology has not only altered the environment but also fundamentally reshaped what it means to be human. Among the most striking illustrations of this transformation are the hybrid creatures that populate the novel: rakunks (raccoon-skunk hybrids), wolvogs (wolf-dog hybrids), pigoons (pigs genetically modified to grow human organs), and the Crakers (a new species of genetically engineered humanoids designed to be docile, obedient, and devoid of desire or religious impulse). These beings, especially the Crakers, exemplify the novel's central concern with the redefinition of identity, morality, and agency through technological intervention.

#### **4.3 Biotechnology, Species Blurring, and Human Obsolescence**

The protagonist, Snowman, survives in isolation and often hides from rogue pigoons and wolvogs—symbolic of biotechnology gone awry. These hybrids reflect a world where human exceptionalism is no longer the norm and where the boundaries between human and nonhuman are increasingly blurred. Atwood's nomenclature—terms like "pigoons" and "Crakers"—evokes both fascination and dread, underscoring the unnatural fusion of species and the ethical dilemmas that arise when life is commodified. Through these hybrids, Atwood critiques not only the unpredictable consequences of unchecked scientific ambition but also the broader posthuman condition in which traditional human traits like empathy, agency, and moral judgment are compromised or genetically erased.

In this speculative world, corporations such as HelthWyzer and RejoovenEssence dominate society, wielding enormous influence over health, life extension, and even human reproduction. These biotech firms are driven by what Sanderson describes as "base appetites and fears" and stimulated by "the latest technological innovations" (86–87). The commodification of life is not limited to nonhuman animals but extends to humans as well. The Crakers, bioengineered

by Crake, are designed to be the “ideal” posthumans—free of aggression, lust, and belief systems. While this may seem utopian, it actually reveals a deeply dystopian stripping away of the very complexities that define the human condition.

Snowman’s existential crisis highlights the deep rupture between enhanced and unenhanced beings. As the last “natural” human, he struggles to find meaning in a world dominated by synthetic life. His memories of the pre-apocalyptic world—saturated with violent video games like “Barbarian Stomp” and grotesque websites like [alibooboo.com](http://alibooboo.com) and [deathrowlive.com](http://deathrowlive.com)—reveal a civilization that had already lost its moral compass. Grimbeek argues that such hyperbolic naming reflects “the banality of the practices they denote,” forming part of “the novel’s larger satiric polemic against cultural decline” (92). This cultural decay parallels the ethical breakdown that accompanies technological overreach, where enhancement becomes a tool of control rather than liberation.

The technophile vision, represented by Crake, treats human imperfection as a flaw to be corrected. Crake’s quest to eliminate suffering, desire, and violence through genetic manipulation leads to the creation of a new species—but at the cost of human complexity and agency. This echoes Allison Dunlap’s view that in Atwood’s world, “capitalist scientists...diminish the possibility of human exceptionalism, reducing both non-human animals and humans to controllable commodities” (3). Crake’s utopia, in effect, becomes a form of techno-totalitarianism where identity is manufactured and morality is pre-coded, leaving no room for choice, conflict, or growth.

Conversely, Snowman’s technophobic stance is shaped by trauma, loss, and alienation. His resistance to the posthuman world reveals the psychological and existential cost of exclusion. As a “natural” human, he is both obsolete and endangered, forced into survivalist habits in a world

that no longer accommodates his kind. His discomfort with the Crakers, despite their childlike innocence, signals a deep anxiety about the erasure of human nuance in favor of engineered docility.

Biopolitical theorists like Melinda Cooper situate such developments within a broader neoliberal framework. Cooper argues that the convergence of biotechnology and capitalism has led to the creation of “surplus life”—artificial life forms and enhanced biological capacities produced for economic gain (45). These advances, however, come at a steep cost: the devaluation of life itself. In *Oryx and Crake*, this manifests in the mechanised reproduction of bodies and identities, and in the loss of autonomy for both the enhanced and the unenhanced. The Crakers’ lack of agency is not an accident but a feature of their design—crafted for stability, not self-determination.

Atwood problematises the human condition in a posthuman world by exposing the ethical and existential consequences of enhancement and exclusion. The dichotomy between technophiles and technophobes—between creators like Crake and survivors like Snowman—underscores the complexity of human responses to technological transformation. As Atwood reveals, efforts to eliminate human vulnerability through science may only create new forms of dependency, hierarchy, and control. In this context, the novel does not merely imagine a genetically altered future—it interrogates the cost of that future on human identity, morality, and belonging.

Margaret Atwood constructs a dystopia teeming with genetically engineered hybrid creatures—rakunks (raccoon-skunk hybrids), wolvogs (ferocious dog-wolf combinations), pigoons (organ-harvesting pigs with human tissue), and Crakers (a new humanoid species genetically designed to be docile, obedient, and free of traditional human traits such as religion or sexual desire). Snowman, the last remnant of “natural” humanity, survives by hiding from the



pigoons and wolvogs, now feral and dangerous. These creatures, once corporate marvels, spiral into uncontrollable threats. Through them, Atwood explores both the tangible dangers of unchecked biotechnology and the symbolic collapse of boundaries between species. The novel becomes a posthuman allegory of hybrid existence, where the natural and artificial blur, and humanity must confront its own obsolescence.

The central concern of *Oryx and Crake* is the hyper-commercialization of life under the guise of scientific innovation. Snowman recalls a pre-apocalyptic world dominated by biotech corporations like HelthWyzer and RejoovenEssence, which commodified health, pleasure, and longevity. As Sanderson notes, the corporations were “stimulated by the latest technological innovations” (86) and “driven by base appetites and fears” (87). These corporations invested heavily in biotechnology to sustain consumerist desires, treating life as a malleable commodity. Atwood's linguistic inventions—names like pigoons and rakunks—signal a grotesque transformation of life into spectacle, producing reactions of curiosity and horror, and priming the reader to anticipate the ethical ramifications of such scientific overreach. Many of the hybrids fail to serve their intended purposes, becoming existential threats. Their creators, obsessed with profit, abandon responsibility once the products escape into the public sphere. Atwood suggests that the lack of accountability and ethical oversight in biotechnological innovation mirrors a broader cultural decline. This is echoed in the novel's portrayal of websites and virtual entertainment: from pornography sites such as HottTotts and Superswallowers to violent games like Extinctathon and Barbarian Stomp, Atwood satirises a civilization desensitised to cruelty and consumption. Grimbeek observes, “These hyperbolic names criticise the banality of the practices they denote, and are part of the novel's larger satiric polemic against cultural decline” (92).

Snowman reflects on the rapid, unnatural evolution of the pigoons, questioning whether their tusks and aggression are the result of “rapid-maturity genes” and the “fast-forward process” of biotech (Atwood 43). These creatures, bred in corporate labs, now flourish in a post-apocalyptic landscape as unintended apex species. Atwood critiques a world where even life itself becomes a patentable product, with little regard for consequences. Dunlap argues, “By controlling and commodifying the production and reproduction of both human beings and non-human animals, the capitalist scientists of *Oryx and Crake* diminish the possibility of human exceptionalism” (3). This posthuman condition reduces all life—animal and human—to functional commodities, stripping them of autonomy, dignity, and ethical value.

Kaushik and Cooper contextualise Atwood’s critique within neoliberal biopolitics. The novel reflects anxieties over the commodification of biology through recombinant DNA, stem cell manipulation, and the militarization of life science. Cooper identifies this as “surplus” life—biological productivity that exceeds natural limits, creating immune systems, artificial organisms, and embryonic stem lines (45). The surplus comes with a moral deficit, wherein life’s value is measured only in terms of utility and capital. This manifests most chillingly in Crake’s ambition to engineer a superior posthuman species, the Crakers. While they are aesthetically pleasing and environmentally adaptable, their creation is tied to a eugenic logic that erases individuality, culture, and moral complexity.

The unchecked commercialization of life leads not only to ecological ruin but also to sociopolitical decay. Atwood presents a world where corporate powers silence dissent, branding critics as “fanatics” (Atwood 298) and orchestrating “political assassinations, strange incidents, and unexplained disappearances” (254). DiMarco notes that Crake, shaped by profit-driven ideologies, embodies *homo faber*—the tool-making man—incapable of ethical transformation. It

is Snowman, the traumatised outcast, who becomes the unlikely site for potential change (171). Despite being surrounded by other beings, Snowman remains fundamentally alone. The Crakers cannot understand his language, and his attempts at communication are marked by futility. The children's chanting of his name evokes myth and memory, but Snowman is no hero—he is the last flicker of a vanishing species, physically and existentially displaced. As Adami writes, “Their perfect adaptability to a hostile environment challenges Snowman's own human status and dignity... pushing him—and us—to reconsider what it means to be human in a posthuman age” (258). Snowman's hallucinations, loneliness, and psychological unraveling reflect a deeper existential rupture, where the human no longer occupies a central, stable position.

Atwood layers Snowman's memories with haunting images of dying animals, contaminated ecosystems, and engineered food like ChickieNobs—biomeat devoid of wholeness, dignity, or pain. Herbrechter questions, “Does this technology save animal suffering, or does it merely further naturalise habits of meat-eating that reinforce ecologically disastrous ways of being human?” (236). The novel poses ethical dilemmas around food, life, and death, highlighting how capitalist logic erodes human values under the guise of progress.

The breach between Jimmy's parents over science reflects the broader ideological conflict of the novel. Sharon, his mother, resists the biotechnological ethos, while his father embodies it. Emotional distress is numbed by drugs, resembling *Brave New World's* Soma, and emotional discourse is replaced by scientific detachment. The family's home, secured by the CorpSeCorps, symbolises not just a physical enclosure but the corporatization of domestic life. This socio-spatial divide between the compound elite and the impoverished “pleebs” parallels *Brave New World's* class stratification. The final image of Snowman, surrounded by genetically perfected creatures he cannot communicate with, underscores the tragic irony of human advancement. The language

barrier becomes symbolic of a deeper ontological rift. Snowman stands as a relic of a species that once dominated but ultimately engineered its own obsolescence. The Crakers may inherit the Earth, but at what cost? Atwood does not merely imagine a future shaped by biotechnology; she warns of the moral, ecological, and existential void it may leave behind.

The dramatically dissimilar architectural landscapes of the Compounds and the pleeblands in Atwood's bifurcated world metaphorically reflect the contest between posthuman prosperity and unenhanced human suffering. The Compounds are sanitised hubs of biocapitalism, where scientists engineer novel life forms and corporate magnates strategise on profit-making under the surveillance of CorpSeCorps. These gated communities exemplify technophilic advancement and secure privilege for the elite. In stark contrast, the pleeblands embody the consequences of exclusion—decaying urban spaces characterised by poverty, disease, and violence. These spaces represent the technophobic margins where the unenhanced struggle to survive amid corporate neglect and ecological collapse.

Artificial happiness is mass-produced and distributed by corporations, but its emotional void is sharply felt by characters like Sharon. Her melancholia signals a profound ethical disillusionment. Though she claims to have resigned for Jimmy's sake, her departure from the biotechnology sector is a moral stand against the instrumentalization of life. Her withdrawal from family life and her emotional detachment from Jimmy reflect the corrosion of genuine human connection in a posthuman society. Even familial bonds are reduced to performative gestures, devoid of intimacy and sincerity.

Snowman's survival in the wild is marked by the memory of Oryx, whose views on money and luck reflect a different, ethically ambiguous posture. Her comment—"You need to give money when someone gives you a knife, so the bad luck won't cut you" (38)—reveals the transactional

logic that governs posthuman ethics. In the genetically engineered ecosystem he now inhabits, Snowman is surrounded by postnatural species like pigoons, rakunks, and the aggressive wolvogs. Forced to live in a tree for safety, he becomes a grotesque parody of the evolutionary hierarchy, displaced by the very technologies that once promised human supremacy.

Biotechnology, once imagined as a vehicle of human enhancement, has instead rendered Snowman physically vulnerable and psychologically fragmented. His grasp on language and memory—core constituents of human identity and agency—is slipping. Yet it is not mere survival he fears, but the existential loss of self. Without language and historical consciousness, he ceases to be human. His dog-like panting in the heat and hallucinations of Ms. Stratton’s voice reveal his gradual dehumanization. The extinction of meaningful relationships parallels the extinction of species in the game he once played—Extinctathon—a morbid pastime that trivialises irreversible loss.

Crake and Jimmy’s friendship is framed by this culture of commodification and simulation. Their codenames—Crake, an endangered bird, and Thickney, an extinct one—are not random but prophetic. These designations reduce identity to symbols of loss, suggesting that their future is inscribed with mortality. As children of a culture that replaces history with entertainment, their engagement with games like Kwiktime Osama and Three-Dimensional Waco reflects the collapse of ethical boundaries. Games become the medium through which violence and extinction are domesticated for amusement.

#### **4.4 Language, Memory, and Ethical Collapse**

Snowman’s futile desire to write a diary underscores his estrangement. Though he clings to language as a form of resistance, he knows the Crakers—engineered to be illiterate—will never understand his words. In a world where literacy is obsolete, memory becomes unrecordable and

history unrecoverable. His struggle is not merely biological; it is ontological. Alienated among biologically superior beings, he finds no solace in human institutions, artifacts, or even former pets like Rakunks. His emotional need for companionship is unmet, just as it was during his time with Crake and Oryx, where emotional authenticity was consistently denied.

Jimmy's childhood further illuminates the emotional barrenness of the Compound life. Given a pet—Killer—as a substitute for parental affection, he becomes a victim of emotional neglect. His father's scientific success deepens Sharon's ethical despair. The domestic space is further destabilised by the presence of Ramona, who symbolises the intrusion of corporate values into intimate relationships. Sharon, constantly monitored and harassed by HelthWyzer's guards, experiences the Compound not as a home but a prison. Her unease reflects the pervasive surveillance and ethical decay of the technocratic order. In such a context, Jimmy's retreat into nature and ecology—fields ignored by the posthuman elite—represents a yearning for forgotten values.

In *Oryx and Crake*, the posthuman world exemplifies the tragic collapse of human identity and morality, as characters grapple with the consequences of genetic engineering and commodification. Snowman, the novel's protagonist, embodies the existential fallout of being unenhanced in a world ruled by posthuman technologies. His isolation in the post-apocalyptic world is not only physical but also ontological, as he contemplates the loss of what it means to be human. His cries against Crake—demanding accountability for a world filled with despair—highlight the ethical and emotional void at the heart of the technological advancements that Crake has ushered in. Snowman's frustration is rooted in the fact that the genetic engineering Crake has unleashed has removed the possibility of a meaningful, human connection, leaving him trapped in a world of loneliness and existential dread (Atwood 174).

The posthuman technologies in the novel, while advancing survival, fundamentally distort the moral and social fabric of the world. Snowman is terrorised by the wolvogs, genetically engineered creatures created by Crake to act as biological deterrents. However, the wolvogs now control Snowman's survival, marking a reversal of human control over nature. This inversion of power exemplifies the dangerous consequences of unchecked genetic manipulation, where the once-subjugated elements of nature now assert control over humanity (Atwood 151). Snowman's relationship with these creatures—who were once engineered for a purpose—illustrates the ethical consequences of using science as a tool for domination.

The commodification of human bodies is most starkly represented by Oryx, who symbolises the exploitation of women in a world driven by capitalism. Oryx's body is repeatedly commodified, sold to various men throughout her life, which Atwood presents as a direct result of the capitalist and scientific paradigms that shape the posthuman world (Atwood 139). As Oryx states, "everything has a price" (Atwood 139), she encapsulates the dehumanizing logic of a world where every human experience, even pain and pleasure, is reduced to a transaction. Her story of human trafficking resonates with the critiques made by Hicks (2016), who argues that human trafficking in the modern world reflects the nadir of human morality. Additionally, Korte (2008) draws parallels between the commodification of Oryx and the ideas expressed by Benjamin Barber in *Jihad vs. McWorld*, noting that the exploitation of women in sex tourism and pornography is emblematic of the deeper moral decay facilitated by globalization.

Atwood critiques this moral decline by drawing connections between colonialism and modern science. Keller (1996) argues that the apocalyptic vision driving European colonial expansion, particularly through figures like Christopher Columbus, laid the groundwork for modern science. The promise of a scientific "paradise" echoes in Crake's vision for humanity—

where nature is to be controlled and perfected. This aligns with the way Oryx's commodification, from sexual exploitation to the dehumanization of her body, mirrors the colonial legacy of extracting value from the bodies of marginalised groups (Keller 163-164). Oryx endures punishment as the Whore<sup>19</sup>.

In this posthuman reality, ethics are subjugated to functionality. Even familial and romantic relationships are viewed through the lens of transaction and utility. Snowman's observation of Uncle En's relationship with Oryx reveals the deeply transactional nature of their interactions, where love is replaced by economic exchange (Atwood 138). This dissolution of love into commodified transactions reflects the triumph of corporate culture and the rejection of human values in favor of profit.

The schism between Jimmy's parents is rooted in their ethical stance toward science. His father, engrossed in engineering pigoons with human brain tissue, dismisses Sharon's moral objections as irrational. Yet her depression and eventual departure indicate the emotional toll of resisting a biotechnological regime that values progress over ethics. Her decision to take Killer and flee suggests a greater loyalty to nature than to her family or the illusion of Compound safety. This act signals a rejection of both the technophilic order and its hierarchical values.

Jimmy's persistent questioning of the CorpSeCorps following his mother's disappearance reflects the corruption and opacity of posthuman authority. The arrival of Crake, with his intellectual calm and strategic mind, further alters Jimmy's trajectory. Their friendship, though seemingly benign, unfolds as a mechanism of manipulation. Their chess games prefigure Jimmy's eventual role as a pawn in Crake's master plan. The transformation of history into a form of play underscores the novel's critique of how knowledge, violence, and morality are commodified in a

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<sup>19</sup> The Whore of Babylon (Revelation 17:1-18)



posthuman economy. Snowman's recollections of the past oscillate between comfort and torment. While they offer evidence of a once-existent humanity, they also intensify his sense of loss. Still, he clings to the preservation of language, believing it to be the last vestige of meaning in a world overrun by engineered perfection. His desperation parallels the larger extinction narrative: the game Extinctathon, once a child's amusement, now serves as a dark prophecy of human and nonhuman annihilation.

Crake and Jimmy's shared experience is not grounded in genuine friendship but in a mutual entrapment within a degraded moral order. Their encounter with Oryx on the site HottTotts and the subsequent triangular relationship only deepen this sense of ethical erosion. When Oryx denies being the girl Jimmy once saw on screen, the denial itself becomes emblematic of the novel's posthuman condition—where identity is fluid, memory unreliable, and intimacy performative. Their relationship, like much of the world around them, is a simulation masquerading as the real. The dark undercurrents of human nature also hold entertainment value in the world of *Oryx and Crake*. Crake's obsession with sites that feature suicides and violence, contrasted with Jimmy's revulsion, delineates the stark divergence between their personalities. While Jimmy is drawn to sex, art, and remnants of human warmth, Crake is enthralled by destruction. Crake argues that art is ineffectual in curbing humanity's darker instincts, as these impulses stem from biology, not merely the failure of imagination. This theme emerges early in the novel in the section titled "Brainfrizz," which depicts Jimmy and Crake's obsession with graphic video games and extreme content (Atwood 85).

These games, as Sloterdijk puts it, reflect "the struggle between the bestializing and the taming tendencies" of human life (Sloterdijk 20). The trading game "Blood and Roses" encapsulates this struggle. Modeled on Monopoly, the game pits "human achievements" or

“monuments to the soul’s magnificence” against atrocities such as “massacres [and] genocides” (Atwood 78). It poses a grave question: what defines humanity, given its capacity to produce both the Mona Lisa and Bergen-Belsen? Sloterdijk’s notion of “anthropodicy”—the tension between biological indeterminacy and moral ambiguity—underscores this dilemma (15). The game’s juxtaposition of beauty and horror, when reduced to comparable tokens, flattens human experience into a transactional spectacle. Crake adopts this reductionist stance without hesitation.

Later in the novel, Jimmy challenges Crake’s vision, warning that it reduces humans to “hormone robots.” Crake’s response is chilling: “We’re hormone robots anyway, only we’re faulty ones” (Atwood 166). To him, art is no exception; it is another extension of the same evolutionary mechanisms—territoriality, sexual competition, dominance—that fuel violence. He likens art to an “empty drainpipe” that amplifies the mating call of a small frog, thus increasing its appeal. According to Crake, artists are no different, using art merely as a means to attract partners—“a stab at getting laid” (Atwood 168). Jimmy, though disturbed, fails to rebut Crake convincingly. His attempt to invoke the poetry of Petrarch or Donne falters, as he does not fully grasp the biological basis of the art he values. Bergthaller argues that Jimmy and Crake represent two flawed approaches to human nature: Jimmy embraces artistic beauty without recognizing its evolutionary underpinnings, while Crake identifies human biology as the root of suffering but cannot see that his disgust also proves that transformation is possible. Crake’s utopia eliminates the very unpredictability—what Rilke alludes to in the command “You must change your life”—that enables ethical evolution (Bergthaller [page number]). Atwood offers no reconciliatory viewpoint between their polarised stances.

Pordzik critiques Crake’s reduction of language to a mere conduit for transmitting fixed ideas, calling it a grave philosophical error. Language is not neutral or passive; rather, it shapes

perception and meaning. This oversight is evident in the Crakers. Despite being engineered to live without symbolic culture, they develop a fascination with language and storytelling. Snowman becomes their narrator and inadvertently initiates them into a symbolic order. Their reverence for him grows from this symbolic exchange: “Snowman! Snowman! . . . We made a picture of you, to help us send out our voices to you” (Atwood 361).

Through storytelling, the Crakers become aware of a void in their identity. Their persistent questions about their origins reveal a subconscious need for a signifier—a linguistic or symbolic anchor that could offer them a sense of self. Their lack of understanding reflects the ambiguous space they inhabit as a posthuman species, genetically engineered yet irreversibly drawn to meaning-making. Pordzik notes that this “missing signifier” marks their condition as both incomplete and posthuman (Pordzik [page number]). Atwood underscores the crucial role of language in constructing identity and cultural belonging. Unlike Crake, she does not separate biology from language but shows how language mediates the relationship between humans and their world. Language, in Atwood's vision, is transformative—it fosters empathy, memory, and moral reflection.

The Crakers’ dependence on Snowman for narratives about their past underscores their longing for roots. Snowman, however, fails to offer them a complete origin story, choosing instead to preserve Crake’s myth of creation. The Crakers, though genetically distinct, mirror a fundamental human need: the desire to belong, to locate oneself within a lineage of meaning. Their symbolic gestures, dietary rituals, and linguistic awakening suggest that even engineered beings resist total detachment from history, memory, and language.

Snowman’s return to RejoovenEsense—a land that Crake had designed to be a utopia—reveals the limitations of Crake’s vision. While Crake intended to eliminate human flaws, he failed

to account for the persistence of human nature, including the need for symbolic systems like religion and culture. The Crakers, genetically engineered to live without jealousy or violence, create their own social structure and develop a reverence for Snowman as a figure of mythic significance (Atwood 361). This emergence of symbolic thought in the Crakers challenges Crake's attempt to engineer a world free of human contradictions. As Pordzik (2012) notes, the Crakers' curiosity about their origins and their fascination with language reflect their incomplete posthuman status, which is marked by the absence of a cohesive self-identity (Pordzik 93).

Despite Crake's intention to create a species that is biologically perfect, the Crakers' evolving cultural practices—such as their symbolic worship of Snowman and their understanding of their origins—demonstrate that identity and agency cannot be entirely engineered away. This mirrors the deep irony of Snowman's position as a human remnant: he longs for the very emotions and conflicts Crake sought to eliminate. In hearing the Crakers' mating rituals, Snowman mourns the absence of love—something deeply human and essential to his identity (Atwood 175). Like John the Savage in Aldous Huxley's *Brave New World*, Snowman's longing for emotional depth highlights the limitations of a posthuman world where human desires are systematically eradicated. Atwood's *Oryx and Crake* critiques the posthuman vision that seeks to eliminate the flaws of human nature through technological and genetic enhancement. The novel explores the tragic consequences of this vision, highlighting the ethical, social, and existential dilemmas that arise when human identity, morality, and agency are commodified and redefined by technology. Through the experiences of characters like Snowman, Oryx, and the Crakers, Atwood underscores the impossibility of engineering away the complexity of human life, suggesting that the quest to perfect humanity through science and technology is ultimately doomed to fail.

In *Oryx and Crake*, Crake and Jimmy represent contrasting perspectives on humanity, science, and the role of the humanities. Crake's perspective is shaped by an unwavering belief in the superiority of science, particularly genetic engineering, while Jimmy remains grounded in the humanities and human experiences, struggling to understand the implications of Crake's vision. Crake's indifference to the death of his mother starkly contrasts with Jimmy's emotional response to his own mother's absence. For Crake, the death of his mother, caused by a bioengineered sickness, is not a moment of grief but a scientific marvel: "It was impressive. . . . Froth was coming out" (Atwood 177). Crake's reaction to the death of his mother—excitement rather than mourning—signals his emotional detachment and foreshadows his future ventures, where ethics are subordinated to scientific progress. In contrast, Jimmy's emotional turmoil after the loss of his mother leads him to cope with grief through alcohol, emphasizing the role of human emotions and connections, which Crake dismisses in favor of detached logic.

This detachment from human emotions is symptomatic of the posthuman world Crake envisions, where biological manipulation overrides human compassion and ethical considerations. Crake's cold description of his mother's demise and his dispassionate response to his stepfather's death—he jokingly claims his father was "kind of uncoordinated" despite being murdered—highlight the emotional void that accompanies the unbridled pursuit of scientific knowledge (Atwood 343). Crake's lack of mourning for his family members parallels his broader disconnection from human relationships, underscoring his preference for biological artifacts over human connections. This detachment from emotional bonds and familial ties reflects the dangerous consequences of a posthuman future where the pursuit of immortality and genetic perfection supersedes the value of life and love.

The theme of severed generational ties is further explored in Crake's radical solution to the world's problems—eliminating an entire generation of humanity to break the chain of time. Crake's chilling declaration, "All it takes . . . is the elimination of one generation. One generation of anything. Beetles, trees, microbes, scientists, speakers of French, whatever" (Atwood 223), encapsulates his apocalyptic vision. This idea of severing the link between generations is symbolic of the broader cultural forces at play in *Oryx and Crake*, where the corporate-driven, capitalist systems have alienated individuals from their humanity. The system fosters individualism at the expense of human connection, as seen in Oryx's tragic commodification, where her body is treated as a product to be bought and sold in a global capitalist market. Oryx's mother, viewing her daughter as a commodity, reflects the destructive force of global capitalism that leads to the fracturing of families and, ultimately, the collapse of society (Atwood 139). In a world where economic forces dictate human worth, relationships become transactional, and emotional connections are diminished or entirely erased.

Atwood's counter-apocalyptic narrative critiques the unchecked power of science and capitalism, which create a world of emotional emptiness. The scientific-capitalistic system that drives characters like Crake and Oryx to prioritise genetic manipulation and financial gain over human connections contributes to the disintegration of familial bonds. This detachment is epitomised by Crake's cold approach to both his mother's death and his stepfather's murder, highlighting a worldview that equates the human body and relationships with mere biological material to be modified or discarded. Crake's vision is one of scientific supremacy, where humanity is reduced to a mere set of genetic traits to be perfected or eradicated. This is contrasted with Jimmy's appreciation for the humanities, which, for him, represent the last remnants of human meaning and emotion.

The novel's critique of the diminishing role of the humanities in a world driven by scientific imperatives is embodied in the educational trajectories of Crake and Jimmy. Jimmy, who studies the humanities, is considered "among the rejects" by his peers, who deem the study of language and arts a "waste of time" (Atwood 195). Crake, on the other hand, studies transgenics at the Watson-Crick Institute, a place where scientific knowledge reigns supreme and social skills are secondary. The company, which prides itself on producing "geniuses" who exemplify the power of science, reflects a world where emotional intelligence and humanistic values are relegated to the background in favor of scientific mastery. Jimmy's devotion to the arts, which he believes provide meaning and beauty to life, places him at odds with Crake's cold, scientific worldview, which dismisses the importance of creativity and emotional depth. Atwood's portrayal of Crake's character, particularly through his cold reaction to his mother's death and his obsession with scientific perfection, critiques the moral emptiness of a posthuman world that prioritises progress over human experience. The company, Asperger's U Watson-Crick, where Crake works, claims to have all geniuses who represent the inordinate power of science. Jimmy devotes his time to studying language and arts to make others laugh and enjoy life. However, he is considered "among the rejects" who are involved in studying "an archaic waste of time" (p. 195). Crake studies transgenics at Watson-Crick, thronged with students who exhibit no social aptitude. Crake's father also names him after Glenn Gould, a brilliant pianist who, according to Atwood, might have Asperger's syndrome<sup>20</sup>. By presenting a stereotypical example of the mad, Atwood criticises all amoral, impersonal scientists who, in their puzzling pursuits, are creating gruesome havoc for humanity.

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<sup>20</sup> A solitary individual with no social contact, he is "odd, different, strange" (Ratey and Johnson 220), the Asperger's sufferer may develop "an encyclopaedic knowledge" (Atwood 89)

The novel also explores the ethical ramifications of Crake's scientific experiments, particularly his creation of genetically modified species. Crake's assertion that his bioengineered creatures are as real as nature itself blurs the distinction between natural and artificial, suggesting that in the posthuman era, the boundaries between reality and fiction, nature and technology, become increasingly fluid. Jimmy's discomfort with Crake's creations, which he sees as a violation of ethical and natural boundaries, signals his growing awareness of the dangers of Crake's vision. As Jimmy reflects, "some line has been crossed, some boundary transgressed" (Atwood 206). This sense of unease underscores the central tension in the novel: the clash between human creativity, imagination, and the cold logic of science that seeks to control and reshape life according to its own agenda.

Atwood critiques the reduction of human identity to mere biological material, as evidenced by the creation of the "no-feather-and-head chicken" (Atwood 267). This genetically modified creature, designed to serve as a commodity, symbolises the moral bankruptcy of a world where science has overridden ethical concerns. In this world, human beings, like the chickens, are reduced to objects for manipulation, their intrinsic value ignored in favor of their utility. Jimmy's realization that the world has become "one vast uncontrolled experiment" (Atwood 267) reflects his growing awareness of the ethical void at the heart of Crake's scientific endeavors. In other words, *Oryx and Crake* presents a dystopian vision of the posthuman future, where science, capitalism, and genetic engineering have eroded the foundations of human identity, morality, and agency. Through the contrasting perspectives of Jimmy and Crake, Atwood critiques a world in which scientific progress is prioritised at the expense of human connection, creativity, and ethical responsibility. The novel urges readers to consider the moral implications of technological



advancements and the dangers of a posthuman world where humanity is reduced to mere biological material, subject to manipulation by those in power.

The contrasting perspectives of Crake and Jimmy reflect the tension between science and the humanities. Crake, whose worldview prioritises scientific, biological advancements, represents a posthuman mentality, while Jimmy, who has a deep appreciation for the humanities, embodies a more traditional humanistic ethos. This divergence is evident in their responses to personal loss: Jimmy, upon graduating in the humanities, is overcome by grief at the loss of his mother and turns to drinking as a form of emotional relief (Atwood 177). In contrast, Crake's response to his mother's death is chillingly detached; he recounts her demise from a bioengineered disease with an unsettling sense of awe: "It was impressive... Froth was coming out" (Atwood 177). Crake's mother succumbs to a transgenic illness, engineered as part of a larger scientific experiment (Atwood 176). The absence of mourning for his mother and his father, both of whom die under tragic circumstances, foreshadows Crake's future endeavors, which lack any emotional depth. He casually mentions the death of his father, who is murdered for opposing the unethical practices of corporate science, describing him as "kind of uncoordinated" (Atwood 343). This emotional detachment is crucial in understanding Crake's ultimate creation of the Crakers, a genetically engineered species, and the ethical implications of his actions.

The novel critiques the consequences of a society where the bonds between mothers and children are severed by scientific-capitalist forces that prioritise individualism over human connection. In Crake's view, the elimination of a generation is a necessary step toward creating a new world: "All it takes... is the elimination of one generation. One generation of anything. Beetles, trees, microbes, scientists, speakers of French, whatever. Break the link in time between one generation and the next, and it's game over forever" (Atwood 223). This radical view of

severing generational ties reflects the broader themes of the novel, where global capitalism, embodied in institutions like the Watson-Crick corporation, plays a central role in the detachment of mothers and the destruction of familial structures. Atwood uses Crake's plot to exterminate humanity as a critique of corporate greed and the destructive pursuit of immortality.

In contrast, Jimmy's lingering attachment to the humanities offers a moral counterpoint to Crake's scientific nihilism. He believes that art and language—humanistic pursuits—are essential for preserving human meaning, especially in a world teetering on the brink of destruction. As he reflects, "When any civilization is dust and ashes... art is all that's left over. Images, words, music. Imaginative structures. Meaning—human meaning, that is—is defined by them" (Atwood 197). This belief in the power of human expression stands in stark opposition to Crake's view that such pursuits are a waste of time, labeling Jimmy as "among the rejects" for studying the arts (Atwood 195). The novel uses this dichotomy to illustrate the potential consequences of abandoning humanistic values in favor of a cold, rationalistic pursuit of technological control.

Atwood also critiques the commodification of life, particularly in the context of genetic engineering. The "RejoovenEsense" project, which promises to create "made-to-order" babies, is a disturbing example of this commodification. In the pursuit of perfection, the wealthy are encouraged to "sell their house, their gated retirement villa, their kids, and their soul to get a second kick at the sexual can" (Atwood 62). This idea reflects the ethical concerns surrounding bioethics and genetic selection, as it mirrors the commodification of human life for profit, similar to the eugenics movements of the early 20th century. The novel critiques the notion of creating a posthuman race through technologies like "NooSkins for Olds," where wealthy clients can buy genetically enhanced children, reinforcing class divisions and social inequalities (Atwood 339-340). The "scientific" trading of human life in this dystopian world serves as a stark warning about

the dangers of pursuing technological advancements without considering their ethical implications.

The novel's emphasis on the consequences of unchecked scientific experimentation is illustrated through Jimmy's experiences with Crake's bioengineered creations. The creation of the Crakers, a species devoid of human flaws, symbolises the ultimate rejection of humanity. Crake's efforts to create a perfect, violence-free society, free from the destructive tendencies of human beings, are a direct challenge to the idea of human dignity. In a posthuman world, where the Crakers have replaced humans, Jimmy becomes the last survivor of a failed experiment. His existential crisis and feelings of guilt are compounded by the realization that he is complicit in the horrors Crake has unleashed. As he contemplates, "If I'd killed Crake earlier... would it have made any difference?" (Atwood 267). This moment of self-doubt encapsulates the moral decay of the posthuman world, where human beings are reduced to experiments and commodities. Atwood's critique of the ethical and social ramifications of biotechnological advancements challenges readers to reflect on the role of science in shaping the future of humanity. The novel suggests that the pursuit of perfection through genetic engineering, while offering potential benefits, also carries immense risks that could lead to the extinction of the very qualities that define us as human. By contrasting Crake's cold, scientific rationalism with Jimmy's emotional and humanistic responses, Atwood underscores the importance of preserving the ethical considerations that should guide scientific progress, ensuring that it does not lead to the dehumanization of society.

The posthuman world depicted by Margaret Atwood exacerbates the already widening divide between the privileged and the marginalised, which resonates with Fukuyama's and other bioconservatives' concerns about the posthuman future. In this dystopian reality, humanity is either relegated to the fringes or genetically modified, losing its traditional status. The 'sons of lesser

gods' represent the pitiful condition of those left behind in the wake of biotechnological advancements, highlighting the ethical dilemmas associated with a society that uses technology to engineer life itself. Fukuyama (2002) expresses fears that genetic enhancement could lead to a society where the "haves" possess superior capabilities while the "have-nots" become further disenfranchised. This divide is vividly illustrated in the novel, where Crake's vision of humanity's future reflects these anxieties.

Crake's request for Jimmy to help advertise the BlyssPluss pill seems initially benevolent but soon reveals itself to be a manipulative move. Jimmy's involvement in the campaign serves as a microcosm of the larger ethical failures that plague this posthuman world. Crake, despite his claims to address environmental issues, is ultimately indifferent to human suffering. He acknowledges the dire state of the planet, saying, "As a species, we are in deep trouble, worse than anyone's saying" (Atwood 295), but instead of pursuing sustainable solutions, he proposes an 'immortality project,' wherein humanity is replaced by genetically engineered beings, the Crakers. Crake's explanation of resource scarcity and its implications, though seemingly rational, reflects his detachment from human life, as he justifies the creation of the BlyssPluss pill, which will extend human life, eradicate sexually transmitted diseases, and sterilise humans to prevent overpopulation (Atwood 295). The pill, however, also contains a haemorrhagic virus that could annihilate humanity, underscoring the dangerous consequences of unchecked scientific experimentation.

This paradox of technological salvation intertwined with destructive potential highlights Fukuyama's concerns about the ethics of posthumanism. As Fukuyama notes, the unchecked use of biotechnology could lead to the exploitation of vulnerable populations, a fear that is mirrored in Crake's actions. Crake's use of developing countries, prostitutes, and prisoners as test subjects

for BlyssPluss—"pay them a few dollars; they don't even know what they're taking" (Atwood 296)—demonstrates the dehumanizing effects of bioengineering in the pursuit of profit. Jimmy's willing complicity in this enterprise reflects the seductive nature of corporate interests, even for someone educated in the humanities, illustrating how easily individuals can be drawn into unethical practices for personal gain.

Crake's ultimate creation, the Crakers, are designed to be the perfect solution to humanity's flaws: free from violence, greed, and desire. The Crakers, with no concept of mortality, are the embodiment of Crake's vision of a perfect posthuman world. They are genetically engineered to live without the corrupting forces of desire, religion, or death. In contrast, Jimmy, as the last human, is mired in existential turmoil, guilt, and longing. The Crakers' creation serves as a critique of the pursuit of a "perfect" human and the ethical consequences of such endeavors. The novel challenges readers to question the value of human imperfections and the implications of a posthuman future where these imperfections are eliminated.

In a world increasingly defined by biotechnology and genetic manipulation, the novel's depiction of Oryx offers a poignant contrast to the scientific rationalism of Crake. Oryx, a figure who represents beauty, optimism, and the capacity to heal, is a symbol of humanity's desire for meaning and connection in an increasingly fragmented world. Her past, shaped by the economic hardships of a Southeast Asian village ravaged by climate change, reflects the devastating social and economic impacts of environmental destruction. Oryx's life story, which Jimmy listens to with both fascination and skepticism, highlights the inequalities that drive individuals into exploitative situations. She is sold to alleviate her family's economic burden, eventually becoming part of the sex trade before being discovered by Crake (Atwood 316). Oryx's ability to transcend her

traumatic past and provide a sense of healing contrasts with Crake's cold, utilitarian worldview, offering a critique of the dehumanizing effects of biotechnological advancements.

Oryx's relationship with Crake also reveals the ways in which intimacy and sexuality are commodified in the posthuman world. Her interactions with both Crake and Jimmy are marked by a dispassionate quality that mirrors Crake's approach to human relationships. Oryx's sexual relationship with Crake, while seemingly intimate, is portrayed as robotic and devoid of emotion, highlighting the way in which scientific and corporate interests have eroded human connection. Jimmy's eventual surrender to her beauty, after initially refusing her advances on moral grounds, demonstrates his internal struggle between his human desires and the ethical compromises he is forced to make in a world dominated by scientific and corporate control (Atwood 317).

Contrary to Crake's detached and calculated approach to humanity's future, Jimmy embodies the emotional, passionate side of human existence, particularly in his love for Oryx. While Crake appears to be at peace with his creation of the Crakers and the impending disaster, Jimmy is tormented by jealousy and the emotional complexity of his relationship with Oryx. Oryx, for her part, never questions her love for Jimmy, seeing him as above the ordinary passions that govern human relationships, but in this belief, she is tragically mistaken. As the virus associated with the BlyssPluss pill begins to spread, Jimmy's fear becomes a tangible reality. Oryx's sudden apology for being an "ignorant tool" reveals her regret for being complicit in Crake's grand scheme. It seems that Crake's motives were driven by revenge—revenge against both Jimmy and Oryx for betraying him. Jimmy, however, remains uncertain about Crake's true intentions: "Did he set up the grand finale as an assisted suicide, had he intended to have Jimmy shoot him because he knew what would happen next and he didn't deign to stick around to watch the results of what he'd done?" (Atwood 343). Crake's ultimate actions are shrouded in ambiguity, leaving Jimmy to

question whether Crake's actions were motivated by love, jealousy, revenge, or a twisted form of intellectualism.

While Crake maintains an exterior of composure, his inner turmoil—characterised by jealousy and hatred—ultimately leads to the destruction of human civilization. Within moments, the virus reaches the far corners of the Earth, signaling the end of *Homo sapiens*. Jimmy watches as humanity's extinction unfolds on the media, marking the conclusion of a once-dominant species. Crake, Oryx, and Jimmy remain immune to the virus, but Crake punishes Oryx by slitting her throat before being killed by Jimmy. Crake's final words to Jimmy—"I'm counting on you"—suggest that he entrusted Jimmy with the future of the Crakers, despite the disastrous consequences of his plan. From one perspective, Crake can be seen as a humanitarian figure, as he recognises the environmental degradation caused by humanity and seeks to eliminate the flawed traits inherent in human nature. Atwood herself acknowledges that "Crake is the most humanitarian person around," recognizing how "monkey brains" led to destructive tendencies and, therefore, acts to eradicate these tendencies through genetic engineering. However, Atwood also critiques Crake's vision, illustrating that his attempt to create a perfect posthuman future—embodied in the Crakers—is ultimately absurd, presented as a prolonged joke in the *MaddAddam* narrative (Atwood 333).

Crake's rejection of the concept of the "real" and his disregard for the boundaries between species or the rules of nature reflect the novel's critique of the power science wields in shaping human destiny. The Crakers, genetically engineered to be the ideal posthuman beings, are presented as physically perfect—well-built, with UV-resistant skin, hairless bodies, and Crake's characteristic emerald eyes. They are designed to withstand extreme environmental conditions, perhaps a prelude to the calamities of the 21st century. The Crakers' existence represents an

idealised version of humanity, free from the flaws and complexities of human nature: racism, hierarchical structures, and violent sexual desires. Crake's alteration of their minds eliminates "turbulent hormones" (Atwood 305) and any inclination toward symbolic thinking. This absence of complex emotions and thoughts eliminates the potential for art, religion, and even warfare: "Next they'd be inventing idols, and funerals, and grave goods, and the afterlife, and sin, and Linear B, and kings, and then slavery and war" (Atwood 361). In his effort to create a utopian species, Crake's vision inadvertently exposes the dangers of reducing humanity to a biologically perfected entity, stripping away the very elements that make humans uniquely human.

Through the creation of the Crakers, Atwood offers a poignant critique of genetic engineering, portraying the Crakers as a contemporary transgenic pastiche—an artificial construct that challenges our understanding of humanity. While Crake's intentions are rooted in his belief that humanity's biological flaws must be eradicated, Atwood simultaneously cautions against the potential harm of scientific overreach. By highlighting the power of genetic engineering to modify human biology and reality itself, Atwood questions the consequences of such unchecked advances. The novel presents a dystopian warning about the dangers of playing God with human nature, challenging the assumption that science is purely a social construct without acknowledging its far-reaching implications for humanity.

When Snowman looks around and finds no companion, he begins to perceive himself as living in an illusory world or in Crake's dream. His overwhelming loneliness highlights the plight of humanity in a posthuman world, where the collapse of human civilization is complete. Snowman's rhetorical question—"Why am I on this earth? How come I'm alone? Where's my Bride of Frankenstein?" (Atwood 169)—expresses his despair and the emotional fragmentation that accompanies the end of humanity. This moment marks a symbolic mourning of all humanity,



which failed to make rational decisions about its survival: “How could I have missed it? How could I have been so stupid?” (Atwood 184). These ironic and clichéd phrases, such as “Cheer up... Oh honey, don’t beat yourself up” (Atwood 169, 42), flood Snowman’s mind. While Atwood uses these overused words to degrade Snowman’s self-perception, she also rehabilitates him by emphasizing his deep admiration for literature and the arts. For Snowman, when civilization ends, only language, words, and music can redeem humanity and maintain a connection to its essence.

Snowman’s struggle to overcome chaos and isolation leads him to narrate stories to the Crakers about their origin and creator. His tales give them the comforting belief that their creator, Crake, remains in the sky, watching over them. Snowman takes satisfaction in the irony that Crake, despite his attempt at godlike control, will likely be repulsed by his own deification. Snowman’s success in partially undermining Crake’s plan does not free him from his entrapment in the *Extinctathon*, a reminder of humanity’s failure to preserve its legacy. When Snowman learns about three human survivors, his mind is filled with doubts about how to present the Crakers to them. These survivors could either view the Crakers as benign and harmless or as “savage and non-human” (Atwood 366). Torn between his moral duty to protect the Crakers and the loss of humanity, Snowman contemplates whether he should kill the three survivors or be killed in the process. His final words, “Zero hour... Time to go” (Atwood 374), remain ambiguous, leaving readers to question whether he is embarking on a mission of peace or heading toward his own destruction.

Atwood uses this uncertainty to engage readers in a dialogue about the slippery slope of genetic engineering and the potential consequences of humanity's reliance on science and technology. Her warning can be summed up in a single phrase: “Think it Through.” Atwood expresses concern that in the age of genetic engineering and biotechnology, humanity might be

headed toward a fatal posthuman future. As scientists, like Crake, play God with the building blocks of life, humans, like Snowman, are often oblivious to the dangers until it is too late to stop their decline. Atwood critiques Crake's desire to remove humanity from its privileged position in the name of perfectibility and evolution. Crake's efforts to engineer the Crakers as a "better" version of humanity highlight the dangers of attempting to transcend human nature without considering the ethical and philosophical implications. Atwood questions the foundation of rational and empirical science, which seeks to challenge the boundaries of materiality and society, and in doing so, undermines human morality and identity.

Crake's radical interventions are an embodiment of modernity's therapeutic project, which seeks to eliminate the complexities of human experience and emotion by reducing everything to quantifiable data. This quantitative worldview, with its focus on efficiency and profit, is epitomised in Crake's "accounting mentality," which neglects deeper emotional and ethical concerns. His solution to the world's problems—genetically modifying humanity to remove perceived flaws—demonstrates a fundamental misunderstanding of what it means to be human, as it overlooks the importance of qualitative experiences and relationships.

#### **4.5 Narrative as Resistance**

The novel underscores the necessity of stories and narratives in maintaining our humanity. Snowman's sacred tales serve as a reminder of the need for connection, tradition, and shared meaning in a world increasingly alienated from these values. While oppressive metanarratives, like those in *The Handmaid's Tale* and Orwell's *1984*, can be problematic, they are still preferable to the anti-narrative state embodied by Crake. Atwood suggests that love, though constrained in such societies, remains a possibility—offering a stark contrast to the emotional desolation found in Crake's world. This implies that meaningful suffering, rooted in genuine human connections

and love, is more valuable than the mindless pleasure that Crake's genetic utopia offers. The characters in both novels grapple with the loss of authentic relationships and the absence of love, which Atwood portrays as the most profound deprivation. The grieving narrators express a longing for intimacy and communion, which the technocratic advancements of modernity have stripped away. This reinforces the idea that our humanity is deeply tied to our capacity for love, empathy, and shared narratives.

Ultimately, the novel advocates for the recovery of qualitative experiences and narratives that can anchor humans amid the chaos of technological progress. The novel reminds readers that without such connections, humanity risks becoming mere products of a cold, mechanistic world devoid of meaning. This reaffirmation of the necessity of embracing the human condition in all its complexity, with its inherent struggles and joys, echoes Atwood's critique of the posthuman future. By emphasizing the importance of human relationships and narratives, Atwood highlights the existential risks of a purely technocratic worldview.

Atwood critiques the destructive nature of scientific discourse, especially in its approach to understanding the Other. *Oryx and Crake* illustrates how science, in its relentless pursuit of quantification and control, often leads to the devaluation and destruction of that which it cannot possess or understand. This aligns with a broader philosophical discourse that warns against viewing the world solely through a scientific lens, where the richness of human experience is reduced to data points and statistics. Rothenberg's assertion that "Nature, as it surrounds us, eludes the categories by which we judge it" (227) underscores the importance of recognizing the limitations of frameworks used to understand the world. Only by fostering humility can humanity cultivate a relationship with the world that allows for genuine communion rather than domination.

The novel fulfills the anxieties surrounding the posthuman world, where only a symbol of humanity survives. Atwood's portrayal of Snowman as the last human could be seen as a refusal to present a wholly dark and ominous future. Rather, the novel highlights that the present world is also threatened by viruses that could devastate all life on Earth. Atwood's narrative warns of how a single "lunatic" or "fundamentalist" can alter the course of history. Though Crake creates the posthuman Crakers to replace humans, his dreams of techno-heaven are unfulfilled, and his ambitious projects lead to humanity's downfall. In the end, Snowman is left as the sole surviving human, symbolizing humanity's failure to heed its ethical responsibility. This anxiety resonates with Fukuyama's warning that without ethical oversight, unchecked genetic engineering could empower figures like Crake to "wreak havoc on humans and the planet" (Fukuyama 218). If the proliferation of techno-culture continues without regulation, individuals like Crake may wreak havoc on humanity and the planet, and few, like Jimmy, will be able to prevent the ultimate disaster. Snowman's ambivalence about searching for other humans further underscores this dilemma—he protects the Crakers, but his search for the remnants of humanity remains uncertain. He saves the Crakers, fulfilling Crake's final directive—"I'm counting on you" (Atwood 343), but his search for other *Homo sapiens* is marked by ambiguity. He straddles the line between human memory and posthuman transformation, embodying the tension at the heart of Atwood's critique: technological progress without ethical imagination leads not to salvation, but to desolation.

#### **4.6 Corporate Culture and Technological Control in Moxyland**

Lauren Beukes is a South African author, journalist, and television scriptwriter, known for her genre-blending works that address urban life, social issues, and speculative futures. Born in Johannesburg in 1976, Beukes has made a significant impact on contemporary science fiction and speculative fiction, defying genre conventions by incorporating elements of noir, horror, and

fantasy into her narratives. Her works often explore complex themes such as gender, violence, and power dynamics, while also offering a critical perspective on social issues in South Africa.

*Moxyland*, set in a dystopian near-future Cape Town, delves into themes of corporate control, technological dependence, and social inequality. *Zoo City*, which won the Arthur C. Clarke Award in 2011, is a gritty urban fantasy set in Johannesburg, where criminals are marked by animal companions. Beukes' distinctive voice in speculative fiction has contributed to a broader conversation about the implications of technology and its influence on human lives, particularly in the context of contemporary South Africa.

*Moxyland* presents a futuristic Cape Town where the government uses advanced technology to tightly control its citizens. The city grapples with severe health and economic problems, reflecting real-world issues such as mass surveillance through AI and data collection from social media apps. "Personal information collected by apparently innocuous apps has been used to conduct hidden surveillance on minority populations for law enforcement and security purposes" (Herbrechter 373). These methods of social control, central to Beukes's novel, have already become commonplace in modern societies.

Beukes sets the novel in a society laden with technological innovations but deeply divided into economic classes: the wealthy elite who control technology and the impoverished "Rurals" who are subjected to it. The novel's characters resist the authoritarian regime in varying ways, exploring how technology has reshaped individuals' social and physical lives. The posthuman world depicted in *Moxyland* is dystopian, with individuals frequently resorting to drugs, violence, and superficial pleasures in an attempt to cope with their harsh realities. The cybernetic advancements have altered the human condition, and the omnipresence of surveillance technology forces people into an anti-establishment mindset. Multinational corporations, driven by profit,

replace human labor with machines, further oppressing the public, particularly in societies like South Africa, where racism and color politics exacerbate inequality. In this bleak future, technology serves as both a tool of oppression and a symbol of the societal decline, reflecting Beukes' critique of the unregulated advance of techno-culture.

The novel, while raising questions about the general human condition in a technology-driven world, also critiques the social divide in South African society. This division becomes more pronounced when advanced technologies are concentrated in the hands of the ruling class. As Lavigne states, "Globalisation and capitalism have led to the rule of multinational conglomerates, while marginalised individuals live in a post-industrial setting defined by cold metal technology, virtual reality and crime" (11). The novel's portrayal of posthuman fiction is a direct reflection of a society in the process of becoming—its incidents are not far-fetched but rather dramatised extensions of contemporary social predicaments and changes.

Set in Cape Town, the novel presents a city marred by AIDS, poverty, and racial intolerance. The realistic elements of this setting are quickly intertwined with the unfamiliar, creating a hybrid world where technology shapes every aspect of life. In this society, all monetary transactions are mediated through cell phones, and "dysconnectivity" is considered the harshest punishment. As Beukes (2008) explains, "wrongdoers are relegated to homelessness, out of society, cut from the commerce loop" (85). The Rurals, the impoverished class in this dystopian world, live under the constant threat of such punishment, their access to basic resources limited by technological and social constraints. In stark contrast, the wealthy elite enjoy the luxuries of high-tech innovations, while the Rurals remain marginalised, cut off from the city's core, quarantined by disease, and denied the privileges afforded to the upper classes. This divide is reinforced by

overzealous security personnel and bioengineered animals like Aitos, which enhance surveillance and further entrench the control of the wealthy.

In comparison to other works in the research, *Moxyland* presents an almost unchallengeable hierarchical society, where the gap between classes is vast and impermeable. The freedom to protest or demand civil rights is nearly nonexistent. The ruling corporations, living in the city's best-equipped sectors, enforce laws that disproportionately benefit the elite while subjecting the masses to oppressive conditions. Luxurious commodities are flaunted in advertisements, further exacerbating the desires of the downtrodden, who remain helpless in the face of corporate power.

The four central characters in *Moxyland* attempt to resist a corporatised state driven by racialised neoliberal principles. The term “government inc.,” repeatedly used throughout the novel, signals the integration of state authority with corporate interests, effectively making the government an extension of private enterprise (Vint, 2021, 132). Beukes paints a picture of a world where governmental control is indistinguishable from corporate domination, with major corporations such as Prima-Sabine FoodSolutions International, Vukani Media, and Inatec Biologica dictating the structure of everyday life. These companies permeate all facets of existence, controlling who holds value and who is expendable.

The novel's frequent use of high-tech terminology underscores the normalization of pervasive technology, presenting consumer culture as an integral part of life. Biotech consumer products, such as “nutradiet” drinks designed to align with an individual's “bio-rhythm” and “bio-tech creams” operating on a subdermal level, reflect the commodification of health (Beukes, 2008, 18). This mirrors Marxist views on the commodification of labor, suggesting that the pursuit of profit, rather than medical progress, drives the pharmaceutical industry. In this world, health is a product, and patients are transformed into consumers, sustaining a cycle of corporate profitability.

Beukes also criticises the biotechnology industry's role in reinforcing the state's security apparatus. The Aitos, bioengineered dogs designed for surveillance, challenge traditional distinctions between humans and other species, reflecting the increasing normalization of life as a modifiable substance. This erosion of boundaries between organic beings and machines extends to human characters, like Kendra, who undergoes a permanent transformation through nanotechnology. By injecting nanobots into her body, Kendra's identity becomes branded, and her body itself is commodified (Beukes, 2008, 7). Kendra's transformation highlights the commodification of human bodies, where bodily autonomy is surrendered for access to elite consumer culture.

Kendra's case is not unique; all individuals deemed "young, dynamic, creative" are subjected to similar processes, integrating them into a corporate system through biotechnological modifications (Beukes, 2008, 12). In Beukes' world, the neoliberal capitalist system governs life itself, transforming organic matter into a resource to be controlled, modified, and commodified through biotechnology. This perspective extends beyond genetic engineering to encompass all life forms, even those not directly modified, treating them as machine-like entities to be bought, sold, and exploited. Corporations generate dehumanised individuals who serve as the producers of "biovalue," a term coined by Nikolas Rose to describe the exploitation of life's vital capacities for profit (Rose, 2007, 33). This posthumanist lens views biotechnology as a tool for manipulating, domesticating, and instrumentalizing life, erasing agency in favor of a biopolitical regime that exploits living beings, including Aitos, as functional commodities rather than autonomous entities. Rebekah Sheldon highlights how the extraction of biovalue has become a growing concern in the context of the privatization of life. In *Moxyland*, this commodification is evident in how corporations convert life into intellectual property, alienating both human and nonhuman bodies



from their own embodied existence. Health is no longer an intrinsic aspect of being but is instead externalised as a measurable ideal that individuals must conform to (Vint 159). Those in precarious positions are subjected to a range of biopolitical mechanisms designed to optimise their productivity, ensuring that every aspect of their existence serves the corporate imperative of extraction and control.

Lerato's experiences illustrate a form of corporate exploitation that leaves her entirely subjugated, shaped by her vulnerability as an orphan whose parents died from AIDS. From childhood, she is raised and educated under the control of Eskom, a corporate entity that later demands repayment for its investment through a binding contract. What initially appears to be a utopian model—where corporations take responsibility for the marginalised—ultimately reveals itself as a biopolitical strategy designed to maintain systemic control over diverse populations. Lerato's trajectory in the novel positions her as an exemplar of global neoliberalism, which not only refines but also intensifies capitalist mechanisms for extracting surplus value (Mezzadra and Neilson 88). By extending its reach into every aspect of life, corporate power reduces individuals to mere organic instruments of production, conditioning them to internalise neoliberal values as essential to achieving a "good life."

Lerato and her sisters' difficult upbringing at Eskom Energy Kids—the orphanage where corporations “cultivate proprietary workforces” (Beukes 140)—exposes the stark reality that corporate governance dictates matters of life and death (Vint). The only available options are to embrace entrepreneurial self-sufficiency and repay corporate debts or face exclusion and possible demise. While Eskom provides orphaned children with housing and a seemingly secure future, the conditions in these institutions are far from benevolent. Even as Lerato successfully rises to a prestigious position, remnants of the corporate system remain deeply ingrained in her education,

as class discussions consistently revolve around topics related to the “parent company” (Beukes 141). The subtle infiltration of corporate ideology into the curriculum may evoke dystopian themes of indoctrination, yet Beukes presents this system with a degree of ambivalence, leaving its full implications open to interpretation.

While technology is deeply embedded in the lives of Beukes’s protagonists, *Moxyland* stands out for its depiction of smart policing through digital media. Phoenix Alexander characterises Beukes’s portrayal of digital technology as both “alien but familiar, consumable and iconic,” suggesting that her depiction of digital media generates a dystopian form of *jouissance* by immersing readers in the excesses of late capitalism, as if she were documenting its descent with a camera in hand (Alexander 158). A defining feature of the novel’s worldbuilding is the fusion of gritty urban existence with virtual reality, where digital interfaces are seamlessly woven into everyday experiences (McQueen 5).

Mobile phones are not only portals to digital information but also tools of surveillance and control, regulating access to physical spaces and essential resources. The intersection of digital media and law enforcement represents an advanced form of urban neoliberalism—one where state regulatory functions are outsourced to corporate entities under the guise of public-private partnerships, effectively turning the market into an authoritarian force (Hetzler, Medina, and Overfelt 638). The exclusionary security practices of *Moxyland*’s corporations mirror real-world neoliberal policing strategies, particularly Cape Town’s Central City Improvement District (CCID), which operates its own private “security cops” (Beukes 274). These corporate enforcers are empowered to bypass state oversight, executing repressive actions without governmental accountability, further illustrating the novel’s critique of unchecked corporate governance.

The extreme nature of repressive security measures in *Moxyland* highlights the unrestrained power of law enforcement. The South African Police Services (SAPS) employ bioengineered creatures like Aitos and lab-designed viruses to quell disturbances, reinforcing a system built on the “colonial logic of racialization and naturalization of (intellectual) property that makes it inevitably complicit with capitalism” (Vint 201). Just as the healthcare industry in the novel upholds the immunity of the body politic by targeting perceived threats, law enforcement operates under a similar framework. This approach is exemplified in a scene where an Aito violently attacks a street kid simply for looking at a woman: “fastening its mouth like a bear trap on his arm and crashing him down to the street in one movement. There is a branch-crack of bone, followed by the inevitable screaming” (Beukes 136). Such incidents suggest that any behavior, no matter how minor, can be classified as a security threat, justifying the deployment of excessive force.

The peak of these security measures unfolds in Adderley Street, where Toby and his fellow gamers engage in realspace play, inadvertently escalating an already volatile protest led by Tendeka. In the ensuing chaos, the gamers mistake bystanders for opponents, indiscriminately shooting them with purple fluid pellets. This moment culminates in a single reaction: “everyone drops to the ground, twitching, phones crackling as the defusers kick in” (Beukes 214). Despite the presence of uninvolved civilians, law enforcement indiscriminately enacts mass immobilization tactics. The situation escalates further when the police, responding to attacks on their genetically engineered dogs, invoke national security protocols and release the lab-coded M7N1 virus, warning that it could be fatal without “medical treatment at an immunity centre within 48 hours” (Beukes 219).

This use of non-human entities as weapons against humans in *Moxyland* underscores the biopolitical structures that categorise life into hierarchies of value and expendability, creating a world where enhanced and unenhanced humans coexist with starkly different experiences. The security apparatus, in particular, functions to reshape the human condition by controlling individuals' agency and moral autonomy. The 48-hour survival window, in which alleged criminals must prove their innocence through forced immunization, exemplifies how the posthuman world manipulates moral agency. While the opportunity to prove innocence exists, it comes at the cost of social exclusion, marking those who comply as "other" in a society that increasingly values enhancement and conformity. Thus, the notion of a "real" human is problematised, with the system enforcing a bifurcation between those who have embraced technological advancements and those left vulnerable.

Moreover, the posthuman world in *Moxyland* critiques the capitalist control embedded in the technological enhancements that govern human lives. The enhanced individuals are tracked and controlled through their cell phones, serving as tools for both social connection and surveillance. This control, while offering a sense of belonging in the connected society, also reduces personal autonomy and privacy. In this context, the human condition is further problematised, as connectivity becomes synonymous with control. The technology that promises to safeguard and enhance life also acts as a tool of oppression, where human beings, whether enhanced or unenhanced, are trapped in a cycle of dependency on the very systems that seek to control them. The posthuman condition, therefore, is not one of liberation but of slavery to the technological infrastructure that shapes every aspect of existence.

Beukes presents a dystopian vision where technological advancements are entwined with systems of control, reinforcing social stratification and reducing personal agency. Those who

embrace the technology (the technophiles) experience enhanced lives, while those who resist or cannot afford enhancement (the technophobes) are relegated to the periphery, both physically and socially. The Rurals, much like the transgressors of apartheid South Africa, are abandoned to a life of suffering and disconnection, reinforcing the critique of a society where technological advancements exacerbate existing inequalities rather than alleviate them. The duality between technophiles and technophobes represents the ethical and social fractures within the posthuman world, where the human condition is no longer universally shared but divided along lines of technological access and resistance.

The societal structure in *Moxyland* is also deeply shaped by technology, where control over communication systems determines one's social status. The possession of a SIM card, which grants access to basic needs like food, health care, and money, marks individuals as either part of the privileged class or relegated to the margins. As King observes, “The SIM card functions as a social class marker and develops into an extension of identity” (21). This technology-driven class system illustrates how posthuman realities can exacerbate existing social inequalities, further entrenching divisions between those who are enhanced by technology and those who are not. The fear of alienation and the drive for connectivity become central themes, as characters like Kendra are forced to conform to a system that requires total reliance on technology.

Fukuyama argues that “info-tech is central to the success of the vast, totalitarian empire” (4), and in *Moxyland*, this is evident in the ways technology is used to control the masses. The characters’ dependence on digital and technological infrastructure — from their SIM cards to virtual reality games — is both a source of power and vulnerability. The city becomes a “communication system” (Beukes 97), where connection and control are inextricably linked. The revolutionaries led by Tendeka understand that without control over communication, they cannot

enact meaningful change. However, their failure demonstrates the overwhelming power of the corporate forces that dominate the city, further highlighting the ethical and existential dilemmas faced by those who resist or are excluded from the posthuman integration.

#### **4.7 The Fragmentation of Identity and the Fracturing of the Human Condition**

Kendra's experience offers a telling example of how posthuman technologies reshape identity and social belonging. As she undergoes a nanotechnology makeover, she opts for a life heavily reliant on biotechnology, a stark contrast to the marginalised Rurals who cannot afford such enhancements. This cosmetic and health-related transformation speaks to the deepening inequalities in the posthuman world. The nanotechnology that optimises Kendra's body not only enhances her physical health but also aligns her with corporate interests, as seen in her indirect work for the beverage company Ghost. This dual purpose of nanotechnology—improving individual health while simultaneously serving capitalist goals—illustrates how technological advancements are tied to broader economic and social structures that reinforce hierarchies. Here, posthumanism complicates traditional notions of identity by presenting a fluid, technology-driven conception of humanity, where the line between human and non-human is increasingly blurred.

The societal divide in *Moxyland* is clear, as the technologically enhanced live in a world of privilege, while the unenhanced Rurals are relegated to the margins. This division starkly highlights the contrasting experiences of posthuman and unenhanced beings. The Rurals, unable to afford genetic enhancements, suffer from ecological disasters and pandemics, while those in technologically advanced urban areas live in a state of relative safety. This scenario reflects how technological advancements, while promising to safeguard human existence, often reinforce social and economic disparities, positioning enhanced humans as “worthy” and unenhanced humans as expendable. The tension between these two groups represents the ethical and existential dilemmas

posed by posthuman narratives, where technologies designed to protect humanity often result in the alienation and exclusion of those who cannot afford them.

The city's depiction in *Moxyland*—as “a skein of intersecting planes, flows, circuits, and skins: organic and manufactured, digital and analogue, visible and invisible” (Beukes 527)—highlights the hybrid nature of the posthuman world, where human and non-human entities intertwine in ways that challenge the concept of a singular human condition. This hybridization, however, also leads to the marginalization of those who are not integrated into the technological network, emphasizing the divide between the enhanced and the unenhanced. The city is a space where technological advancements serve to deepen inequalities, as the privileged few experience the benefits of posthuman technologies, while the disadvantaged are left exposed to ecological and social threats.

The novel offers a critical lens through which to examine the transformation of the human condition in a posthuman world. The novel challenges traditional notions of humanity by presenting a world where identity, morality, and agency are increasingly shaped by technology, creating a society that privileges the enhanced while marginalizing the unenhanced. Through the contrasting experiences of technophiles and technophobes, the novel explores how technological advancements can both empower and disempower individuals, revealing the ethical, social, and existential dilemmas faced by both enhanced and unenhanced humans in a posthuman future.

The introduction of nanotech modifications to both humans and animals, such as dogs used by the police for intimidation, offers a disturbing look at how technology is deployed as a tool of control. These enhanced creatures, though initially designed for policing, sometimes go out of control, highlighting the unpredictable nature of posthuman technologies. As one critic observes, “In *Moxyland*, the same technologies that overwhelm the forces of nature are used to turn nature

against those who would oppose the project of corporate rule” (Smith 356). This manipulation of nature, including the use of viruses for policing, signals the breakdown of traditional boundaries between humans and machines, complicating the very concept of what it means to be human in a world dominated by technology.

Kendra’s experience in *Moxyland* exemplifies the loss of agency in a posthuman world. As a walking billboard for Ghost soft drinks, she symbolises the commodification of human bodies, reduced to marketing tools for corporate gain. Her desire to disconnect from the corporation leads to a fatal confrontation, as the nanotech introduced into her system binds her to the company's interests, leaving her powerless to regain her autonomy. This reflects a key theme of posthumanism: in a world dominated by technology, the individual is often denied agency in favor of corporate or state interests. As Kendra's situation illustrates, “the right to disengage from the scientific experiment is denied and rejected” (Beukes 101), highlighting the oppressive control of the corporation over her life.

The intersection of real and virtual identities complicates the notion of selfhood in *Moxyland*, where characters' identities are fractured and multivalent. Tendeka, a Marxist revolutionary, navigates both physical and virtual spaces, participating in virtual reality games while also engaging in real-world resistance. His actions demonstrate the posthuman condition where individuals inhabit multiple identities, both real and virtual, reflecting the fluidity and multiplicity of self-representation in a technological society. As the novel suggests, “the blending of social and virtual reality influences the world and vice versa” (Beukes 120), underscoring the dissolution of clear boundaries between the two realms. Kendra’s transformation into a “Sponsor baby” further exemplifies this blending of technology and biology, as prosthetic intervention reshapes her biological identity and social role.



Kendra's struggle with her cyborg identity highlights the ethical implications of technological enhancement. As her body begins to show signs of metamorphosis due to nanotech intervention, she faces the possibility of becoming "spectral" — her body no longer fully human, but overtaken by technology. This reflects the existential crisis at the heart of posthumanism: "the risk is that she will be turned into a spectre within a brief span of time" (Beukes 179). This looming transformation into something non-human raises critical questions about the cost of technological perfection. The loss of Kendra's human essence demonstrates how posthuman technologies can strip away not only physical autonomy but also the very core of individual identity.

The desire for technological enhancement, embodied in Kendra's pursuit of perpetual youth, exposes the ethical dilemmas of a world where technological solutions come at the expense of humanity. Her eventual fate — becoming a "spectre" or losing her authentic self to the nanotech — is a powerful warning against the consequences of unchecked technological advancement. As Haraway explains, "Biological organisms have become biotic systems, communications devices like others" (144). This view of humans as hybrid entities, part biological and part machine, aligns with the struggles faced by Kendra, who finds herself ensnared in a technological system that irrevocably alters her nature.

The novel provides a stark critique of the posthuman condition, where technological enhancements blur the boundaries between human and non-human, and where corporate control, social stratification, and the erosion of individual autonomy lead to profound ethical and existential crises. The novel explores the implications of a world where the human condition is reshaped by technology, revealing the dangers of a society where the quest for perfection comes at the cost of individuality and humanity. Through characters like Kendra, who is both a cyborg and a victim of

corporate exploitation, *Moxyland* challenges the posthuman narrative, offering a warning about the dehumanizing effects of technological advancement.

Mobile phones serve as instruments of surveillance and control, reflecting the posthuman condition where technology intersects with human identity. According to Stobie (2012), *Moxyland* critiques the influence of technology, focusing on "cell phones," "advertising," and the pervasive presence of political authority (371). These devices are not merely tools but extensions of the characters' identities, a prosthetic form of recognition that entangles individuals in the web of state and corporate surveillance. Through these technologies, people lose their personal space and autonomy, illustrating how posthuman societies, driven by corporate-state collusion, use technology to consolidate power over both enhanced and unenhanced humans.

The novel explores how the pervasive use of mobile phones, akin to the *dompas*<sup>21</sup> during apartheid, integrates personal identity with a coercive, dominant ideology. In a society where rebellion against the state appears impossible, the technology functions as both a form of identification and oppression, making the division between the enhanced and unenhanced even starker. This technological control reinforces hierarchical structures that dehumanise those outside the system of technological enhancement, contributing to the societal fragmentation that defines the posthuman world.

Kendra's relationship with technology further illuminates the dilemmas of identity and agency in a posthuman context. Although she strives to maintain a semblance of her humanity through analog photography, her efforts to capture and preserve authentic experiences fail in the face of the overwhelming digital reality around her. She is caught between two identities—her biological self and her technologically altered cyborg existence—vacillating between the physical

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<sup>21</sup> Means 'dumb pass'. All black people outside the confines of their government-designated areas were legally required to carry passbooks.

and virtual realms. This duality exemplifies the existential crisis at the heart of the posthuman condition, where the boundaries of the self are increasingly porous, and the human experience is fragmented. Catherine Forrest (2016) asserts that Kendra's attempts to break away from the hyperrealistic world highlight her struggle to discern reality from simulation, a critical tension for individuals in posthuman societies (51).

The posthuman world challenges traditional notions of human identity and agency. Kendra's body, altered by nanotechnology to become an idealised corporate asset, faces the paradox of being both enhanced and diminished by technological intervention. Her cyborg identity, like the dogs injected with nanotech to serve the state, symbolises the commodification of the human body and the erosion of dignity in a society where technology dictates existence. The nanotechnology that enables her transformation into a "Sponsor baby" is a metaphor for the larger loss of individual autonomy in posthuman societies. As Rothenburg (2010) suggests, the body becomes a signifier of unintended expression, reacting to the violence of technological integration (104).

Kendra's desire to rebel against her enforced cyborg identity further illustrates the ethical and existential consequences of technological enhancement. Her body's rejection of the M7N1 virus, enabled by nanobots, represents a loss of bodily autonomy and an erosion of human dignity. This reflects the posthuman tension between the desire for technological perfection and the inherent risks of dehumanization. As Byrne and Levy (2015) note, the body in *Moxyland* is not only a site of technological enhancement but also a battlefield where the boundaries between human and machine are continually transgressed (78-79). The novel critiques the seductive promises of posthuman perfection, revealing the dangers of over-commitment to technology. Through Kendra's experiences and the societal dynamics in *Moxyland*, the novel problematises the

human condition in a posthuman world, where technology both elevates and suppresses human agency. The collision of enhanced and unenhanced identities in such a world raises profound ethical questions about the nature of humanity, the preservation of individual dignity, and the social consequences of technological advancement. As Kendra's fate unfolds, it underscores the perilous transformation of the human body and identity in a world where technology is both a tool of liberation and a mechanism of control.

Lerato's evolution embodies the posthuman dilemma concerning identity, agency, and the loss of human subjectivity in a technologically driven society. In the beginning, Lerato lacks clear commitment to anything. She ascends within the corporate system—where technology and human identity merge seamlessly—without questioning the ethical implications of her actions. Even as she becomes involved with Tendeka's revolutionary group, her involvement is driven by a naive belief in freedom and opportunity. Her involvement leads to her promotion, yet she does not see the corporation as inherently evil. She believes that her actions are a form of personal growth, but, in truth, she is part of a larger, dehumanizing system. As her journey unfolds, Lerato's growing disillusionment is evident when she uncovers the true nature of her role within the corporate system. Realizing that her career advancement is not a product of personal merit but of corporate manipulation, her perception of freedom is shattered. The “promotion” she thought was her own achievement is revealed as part of a larger mechanism of control (Beukes 199). In this posthuman world, where technology and corporate power shape human experiences, Lerato's realization that she is nothing more than a pawn in the corporate game challenges her earlier understanding of autonomy. The realization that “the IP address for skyward comes back to Communique's corporate pipeline” (Beukes 199) underscores how she has been manipulated into thinking she is in control, when, in fact, she is being controlled.

Lerato's detachment from human connection is also shaped by her traumatic childhood, marked by the loss of her parents to AIDS. The memory of living in orphanages "more vivid in [her] head than [her] idea of home" (Beukes 107) plays a significant role in her acceptance of technological advancements, which she views as a means of healing. The belief that technology can cure human vulnerabilities, such as the disease that killed her parents, leads her to adopt a detached relationship with her humanity. Her work at Communic, where individuals can escape their traumatic pasts through virtual reality, becomes a means of distancing herself from her painful memories. She believes technology can "heal" what is broken in the human condition, but in doing so, she abandons her human ties, which further distances her from her authentic self.

In contrast to Lerato, Jane fully embodies the corporate identity, which results in her complete erasure of personal subjectivity. Jane's existence, entirely mediated through technology, serves as an extreme example of the posthuman condition in which the individual becomes subsumed by corporate and technological power. Her narrative absence in the novel—she never narrates any of the sections—signifies her loss of personal perspective and her transformation into an extension of the corporate system. As the avatar "Skyward," Jane represents the inhuman, elevated nature of technological control that dominates posthuman society. Her role as a surveillant within the company shows the extent to which technology strips individuals of their agency, as she becomes the instrument of corporate surveillance. Jane is described as "frigid," with her lack of sexuality symbolizing her complete detachment from human intimacy (Beukes 185). This detachment speaks to the way posthuman technology dehumanises individuals, rendering them mechanical and devoid of meaningful emotional connection.

Although Jane is an integral part of the corporate system, her existence is void of personal autonomy. Her interactions are purely mechanical, exemplified by the robotic-sounding nature of

her emails, which further demonstrate how her human qualities are overshadowed by her role in the corporate structure. Jane's behavior exemplifies how the posthuman world requires individuals to sacrifice their humanity to survive. Her role in the corporate system, as a tool of surveillance and control, suggests that freedom and individuality are illusory in a posthuman world. As the representative of Communique, she is responsible for monitoring and controlling other characters, yet her identity is entirely shaped by the company's agenda.

In contrast, Toby, another character in the novel, also illustrates the loss of human subjectivity in a technologically dominated world. Toby's reliance on technological devices—specifically the BabyStrange coat and Streamcast—disconnects him from his human identity. When wearing the coat, he loses touch with his authentic self, becoming a detached persona, and Streamcast turns him into a celebrity, further alienating him from his individuality. His inability to form genuine human relationships highlights the way in which posthuman technology, by enhancing human capabilities, also deepens the divide between individuals and authentic human experience. Toby's lack of emotional response to Tendeka's death is particularly telling, as he fails to mourn the loss of his friend. His focus on his media capital instead of his friend's death further emphasises the hollow nature of his existence in a posthuman world. His reaction—if it can be called that—is guided solely by the prospect of gaining more capital, a clear indication of how technology can strip individuals of their emotional and moral agency.

The divergent responses of these characters to the challenges of living in a posthuman world raise important questions about the ethical, social, and existential dilemmas posed by technological advancements. How do the posthuman technologies in *Moxyland* reshape the human condition for both enhanced and unenhanced characters? The cases of Lerato, Jane, and Toby demonstrate how technological enhancements, rather than liberating individuals, create new

dependencies, reinforce hierarchies, and deepen inequalities. For some characters, technology offers an escape from human vulnerability, while for others, it becomes a tool of control, manipulating their sense of self and agency. Ultimately, the posthuman world depicted in *Moxyland* presents a future where the boundaries of humanity are increasingly blurred, and the quest for freedom becomes an illusory pursuit.

Tendeka, unlike Toby, refuses to blindly follow the government's discourse and instead aligns himself with social activism. He is an idealist who believes that through his revolutionary activism, he can overthrow the capitalist regime that represents both ideology and power. His belief in freedom and humanistic values makes him appear authentic, though he occasionally finds himself involved in criminal activities. His personal relationships, including his marriage to a Malawian refugee, point to his non-conformity to heteronormative societal structures. As Ashraf notes, Tendeka is "not being female-inclined" (Beukes 33), which highlights his divergence from traditional norms. Both he and his friend Toby lean toward homosexuality, signaling their rebellion in a heteronormative world.

Despite his revolutionary aspirations, Tendeka finds himself torn between two opposing forces: the desire to materialise his ideals and the seductive lure of virtual reality. Participating in "gamespace" gives him a temporary sense of belonging, but the very system he opposes also traps him. In a world where imperialist forces once used literature and civilization to ensnare minds, entrepreneurs now seduce the masses by offering a utopian world of virtual games made possible by advancements in nanotechnology. The virtual world, branded as "Pluslife," promises the prolongation of life and entices individuals like Kendra to become "Sponsor babies" for the corporate entity, Ghost (Beukes 199).

In the gaming world, participants are led to believe they control their destiny. However, this promise is an illusion. When Kendra's experience turns disastrous, Tendeka falls into a trap orchestrated by Jane, unwittingly sharing sensitive information about his revolutionary activities with the very hegemonic forces he despises. Tendeka and his group members, labeled as anti-corporate 'terrorists,' are sprayed with the M7N1 virus, a tool designed to control the masses. Their infection leads to "dysconnectivity" and widespread chaos, forcing them to separate in search of an antidote while evading the police. Tendeka realises too late the consequences of his decisions. On a rooftop, he confronts his impending death, feeling that "something rips free inside me" (Beukes 227). This moment represents his final escape from corporate manipulation, though it comes too late to save him. His death symbolises the demise of revolutionary idealism, which the entrepreneurial system cannot tolerate.

Tendeka's fall is indicative of a broader existential crisis within the posthuman world, where data plays a central role in determining one's existence. As Iuculano and Kadosh (2013) argue, biomedicines can enhance certain cognitive abilities while impairing others. Tendeka's death occurs after his revolutionary data is metaphorically "hacked" by the corporation. The virtual world of games directly impacts his real-world survival, and the act of sharing his information results in his death. As Byrne and Levey (2015) assert, "With Tendeka's death, the novel's only meaningful human connection is terminated" (85). This loss underscores the grim reality that any attempt to maintain human authenticity in a posthuman world results in sacrifice, either to the altar of technology or at the hands of the corporate machine.

Moreover, *Moxyland* explores the normalization of appearance and the commodification of bodies. While race is not openly discussed, the novel's society is clearly divided into classes, with an emphasis on physical aesthetics. Characters, especially Kendra, are aware of the



importance of maintaining a youthful, slender, and disciplined body. The “effortlessly casual” look, as Kendra notes, reflects the hegemonic power of white femininity, which has historically been associated with desirability, especially in post-apartheid South Africa (Beukes 31). This aesthetic ideal is manipulated by the technological advances in virtual reality and biotechnologies, such as the "Sponsorbabes" program, which exploit the desire for physical perfection to maintain control over the population.

Kendra's efforts to challenge the company's discourse through her camera reflect her desire to construct an anti-essentialist view of herself. However, despite her attempts to use photography as a means of reclaiming her subjectivity, she remains unable to escape the corporate gaze. The camera, which she carries as a tool for self-expression, ultimately fails to disrupt the ideological control of the corporation, as her subjectivity is continually shaped by external forces. In this posthuman world, the corporate system dictates the terms of subjectivity and forces individuals like Kendra to conform to its expectations, regardless of their personal desires.

Toby, another key character, demonstrates how technology can shape and manipulate identity on a global scale. His use of the BabyStrange jacket, which allows him to disseminate his image worldwide, is a testament to the power of technology in controlling how identities are marketed. His image, particularly that of "Ghost Girl", becomes commodified and is circulated more widely in regions such as Southeast Asia, where the ideals of cosmopolitan white beauty are popular. The jacket allows Toby to participate in a global marketing campaign that spreads the company's definition of beauty and reinforces the racialised and gendered norms that define desirability in the posthuman world. Toby, who initially sought to be injected with nanotech to ward off cancer, is unaware of the side effects that accompany his technological enhancement. His

ignorance makes him vulnerable to exploitation, and his identity becomes an open secret, disseminated globally by corporate forces.

Through the experiences of Tendeka, Kendra, and Toby, *Moxyland* explores the tension between human authenticity and technological control in a posthuman world. The characters' struggles highlight the ethical, social, and existential dilemmas raised by technological advancements and corporate power. Ultimately, *Moxyland* paints a dystopian picture where human subjects are commodified, their identities shaped by the very systems they seek to resist.

Kendra's damaged photos, linked to the regenerative properties of nanotechnology, are manipulated by Toby and posted on the blog, propagating side effects. These images, praised for their healing and rejuvenating effects, spark widespread interest. However, Kendra's subconscious association with the Aitos dogs triggers feelings of discomfort and confusion. Unbeknownst to her, her white, feminine image becomes commodified, branded as "Sponsorbaby." This commercialization highlights the persistent feminist issues in the posthuman world, where gendered power dynamics continue to shape female identity. Kendra's cyborg identity as a woman remains transient, as she is reduced to a nanotech object by both Jonathan, the photographer, and Toby, who is fixated on her slender body. Despite the technological advancements, the power relations embedded in gender remain largely unchanged. The executives at Andile continue to infantilise her by calling her "babes," further reducing her to a passive entity within a system driven by power and exploitation (Beukes 144).

#### **4.8 Gender, Whiteness, and Neocolonial Biopolitics**

The novel's critique of whiteness is integral to understanding its racial and gendered account of posthumanism. Whiteness, as an idealised form of beauty, serves as both a tool of attraction and wealth accumulation. Female beauty, particularly white beauty, is commodified, as it remains an

ever-evolving standard shaped by technological progress. However, this evolving notion of whiteness retains its hegemonic power, often reinforced by the female body. From Kendra's experiences, Beukes suggests that genuine female solidarity is absent in the posthuman world, with women-only communities relegated to the realm of utopian aspirations (Beukes 151). This positions Kendra, like other women in the narrative, as pawns within a larger capitalist and technological machine, highlighting the fragility of feminist progress in the face of power structures that commodify identity.

The novel also brings forth the persistence of exploitative systems rooted in historical colonial practices. The novel presents a dystopian future in which the protagonists are entrapped by biopolitical control and a racialised concept of personhood, drawing heavily on ideologies imported from the West into the Global South. The colonial legacy, particularly evident in the apartheid-era technological advancements and labor exploitation in South Africa, continues to shape the present. Engineers in South Africa developed technologies to extract minerals, while panoptic surveillance structures were used to control and monitor labor forces. This system left marginalised populations dependent on colonial authorities, whose influence permeated the social and economic fabric of the country (Amin 12; Rodney 34).

Beukes's *Moxyland* argues that the mechanisms of exploitation have evolved in modern times, taking the form of biotechnologies, social media, and digital surveillance. Corporations like Amazon, Google, and IBM now dominate the South African tech ecosystem, further entrenching economic hierarchies. The "contemporary panopticon," as described by Kwet, is formed through centralised data intermediaries and surveillance networks, with intellectual property and private control over computation serving as the new form of extractive land. This exploitation of data, the raw material feeding artificial intelligence services, intensifies global inequalities. In this

posthuman age, technological advancements predominantly benefit those already in power, exacerbating the technological divide and reinforcing systemic inequalities (Kwet 2021).

A pressing question arises from these observations: Can posthumanism bridge the technological disparities that perpetuate poverty and disadvantage in Sub-Saharan Africa? *Moxyland* suggests that rather than alleviating these inequalities, technological advancements are more likely to exacerbate them. The novel envisions posthumanism through the fusion of technology with the human body but highlights a fundamental lack of "posthuman subjectivity" among its characters, as defined by Rosi Braidotti. In *Moxyland*, the protagonists fail to develop an "embodied and embedded" awareness of community and relationality. Instead, they internalise systems of control, compressing their bodily agency into apparatuses that serve to reinforce existing power structures (Braidotti 19; Esposito 115).

Furthermore, the novel critiques the neoliberal market conditions that facilitate biopolitical divisions, reducing life itself to an economic commodity. Fukuyama argues that true freedom lies in the ability of political communities to safeguard the values they consider most important. However, in *Moxyland*, the characters' lack of agency reveals a fundamental issue: technological advancements are not inherently liberatory. Instead, they often serve to reinforce entrenched power structures that exploit and oppress the marginalised (Fukuyama 218).

The human condition in *Moxyland* underscores the dystopian consequences of technological development. Despite the presence of advanced gadgets and enhancements, the characters suffer from existential crises, exacerbated by the side effects of the nanotechnology designed to rejuvenate them. This reflects a world where the corporate regime exerts overwhelming control, leaving the characters powerless to resist or voice their dissent. Ken Barris examines this dynamic, focusing on Kendra's experience as she navigates a system of constant

surveillance, police brutality, and invasive nanotechnology that alters her physical body. Barris emphasises the significance of Kendra's disconnection, arguing that it makes her an "outcast" as she "becomes a ghost in civic and economic terms" (Barris 22).

#### **4.9 Technological Borders and the Biopolitics of Exclusion in *Ink***

Sabrina Vourvoulias, an American journalist and writer, is known for her speculative fiction that frequently addresses themes of social justice, immigration, and identity. Her work is shaped by her Latina background, with strong ties to Guatemala and the United States, which deeply influences her exploration of marginalization and the experiences of bicultural individuals. Vourvoulias's debut novel, *Ink* (2012), presents a dystopian world where the implications of racism, immigration, and resistance are vividly depicted. The book has been lauded for its insightful reflection on contemporary social and political issues and its innovative storytelling (Vourvoulias 35).

Vourvoulias explores the intersection of posthumanism and immigration, presenting a future where technology, designed to free humanity from disease and societal bigotry, ironically becomes a tool for oppression and domination. This technological revolution, initially seen as a path to a better world, ends up reinforcing hierarchies, particularly those based on race and ethnicity. The novel imagines a society where technologies, intended to cure illnesses and eliminate past injustices, instead serve as instruments of control, stripping individuals of their fundamental right to live freely (Vourvoulias 68). The racialised division between those who are tattooed and those who are not further underscores the social hierarchy, drawing a stark comparison to the medieval world where the powerless were subjugated (Vourvoulias 102).

Posthumanism is explored as a central theme, focusing on the transformation of humanity through technological enhancements. Characters in the novel undergo a process where they are implanted with chips or tattoos that give them enhanced physical and mental abilities, creating a

clear divide between the "tattooed" and "untattooed" populations. This transformation is portrayed as a form of evolution, where the tattooed individuals surpass their previous human form, raising ethical questions about identity, power, and the moral implications of technological domination. The tattooed beings gain a sense of superiority, which leads to their marginalization of the untattooed population, creating a dangerous power imbalance (Vourvoulias 76).

The tattooed population's superiority reflects the social and racial divides in this dystopian future. Immigration laws have been restructured to differentiate between American citizens and immigrants, with tattoos serving as a marker for legal status. These tattoos are used by authorities to track and control the movements of non-citizens, with distinct colors denoting different social classes, from the most despised (black) to the more privileged (Vourvoulias 112). The racialised tattoo system mirrors the existing American hierarchy, where American-born citizens are exempt from the discriminatory laws imposed on non-whites.

The narrative of *Ink* also highlights the dehumanizing consequences of technological control. The tattooed individuals, subject to curfews and restricted mobility, live under constant surveillance through embedded GPS trackers. This technological control serves to reduce their lives to mere objects, stripping them of their humanity and fundamental rights (Vourvoulias 139). The regime's cruelty is further demonstrated through the introduction of a deadly disease, which only affects those with tattoos. The outbreak of the disease appears to be a pretext for further control, as the authorities seek to "purify" the American land of immigrants. In response, quarantines known as *Inkatoriums* are established, where those infected are sterilised without consent, further stripping them of their autonomy and rights (Vourvoulias 147).

This dystopian vision is strikingly relevant to contemporary concerns about security and immigration in the real world. The novel draws parallels with modern-day practices where

individuals are subjected to extreme security measures in the name of protecting national interests. Just as the post-9/11 world saw increased surveillance and loss of personal freedoms under the guise of ensuring safety, *Ink* depicts a society where control and manipulation are justified by the rhetoric of security. The parallels between the security measures in *Ink* and those enforced today—particularly at airports and borders—highlight the tension between individual freedom and state control (Foucault 27). Governments justify intrusive surveillance and restrictions on personal freedom by invoking the need to protect the masses from external threats, even as these measures erode basic human rights.

The novel presents a powerful commentary on how governments and corporations use technology to maintain control over marginalised populations. The question raised by *Ink* is critical: To what extent can a society justify the erosion of personal freedoms in the name of security and stability? Vourvoulias's portrayal of a society where the rights of individuals are sacrificed for the perceived safety of the majority resonates with real-world concerns about privacy, freedom, and state control (Foucault 29). As Finn, one of the protagonists, works to expose the plight of the quarantined immigrants, the narrative underscores the ethical dilemmas of surveillance and the abuse of power. His investigation into the *Inkatoriums* reveals the government's hidden agenda, highlighting the risks of unchecked technological and governmental power (Vourvoulias 160).

Four distinct voices narrate the story, each offering a unique perspective on the events unfolding. Finn, an American journalist, is drawn to the story of the quarantined immigrants after being tipped off by Mari, a Guatemalan immigrant who works at the Population Control Centre. Mari's suspicions about the rapid decline in population lead her to uncover the existence of the *Inkatoriums*, where immigrants are quarantined, sterilised, and erased from society (Vourvoulias

174). Despite the government's efforts to silence dissent, Mari becomes a key informant, putting her safety at risk to reveal the truth. Her actions, however, are thwarted by the omnipresent power of technology and surveillance, which ensures that the authorities maintain control over both the immigrants and their narratives (Vourvoulias 182).

Through these interconnected narratives, Vourvoulias paints a bleak picture of a world where technology, once seen as a path to liberation, becomes a tool of oppression. The use of tattoos as a marker of identity and status, along with the relentless surveillance of the tattooed population, illustrates how technology can deepen existing social divides and reinforce oppressive systems. The novel challenges readers to consider the ethical implications of technological advancements and the ways in which they can be used to control and marginalise vulnerable populations.

Ironically, those who are guarding the immigrants are themselves at risk due to the lack of security. They are desperately striving to maintain their 'legal' citizen status. The characters experience both legal and economic vulnerability. Their survival depends on government provisions, but the government is reluctant to fulfill its duties. Immigrants with fake or illegal tattoos are the targets of the worst hatred and persecution. Their voices are often ignored or disbelieved by the authorities. Although the situation in *Ink* appears futuristic, it mirrors present-day realities, such as the torture of individuals based on flimsy evidence at facilities like Abu Ghraib and Guantanamo Bay<sup>22</sup>, which are "universally held to be fundamental violations of a person's inalienable rights" (Foucault 33). The efforts to 'secure' humans become increasingly agonizing as technological devices multiply. This situation in *Ink* highlights the prevalent anti-

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<sup>22</sup> <sup>22</sup> Seymour M. Hersh, *Torture at Abu Ghraib: American soldiers brutalised Iraqis*, New Yorker, May 10, 2004, at 42; Douglas Jehl & Kate Zernike, *Scant Evidence Cited in Long Detention of Iraqis*, N.Y. Times, May 30, 2004, § 1,



immigration discourse in the contemporary world, where immigrants are often seen as an unwanted burden on national economies (Vourvoulias 58).

Some characters attempt to assist the distressed immigrants, but they find themselves powerless against the all-encompassing government machinery. Del, Finn's brother-in-law, who works for the construction company Latino Labourers, learns of the immigrants' plight when he becomes infatuated with the charming Meche. Unlike others, Del desires to understand the lives of his co-workers, who are afraid of engaging with local communities that typically regard them as outsiders. They feel structurally and psychologically inferior to the native citizens, who do not bear tattoos. Local communities separate them and fail to recognise their identities, as most workers are replaced every few months. Del reflects, "We face an entirely different crew every three months. We don't even bother to learn their real names, we mostly call them by the name of their country of origin" (Vourvoulias 54).

These workers are treated as machines, created solely to serve their masters, and their suffering is compounded by the embedding of metal chips into their bodies. With the ever-present chips in their flesh, their movements are constantly monitored, denying them personal freedom and enjoyment. Their bodies show servility to technology. Meche is one of the few who informally provides social services to make the immigrants' lives less miserable. She works alongside Finn to help those who are oppressed. Abbie, another narrator and the daughter of an Inkatorium executive, aids the incarcerated Meche and Mari. Abbie's rebellious nature drives her to challenge her mother's authority. While Abbie's mother knows that some of the quarantine's inmates are not really sick, her financial vulnerability forces her to remain silent about the abuses occurring at the Inkatorium. Economic dependence restricts her from standing up against the atrocities committed by the government (Vourvoulias 92). The division among humans in *Ink* highlights the

strengthening of hierarchical structures in the posthuman world, where technology exacerbates social and economic inequalities instead of alleviating them. This division aligns with the concerns Fukuyama (2002) predicted, reflecting his assumptions about the future of posthumanism. In Vourvoulias's novel, the lower classes are depicted as having no will of their own, no capacity to revolt, and no natural emotions like humans (Fukuyama 14).

The situation becomes even more intense when an uninfected woman, who has just given birth, suffers alongside her newborn child. The child suffers from the harsh cold and lack of sunlight, representing the plight of subjugated citizens who endure emotional and psychological torture. Abbie's mother, caught in a system that prioritises survival over empathy, asks, "What's sentiment when your kid's freezing in a cold house?" (Vourvoulias 92). This line underscores the helplessness of the marginalised, whose only crime is that they are not American and cannot challenge the dehumanizing technological systems that oppress them. Anyone who defies the legislation is tracked and hunted like prey. Abbie's involvement with the immigrants reveals the reality of a social order that seems progressive on the surface but remains deeply conservative and hierarchical at its core (Vourvoulias 102).

The disjointed and fragmented narrative structure of *Ink* foreshadows the disintegration of society caused by social segregation. It seems that only technology has advanced, while human minds remain entrenched in racial prejudice, bigotry, and oppression. The slogans of technophiles, promoting the benefits of technology, appear to be an illusion designed to deceive the masses. The fate of the characters intertwines through their collective resistance to the encroaching power of biopolitics. The biopolitical era intrudes into the biological lives of the masses, and in the name of governance and security, citizens are reduced to mere resources or emotionless machines (Vourvoulias 115).

The posthuman age depicted in the novel is eerily reminiscent of the Nazi regime, where Jews were marked and tracked. This raises the question: Is this the promised progress? With the aid of powerful technological tools, the authorities in the posthuman age have unprecedented control, making rebellion seem impossible. All forms of identification—biometric data, body scanning, eye scans, driving licenses, and passports—are examples of control mechanisms that violate human freedom. The novel suggests that under the guise of liberal civil order, a form of autocracy has taken hold, concentrating power in the hands of a select few. The traditional power structures, such as white and masculine supremacy, remain largely intact, even in a supposedly progressive society. The legislative measures enacted by the government in *Ink* ultimately transform a democratic regime into a totalitarian one, initially designed to oppress the marginalised but later threatening the lives of many others (Foucault 27).

The tattooed immigrants and the American-born, unmarked citizens reveal the true face of Western democracies, which, under the guise of humanism and technological progress, continue to violate the human rights of non-citizens. While atrocities committed by 'outsiders' in concentration camps without legislation may be termed as criminal, legislation itself renders authority the right to exert power. As Agamben asserts, people can be "so completely deprived of their right and prerogatives that no act committed against them could appear any longer as a crime" (110). This legal framework allows the state to use tools of exploitation, surveillance, and violence against marginalised groups, drawing a parallel to the global systems of oppression seen in the present day.

The novel critiques these systems through the division between the "inks" (immigrants with tattoos) and the non-inks (American-born, unmarked citizens), showing how this technological surveillance fosters both physical and psychological alienation. Non-inks are discouraged from

engaging with or marrying inked individuals. Biracial and multiracial activities are taboo, and even children born with hybrid identities are forced to undergo the tattooing process. In addition to the mandatory GPS implants, curfews, and segregated seating in public spaces, inked individuals face social ostracism. The situation worsens as rumors about contaminated beings heighten their marginalization. In public spaces, their used utensils are discarded, and they endure frequent physical and psychological abuses, including rape and torture, even for minor offenses. Immigrants become victims of the "one-drop-rule" ideology, which further divides society into factions such as impermanent workers, permanent citizens, refugees, and illegal immigrants. Finn, a journalist, is determined to expose the harsh realities of the inked community, while Abbie, a teenager, represents the younger generation's innocence in a corrupt system. Mari, a storyteller, reflects on the happier, pre-ink days, contrasting her current state of subjugation. Del, an artist, symbolises the creative minds suppressed under the authoritarian regime. All these characters face the oppressive consequences of modern technology, from identity crises to GPS tracking and other inhumane processes.

The issue of technology's dominance is central to the novel, as Finn and others yearn for a return to pre-ink days, free from the pervasive surveillance culture. Finn, for instance, expresses his longing: "By now pre-ink days seems as remote fantastic and fairy tales" (Vourvoulias 10). His repeated desire to return to a time before tattoos and trackers signals his deep dissatisfaction with a world controlled by technology. The imposition of technological control has restructured power hierarchies, where machines assert dominance over humans, turning people into slaves of technology. Finn's concern extends to future generations, worried that their suffering will persist. He remarks, "Well then what happens if you get married, have kids? Have you thought what it had been like to see your children tattoos and monitored like all the other inks?" (Vourvoulias 33).

This vision of the future echoes the current struggles of immigrants worldwide, such as those in the UK and the US. In 2017, the UK held a round-table conference to address immigrant issues, acknowledging the complex threats posed by organised crime and the need for advanced border security technologies like embedded chips in passports, mobile phones, or even bodies. Similarly, the US Department of Homeland Security employs electro-optical cameras, lasers, and chemical detectors to limit immigration, ensuring tighter control over borders. This increasing reliance on technology to govern immigration poses a significant threat to immigrants and their future generations, as the barriers to entry into developed nations will be reinforced by inhumane technological systems devoid of empathy or emotional connection to human suffering.

In light of the challenges faced by immigrants, it is evident that the future may not allow for the easy movement across borders as it once did. As technological surveillance and control mechanisms grow more advanced, immigrants, with GPS trackers in their bodies, will be subjected to further subjugation. Their data will be monitored, their movements tracked, and their stories silenced by an oppressive system that strips them of their agency. This creates a reality where economic migrants are bound by the constraints of technological borders, making migration not just a matter of survival but an increasingly perilous journey in a world where technology, rather than compassion, governs global relations.

This examination of the impact of technology on the identities, mobility, and rights of immigrants in *Ink* serves as a critique of the current and future biopolitical systems that seek to control and oppress marginalised communities. The question arises: In a world increasingly governed by technology, will the plight of immigrants, as depicted in the novel, become a global norm, or can humanity find a way to resist the dehumanizing forces of surveillance and control?

When Melinda and Finn converse in the hotel, their discussion underscores the growing fear and paranoia generated by constant surveillance in their society. Melinda wishes to share a story about the inked community with Finn but is cautioned by him to avoid using the landline, as their conversation could be intercepted and traced. Finn points out that their cell phones are also being monitored by authorities, and although he offers to share his mobile number to receive the data, Melinda hesitates. She fears that even mobile phones can be tracked. This conversation reflects the harsh curtailment of individual freedoms, where citizens are tethered by technology, no longer able to communicate or act freely without being surveilled.

This issue is not confined to the fictional ink community within the narrative but mirrors the growing surveillance concerns in contemporary society. As Sweeney<sup>23</sup> observes, “The familiarity of these entities emphasises the commonalities between the United States of the story world and that of the reader's own world to underscore how this fictionalised violence is heavily steeped in reality” (119). Keeping in view the condition of the depraved people across various countries, one can imagine that they will strive to go to developed countries with better economic prospects.<sup>24</sup> They have no other option except to migrate from developing countries to the developed part of the world. However, tragically, in the near future, it may not be possible to get visas and cross borders easily as the borders will be secured and protected by merciless, inhuman technology that has no emotional attachment to miserable humanity. Just as the inked community faces extreme monitoring, real-world citizens experience similar surveillance in the name of security. The film *Snowden*, directed by Oliver Stone, highlights how the U.S. government

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<sup>23</sup> Sweeney Marisol. Indelible Storyworld. *American Book Review* 41(1), 7-8. 2019 [doi:10.1353/abr.2019.0125](https://doi.org/10.1353/abr.2019.0125).

<sup>24</sup> In 2022, Pakistan's brain drain problem worsened as more than 750,000 educated individuals made the decision to go abroad due to the country's unstable political and economic environment and declining employment chances. (<https://tribune.com.pk/story/2390704/countrys-brain-drain-situation-accelerated-in-2022>)

monitors its citizens, and by extension, much of the globe, using advanced technological tools. This technological surveillance extends beyond national borders and is part of a larger trend of data hacking and cyber warfare that has escalated into an international issue.

From 2014 to 2022<sup>25</sup>, the U.S. Department of Homeland Security and the FBI warned citizens and businesses of foreign nations, particularly Russia and China, exploring vulnerabilities in global network infrastructures such as routers (National Cyber Security Centre, 2022). Such activities reflect ongoing tensions between rival nations, with Russia and the U.S. historically at odds. This digital espionage signals the rise of cyber warfare, which could lead to global instability. As the UK and the U.S. issued joint statements blaming Russia for various cyberattacks on businesses and consumers, it became evident that this type of conflict could escalate into a new form of warfare. This cyber war would not be fought on traditional battlefields but would involve the theft of sensitive data—ranging from medical records to state secrets. As such, a cyberattack could disrupt cell phones and networks, paralyzing systems and rendering critical data inaccessible.

In October 2018, the U.S. Government Accountability Office (GAO) reported that the nation's weapons systems are alarmingly vulnerable to hackers, a flaw not only caused by external cyber threats but also by internal mismanagement within the Department of Defense (GAO<sup>26</sup>). This vulnerability points to the broader issue of technological dependence, which the inked community in *Ink* also faces. As seen when Mari and Nely, attempting to escape surveillance, cut

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<sup>25</sup> <https://www.reuters.com/world/fbi-says-russian-hackers-scanning-us-energy-systems-pose-current-threat-2022-03-29/>  
<https://edition.cnn.com/2022/03/22/politics/fbi-energy-hacking-warning/index.html>  
<https://www.washingtonpost.com/politics/2022/10/17/chinese-hackers-are-scanning-state-political-party-headquarters-fbi-says/>  
<https://www.cnbc.com/2019/01/29/china-russia-could-disrupt-us-infrastructure-with-cyber-attacks-odni.html>

<sup>26</sup> <https://edition.cnn.com/2018/10/09/politics/us-weapons-report-vulnerable-cyber-attacks/index.html>

their GPS trackers, they realise that severing their connection with the authorities also severs their connection to society itself. By cutting their trackers, they no longer have a means to be located, which leaves them isolated, without communication to their families or allies.

The GPS trackers serve as both an identity marker and a form of control for the characters. Tattoos, in this world, are a marker of identity, and the GPS trackers are a way of life. As the narrative shows, these technologies are not optional; they are integral to survival. When Ted and his friends remove their trackers, it symbolises their attempt to free themselves from surveillance, but it also isolates them in a world dominated by technology. Finn and Father Tom's inability to locate Mari and Nely after the trackers are severed demonstrates the centrality of technology in their world. It suggests that in the 21st century, individuals cannot move without technology, and that technology has become an inseparable force in their existence.

A minor issue can be highlighted in a very few minutes through social media and other sources of media. Here if authorities are unable to control their secret, how can they control the public? Like Twitter and other modern features of technology, it might be possible for technology to gain control on a global level. It shows that tech and media giants can popularise or depopularise a person very easily. When Donald Trump, an American president, is defeated in an election, he starts a campaign on Twitter, and thousands of Americans come out to protest. He has been sending messages through Twitter and instigating the people not to accept the results, but his movement died down when Twitter banned his account for being "in violation of the Glorification of Violence Policy".<sup>27</sup>

This technological domination is also portrayed in the disturbing scene where Ted exploits the cover of night to rape Mari. The next morning, Ted's friend scans Mari's tattoos to determine

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<sup>27</sup> <https://www.bbc.com/news/world-us-canada-55597840>



whether she is a permanent or Ink citizen. The scan becomes a tool of oppression, as Mari is threatened with exposure of her true identity to the authorities. Ted's friend coldly tells her, "You could report us, but you won't. Funny thing about inks, you don't trust cops or authority figures even when you're on the right side of the law" (Vourvoulias 50). This chilling exchange underscores how technology, far from providing protection, can be used to conceal heinous crimes, such as rape, by manipulating the very systems that should ensure justice. In this context, the use of scanners becomes a tool for the perpetuation of violence, as the Ink community is further victimised by systems that were initially designed for surveillance and control.

The example in *Ink* reflects broader concerns about the potential for technology to perpetuate inequality and injustice. As surveillance systems, biometric scans, and data tracking become more advanced, the capacity for abuse also grows. What was once seen as a tool for safety and security becomes a means of exerting control over vulnerable populations, making it increasingly difficult to escape from a world governed by digital surveillance. The characters' inability to move freely due to the mandatory scanning of their tattoos at checkpoints highlights the psychological and physical suffering they endure under constant surveillance. As Abbie, Meche, and Finn travel toward Bedford to find their companions, they are stopped by the police, who check their tattoos through scanners. Both Abbie and Meche express their apprehension about the check-posts and the invasive process of tattoo scanning. The process serves as a form of control, limiting their autonomy and reinforcing a system of dehumanization. The tattoo serves as a marker of identification and, ultimately, as a tool for societal control. When they reach Bedford, their journey is further hindered by protests against tattoos and the scanner rooms, which are seen as instruments of oppression. Meche mentions that 15 communities are affected by the "tracker rooms," illustrating the widespread resistance to this invasive technological system. The

installation of chips into their bodies is described as inhumane, with even young children subjected to the painful and intrusive process. Abbie's reflection encapsulates the exhaustion and frustration experienced by those who are forced into this system: "I'm tired of the instaskin, the ban on everything that makes you what you are, the worry that someday Gus will be found out and have to wear that goddamned tattoo. I'm tired, and it's time" (Vourvoulias 223). This statement expresses not only the personal suffering of the characters but also their yearning for a return to the life they had before the tattoos and technological control.

The theme of technological control extends beyond the tattoo scanners in the novel. During their journey, Finn introduces Ag, a photographer who hacks the tweets of authorities controlling the protestors. The authorities' failure to control the mob is due to their inability to control the flow of information in the digital age. Ag's ability to expose the truth before the authorities can react demonstrates how modern technology, especially social media, has empowered individuals and grassroots movements to challenge those in power. The role of technology in shaping public opinion is significant; it can elevate or dismantle movements almost instantaneously. A real-world parallel can be drawn to former President Donald Trump's use of Twitter to galvanise his supporters after his defeat in the 2020 U.S. presidential election. Trump's campaign of misinformation and the subsequent protests were only halted when Twitter banned his account for violating its policies on the glorification of violence. This scenario illustrates how tech giants like Twitter hold the power to both amplify and suppress public discourse, showing the power and danger of technological platforms.

The use of security cameras in the novel further highlights the pervasive control exerted over individuals. The characters, especially girls like Peno, Abbie, Neto, Relia, and Carlor, are made to feel insecure by the presence of cameras, even in private spaces such as changing rooms.

Amnesty International<sup>28</sup> has argued that surveillance breaches human dignity by infringing on personal privacy, and this sentiment is reflected in the characters' distress. The installation of cameras for the purpose of monitoring their movements strips them of autonomy and adds to their sense of being watched, even in the most private moments. This technological surveillance has caused a breakdown in the concepts of morality and personal freedom, as privacy is no longer a right but a luxury.

*Ink* explores the consequences of a posthuman future where technology is used not to enhance human life but to suppress it. The slogan “don’t let the future be written for you” (Vourvoulias 259) serves as a warning against the unchecked proliferation of surveillance and control technologies. The characters in the novel mourn the loss of their autonomy, lamenting that the technological advancements promised to elevate human life have instead led to its degradation. The experience of posthumanism in *Ink* does not resemble the ideal of human enhancement envisioned by technophiles but instead reveals a dystopian society where human dignity is violated through surveillance, technological control, and the marginalization of the tattooed population. The novel raises crucial ethical questions about the relationship between technology and humanity, exploring how the extension of human capabilities through technology can result in greater vulnerability and dehumanization rather than liberation.

In *Oryx and Crake*, *Moxyland*, and *Ink*, the tension between the enhanced and unenhanced individuals forms a central axis through which the human condition is interrogated. The dichotomy between these groups exposes the ethical, social, and psychological fractures within posthuman societies, revealing how technological advancements either exacerbate existing inequalities or create new forms of alienation, control, and dependence.

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<sup>28</sup> <https://www.amnesty.org/en/latest/education/2019/01/learn-how-to-protect-yourself-online-and-promote-digital-security/>

In *Oryx and Crake*, the enhanced—represented by Crake’s genetically engineered Crakers—are stripped of their emotional and moral complexity. Their perfection, devoid of empathy, vulnerability, and ethical reasoning, symbolises a posthuman ideal that rejects the fundamental elements of the human condition. Through Snowman, the unenhanced survivor, Atwood contrasts the emotional and intellectual depth of human experience with the shallow, mechanised existence of the Crakers. The Crakers’ perfection, while biologically enhanced, comes at the cost of their humanity—an essential element of identity, dignity, and agency. Snowman’s struggle with memory, guilt, and existential longing underscores the enduring relevance of unenhanced human qualities—qualities that the Crakers, despite their superior design, cannot possess. In this sense, Atwood critiques the posthuman notion of perfection, suggesting that the loss of humanity in the quest for enhancement leads to moral decay and existential crisis.

In *Moxyland*, the contrast between the enhanced and unenhanced is starkly evident in the corporate-controlled, tech-saturated world of posthuman South Africa. Characters like Tendeka, who remains unenhanced, are relegated to a marginalised status, excluded from the privileges granted to those who submit to corporate surveillance and genetic upgrades. The enhanced characters, who have embraced technological modifications, occupy positions of power and privilege, but their identities are increasingly fragmented by surveillance, commodification, and the pressures of technocratic governance. In a world where identity is increasingly digitised and commodified, the unenhanced are pushed to the fringes, while the enhanced are reduced to mere extensions of the corporate state. Beukes highlights the ethical and moral implications of this technological stratification, where the unenhanced are denied the agency to shape their futures, while the enhanced are trapped in a cycle of conformity and corporate control. The novel

underscores the social and political costs of technological enhancement, questioning whether such advancements truly enrich human experience or merely deepen societal division.

In *Ink*, the condition of the enhanced and unenhanced is framed through the racialised experiences of immigrant bodies subjected to biometric surveillance and technological borders. The enhanced, often through the imposition of tattoos or genetic modifications, become symbols of state control and exclusion. The unenhanced immigrant bodies, marked by their lack of technological integration, are subject to constant surveillance, stripping them of their autonomy and identity. Vourvoulias presents a biopolitical critique of technological borders that divide individuals into categories of worth, privileging the enhanced while marginalizing the unenhanced, whose bodies are marked as objects of surveillance and control. The unenhanced, in this case, are not only defined by their lack of technological enhancement but also by the racial and political structures that determine their access to dignity, belonging, and agency. Through this lens, Vourvoulias critiques the intersection of race, migration, and posthuman technology, emphasizing the vulnerability of the unenhanced as they navigate a world where technological enhancement becomes a tool of exclusion and oppression.

In all three novels, the condition of the enhanced and the unenhanced reveals a fundamental tension between freedom and control, autonomy and dependence. The enhanced may possess superior physical or cognitive abilities, but these advancements often come with the loss of critical aspects of the human condition—empathy, morality, and ethical reasoning. Conversely, the unenhanced, while retaining these core aspects of humanity, are marginalised, oppressed, and subjected to the harsh realities of technocratic and biopolitical systems. The novels raise critical questions about the ethical consequences of posthuman enhancement, suggesting that while technological progress may promise transcendence, it also risks dehumanization, inequality, and

the erosion of the very qualities that make us human. The contrast between the enhanced and unenhanced in *Oryx and Crake*, *Moxylant*, and *Ink* underscores the complexities of the posthuman world. These works challenge us to reconsider the meaning of humanity in an age of technological transformation, emphasizing that the true cost of posthuman enhancement may not lie in the loss of physical or cognitive abilities, but in the erosion of the ethical, emotional, and social dimensions of the human condition.

## Chapter 5

### **Evolved and Unevolved: Navigating the New Human Condition in a Machine-Driven World**

The previous chapter examined science fiction where human characters employed technological and biotechnological enhancements to assert control over others—their fellow humans or genetically engineered beings. In most cases, dominance remained somewhat in human hands except in *Oryx and Crake* where Crake's release of a deadly virus brings apocalypse that dismantled human supremacy altogether. Yet even in this radically altered world, the posthuman figures like the Crakers retain vestiges of humanity. Despite their genetic design, they exhibit familiar traits—emotional responses, social behaviors, and physical characteristics—that maintain a symbolic continuity with the human.

In contrast, the texts analysed in this chapter show a more profoundly intricate posthuman condition. The characters do not simply coexist with human-like hybrids, but instead navigate worlds filled with technologically evolved entities—cyborgs, monstrous hybrids, sentient nonhumans, beings with high consciousness and other uncanny posthuman forms. These beings often diverge radically from human norms, not only in physical form but also in cognitive abilities. As a result, the narrative focus shifts away from questions of human control or continuity, turning instead toward the fragility of human identity and embodiment in environments where humans are no longer central. This chapter explores the condition of human vulnerability, estrangement, and affective disorientation within these altered ecologies and foregrounds the ethical and existential tensions that arise in the face of nonhuman technological life.

In *Borne*, Jeff VanderMeer envisions a dystopian posthuman future where unchecked biotechnological experimentation by a corporate entity known only as “the Company” has

devastated the environment, obliterated social order, and fractured human subjectivity. This speculative landscape mirrors the core problem of the human condition in the posthuman world: the dissolution of stable identities and moral agency in a world dominated by non-human forces. As VanderMeer describes, “The Company had come to the city unbidden, when the city was already failing and had no defenses against the intruder” (24). Initially perceived as a redemptive force, the Company ultimately betrays its promises, transforms into a symbol of control, exploitation, and decay. The physical remnants of the Company—its rusted buildings and abandoned warehouses—serve as monuments to the ethical failure of corporate biotech, reinforcing hierarchical domination and human disposability: “In that tangled mass of warehouses and rusted industry lay every excuse and promise of a death foretold” (91).

This setting reveals how posthuman technologies erode human identity and dignity, especially for those unenhanced or marginalised. In the novel, the survivors live in a perpetual precarious state, stripped not only of material stability but also of coherent identity. The chaos of the world dislocates them from history and moral direction as the narrator observes, “The young were often the most terrible force in the city...They had no memories of the old world to anchor them or humble them or inspire them” (30). Here, memory—the foundation of individual and collective identity—is rendered obsolete, and it problematises the human condition by detaching people from their ethical and historical frameworks.

VanderMeer’s inclusion of “memory beetles”—biotechnological devices that allow users to sympathetically experience joyful or meaningful moments from others’ lives—symbolises the replacement of authentic experience with simulated one. The human condition becomes increasingly mediated through posthuman technologies that offer temporary emotional escapism while deepening existential disconnection because these memory beetles are external to human



body. They are not organically linked to them. These beetles serve as coping mechanisms for trauma but also highlight the loss of agency and belonging in the posthuman city. Instead of confronting or processing their fractured realities, individuals turn to simulacra. It suggests that posthuman technologies not only fail to heal but often intensify psychological and social fragmentation. This addresses the third and fourth research questions, emphasizing how attempts to overcome vulnerability through enhancement lead to new dependencies and ethical consequences, especially for those resisting integration.

*Borne* illustrates the profound tensions at the heart of the posthuman condition: a world where technological omnipresence does not elevate humanity but instead renders its foundational traits—memory, identity, moral clarity—increasingly obsolete or inaccessible. The novel critiques the techno-centric future by showing how enhancement and control mechanisms, though promising liberation as imagined by Kurzweil and Bostrom, often result in deeper inequality, alienation, and the erosion of what it means to be human.

### **5.1 Fractured Ontologies, Religious Echoes and Symbolic Longing in *Borne***

Although Jeff VanderMeer's *Borne* presents a world devoid of institutional religion, remnants of spiritual longing and symbolic interpretation remain embedded in the ruins of the human condition. In the aftermath of biotechnological collapse, humanity clings to quasi-religious structures to interpret and cope with the chaos. The figure of the Magician, with her aura of authority and manipulation, is revered by some as a divine or prophetic presence. Her use of advanced biotechnology and cryptic messaging underscores her performative godlike role: "She left signs and symbols everywhere" (VanderMeer 91). In a city overrun by synthetic creatures and hybrid monstrosities, these signs suggest a desire for order or divine intention amidst the disarray—a form of technotheological symbolism replacing traditional belief systems.

This behaviour demonstrates the persistence of symbolic thinking and moral anchoring even in the fractured, posthuman world. The followers of Mord, a giant flying bear genetically engineered by the Company, interpret his destructive presence through an apocalyptic, near-Biblical lens. Rachel notes, “Once, comets had appeared in the heavens... Now we had Mord, and salamanders” (17). This comparison highlights a persistent human need to invest meaning into external phenomena, connecting the unknowable with inherited interpretive frameworks. The novel thus critiques the posthuman world as one where religious structures along with human agency and identity collapse but symbolic longing persists and reflects a fractured form of identity and moral agency. The prevailing situation throws light on how the posthuman world reshapes notions of identity and social belonging through the reinvention of symbolic and spiritual structures. In the absence of religious gods, technology has acquired the status of them as in Atwood’s depicted world Crakers long for knowing their creator.

However, mere longing for religious symbols does not solve the anxieties and problems of the human characters. The symbols that populate *Borne*—Mord, the Magician, the genetically altered creatures—do not offer redemption. Instead, they underscore grotesque transformations and deepening despair. The biblical framework invoked here is inverted: instead of salvation, there is only decay. This subversion reflects the existential crises central to the argument of the thesis, where technologies become tools of suppression, and religious longing becomes distorted in the absence of human coherence. The scantily surviving human characters strive to build meaningful relationship with the bio-engineered creatures but the attempts of Rachel often go futile. The desire for a cultural or spiritual centre—so central in texts like *Oryx and Crake*—also emerges here but is left unsatisfied. In its place is monstrosity, surveillance, and domination and it reinforces the bleakness of the posthuman landscape.

The novel presents a society where the posthuman condition has not abolished the need for meaning but has instead redirected it toward hybrid icons and techno-apocalyptic visions. These distorted forms of belief highlight the ongoing struggle of unenhanced humans to locate identity and moral orientation in a world where traditional values have been replaced by biotech dominance and artificial symbolism. The narrative constructs a bleak biotechnological landscape populated by hybrid entities that blur the boundaries between the divine, the monstrous, and the posthuman. Figures such as Mord, the Duck, and Behemoth embody terror and death, while others like the blue fox, the Trio, and Borne himself exist as uncanny hybrids—neither entirely threatening nor clearly redemptive. These characters do not conform to traditional notions of deity or moral uniqueness, yet they carry a superhuman, semi-divine aura that gestures toward a transformed cosmology. Their grotesque and mutable forms resist easy categorization and the posthuman condition in which established binaries such as human/inhuman, divine/demonic, and natural/artificial have collapsed.

This shifting symbolic order aligns directly with the study's focus on how posthuman technologies reshape identity, agency, social belonging and human condition. The hybrid figures represent a new hierarchy where power derives from genetic and biotechnological manipulation, not ethical authority or transcendence. Their emergence marks a loss of redemptive frameworks and highlights the existential ambiguity of posthuman identity.

Mord, in particular, serves as a parodic embodiment of divine wrath. His rampages mirror the God of the Old Testament, especially in violent texts such as Samuel 15:2–3 or Joshua 6:21, where divine command entails the destruction of entire nations. However, unlike biblical narratives where violence often serves a higher moral or covenantal purpose, Mord's destruction lacks any such justification. He becomes a grotesque caricature of divine omnipotence, with his

victims reduced to “a red mist” (VanderMeer 99). The Mord proxies, equally remorseless, intensify this parody: “a chaos of viscera and exposed bone” (165) marks their passing, suggesting not justice but pure, mechanised eradication.

This imagery reflects a posthuman world in which divine power is refigured as biotech horror—a world where technological domination has replaced spiritual authority. It illustrates how technological power reinforces new forms of violence and hierarchy and suppresses human dignity and ethical complexity. The god-like biotech entities do not inspire awe or reverence but fear and submission, contributing to a society where traditional moral agency is eroded and replaced by brute, inescapable force. In this way, *Borne* interrogates not only the transformation of the human condition but also the reinterpretation of divinity itself in a posthuman world. These figures do not offer salvation; rather, they reflect a terrifying future where monstrosity becomes the new sacred and human vulnerability remains unredeemed.

Jeff VanderMeer employs rich Biblical and apocalyptic imagery to frame Mord not just as a monstrous creature but as a pseudo-divine ravager whose downfall marks the end of an unstable faith in the posthuman power. Mord’s relentless destruction of the city parallels Old Testament passages that associate desolation with divine wrath, such as Leviticus 26:31—“I will lay your cities waste and bring your sanctuaries to desolation”—and Ezekiel 35:4—“I will lay your cities waste, and you shall be desolate.” These verses resonate with Mord’s transformation of the city into a landscape of ruin, where biotech creations roam freely and human life is on the brink of extinction. Like the beasts in Daniel 7 or the monstrous agents of divine wrath in Revelation 16 and 17, Mord’s presence invokes fear and signals a theological crisis. The condition tells how posthuman monstrosity replaces traditional sacredness.

When Mord's flying power wanes and his cult begins to dissolve, the text signals the collapse of a godlike figure and the faith built around him: "God was God no longer" (VanderMeer 198). This moment reveals the precariousness of belief systems in a world where divinity has been hijacked by biotechnological excess and fear. In the posthuman condition where traditional theological and moral frameworks have broken down, faith becomes a form of desperate meaning-making. Such situations show how posthuman beings both reconfigure moral and existential paradigms and serve as tools of symbolic control over diminished human communities.

The final confrontation between Mord and Borne evokes the grand apocalyptic imagery of Revelation 19, a climactic battle between monstrous powers that redefines the boundaries of cosmic order. Rachel's description—"so epic you don't know how to place them in the cosmos" (311)—emphasises the existential disorientation that characterises the posthuman world. These epic struggles no longer function within redemptive or eschatological frameworks but instead reflect the monstrous sublime—power without purpose, conflict without closure. In this way, *Borne* not only critiques the techno-centric posthuman future but also reveals how such futures distort and fragment the human condition, leaving behind symbolic residues of a lost theological structure.

## **5.2 Technological Monsters and the Collapse of Fixed Identity**

The biotechnological innovations engineered by the Company illustrate the terrifying scope of posthuman science gone awry. From memory beetles that alter perception, to predator cockroaches designed for warfare, and diagnostic worms that gather internal biological data, these organisms underscore the Company's instrumentalization of life for control and profit. However, the apex of this technological mutation is Mord—a colossal, flying bear that guards the Company and eventually becomes its most uncontrollable creation. Mord's immense size and unpredictable

behavior mark the extremity of posthuman experimentation and it symbolises both technological hubris and apocalyptic fallout. As long as the Company maintains power, Mord is a regulated force; but with its collapse, he becomes a chaotic agent of destruction and disrupts the fragile remnants of human society (VanderMeer 24, 91, 99). In this decaying world, Rachel and Wick, two human survivors living in Balcony Cliffs, cling to life amid scarcity and danger and it represents humanity's fragmented condition in a world dominated by hybrid entities.

The emergence of Borne—a strange, shape-shifting organism—complicates notions of identity, autonomy, and relationality. Borne cannot be categorised within familiar binaries; it shifts forms, blurs the lines between plant, animal, human, and non-human. Rachel, upon discovering this entity, names it “Borne” in an attempt to make sense of its ambiguous gender and form (VanderMeer 7–9). As Borne learns language and begins to question its own existence—“Was I a person?” “Was I evil?”—Rachel responds with maternal affection that projects human desires onto a being that exists beyond human categories (104–06). Her emotional investment in Borne reflects the human need for connection in the posthuman reality that has erased traditional family and community structures. The creature becomes a surrogate child who fills the emotional void left by the collapse of society. Yet Borne's inability to reciprocate fully, combined with its unknowable nature, reveals the limits of projecting human emotions onto posthuman entities. Wick, in contrast, remains skeptical, distances himself from synthetic beings and it symbolises a refusal to integrate into a world that no longer follows human logic.

Rachel's role as Borne's surrogate mother initially appears to offer a redemptive human bond amid a devastated posthuman world. She showers Borne with affection and zealously protects him, attempting to raise him “like a normal boy” within the relative sanctuary of the Balcony Cliffs (VanderMeer 77). Her effort, however, fails in the face of Borne's indeterminate

identity and insatiable curiosity. Borne, entangled in both human and nonhuman categories, cannot grasp what he truly is. His existential confusion—"I am not human. I am not human. I am not human. Rachel says I am 'he.' Am I he, she, or both or neither? I am a person . . . I am not/intelligent" (76, 184)—lays bare the crisis of identity at the heart of posthuman subjectivity. VanderMeer's depiction complicates any simple binary of human versus nonhuman by dramatizing Borne's protean existence, one that lacks clear ontological anchoring and defies traditional categories of gender, morality, and personhood.

The horror of this ambiguity dawns on Rachel when she suspects Borne may have impersonated Wick and violated intimate boundaries—possibly caressing or sleeping with her while disguised. This breach of bodily and emotional trust is shattering. Rachel's reaction signals the fundamental importance of ethical consistency and selfhood in maintaining human relationships. As Fukuyama argues, "with a change in nature comes a change in morality and moral values," which are essential to human society (83). Borne's shapeshifting abilities and capacity to steal memories destabilise not only identity but also the moral codes embedded in trust and reciprocity. His impersonations leave both Rachel and Wick disoriented, for Borne's existence exposes the fragility of personhood in a world unmoored from the traditional boundaries that govern ethical interaction.

This state shows how the posthuman technologies disrupt identity formation and reshape social bonds. Rachel's nurturing of Borne reflects a desperate attempt to recreate belonging and agency, while Borne's own existential confusion mirrors the ontological instability of beings created outside human frameworks. The ethical and emotional ambiguities surrounding Borne's presence highlight the difficulty of reconciling posthuman beings with traditional understandings

of the human condition, especially when vulnerability and care are repurposed in non-human forms.

As Borne matures and grows to human size, his character paradoxically becomes more alien, not less. This transformation highlights the instability of identity in the posthuman contexts, where familiarity breeds not comfort but estrangement. Though Borne learns to speak and exhibit human behaviours, Rachel remarks that he appears most uncanny precisely when he most resembles a person: “a six-foot hybrid... He never looked so alien as he did in that moment” (76). His outward humanization reveals an inner dissonance and it emphasises his persistent incomprehensibility. Described by Rachel as embodying “randomness, ambiguity and disorder” (26), Borne defies all anthropocentric categories. His inability to understand death, despite his cognitive advancement, exposes the limits of artificial intelligence and the posthuman empathy: “there was no death, no dying” (222). Borne is thus not merely an artificial being with human features but a fluid, alien presence that disorients traditional ethical and ontological categories.

From the posthuman theoretical lens, Borne exemplifies what Rosi Braidotti describes as a “posthuman subject” shaped by relationality, contingency, and becoming (Braidotti 136). He resists fixed identity and operates instead as a constantly evolving entity whose very form is in flux. Deleuze and Guattari’s notion of “creative involution”—a process of non-linear, non-teleological becoming—captures Borne’s trajectory (262). His shifting morphology and adaptive nature allow for “transversal communication” that bridges distinctions between human, animal, plant, and machine. Borne’s lack of understanding of human finalities like death marks a key boundary between biological humanity and the posthuman life. In bypassing death and traditional temporality, he redefines what it means to exist and signals a movement away from human-centered narratives of identity, purpose, and mortality.



Borne embodies how technological beings can simultaneously absorb and transcend human ethical frameworks. He like Crakers is unable to build proper communication with Rachel. His ambiguous identity challenges human attempts to define personhood, while his lack of understanding about death destabilises the moral and emotional codes that underpin human society. By representing a being in constant transformation, Borne dramatises the profound difficulty of locating selfhood or ethics in a posthuman world where life, death, and individuality are no longer stable categories.

### **5.3 Hierarchies and Control, the Ethics of Unconsented Enhancement**

Mord, the colossal biotech creature, functions as both an apocalyptic threat and a symbol of the irredeemable consequences of technological excess. Engineered by the Company to suppress dissent and maintain control, Mord ultimately escapes this purpose, becoming instead a force of unrelenting chaos: “Mord would transform from their watchdog to their doom” (4). His presence permeates the desolate, post-apocalyptic landscape, and incarnates the terror of unchecked technological ambition. Rachel’s description of Mord’s destruction as “the most miraculous true thing” (158) testifies to the awe-inspiring and mythic nature of his violence. As both a spectacle and an existential threat, Mord transcends narrative embellishment to become the embodiment of a living nightmare—a hybrid of biotech engineering and ancient, god-like wrath.

Mord's terror is not merely physical but psychological; he is referred to as “the purest reflection” of the ruined city (111) that represents the deep ethical and spiritual decay of its creators. He is a creature of “greater darkness,” whose origin in human design turns the spotlight back on humanity’s own monstrous capabilities. The Company's manipulation of biotechnology for control and suppression is vividly realised in Mord, whose rebellion against his creators illustrates the failure of posthuman aspirations to regulate enhanced beings. His posthuman

condition—augmented strength, unnatural size, semi-divinity—marks a departure from any stable notion of personhood or morality.

Yet, *Borne* complicates the trope of the monstrous other by allowing fleeting glimpses of humanity within Mord's terrifying form. Rachel's observation that he may have "once... been human" (160) introduces ambiguity into his otherwise inhuman portrayal. This potential trace of a human past complicates the binary between monster and man, recalling Judith Butler's assertion that even the most abject beings may carry the "ghost of recognizability" (Butler 43). Mord thus serves not only as a symbol of destruction but also as the posthuman figure haunted by the remains of human identity, raising questions about the possibility of ethical being after total transformation.

Mord represents a being whose identity is shaped not by ethical development but by biotechnological manipulation and the legacy of domination. His uncontrollable violence reflects the consequences of the posthuman enhancements divorced from moral frameworks. Mord's transformation into a living weapon created by the Company underscores how advanced technologies can reinforce hierarchical structures and threaten autonomy. Finally, Mord's semi-divine aura and mass destruction illustrate the use of posthuman bodies as tools of terror and domination, reinforcing how control mechanisms in dystopian futures often backfire, intensifying the very chaos they sought to contain.

Human existence is pushed to its margins—symbolically and spatially confined to Balcony Cliffs—where Rachel and Wick cling to survival amid overwhelming biotechnological threats. The city's landscape, now ravaged by biotech terror, positions the last remaining humans "between a rock and a hard place," with Mord's destructive presence looming on one end and the Magician's militarised biotech army on the other. The Magician, a former Company employee, amasses control through "feral children"—genetically enhanced beings who act as her private militia—and

through deadly biotech weaponry, threatening to claim what remains of the city. These figures are not merely antagonists but embodiments of how biotechnology erodes the basis of human community, empathy, and relationality.

The violent presence of Mord and his “proxies,” the killer bears, already suggests that technology has bred uncontrollable entities that turn against their creators. However, the more harrowing danger emerges from modified beings who no longer retain any sense of kinship with unaltered humans. VanderMeer’s description is chilling: “Other than Mord, the poison rains, and the odd discarded biotech that could cause death or discomfort, the young were often the most terrible force in the city. Nothing in their gaze could tell you they were human” (388). These “young” beings—products of unrestrained enhancement—epitomise the alienation and ethical disintegration that posthuman modification enables.

Francis Fukuyama’s warning in *Our Posthuman Future* that biotechnological advancements may sever ethical foundations and collective human identity finds vivid representation in *Borne*. The genetically engineered children and Magician’s followers have no memory of a human past, no inherited values, and no emotional capacity to form intersubjective bonds. Their severance from human memory and shared history renders them incapable of forming a society based on mutual care, ethical obligation, or even recognition of others as human. As such, the novel dramatises the collapse of a moral community when biotechnology dislocates identity from memory and ethics from embodiment.

This analysis demonstrates how hierarchical structures are reinforced through technological modification: the feral children and killer proxies embody systems of control and exclusion, asserting dominance over natural humans. The engineered beings represent the unintended consequences of attempting to transcend human vulnerability through modification—

only to produce entities that have lost their capacity for empathy. These beings function as instruments of control and terror illustrate how posthuman technologies serve not as liberating tools, but as enforcers of domination in a fractured world.

The novel problematises the relationship between creators and their creations, offering a bleak vision of a world in which creation has eclipsed its makers. The Company, once the central force behind biotechnological innovation, has vanished, leaving behind autonomous and often monstrous creations with no accountability or origin. This absence ruptures traditional notions of authority and purpose. Borne, in a moment of existential anxiety, reflects on his artificial origin as a “made thing”—a biotechnological entity who possesses feelings akin to humans but lacks any certainty of personhood or belonging (847). Rachel, by contrast, is biologically human, yet their emotional bond complicates the binary of human and machine. Rachel's acceptance of Borne as a “person” marks a rare instance of posthuman relationality founded on empathy rather than control, echoing Nayar’s argument that “posthuman ethics begins with affect and interdependence rather than autonomy and origin” (Nayar 123).

Yet outside this singular relationship, most connections in the novel are governed by domination, alienation, or coercion. Mord, though created by the Company, rebels against his creators and becomes their executioner. His relationship with his killer proxies is void of attachment or communication, defined solely by instinct and destruction. Similarly, the Magician’s bond with her “feral children” mirrors a master-slave dynamic. These children, once human, are forcefully transformed through biotech without consent, stripped of identity and agency. They do not choose posthumanity; it is imposed upon them. Their obedience is secured through control, not kinship, this example reinforces the technophobic fears that the posthuman technologies may

lead not to emancipation but to new forms of bondage. The forced transformations violate not only individual agency but also the ethical integrity of humanity itself.

The fate of Teems—a “willow-willed” boy traded for biotech machinery—exemplifies how biotechnology commodifies life. He becomes an expendable object in a profit-driven system that values enhancement over existence. Such transactions mark the erosion of moral community and reveal the cost of uncritical progress. The novel seems to criticise the techno-utopian promise that posthumanism will liberate humanity from its limitations. Instead, it presents a dystopian inversion in which the shift from humanism to posthumanism leads to fragmentation, loss, and dehumanization. As Lewis notes in reviewing the novel, *Borne* “makes readers question their own relationships, the reality of trust, and the nature of family in a devastated world”. The world of *Borne* thus becomes a cautionary allegory, showing how unchecked technological advancement can obliterate the very foundations of freedom, dignity, and mutual responsibility.

#### **5.4 The Ecological Collapse and the Human Connection in a Posthuman World**

The anonymous city where Rachel and Wick barely survive is a stark aftermath of ecological devastation and reckless biotechnological experimentation. Once a hub of innovation, the city now lies in ruins, overrun by the unfinished creations of biotech manufacturers. These “scientifically enlightened creatures” have turned against their creators and brought about era of annihilation where hybrid lifeforms swarm the earth and human presence is all but extinguished. As Horkheimer and Adorno famously wrote, such monstrous byproducts of science are “radiant with triumphant calamity” (1), emblematic of a civilization that has allowed technological mastery to surpass moral responsibility. Wick, a former employee of the Company—responsible for manufacturing drugs, weapons, and organisms—now lives a diminished life, trading drugs with scattered survivors. His own body, infused with diagnostic and healing worms, signifies the

intimate infiltration of biotech into human life, yet this enhancement proves futile when faced with Mord's overwhelming posthuman power. Clarke aptly captures this condition and comments that "the nonhuman is explicitly the posthuman when what comes after the human involves the elimination or replacement of the human" (147).

The novel seems critical of this uncritical embrace of science and highlights its ecological and existential toll. The climate catastrophe that haunts the narrative recalls the decimated world of *Oryx and Crake*, where blind allegiance to scientific innovation results in irreversible planetary damage. In *Borne*, the consequences are similarly grim. Rachel, a refugee from past destruction, finds herself in a space that offers no safety—only the illusion of sanctuary in the Balcony Cliffs, where she and Wick are like "grass crushed in the fight of elephants." The metaphor captures their utter powerlessness amid the larger struggle between Mord, the Company's rogue monstrosity, and the Magician, a biotechnician armed with biotech weapons and feral children. Mord's name itself, phonetically linked to *mort* (death) and *mordre* (to bite), encapsulates his dual function as devourer and destroyer who embodies the fatal legacy of scientific overreach.

VanderMeer's narrative questions the techno-utopian rhetoric that glorifies scientific advancement without acknowledging its ethical failures or long-term repercussions. While the promise of technological elevation is not inherently negative, the novel exposes the dangers of showcasing only the utopian surface shown by technophiles who conceal the darker realities beneath. As Fukuyama warns, many neuro-enhancement drugs and biotechnologies are aggressively marketed for profit, with their side effects either omitted or obscured in fine print. In this sense, *Borne* stands as a cautionary tale—a critical examination of posthuman futures shaped not by wisdom and foresight, but by profit-driven ambition and ecological amnesia.

In the desolate world of *Borne*, Rachel's sole solace lies in her evolving relationship with the biotech organism Borne, whose companionship becomes the only thread tying her to a sense of humanity. Her emotional reliance on Borne reveals a fundamental truth often neglected by the techno-scientific paradigm: that humans, at their core, yearn for love, community, and connection. The synthetic creation cannot fully satisfy this need of humanity. Rachel clings to Borne as one might cling to the last hope for survival, a fragile yet radiant symbol of emotional continuity. Borne's childlike mimicry, joyful curiosity, and linguistic play—his words arriving “in a kind of mellifluous burble” (38)—enchant Rachel and temporarily restore meaning amidst collapse. In this post-apocalyptic wilderness, biotech appears almost redemptive, but only when it supports rather than supplants human relationships and emotional depth. Rachel, the last outpost of *Homo sapiens*, finds in Borne a reflection of what it means to be human, even if that reflection is unstable and deceptive.

Nonetheless this companionship is ultimately illusory. Borne's increasing sentience destabilises the boundaries Rachel tries to preserve. Her efforts to instill personhood in him backfire: the more she educates and nurtures him, the more alien and uncontrollable he becomes. This unsettling shift underscores how the concept of “the human” becomes porous in the posthuman environments, where the distinction between person and non-person continually mutates. To technophiles, Borne may represent the pinnacle of human aspiration—the achievement of enhanced intelligence, consciousness, and adaptability. Advocates of such technological evolution argue that breaking these boundaries fulfills humanity's age-old quest for self-transcendence. However, *Borne* tempers this techno-utopian ideal with profound ethical skepticism. Rachel's failed attempt to humanise Borne reveals how biotech, in pursuing progress,

may instead erode the very capacities—empathy, memory, vulnerability—that define human subjectivity.

Francis Fukuyama warns against precisely this danger. He expresses deep concern that unchecked advancements in biotechnology, driven by capitalist hegemony and a lust for power, could lead to outcomes that threaten human dignity and freedom (172). Without rigorous ethical oversight, such enhancements may turn into tools of control, distortion, or destruction. VanderMeer's ambiguous stance reflects this tension: while Borne's evolution carries moments of warmth and wonder, the broader dystopian setting—the biotech-ruined city, the emotional desolation, the dehumanised lifeforms—serves as a bleak commentary on scientific overreach. In the end, *Borne* not only interrogates the fragility of love in a posthuman age but also suggests that replacing or reprogramming personhood may irreversibly rupture the moral and emotional fabric of human existence.

Borne's exile from the Balcony Cliffs is thus not merely a personal or emotional response but a necessary boundary-making act. He is an exceptional creation—vivid, intelligent, and possibly sentient—yet ethically incoherent and ontologically threatening. His presence represents the collapse of the moral architecture upon which human society depends. As Ghosh notes, the Anthropocene era is marked by “inescapable continuities” between the human and nonhuman (62), but VanderMeer complicates this vision. The disruption of ontological and ethical boundaries does not yield harmony; rather, it produces existential vertigo and social chaos. Rachel's final disillusionment underscores the tragedy of misplaced hope in biotech's capacity to replicate or restore humanity. Her desire to humanise Borne—like many transhumanist visions of enhancement—is thwarted by the inescapable truth that personhood is not merely a matter of intelligence or form, but of moral orientation and shared human vulnerability. Wick's persistent



suspicion of *Borne* reflects an insider's understanding of biotech's potential to create entities that challenge the very foundations of human society.

VanderMeer constructs a haunting posthuman landscape that exemplifies what Bolton terms the "posthuman Gothic," a genre where terror emerges from the uneasy fusions of human and technological life. As Bolton writes, the posthuman Gothic "finds instances of terror and horror arising from the interfaces and integrations of human and technologies; specifically, in the inevitability and exigency of these unions as a matter of the continued existence of the human subject reconstituted as posthuman" (2). *Borne*, Mord, and other biotech entities populate a world that is teemed with hybrid monstrosities, yet what is most terrifying is not their otherness, but their origin: they were once human. This revelation underscores a dystopian irony—humans are the architects of their own monstrous futures. The specter of these 'becomings' looms large, revealing biotechnology as both a tool of transformation and a harbinger of species-level destabilization. In such a scenario, as Fukuyama warns, the manipulation of human nature may push individuals beyond the threshold of what can still be recognised as human (154).

The latent threat in *Borne* becomes evident when Rachel and Wick enter a deserted company building in search of Wick's medicine. Inside, they uncover a mysterious hole, unearthed by the elusive foxes, who are perpetually engaged in a battle with Mord and other creatures for control over the area. While the foxes' primary aim seems to be the capture of the place, their true agenda remains enigmatic. Rachel ventures through the hole and encounters a cryptic "Hall of Mirrors," a space that evokes both fascination and foreboding. Within this hall, a "wall of silver became a river of silver raindrops and then a frozen scene," offering an idyllic, pre-war landscape—a "pretty-enough scene, from a place undamaged by war" (VanderMeer 220-222). This scene, a stark contrast to the desolation of the city, becomes an object of intense desire for

the survivors. It appears to represent an alternate reality, a glimpse into an untouched past beyond the reach of the present's ruin. Yet, Rachel instinctively identifies the place as "a trap" (226), reflecting her awareness that the allure of the past, no matter how beautiful, can be dangerous and deceptive.

Rachel's perception of this place as "the past preying on the future" (244) underscores the novel's central theme of how the past, particularly in the form of past mistakes and unchecked actions, can have devastating repercussions for the future. The notion of the past "preying" on the future suggests a cyclical relationship between past actions and their long-term consequences, particularly when the past is unresolved or mishandled. The Company's actions, driven by profit and technological experimentation, set into motion a chain of events that will inevitably harm future generations, emphasizing the dangers of forgetting or repeating history.

The dissolution of clear boundaries between nature and technology, human and nonhuman, creates not liberation but profound ontological uncertainty. While theorists such as Haraway argue against rigid definitions of "the human" and celebrate hybridity as a necessary part of our technofuture, and Kurzweil envisions a utopian "singularity" where humanity merges seamlessly with machines, *Borne* tempers such optimism with apocalyptic imagery. The novel envisions a world where the unregulated proliferation of biotech results in ruin rather than progress. In this speculative space, the "cross-pollination between the human and non-human" (Mukherjee<sup>29</sup>) no longer signifies productive symbiosis, but an irreversible loss of coherence in identity, ethics, and agency. The sheer volume of biotech monstrosities renders the world uncanny and unlivable—emphasizing the dangers that bioconservatives, such as Fukuyama, rightfully fear. Experiencing an entirely new environment caused by global warming can haunt humankind, for it affects the

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<sup>29</sup> Mukherjee, Neel. "Borne by Jeff VanderMeer Review — After the Biotech Apocalypse." *The Guardian*, 15 June 2017, [www.theguardian.com/books/2017/jun/15/borne-by-jeff-vandermeer-review](http://www.theguardian.com/books/2017/jun/15/borne-by-jeff-vandermeer-review).

skin rather than be felt directly. The state of not being appropriate for the novel conditions creates fear as homo-sapiens are unable to coordinate with the new reality. Shaviro (2017)<sup>30</sup> points out, we have “exposed ourselves [...] to the geological and biological forces that respond to us in ways that we cannot anticipate or control”.

Far from being a celebration of posthuman potential, VanderMeer’s vision reads as a cautionary fable. The human characters are reduced to scavengers amid towering biotech constructs and they grapple not only with external threats but with the collapse of meaning itself. The environment becomes a grotesque manifestation of humanity’s overreach, where human exceptionalism dissolves, and nature is no longer natural but eerily fabricated. In such a context, the posthuman Gothic articulates a profound anxiety about survival, identity, and the loss of what makes life humanly livable.

Understanding the earthly environment has taken centuries of co-evolution between human cognition and ecological stability and if humans are suddenly thrust into a radically altered environmental condition—such as one produced by a huge climate change or unchecked biotech advancement—they will likely fail to comprehend or adapt to it within a meaningful timeframe. The titular creature, a product of a hyper-advanced biotech industry, is unable to comprehend the very world that created him. His perceptual disorientation reflects the broader human predicament: the changing planetary conditions resulting from global warming and bio/nanotechnological interference threaten to render human existence miserable, as human physiology and psychology are ill-equipped to face such extremity.

Ironically, in the pursuit of scientific and technological progress—often celebrated for its miraculous contributions to human development—the very foundations of life on Earth are being

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<sup>30</sup> Shaviro, S. (2017). *Jeff VanderMeer’s Borne*. Retrieved from <http://www.shaviro.com/Blog/?p=1437>

eroded. The world is already suffocating under the effects of carbon emissions, widespread pollution, deforestation, mass extinction, and the reckless exploitation of natural resources. The apocalyptic setting is not merely fictional but disturbingly plausible, driven by the “lunacy” of tech-scientists whose innovations are divorced from ethical restraint. Who, the novel asks, will guarantee that the contemporary scientists will not pursue equally disastrous endeavors?

The scenario VanderMeer imagines seems less speculative than prophetic. Even if one optimistically assumes that future technological advances will serve humanity’s welfare, history demonstrates that such progress is rarely equitably distributed. Technological privilege remains confined to the few, reinforcing and exacerbating pre-existing hierarchies. As depicted in the posthuman landscapes of *Borne*, *Moxyland*, and *Oryx and Crake*, hierarchical structures are not dismantled by technological change—they are deepened by it. The posthuman world, far from being a utopian leveling of human experience, intensifies inequality by gaining unprecedented powers: the ability to alter human nature, to create monstrous life forms, and to engineer viruses or bioweapons capable of annihilating *Homo sapiens*. This world creates problems not only for those who are biologically humans but for the bio-engineered as well

This existential threat is compounded by the cognitive limitations of the human mind, which struggles to fully grasp the magnitude of the crisis it has created. As Tabas explains, “one of the terrors of our current situation [is] our profound awareness of the looming environmental crisis coupled with our awareness of how the limits of our minds hinder our every attempt to master or rationally model the world around us” (10). The posthuman condition, then, is not merely a philosophical abstraction—it is a material reality unfolding at the intersection of ecological collapse and techno-capitalist ambition, where human survival becomes increasingly uncertain.

Rachel's journey in *Borne* illustrates the profound limitations of anthropocentrism and the impossibility of forging genuine relationships across species boundaries, especially when dealing with entities like Borne, who possess non-human forms of sentience. Despite her deep attachment and desire to understand Borne, she cannot fully grasp the creature's perspective. Their worlds are irreconcilably different; Rachel's attempt to bridge the gap between human and non-human experiences ultimately fails. She acknowledges that while understanding Borne's inner experiences might shed light on his existence, the true nature of his world lies beyond her comprehension and reach. This failure to connect highlights the inherent boundaries that exist between species, suggesting that true interspecies relationships—particularly with posthuman entities—are fraught with insurmountable challenges.

The narrative, through Rachel's journey, invites readers to confront the conflicting reality of the posthuman world. The idyllic vision of a flourishing future civilization is shattered as they witness a landscape in decay, a world threatened by an unstable, deteriorating ecosystem. This ecological collapse is not merely a backdrop but a direct consequence of humanity's relentless pursuit of material progress. Rachel's original homeland, once a refuge, has already succumbed to environmental changes, a fate that now threatens the entire planet. The uncontrolled escalation of these changes symbolises the perilous consequences of technological and ecological recklessness. In this context, Rachel emerges as a symbolic figure of future humanity—caught in an existential struggle for survival in a world increasingly hostile to its continued existence.

The global ecological crisis depicted in *Borne* illustrates humanity's failure to engage with the long-term consequences of its actions. As the world continues to embrace unchecked technological and economic development, the damage to the planet is irreversible. The technophobes in the novel serve as a warning, urging the global powers to fully assess the

posthuman condition before it's too late. Humanity's blind pursuit of material wealth and technological progress has come at the expense of the planet's wellbeing, leading to a point of no return. The "Hall of Mirrors" symbolises the trap in which humanity finds itself—deceived by illusions, with the future being gradually taken away.

In the novel, the Company represents the monstrous entity that was once perceived as a benevolent force working for the planet's benefit. As is often the case with capitalist ventures, the true motives of such enterprises are obscured by their outward appearances. While some may argue that the majority of people are not directly responsible, the consequences of these actions affect everyone. In a world dominated by capitalist forces, a few scientists and entrepreneurs can steer the course of history, regardless of the masses' desires. The novel critiques this capitalist realism, which presents illusory solutions as tangible realities, while the masses remain unaware of the true nature of the world they inhabit. What is needed, the novel suggests, is a shift toward "weird realism," which uncovers the hidden truths and reveals what has been obscured. Only through speculative, non-mimetic storytelling can readers embark on a cognitive journey that exposes the reality beyond the mirrors.

Rachel's efforts to uncover this hidden reality reflect the necessity of dismantling these deceptive illusions. If humanity is to have any hope of survival, the "Hall of Mirrors" must be dismantled, and the true state of the world must be revealed. The contemporary human race, living in a post-apocalyptic world, believes it has already passed the worst of its trials and tribulations, when, in fact, both humanity and the planet are on the brink of total extinction. *Borne* emphasises the urgency of addressing this global crisis, stressing the need to rectify what Hos calls the "great derangement" (Hos 56), or the severe disruption of ecological and societal balance.

## 5.5 Hierarchy and the Fluidity of Posthuman Selves in *Natural History*

Justina Robson's novel presents a posthuman world where humanity has transformed into genetically and technologically enhanced beings known as the Forged, while biological humans, the Unevolved, continue to exist a traditional social role. The division is the basis of the novel's exploration of posthuman subject, techno-hierarchies, and the ethical uncertainties surrounding artificially intelligent and bio-engineered creatures. The extreme alterations of the human body, exemplified by the Forged, illustrate a reality where both humans and posthumans must navigate their own spaces to thrive. The Forged, created as sentient tools for space exploration and other strenuous labour, are treated as lesser beings despite their advanced capabilities and consciousness. The relation shown in the novel is different from the other as here, in the beginning, it is the Forged who are striving to find their place and identity in the society. The novel implies that when modifications to the human body become too extreme, those individuals can no longer be regarded as fully human. Through its portrayal of segregation and difference, the novel suggests that coexistence between humans and posthumans may be unfeasible. This analysis will explore how altering the human form risks perpetuating historical patterns of prejudice and discrimination.

Physiologically and psychologically, the Forged are so much changed that they hardly resemble those ones known as humans. Instead of strengthening humanity, they start posing threats to human existence and society is divided into classes as Fukuyama predicts that the "posthuman world could be far more hierarchical and competitive than the one that currently exists, and full of social conflict as a result" (218). To exist in a shared space, both humans and posthumans are bound to devise a way to guarantee a peaceful environment, but developing such an agreement needs shared characteristics that they lack. Until humankind evolves to a point where it ceases to be humankind, their co-existence seems out of the question.

*Natural History* presents a fictional world where humans and nonhumans coexist. One of the protagonists, Isol, embodies a posthuman form that is intricate, ambiguous, and difficult for the readers to fully comprehend. Though both Isol and Zephyr Duquesne, an anthropology professor, are identified as female, they differ significantly due to the distinct socialization processes that have shaped their bodies and minds. Isol's physical form is described metaphorically as "stranded sea junk: an assembly of spars" (Robson 138), that makes it nearly impossible to visualise or define her appearance. Her transformation into a posthuman being is essential for faster-than-light space travel, as the human body is inherently fragile and incapable of enduring such speeds. Consequently, Isol becomes a cyborg, possessing enhanced strength and abilities beyond those of ordinary humans. Her primary mission is to explore space and seek new territories for her kind, who remain locked in a continuous conflict with humans. This struggle between unmodified humans and the forged represents a broader tension between creators and their creations. In the novel, identity is fluid, yet unequally distributed. The Forged experience existential uncertainty, question their purpose, origins, and value in a world that has created them only for utility. Their emotional interiority, including longing for connection and freedom, stands in stark contrast to the societal structures that exclude them.

The Ironhorse AnimaMekTek Pigeons are hybrid entities with "a graceful tail like a huge aerial manta ray" (69). These beings serve as "small helicopters and robot lifter flights," facilitating human transportation while physically integrating with their passengers (69). Passenger Pigeon Aurora carries Zephyr within her body, enabling her to travel across different locations. Zephyr is both fascinated and unsettled by this new form of posthuman cyborg, designed with a specific function in mind. The novel establishes a dichotomy between the unevolved and the forged, mirroring the power dynamics in human society, where the powerful exploit the powerless. The



resistance of unevolved humans against the forged reflects the broader struggle of the marginalised against those in control. Interestingly, humans, including Zephyr, rely heavily on AnimaMekTek Pigeons for mobility and transportation. This reliance positions the Pigeons in a place of power, similar to how Isol and Zephyr maintain a commanding presence in discourse but occasionally experience vulnerability. These posthuman hybrids are both mesmerizing and highly capable, yet they are discarded once they have fulfilled their roles. Their existence revolves around following directives, which distances them from human agency. Their ultimate priority is to demonstrate obedience, proficiency, and service to their superiors.

Symbolically, these posthuman figures represent individuals in society who wield power by exploiting the weak, often supported by capitalist structures that deplete resources from developing nations. The depiction of large and complex bodies signifies authority and intimidation. In cyberpunk fiction, posthuman bodies are typically associated with male figures, highlighting the patriarchal nature of societal power structures. Physical dominance is often equated with psychological strength and the ability to control others, particularly women.

The Gritters, another form of posthuman entity, possess gendered bodies due to the failure of experimental modifications. They are described as "ugly scarlet lizard heads" (51) and are perceived as lazy and unattractive by the so-called primitives. The novel portrays an ongoing conflict between General Machen's humans and the degraded cyborgs. General Machen harbours deep hostility towards both the forged and the degraded because of their posthuman nature. He refers to the degraded using derogatory terms, calling them "self-serving, little bastards, and more reptilian than they should have been" (32). From a deconstructive perspective, such language reinforces power hierarchies, where derogatory labeling is a means of exerting dominance over those with less power. The degraded are not savages; rather, they perform menial labor, such as

serving as couriers or transporting people and goods. Their role is to obey orders without question, reinforcing the idea that those who issue commands hold power and influence. Despite their attempts to assert their identities, the degraded remain trapped in a subordinate position within society.

In the novel, people are divided into three kinds: the Forged, the Unevolved, and the Degraded. The former are designed genetically for particular purposes, the latter are, as the name suggests, unmodified humans, and the latter are the failed form of the Forged. According to Fukuyama, the transition from human to posthuman needs immaculate consideration, which seems to have been completely ignored in the novel's world.

The hierarchical structures can easily be sorted out from the language of the evolved as they refer to human forms as "Old Monkey," implying that the Unevolved could not develop from their original shapes. The same happens when the Unevolved view the posthuman bodies as something fantastical or strange. According to Zephyr, Isol is "like nothing more than a piece of stranded sea junk" (133). The Forged, though designed by humans, have less similarity to them. They look at themselves as different beings who should be understood within the parameters of their making. Zephyr also describes General Machen as an extraordinarily stout Unevolved, tough like a bull and "not unlike those of a Herculean Citizen (74). The imagery indicates his linkage to human history and his connection to the Forged—the Herculean class. Zephyr's focalised perspective implies that General Machen can play the role of mediator between the groups. However, it is only one perspective. Corvax thinks the General is weak, soft, and tiny. Machen is considered just a toy that can be used for biomechanical experiments. The abilities of the Evolved have been contrasted with the Unevolved. Zephyr's language is ethnically charged and segregating, while Corvex's phrases like manufactured "cheap plastic" (19) expose his intellectual superiority

over the General and the like. The modified and the unmodified are divided into classes based on their abilities.

The contrasting descriptions of General Machen in the novel suggest that the perceived strangeness of the posthuman is shaped by the observer's perspective. When Zephyr first encounters Machen, she perceives him as "an unusually sturdy Unevolved, with the bullish frame that came from plenty of hard labour and tough, land-working genes, not unlike those of a Herculean Citizen. His skin was a modern-style ultra-melanin fast-tanning white, the kind that looked Mediterranean until a few hours' sunlight would cause it to blacken completely" (Robson 74). Her depiction connects Machen to a lineage of human laborers while also likening his physique to the Herculean class of the Forged, positioning him as a potential bridge between the Unevolved and the Forged.

However, Corvax's perspective of Machen presents a stark contrast, underscoring how subjective these interpretations are. When Corvax, a Forged Roc Handslicer, meets the General, he perceives him very differently: "Corvax had forgotten what Unevolved looked like close to: soft, tiny and weak. Machen's skin was the colour of cheap white plastic that'd been exposed to too much heat and had browned to the verge of disintegration. The General was so small, too, smaller than Zing's spacer frame with its overgrown bones. He was like a toy that Corvax might use for demonstrating the features of basic biomechanics to one of his patients who'd come in for a change" (194). Unlike Zephyr, who sees Machen's genetic adaptations as a continuation of human resilience, Corvax emphasises his physical inadequacy relative to the Forged. Instead of using an ethnic or geographical reference like "Mediterranean" to describe Machen's skin tone, Corvax compares it to "cheap" plastic damaged by excessive heat, suggesting fragility and artificiality rather than adaptation. Zephyr's viewpoint affirms Machen's essential humanity,

seeing his genetic modifications as a means of survival in extreme conditions. Corvax, on the other hand, reduces him to an inferior imitation of the Forged, reinforcing the idea that perceptions of the posthuman are shaped by the biases and values of the observer.

When the Forged are created, they are treated as enslaved people whose only purpose is to serve humanity or their creators. Human history tells, Zephyr points out to a student, that "slaves are people who do not exist legally. They are also people whom one does not need to care about as if they are real" (55). She believes that the Forged are thought to be created slaves by political extremists. The Forged believe themselves to be humans, but because of their monster-like appearance, they are termed as non-humans. The deeply-rooted prejudice does not permit humans to admit them as equals. The uniqueness of the human form puts them at the far end, where they are supposed as subhumans. These notions problematise their existence and create cultural and social consternation and constraints.

She further notes that some political extremists in the novel view the Forged as the modern equivalent of slaves. Although the Forged are biologically human, their distinct appearance—often likened to “machines or monsters”—results in their dehumanization by the Unevolved (208). Zephyr questions whether this perception stems from a lack of imagination or a deeper ingrained bias, but regardless of its cause, many Unevolved view the Forged as subhuman.

The Forged exist at the extreme ends of a spectrum of human form and ability, embodying both enhancement and limitation. While their engineered bodies grant them advantages over Unevolved humans, they are simultaneously constrained by their biological modifications. In this way, the Forged illustrate the social and cultural challenges that emerge from radical bodily variation. Their self-perception as an oppressed class reflects the broader issue of difference in posthuman discourse: the contested boundaries between human and posthuman, Unevolved and

Forged, machine and human, and even human and animal. These divisions depend on rigid, essentialist views of form and function—the very notions that the Forged seek to overcome.

Constructed from a combination of mechanical components, human DNA, and genetic material from other species when advantageous, the Forged are not products of natural evolution but rather of deliberate technological design (59). Despite possessing abilities that surpass those of the Unevolved, their origins as purpose-built beings position them within a framework of servitude. This inherent power imbalance has fueled an Independence movement among the Forged, challenging their imposed role within society.

The Forged are not the only creations augmented by biotechnology; even the Unevolved use a technology called MekTek, which they developed to get facilitated in various ways. This technology compensates for the frailty and feebleness of human beings, enhances the capacity of their brains, and gives them access to communication systems needed for military operations. Anthony implants this technology in himself, making him capable of belonging to either side. His innate intelligence is boosted when it is integrated with artificial intelligence. That is why, in the text, the bodily and mentally unenhanced characters feel inferior when they encounter the bodily enhanced or the Forged. This complexity creates conflict, leading to further disaster and upheavals in society. Anthony's silicon and metal-covered head stands out among other human beings and symbolise the hierarchy and class conflict. The Unevolved have classified the Forged as inferior, and the same happens in their own class. Zephyr feels herself subordinate while interacting with Anthony. Living within the boundaries marked by humans stirs a desire among the Evolved to transcend the limitations.

The contrast lies in the making of the two: the Forged is the combination of the mechanical and organic, while the humans are wholly organic; this puts them in discomfort with one another.

The Evolved are basically not machined as they also have organic parts. This makes them cybernetics that is done by “altering bodily functions... by suitable biochemical, physiological, and electronic modifications of man's existing *modus Vivendi*” (Clynes and Klinep 29). Owing to these characteristics, they have the capacity to feel and think. In this, they can excel human beings and if human beings consider them inferior, cybernetics feel humiliated. On the other hand, intellectually, they deem themselves superior to the Unevolved, the ability which can possibly instigate them to rebel against their creators. The unity of human DNA and machine components provides a dominant position to The Forged over humans. They may have been created to serve, but they can also transcend the boundary that they are designed for. Their serving willingly does not bind them always to wait. Their realisation of the power imbalance creates a stir in their ranks, and they start thinking about the independence movement. The boundaries are not defined as they perceive and feel like humans but are more intellectual and powerful.

On the other hand, their appearance is markedly different from human forms, creating tension among them as both deem each other inferior. The dissimilar beings may consider the opposite forms their enemies, and this could lead them to war where the Unevolved would be at a disadvantage as their bodies are not capable of fighting against the Forged, who are mechanically loaded, though, in the beginning, human forms are pontifical of their power.

The Forged are the oppressed part of the society, and the boundaries set around them seem essential and challenging to cross because they have been created to perform certain jobs. Their incorporated beings also segregate them from humans. *Natural History* draws the attention of the readers to the fact what the reconstructed human body looks like. The contrast is felt when Corvax enters Uluru, a centre of virtual reality, where he finds human bodies drab. He is frustrated at the human body's weaknesses when he compares them with the Forged. Sheer disappointment at the

spectacle forces him to question Tupac about the human condition, and she responds, "these are your people. And you are their dream: Forged made, the best they could do. A little humility wouldn't kill you, you know" (Robson 114). If humans have the desire to be limitlessly powerful by incorporating devices into their bodies, they will lead themselves to a situation where their being will be eliminated or disturbed. Finitude should be accepted, according to Hayles (1999), as the human condition; otherwise, they will lose connection with the material world in which they are intricately embedded and on which they rely for their "continued survival" (5).

Only humans can interact with the outer environment appropriately as they have evolved into it. Corvax learns this during his stay at Uluru. The Forged bodies have not experienced any natural evolution. They have been created for a particular purpose that is, to serve with the use of technologies. Their creation is not natural as they all have been designed by "Blessed Mother-father," who breathes a kind of spirit or energy into them. She<sup>31</sup> is the wonder of bioengineering that manipulates human bodies in an incredible way.

Zephyr's entry into Tupac mystifies the process of biomechanical engineering as she marvels at the development and enthusiastically responds to the design of the Forged human. Her approval of the process shows that she thinks this process is equal to the natural one, though it is not. If it is like human evolution, the Forged may not have wished to sever their connections with the human species. The struggle of Isol to find a new home for the Evolved is, in fact, her desire to flee from 'the shackles of Solar DNA' and to bequeath the Unevolved "a future of self-development, free of the bonds of Form and Function" (162), though Zephyr thinks of Isol's talk as nonsense because, unlike Isol, she is not biomechanically integrated. She cannot comprehend Isol's plight as her making significantly varies from hers. Creating living organisms from DNA

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<sup>31</sup> Tupac can be referred to as 'She' because of the name, "Blessed Mother-father' and it works as an incubator that resembles 'womb'

does not mean that human beings can be reduced only to genes. Various species can lose their specific status if one starts believing in genetic reductionism, which can only commodify life, killing its intrinsic worth that assigns, according to Loftis, "special moral status to an entity because it is natural" (71).

### **5.6 Coexistence and Conflict: Forged, Unevolved, and the Gritters**

This moral status differentiates humans from other created entities. Because of this, Fukuyama is critical of all posthuman ventures which could bring the extinction of the human species or eliminate its unique status among all creatures. The scientific community, according to him, may realise this when the disaster is complete. The existence of human society is mainly based on shared values and moralities; if shared ethics cease to play a role in humanity, the catastrophe is not far away. That is why Isol, even after sharing a genome with the like of Zephyr, wants freedom from the Unevolved, for she does not have any affiliation or feelings. It means, for Isol, being human is entirely different from sharing a genome. Fukuyama has also emphasised the necessity of the existence of moral sense. He cautions against producing genetically modified human species.

The intervention to manipulate human genetics is the cause of the gulf between the modified and the unmodified. The Forged have the ability to adapt to various environments and enter where human beings cannot. All species exist with a particular purpose for what they have been created, and this function provides them reason to live and survive. The Forged know that their lives are meant to be spent like sterile workers, and this recognition stirs them to revolt against Old Monkeys, who are the unworthy receivers of their efforts. The search for a new world for the Forged begins where they "could make a new beginning and forget their origins and the experience of mingled pride, shame and puzzlement that went with it" (Robson, 2008, p. 70). The desire for a



new home makes Isol accept an alien technology that puts even her individuality at stake. However, all the Forged do not favour leaving their functions in society. Aurora still believes in contributing to the betterment of society and thinks that one cannot cross the boundary of one's attributes. However, others want to transcend the limitations, though it seems complicated for their bodies and minds that have been designed to perform specific tasks. This boundary can inhibit them from undertaking new tasks as Corvax has to shed off his wings to enter a human-sized laboratory. When deciding about their future in Independence Party, Gaiaform Bara and Gaiaform Kincaid, who have been hibernated after being used for certain tasks, disagree as to their future flight to the new world; they have been given the promise of longevity, and they want to take all forms with themselves including those who have created them, while the others, Tatresi, argue against the Unevolved who have crippled the life of many by inadequately understood engineering and this situation stirs "a scuffle that results in the arrest of several rowdy members of the audience" (215).

Timespan Tatresi, spokesperson for the Solar Transport Workers Union, addresses the Forged Independence Party, stating that two-thirds of its members endorse Isol's demand for a homeworld. He argues that such a settlement would serve future generations of both Unevolved and Forged humans by providing a space distant from Earth's origins and the dominance of Unevolved culture and traditions (Robson 211). This rhetoric of separation underscores how historical patterns of intergroup conflict persist, even in a technologically advanced posthuman society.

This conflict tells of the apprehensions of various theorists and science fiction writers about the latent dangers that can be brought about by the posthuman technology. If monster-like creatures with intelligence wage war against one another or against humans, it can have catastrophic

consequences for human existence. The war-for-power is not only among humans and the Forged but also among the Forged because they do not want to leave this place and take a flight to another place. Another anxiety is related to the errors that may be made while developing technologies. The victims of experiments will be worst affected. The same happens in the novel with the Degraded—whose plight will be discussed shortly.

The Forged are slaves to their functions and putting the Gaiaforms to isolation is also a form of slavery. Tatresi, during her independence speech, openly associates their condition with slavery and demands:

Either Earth must grant us the freedom to pursue our own reproduction and design, equal in rights, or they must be discarded as the slave traders and commodity brokers that they are” because the Evolved “exist in cultural poverty, designed and fabricated to lead lives of restricted experience and social deprivation in comparison with the hominid populations, who enjoy a full and varied animal life in addition to their functions as employees, workers and philosophers. (218)

Another Forged talks of their machine-like status that must be changed and asks, quoting Marx, for division of labour, for the humans are enjoying every luxury. The hierarchy has created discrimination that seems to be based on race and nation. The humans deem themselves more privileged. The transgressions which have been the part of human societies are also the part of the posthuman world. Fukuyama's words echo in *Natural History*. He is critical of the posthuman ideals of the future world. It may be argued that unless one is aware of the future—good or bad, one should not debunk technological advances, but, keeping in view the past conflicts, one may imagine what a technologically advanced future can wreak. Any battle in the novel can put humans at a disadvantage, and they may be the ones who will suffer the most.

If technology can upgrade the human body to a point where it could meet utopian notions, it can equally degrade humans. The darker picture is presented in the novel. The Degraded version is the third class, which is the failed version. The hatred Isol rears in her heart for the Unevolved can also be felt in the Degraded class. The Degraded have reared animosity for both classes. In the fight between the two groups for territory ownership, the Degraded are cornered and marginalised. They are living a dehumanised life, and the one responsible for their present plight is not taken to task by anyone. Their life is a life of misery, pain, and shame, and they remain in it perpetually, being punished for the crimes of others. They also suffer from an inferiority complex of having monstrous bodies and lacking human potential. The Degraded have either been created by the procreative struggles of the Forged or by the humans keen to produce intelligent pets; therefore, they are called "productive errors." They feel neglected good-for-nothing and unable to find any function or purpose in the prevailing situation around them.

The question arises of whether all posthuman experiments will be successful, and if not, who will bear the brunt of or be the victim of such experiments? The language used by the authorities of the Restitution further aggravates apprehensions regarding Gritter's (a Degraded) existence, "we did not strive to make lower, only higher, than ourselves. But, once in a while, accidents happen" (220). The Gritters will bear the misery of the accidents. Corvax, though an evolved, speaks these words for Gritters, "all great plans have failures" (35). The Degraded, the bodily deformed, clumsy, and ugly have no capacity to perform any social service, express themselves, or move easily. Both the other groups use ridiculing descriptions for them.

The conflict between the Unevolved and cyborg bodies seems to be the central conflict in the novel. The Forged have been formed to exist in stimulating environments, for their endurance is more remarkable than humans. They have the ability to survive in hardship. Humanity has

created forged configurations that can even adapt to alien environments and travel to other solar systems. The Unevolved can surmount their weak bodies with MekTek—a cybernetic apparatus. With the help of this machine, humans can implant their bodies with AI systems to communicate with cyborgs as Anthony augments himself bodily and mentally. He develops competence to interact with other AI technologies, while Zephyr does not implant her body with such gadgets. Anthony is not genetically altered, but he, to a great extent, loses his naturalness. General Machen modifies his body by using MekTek machinery. This alteration compensates for their lack of human bodies, but the General still has human vulnerabilities; he seems too small, a toy-like creature much inferior to the Forged. Although created in humanity's image, these posthuman beings are physiologically and psychologically so altered that they no longer align with traditional notions of humanity. Their very existence brings into question the viability of coexistence between the unevolved and the technologically enhanced. Rather than extending human capabilities in service of a common good, the Forged become symbolic of division and existential threat.

The Forged behave like humans because of human origin and human-like consciousness, yet they are unlike normal humans as they are integrated with animal and human genes and machinic extensions. Instead of varied hybrid forms, they are not of one uniform form, such as "reptilian, insectoid, corporeal presences, projected avatars, enhanced, defective, born, made" (p. 96), to perform multiple tasks. One of them, Isol, the protagonist, is on a mission to explore outer space. Her body has been formulated like a spaceship. Her power and resilience during the journey are far ahead of human endurance. The only frailty she has is her biological parts. This indicates a human vulnerability in front of cyborgs who, having consciousness and thinking capabilities, can replace the human race. Though Robson does not predict such a dreary future, one can surmise the implications of giving more power to non-human bodies. Even if these bodies do not annihilate

humans completely, they can snatch their central significance. Isol's collision with colossal debris harms her seriously, and she bleeds profusely until she comes across an artifact called "Stuff" by her. Entering those margins, she liberates herself from space and time. Her body recovers at this newly discovered place, and her wounds heal. The transcendence from space and time, the journey to another planet with faster-than-light speed, proves an epiphany for her to look for a new place for the Forged. She and they do away with Humanforms' domination and proffer salvation to the Evolved in Zia Di Notte—a newly discovered, technologically advanced planet. The planet is now deserted and abandoned, suitable to be captured and colonised.

Isol Voyager has formidable skills: fifty times greater speed at processing memories, possessing “360-degree visual sensors” (133), astonishing competence in music, and the capacity to listen to the entire earth within a shorter time. She, unlike humans, can survive on her own. Besides this, she can challenge the Old Monkey's will and disobey his authority. That is why she radicalises others to revolt against the ancestors of the earth and to settle on a new habitable planet. She introduces the concept of freedom and instils a new spirit into them by saying, A future of self-development, free of the bonds of Form and Function [...] free of the self-serving interference of the Unevolved" (162). She shares her view with Corvax and tells him the Stuff can offer greater opportunities if it is occupied. She activates many other Forged forms by drawing their attention to the fruits of freedom. Soon after her return from the journey, she has found a "promised land" (44). The authorities on Earth cannot believe, though keen to colonise, Isol's report; her claims about the planet should be investigated, and representatives should be selected to be sent to the mission.

This vision of coexistence despite physical differences draws on long-standing social and economic class structures, particularly those that emerged during the Industrial Revolution—

conditions that Marx analysed and that are referenced in the novel. Given the structured classifications of the Forged and the Unevolved's attempt to replicate similar systems based on genetic lineage, such arguments feel natural within the world of *Natural History*. However, whether class distinctions are framed as a source of pride or as restrictive constraints dictated by the Forged Class system of Form and Function, they ultimately highlight the discriminatory potential of such classifications, whether applied to posthumans or contemporary humans. This concern is reflected in the response of an Unevolved government official to the proposal of a separate homeworld for the Forged, stating that “separation from the Forged is purely a racist and divisive manoeuvre, a falling-back to the positions of the early twenty-first century where national, religious and cultural divisions were allowed to stand as barriers to trade, rights and the fair distribution of wealth” (217).

The novel echoes broader historical patterns of human conflict, aligning with debates in posthumanism. Ray Kurzweil, a key advocate of posthuman technology, envisions a future where humanity overcomes biological limitations, asserting that advancements will grant individuals control over their own fate and even enable indefinite life extension (9). This perspective assumes an inevitable trajectory toward technological transcendence. However, others raise concerns about what such a future might entail. Francis Fukuyama's critique of posthumanism appears to respond directly to thinkers like Kurzweil when he warns that while many envision a posthuman world resembling our own, it could instead become stratified. The speculative nature of both arguments—Kurzweil's optimism and Fukuyama's caution—makes it impossible to predict whether a posthuman future would be utopian or dystopian. Advocates of technological progress argue that this uncertainty should not prevent humanity from pursuing these advancements.

A similar logic applies to the ‘Stuff’ in Robson’s novel; without firsthand experience of its eleven-dimensional existence, one cannot determine whether the transition is beneficial or harmful. However, what the novel does make clear is the destructive impact of conflict between opposing factions—specifically, the Forged, who seek independence, and the Unevolved, who resist their departure. By mirroring historical human conflicts between marginalised and dominant groups, the novel suggests that the suffering caused by such tensions is not solely the result of technology but rather of deeper social and political divisions. The complex situation, which illustrates how attempts to reduce human vulnerabilities lead to new dependencies, is powerfully exemplified in the Forged’s reliance on corporate systems for survival and recognition. Created to endure environments humans cannot, the Forged paradoxically become dependent on those who engineered them. Rather than achieving autonomy through enhancement, they are trapped within techno-political systems that exploit their capabilities while denying them full personhood. The Forged are not only modified biologically and technologically but are also conditioned psychologically, denied histories, and excluded from political agency. Their intellectual, emotional, or physical rebellion reveals the fragility of the systems meant to contain them. The presence of alien artifacts introduces an unknown element that destabilises both human and posthuman certainties, underscoring how technological futures remain unpredictable and oppressed.

Thus, the three different categories of humans—the Unevolved, the Forged, and the Degraded—are in constant battle in the hierarchical world of *Natural History*. It offers a cautionary vision where enhanced beings are dehumanised, and the persistence of historical hierarchies is amplified by technology rather than dismantled. As a result, the novel exhibits ambivalence concerning the prominence of the posthuman technology in human life. In addition to being useful,

the posthuman technology has the possibility of supporting a society that is more hierarchical. The novel explores if it is true that humans believe they are the sole rulers of all other species on this planet, despite the fact that it does not emphasise this topic, namely the hierarchy among species. The conflicts between the Forged and the Unevolved are just one example of how Robson draws attention to the notion that technologically altering the mind and body of some populations within a crucial posthuman framework will have adverse repercussions.

According to Mitchell, the novel "depicts both the harnessing of technology for human advancement and the negative, potentially dehumanising effects of technological 'progress'," which explains why Robson places emphasis on both the adverse and beneficial aspects of posthuman technology (117). In addition to the fusion of technology and people, animals and people, and people and aliens, one also sees cyborgization in the dissolution of cyberspace and reality. Robson challenges humans to think about "both the positive (emancipatory) and negative (loss of self) ramifications of this process; the alien "Stuff" can be viewed as either welcoming, offering the possibility of an immeasurably enhanced understanding and experience, or voracious in the way that it "sucks everything up together" (125).

By speculating on the political, social, and ethical issues raised by rapidly advancing technoscientific discoveries, *Natural History* concisely examines posthumanization. Thus, the novel helps us "to concretely envisage bodies and selves" and "examine and explain the relationship between changes in the material world, which may include new technology, and changes in the human beings that occupy this world" (Vint 19). According to Mitchell, the implications of technologically induced physiological modification and the fundamental query the novel raises about the intimate crossings of humans and machines are highly compelling. "Will technology make us posthuman because it blurs the line between human and machine? Is the query



Robson wants readers to answer” (109). As science and technology have made such incredible strides, Robson may already be aware of how quickly mankind is going into post-humanity. Humans are embodied “in a knot of species coshaping each other in layers of reciprocal complexity all the way down,” just like the Unevolved, the Forged, the Degraded, and other in-between species are in the novel (Haraway 42).

After analysing various texts, one can say that the novels combine sci-fi and horror to sketch out the quest for insane dreams of human impeccability that lead only to monstrosity and viciousness. Similarly, they uncover the bleak side of the post-biological version of posthumanism celebrated by speculative scientists such as Hans Moravec, Raymond Kurzweil, and many others mentioned earlier. These novels insert themselves into a strong tradition of anti-capitalist, antiauthoritarian discourse in art and literature that has emerged in the contemporary world of bio/nanotechnology and bioinformatics. They portray the posthuman cyborgs and other hybrid advancements as risky augmentations to the arsenal of authoritarian states and corrupt corporations.

## **Chapter 6**

### **Conclusion**

This chapter addresses the research questions through the analysis of selected works of science fiction. This study has explored how the evolving techno-cultural landscape, as portrayed in dystopian science fiction, reconfigures the meaning of being human. The chapter explains how the concepts of technophiles and technophobes have helped me analyse human condition and the complexities related to it in the posthuman world. By examining posthuman worlds where enhanced and unenhanced beings coexist—or are set against each other—it reveals the far-reaching consequences these technologies impose on individual identity, collective ethics, and socio-political hierarchies. The characters' relationships, agency, and dignity are shaped not only by the technological transformations they undergo or resist, but also by the structural systems that privilege enhancement while marginalizing unmodified humans.

The proliferation of posthuman technologies raises pressing concerns about the obliteration of humanity and the emergence of a machinic, hybrid species that no longer retains core human values. Science fiction powerfully illustrates how these technological shifts destabilise the human condition—undermining ethical frameworks based on affection, empathy, and relationality—while reinforcing systemic patterns of genetic marginalization, social fragmentation, authoritarian control, surveillance, ecological destruction, dependency, and psychological manipulation. The very assumptions embedded in posthuman technologies reflect a drive toward optimization and domination that eclipses spontaneity and moral reasoning.

This study has explored how the evolving techno-cultural landscape, as portrayed in dystopian science fiction, reconfigures the meaning of being human. By examining posthuman worlds where enhanced and unenhanced beings coexist—or are set against each other—it reveals

the far-reaching consequences these technologies impose on individual identity, collective ethics, and socio-political hierarchies. The characters' relationships, agency, and dignity are shaped not only by the technological transformations they undergo or resist, but also by the structural systems that privilege enhancement while marginalizing unmodified humans.

Far from offering a utopian vision of transcendence, these narratives critically expose the dystopian underside of posthuman promises. Science fiction, especially in its technophobic mode, conjures visions of futures where technological systems impact every facet of human behavior. The logic of cybernetic control, efficiency, and surveillance replaces spontaneity, freedom, and affective life. The once-imagined utopia of human-machine harmony becomes a technocratic regime in which human autonomy is subjugated to algorithmic command. This reversal of Asimov's laws—where it is no longer robots who serve humanity, but humans who are forced to obey technological imperatives—underscores the erosion of the human condition in favor of machinic order and the situation brings about the emergence of a different human condition where the once apparently stable categories such as human identity, ontology, essentiality, consciousness, morality are problematised and transformed. As Winner says, “In the end, literally everything within human reach . . . will be incorporated into the system of technical instrumentality. . . Here one locates the political essence of technology in its total formative impact on all nature and all culture” (191, 237).

### **6.1 The Fractured Human Condition in Technologically Stratified Worlds**

While the texts may be characterized as *apophatic* due to their continual gestures of negation or *différance*, especially when interpreted through the lens of ecological teleology, they also present a vision of the human subject that resists conflictual definitions. Instead, they offer a portrayal of the human as existing in a threshold space—neither fully of the earth nor entirely beyond it. This

conception of the human as an intermediary being aligns with the principles of theological humanism as articulated by Klemm and Schweiker, who explain: “The human is a ‘bridge’ (to speak metaphorically) between realms of life, at once animal and yet exceeding our animality. Human beings, in more biblical terms, are dust that breathes, made of the earth and yet an image of God. The decisive question is whether ‘humanity’ is an origin or a destination or, we now add, lived in the tension of both.” (17)

This perspective frames the human condition as inherently unfinished—situated in a state of ongoing tension rather than fixed at either an origin or conclusion. Yet, this state is not framed as a punishment. On the contrary, humans are marked by an intrinsic yearning to rise above mere biological existence and to recover a sense of the divine. In support of this, Klemm and Schweiker reference Hungarian philosopher Laszlo Versényi, who defines the human as “*a movement, a transcendence*” (17).

My focus on *Oryx and Crake*’s depiction of familial and domestic disintegration foregrounds how personal histories function as both a prelude and a metaphor for the broader annihilation of the human species. The novel treats the protagonist’s past not only as a source of origin but also as a recursive staging ground for the ultimate collapse of human civilization, capturing the tension between despair and fragile hope that underpins this post-apocalyptic vision. Atwood constructs Jimmy’s subjectivity through a structure of loss and substitution—an endless cycle of emotional trauma, broken attachments, and distorted recognitions. This recursive pattern of suffering forms a narrative template through which the readers are invited to confront the collapse of their own world and to rethink about their subjectivities. In this way, the novel becomes a psychological mirror that reflects internalised anxieties of the character living in the posthuman world..

The post-apocalyptic mode in *Oryx and Crake*, as in the genre more broadly, blurs the line between allegory and literalism by transforming the psychic processes of trauma—both mundane and monumental—into world-ending spectacles. These include the insidious, everyday traumas of abandonment and alienation as well as overwhelming historical catastrophes. By dramatizing both catastrophic endings and ambiguous new beginnings, the novel allows us to imagine the unimaginable, to face a new human condition and a threat of extinction while paradoxically continuing to endure through narrative.

Such fictions operate as imaginative rehearsals for the end—rituals that oscillate between repetition and transformation, between symptomatic reenactment and the possibility of healing. They do not erase trauma, whether personal or collective, but they do offer a space in which to grapple with our role as historical subjects burdened with memory and compelled toward futurity. In confronting these apocalyptic fantasies, we are forced to reckon with what it means to be human in a world where both the past and future are destabilised—where the human condition itself is defined by a precarious dance between loss and longing, collapse and continuity.

Across the selected texts, posthuman technologies deeply redefine the human condition, particularly for unenhanced individuals, who struggle to maintain a coherent sense of identity, moral agency, and belonging in increasingly alien environments dominated by engineered beings or oppressive digital structures.

In *Oryx and Crake*, the human condition is transformed under the weight of genetic engineering and corporate science. Crake, the architect of a new posthuman species, exhibits a complete absence of empathy or ethical reflection. He embodies the dangers of unrestrained rationalism. His engineered creations, the Crakers, though biologically optimised, lack the emotional depth and ethical nuance that define human social life. Jimmy (Snowman), one of the

last remaining unenhanced humans, serves as a tragic figure clinging to obsolete emotional values and interpersonal longing in a world that no longer recognises or reciprocates him. His inability to form meaningful connections with the Crakers exposes a profound rift in social belonging and emotional continuity. The human condition, once rooted in shared vulnerabilities and ethical reciprocity, is reconfigured into a sterile, profit-driven logic in which both humans and nonhumans become tools for manipulation. Corporate commodification of enhancement—through beauty and intelligence pills or biologically engineered animals—reflects a moral vacuum where agency is supplanted by consumerist programming, as seen in Sharon's futile resistance through self-medication.

In *Moxyland*, the erosion of the human condition takes the form of fractured identity and coerced conformity. Here, digital technologies not only surveil and control but also rewrite the terms of existence itself. Enhanced individuals like Kendra undergo nanotechnological modifications that alter their bodies and blur the boundaries of selfhood and it leads to emotional alienation and bodily estrangement. In contrast, the unenhanced are systematically disenfranchised, their worth is determined by their ability to conform to techno-corporate expectations. Characters are pressured to abandon their authentic selves in favor of state-sanctioned digital identities, where dissent is met with erasure—both metaphorically and literally. Moral agency is suppressed by a regime that rewards complicity and punishes resistance. The techno-state operates as a totalitarian force that dissolves traditional human bonds and values and replaces them with artificial loyalties and algorithmic governance. Social belonging is granted only to those who surrender their autonomy, creating a perverse reward system for dehumanization.

In *Natural History*, the divide between enhanced and unenhanced beings becomes ontological. The genetically engineered "Forged" possess mechanical affectivity and diminished

emotional capacity which makes them incompatible with traditional human modes of interaction. Their inability to feel familial affection, sexual desire, or sorrow signals a profound departure from the emotional core of the human condition. The Unevolved (unaltered humans) regard these posthuman entities as disposable labour, devoid of intrinsic worth or social identity. This asymmetry reflects not only a loss of moral empathy but also an erosion of community and solidarity. Even the failures of genetic engineering—the Degraded—are not mourned but mocked, further showing a world in which ethical obligations are reserved only for the biologically normative. Posthuman modification in this narrative dislocates the very fabric of moral agency and it renders both creators and creations emotionally impoverished and ethically indifferent.

*Borne* intensifies this erosion of the human condition by situating it in a world already ruined by unchecked experimentation and ecological collapse. Enhanced beings—whether bioengineered animals or humanoids—function according to alien logics exhibit fragmented or entirely absent ethical categories. Rachel, an unenhanced human, seeks emotional connection with Borne, a synthetic entity, but finds the task impossible; Borne’s perception, memory, and morality operate outside recognizable human parameters. Their failed connection speaks to the larger impossibility of relationality in the posthuman world where emotional resonance is no longer a shared capacity. The Company’s creations, including Wick, exist in a liminal state—neither fully human nor machine—lacking a stable moral compass or social role. In this world, memory itself is unreliable, and identity is splintered, reducing once-coherent individuals into drifting remnants with no social or ethical anchor. The human condition, here, is not only threatened by enhancement but fundamentally unsustainable within the ecosystem of artificial life.

The posthuman world emerges not as a realm of liberated futures but as a fragmented landscape where traditional notions of self, ethics, and community are either deformed or

dissolved. The enhanced may gain new forms of power or functionality, but they often do so at the expense of moral agency and emotional depth. Meanwhile, the unenhanced struggle to survive in systems that no longer value their existence or recognise their humanity. The divergence in experience between these two groups highlights the unequal and unstable reconfiguration of the human condition in the posthuman era.

## **6.2 Technological Advancements as Mechanisms of Hierarchical Oppression and Dehumanization**

Atwood portrays a world in which humanity is either in decline or has been rendered obsolete, leaving room for the posthuman to emerge as a potential—though not guaranteed—successor. This successor is not defined by dominance or transcendence, but by ecological consciousness and survival through symbiosis. Both Atwood and other writers of speculative dystopia position their narratives at a critical threshold: the collapse of the coherent humanist subject and the beginning of a radical reconfiguration of life on Earth. In these visions, the human is no longer sufficient to address the complexity of an interconnected biosphere shaped by biotechnological intervention. Yet even as the human fades, the zoe-centric paradigm that might replace it has not yet solidified—remaining suspended in a space of emergence, uncertainty, and potential.

The selected novels collectively depict posthuman technologies not as liberatory forces, but as instruments that reinforce social hierarchies, strip individuals of dignity, and severely restrict human freedoms. These narratives reveal how techno-corporate systems institutionalise inequality, particularly targeting those who are unenhanced, biologically “inferior,” or racially marginalised. Far from ushering in an egalitarian future, the posthuman technologies facilitate control, surveillance, and dehumanization under the guise of progress. As Matheson (2004) rightly argues, there appears to be “an intrinsic and unavoidably destructive momentum embedded inside all



technological processes, beyond the power of humans to avert" (p. 335). This destructive logic is evident throughout these texts, where technology is no longer a neutral tool but an autonomous force driven by profit, militarism, and social engineering. Corporations, often functioning as de facto governments, manipulate innovation to deepen social inequalities while cloaking their activities in the rhetoric of progress.

Margaret Atwood foregrounds the persistence of humanist ideals and ethical concerns, even as she satirises a genetically hybridised future. While these humanist values remain central to her commentary, the emergence of new forms of subjectivity—embodied by the hybrid coexistence of pigoons, Crakers, and the remnants of humanity—suggests the possibility of a critical posthumanist consciousness. This community, situated within a devastated landscape, begins to gesture toward a zoe-centered worldview—one that emphasises multispecies entanglement, ecological awareness, and technological integration. Atwood thus imagines a future that, although rooted in dystopia, gestures toward a genuinely posthuman society founded on interdependence rather than anthropocentric dominance.

However, as in much posthumanist fiction, the dystopian context remains a dominating force that inhibits the full emergence of this new subjectivity. Human agents continue to enforce the logic of consumer capitalism, enacting violence upon genetically altered beings and reinforcing the divide between the enhanced and the unenhanced. Yet it is precisely through the representation of suffering, displacement, and vulnerability in these altered creatures that readers are drawn into an empathetic engagement with the posthuman perspective. Through this connection, the conceptual space of posthumanity begins to open—not as a perfected alternative, but as a contested and affective field of possibility.

In *Oryx and Crake*, Atwood depicts a stratified society where technological advancement directly correlates with power, and moral decay is the cost of innovation. Crake emerges as a scientific dictator, making unilateral decisions about the future of the human race. His bioengineered creatures—pigoons, rakunks, and the Crakers—are both products and enforcers of a biopolitical order that renders traditional human life obsolete. Jimmy (Snowman), the last remnant of humanity, is caught in a collapsing hierarchy where survival is contingent on avoiding genetically engineered predators. Crake's vision erases individuality, democracy, and consent, replacing them with totalitarian scientific rationality. The suppression of dissent is evident in Sharon's futile protests, dismissed within a patriarchal system that silences women and moral objectors alike.

Human dignity, especially, that of women, is commodified and traded. Oryx is reduced to a symbol of aesthetic consumption, trafficked and objectified within a male-dominated technopatriarchal structure. Her emotional and physical exploitation underscores how posthuman systems intersect with gendered violence. Crake's mechanistic view of sex reveals a chilling detachment, treating intimacy as mere biological function, devoid of emotional reciprocity. In contrast, Jimmy's capacity for emotional connection—though fragile—emphasises the erosion of human values under technological determinism. The illusion of freedom is maintained by systems that deploy fear—viral outbreaks, surveillance, and bio-terror—as means of control.

*Moxyland* presents a digitally dystopian society where identity and agency are contingent upon one's position in the technocratic hierarchy. Surveillance is omnipresent; biometric data, embedded nanotech, and mobile access become both lifelines and chains. Technological enhancements, such as Kendra's nano-augmentation, promise empowerment but deliver dependence and subjugation. Her bodily autonomy is sacrificed to corporate branding, illustrating

how enhancements serve capitalist interests rather than individual liberation. State-sanctioned violence is carried out through genetically modified enforcers like the Aitos, used to police and segregate urban populations. Resistance is met with viral warfare, demonstrating how even disease is weaponised to crush dissent. Marginalised communities—especially Black populations—are systematically excluded from privileges and subjected to what Jackson calls the “animalization of black(ened) being” (2). Dehumanization here is not a side effect but a central feature of the posthuman cityscape. Tendeka and Kendra's tragic trajectories underscore the impossibility of escaping technological domination when it is fused with systemic racism and class oppression. In *Borne*, the breakdown of human dignity is linked to ecological collapse and the perverse aftershocks of biotechnological experimentation. The Company's reckless manipulation of life forms results in a fragmented society haunted by monsters of its own making. Rachel and Wick live as perpetual refugees, deprived of basic needs and constantly displaced by engineered threats like Mord. Their lives are marked by fear, hunger, and instability, reflecting the brutal consequences of a world shaped entirely by the failed promises of technological innovation.

The humanoid entities that populate Borne's ruined world—including Borne himself—lack stable identities or ethical grounding. Rachel's inability to connect meaningfully with Borne reveals not just the failure of interspecies communication but the broader impossibility of moral or emotional continuity in a world where artificial life forms dominate. The Company's creations are neither human nor companionable, and their existence displaces humans from the center of moral and social life.

*Natural History* presents the most explicit critique of technologically reinforced hierarchies. Robson's world is divided between the Unevolved (traditional humans), the Forged (genetically modified beings), and the Degraded (failed experiments), with each occupying a rigid

position in a bio-social caste system. The Forged, though enhanced, are initially treated as tools—stripped of agency, love, and individuality. Their eventual rebellion against their creators reflects the cyclical nature of hierarchical power: even those who rise through technological superiority replicate the structures they once opposed. The Degraded occupy the lowest tier of existence, denied even the dignity of recognition. Their suffering is normalised, and their deaths are inconsequential. While the Evolved discover a potential escape via the alien “Stuff,” even this cosmic alternative fails to resolve hierarchical oppression. Isol’s ambivalence about coexistence with humanforms reveals a bleak truth: technological superiority does not eradicate hierarchy—it merely shifts its axis. The remnants of past civilizations, scattered across new planets, testify to the self-perpetuating destructiveness of techno-imperialism.

Across all these narratives, posthuman technologies serve to entrench inequality rather than dismantle it. The “enhanced” classes—whether genetically, digitally, or biologically modified—wield disproportionate power, while unenhanced or “less-than-human” beings are subjected to violence, displacement, and erasure. Freedoms are curtailed not only through physical control but also through ideological indoctrination, economic dependency, and algorithmic governance. The human condition, once defined by agency, community, and dignity, is now reconfigured through the lens of control, commodification, and exploitation.

These speculative futures, while fictional, mirror real-world anxieties about surveillance capitalism, bioengineering ethics, and systemic inequality. They challenge techno-futurist narratives by exposing how technological progress—if driven by corporate or militaristic interests—can deepen existing power imbalances and threaten the very essence of what it means to be human.

### 6.3 Technological Solutions and the Reinvention of Vulnerability

While *Oryx and Crake* presents the decline of humanity and the rise of posthuman life through ecological and genetic catastrophe, Justina Robson's *Natural History* offers a more technologically driven evolution—one that foregrounds the artificial creation of new life forms through extreme bodily augmentation and synthetic biology. In both novels, the threshold between human and posthuman is not merely crossed but dismantled, replaced with ambiguous figures that challenge the coherence of the human condition as it has historically been understood.

In Robson's world, the "Forged"—posthuman entities designed for space exploration and other extreme tasks—embody the tensions between technological enhancement and existential alienation. Like the Crakers in Atwood's novel, the Forged represent an attempt to craft beings that surpass the limitations of the organic human form. Yet, where the Crakers are designed to be peaceful, instinct-driven replacements for humans, the Forged are complex, sentient, and self-aware subjects whose struggle lies in their desire for inclusion, recognition, and meaning. Their hybrid condition—a fusion of machine, synthetic tissue, and programmed identity—mirrors the unresolved status of posthuman life: beings simultaneously liberated from and haunted by their human origins.

Both novels explore the implications of these hybrid entities not only as technological marvels but as ethical subjects. The Crakers, pigoons, and Forged each expose the failures of a human-centered worldview to anticipate the long-term consequences of its creations. The communities that form around these entities suggest the possibility of a new social order based not on human exceptionalism but on interspecies and intertechnological relationality. However, the realization of this potential remains incomplete. In *Natural History*, the Forged are met with suspicion, subjugation, and systemic exclusion. They are constructed for utility and expected to

remain subservient, mirroring how advanced posthuman beings can become marginalised precisely because they destabilise dominant social, economic, and ontological categories.

In both Atwood and Robson's works, then, the posthuman is situated within dystopian realities shaped by historical traumas, systemic inequalities, and the unchecked proliferation of technology. And in both, the emergence of new life forms does not erase the past but recodes it through bodies that carry traces of both their origins and the speculative futures they might embody. The zoe-centric vision that begins to emerge—life beyond the anthropocentric framework—is constantly undermined by lingering human desires for control, purity, and hierarchy.

Yet this tension also opens a space for critical posthuman subjectivity to emerge. In *Oryx and Crake*, it is through the figure of Snowman/Jimmy—a flawed, traumatised, and transitional human—that the reader witnesses the paradox of witnessing and surviving collapse. In *Natural History*, it is through Isol, the Forged character whose quest for self-knowledge and connection drives much of the narrative, that we encounter the posthuman not as a perfected being but as a subject caught in the same ontological uncertainty that has long defined the human condition. Both novels, therefore, resist the binary logic of technophilia and technophobia. Instead, they articulate a liminal space in which the human is not so much surpassed as it is reframed—as part of a continuum of life that is entangled, evolving, and always incomplete. The human condition, as represented in these works, is not discarded but radically reimagined. It becomes a site of negotiation between the past and future, the biological and artificial, the individual and the planetary. In this sense, both *Oryx and Crake* and *Natural History* present posthumanism not as an end to humanity, but as a critical lens through which to confront the ethical, ecological, and existential dilemmas of our time.

This study reveals that technological strategies aimed at overcoming human vulnerability frequently produce unintended consequences: they suppress agency, deepen inequality, and reconfigure the human condition into a state of perpetual dependency and dehumanization. Rather than delivering emancipation or transcendence, these advancements often serve the interests of corporate, militaristic, or techno-utopian agendas. The posthuman promise of immunity to suffering and mortality proves to be a false ideal, merely shifting vulnerability into new, more insidious forms. Technological transcendence, promoted by what Dinello calls "techno-gurus," is sustained by a quasi-religious belief system. Here, the "priestly order" of scientists—motivated by profit, perfection, and a messianic drive to "improve" humanity—redefine human frailty as a defect to be corrected, not accommodated. Noble critiques this techno-salvation ideology, arguing that the technological pursuit of immortality and control has become "a threat to our survival" (208). The reconfiguration of the human condition within such a worldview thus reflects an ideological war against embodiment, mortality, and limitation—central aspects of what it means to be human. In *Moxyland*, the nanotechnologically enhanced Kendra embodies the paradox of anti-vulnerability technologies. Marketed as a symbol of perfection and aspiration, Kendra's enhanced beauty and bodily discipline attract public admiration. However, her identity and bodily autonomy are commodified by the corporation that exploits her as a living advertisement. The hidden side effects of nanotechnology—cracking skin and eventual bodily collapse—reveal that rather than eliminating vulnerability, technology internalises it within the body itself. Her death is insignificant to the corporation, exposing the exploitative logic of enhancement culture where human dignity and individual suffering are easily discarded for corporate gain. The human condition is reduced to a manipulable shell, subject to technological manipulation without moral accountability.

Similarly, *Borne* presents a world where the quest to overcome human limitations leads to ecological collapse, mass displacement, and intensified precarity. The Company, once dedicated to augmenting humans, leaves behind a landscape ravaged by engineered organisms, toxic waste, and radiation. Rachel and Wick's struggle for food, safety, and shelter exemplifies a deteriorated human condition, where technological "progress" has paradoxically increased vulnerability. Instead of protection, technology has introduced existential threats—giant biotech monstrosities like Mord now rule over humans with absolute indifference. Here, vulnerability is not conquered but multiplied, alienating individuals from both the environment and their sense of self.

In *Natural History*, Robson provides a layered portrayal of technological stratification. While the humanforms gain partial liberation through MekTek, their agency remains limited compared to the Evolved—a more advanced species of engineered beings. This hierarchy underscores that technological enhancement does not democratise power but redistributes it unequally, reinforcing ontological hierarchies. The Degraded, at the bottom rung of the posthuman world, are denied even the illusion of improvement. They exist in conditions worse than pre-technological poverty—treated as subhuman, their lives evidence a regression of the human condition. The Evolved, though superior in capabilities, merely invert the hierarchy; they do not transcend it. This reveals that even the most radical technological transformations fail to escape the power structures they promise to dismantle. The human condition is not improved but reorganised into new systems of control and exclusion.

*Oryx and Crake* illustrates how technological control over biology and environment produces a society wracked with moral, existential, and emotional voids. The posthuman project in the novel, designed to purge humanity of its "flaws"—violence, lust, aging, and emotional excess—results in a sterile, morally vacant civilization. Crake's engineered "Crakers," devoid of



jealousy, religion, and pain, embody a radical revision of human nature. However, rather than solving human problems, this attempt to eliminate vulnerability eliminates the very conditions for ethical reasoning, relational identity, and existential meaning. Jimmy/Snowman, left among the Crakers after the global catastrophe, suffers from profound isolation, hunger, and psychological deterioration. His wandering through a devastated landscape dramatises the fallout of technoutopian fantasies. He is not only physically vulnerable but mentally fragmented, mourning a lost world in which he could at least exercise moral agency and relational bonds. In this context, vulnerability is not eradicated by technology; it is remade as abandonment, existential precarity, and ontological dislocation.

Even familial bonds—the most intimate aspect of the human condition—are dissolved. Crake’s murder of his father for objecting to corporate malpractice illustrates the erasure of ethical restraint in favor of utilitarian goals. The sanctity of kinship and emotional attachment is replaced by cold logic and calculated sacrifice. The mechanised world becomes one where empathy and memory are obsolete, and existential anxiety is amplified by the very technologies designed to suppress it.

Technological domination is most starkly portrayed in *Moxyland*, where citizens are subjected to biometric surveillance, bio-tagging, viral manipulation, and cyber-exclusion. Kendra’s enhancement does not empower her—it entangles her in a corporate system that monitors and disciplines her every move. Tendeka’s efforts to resist systemic oppression through digital rebellion are thwarted by total surveillance, and his subsequent betrayal by Jane (an AI agent) reveals the futility of resistance in a world of ubiquitous control. Technology, once heralded as a liberator, becomes the new tyrant. Identity is constructed through data; belonging is contingent upon compliance; freedom is redefined as submission. Those deemed unenhanced or deviant are

disconnected, dehumanised, or destroyed. The transformation of the human condition here is total: individuals no longer act, they are acted upon—objects in a technocratic system that rewards conformity and punishes dissent.

Despite posthumanist rhetoric advocating liberation from human limitations, the texts demonstrate that techno-solutions create new dependencies—on corporations, machines, enhancements, and manufactured ecologies. These dependencies undermine traditional elements of the human condition: moral autonomy, embodied integrity, memory, belonging, and agency. Even when technological advancements promise empowerment, they often result in deeper entanglement within systems of control that individuals cannot escape or fully comprehend. Faith in technology becomes a form of techno-religion, as Lanier notes in his critique of “cybernetic eschatology”—the belief that technology leads inevitably to a transcendent future. This deterministic view silences dissent and forecloses alternative futures. Those who challenge the techno-narrative are labeled Luddites or reactionaries, as if resistance itself were an irrational relic. However, science fiction exposes the dangers of surrendering human destiny to technological determinism and cautions against confusing progress with perfection.

In the texts, the aspiration to transcend vulnerability through technological means reshapes the human condition in troubling ways. Enhancements do not eliminate suffering; they reconfigure it within new systems of control and inequality. The human becomes a malleable project—its value determined by technological fitness rather than intrinsic dignity. These narratives suggest that attempts to perfect the human often distort its essence, reducing complex beings to engineered functions and data points. The result is a posthuman world not of freedom and equality, but of dependency, dehumanization, and existential fragmentation.

#### 6.4 The Human Cost of Resistance and Exclusion in a Posthuman Order

This study reveals that in posthuman narratives, technology is not merely an instrument of progress but a sophisticated apparatus of control, suppression, and exclusion. The promise of empowerment and transcendence masks deeper ethical violations and existential ruptures. Those who resist technological integration or fail to meet the requirements of posthuman enhancement are systematically denied agency, dignity, and belonging—core aspects of the human condition. The techno-future, far from being an inclusive utopia, becomes a bio-techno regime where dissent is pathologised and difference is punished.

While technological narratives profess to dismantle barriers and eliminate inequality, science fiction reveals a dystopian reversal: the posthuman world deepens social divisions, institutes biological castes, and legitimises the dehumanization of the technologically unfit. Individuals who do not—or cannot—participate in the enhancement race are rendered socially obsolete, structurally excluded, and ethically disposable. Such marginalization not only compromises their material conditions but also erodes their identity, freedom, and moral agency. In Margaret Atwood's *Oryx and Crake*, the techno-authoritarian state erodes individual moral and political autonomy, replacing it with algorithmic governance and bio-surveillance. Jimmy, Sharon, Crake's father, and Oryx are each victims of a system that does not tolerate ethical dissent. Crake's utopian project—intended to free humanity from suffering—culminates instead in an antiseptic apocalypse. The eradication of human complexity in favor of genetic “perfection” annihilates human dignity and relationality. Crake's father is eliminated for exposing the corporate machinery, and Sharon loses her sanity in isolation. Jimmy, unable to reconcile the moral vacuum of his world, spirals into existential despair. The human condition here is stripped of its moral compass, leaving characters in a nihilistic void where suffering is both normalised and mechanised.

In *Moxyland* by Lauren Beukes, the illusion of freedom in technologically-mediated life is shattered by state-corporate mechanisms of control. Kendra's participation in nanotech enhancement makes her a walking advertisement, not an autonomous individual. Her enhanced beauty masks the erosion of bodily autonomy—her identity is commodified, and her vulnerabilities are exploited for corporate gain. The digital apartheid system classifies citizens into zones of access and exclusion based on their level of enhancement and obedience, reducing dissenters like Tendeka to targets of bio-political erasure. His attempt at revolt is met not with ideological engagement but with viral punishment and social disconnection, effectively erasing his identity and relational ties. This technological suppression undermines the very human capacity for collective resistance and solidarity.

In *Borne* by Jeff VanderMeer, the corporate exploitation of biotechnologies leads to societal collapse and environmental ruin. The company's reckless experimentation spawns sentient bioforms like Mord and Borne—creatures who not only terrify the remnants of humanity but reconfigure the landscape of power. Rachel and Wick, who neither embrace nor resist these technologies outright, are caught in a liminal space of ethical precarity and physical vulnerability. Their survival hinges not on technological integration but on cautious evasion, underscoring how posthuman control leaves even the bystanders in a permanent state of insecurity and anxiety. As Fukuyama warns, the unchecked proliferation of biotechnologies, when divorced from ethical reflection, endangers not just the human body but the conditions for meaningful life itself.

In *Natural History* by Justina Robson, the Unevolved—those who remain outside the engineered elite—become second-class beings, excluded from the privileges and moral recognition accorded to the posthuman elite. The Forged, despite their power, are also caught in a paradox: they have been constructed to serve, yet they seek liberation from their creators.

However, their evolution introduces another ethical crisis: the erosion of empathy and shared values. When the human condition is reduced to functionality and optimization, society loses its ethical moorings, creating beings who are physically capable but emotionally and morally disoriented. The posthuman promise of equality and brotherhood turns hollow, replaced by hierarchies of enhancement that mimic, even exacerbate, historical systems of inequality.

Collectively, these texts problematise the belief that posthuman integration leads to universal uplift. Instead, they reveal a grim irony: as technology advances, those who resist or are excluded from its embrace face intensified marginalization, and those who comply often sacrifice essential dimensions of their humanity. Science fiction thus becomes a critical medium for exploring how the human condition is fractured in a world governed by machines and markets. The ethical consequence is a loss of dignity and justice; the existential outcome is alienation, disposability, and the erosion of freedom, identity, and relational belonging.

Moreover, the narratives caution against the emerging technological fundamentalism that brands skeptics as regressive or irrational. Characters who question techno-salvation—like Jimmy, Tendeka, or the Unevolved—are vilified, eliminated, or silenced. This techno-dogmatism echoes the worst aspects of historical fundamentalism, as Lanier warns, with its eschatological certainties and intolerance for ambiguity. The novels suggest that if we do not resist the deification of technology, we risk constructing a future where human diversity, dissent, and dignity are liabilities rather than values.

The human condition becomes the battleground—a site of conflict between the urge to transcend vulnerability and the fundamental need for ethical agency, relational belonging, and existential freedom.

Science fiction emerges as a critical lens through which the ethical, existential, and political crises of posthuman technology can be examined. Far from being mere speculative entertainment, it functions as a warning—a narrative resistance to uncritical technophilia and a plea for reflection before the human condition is irreparably transformed. The selected texts expose a future where technological advancement does not guarantee liberation, equality, or enlightenment, but rather introduces new forms of suffering, alienation, and dehumanization.

At the heart of these narratives lies a profound interrogation of the human condition, especially the dimensions of dignity, agency, identity, vulnerability, emotional depth, and belonging. The novels suggest that technological enhancement—far from being an unequivocal good—can erode the very qualities that define humanity, particularly when it is pursued without ethical boundaries or inclusive governance. The enhanced, while seemingly privileged, often endure transformed anxieties and loss of emotional and moral clarity. The unenhanced, by contrast, are cast out, their humanity questioned, their personhood stripped, and their social worth diminished. The resulting hierarchical binary between the augmented and the unaugmented does not resolve existing inequalities—it exacerbates them, creating a techno-caste system where only the optimised belong.

In these fictional yet plausible futures, the unaugmented individual is rendered vulnerable and obsolete, excluded from citizenship, healthcare, decision-making, and even the right to memory or moral dissent. The enhanced, too, suffer—not always from lack, but from excess: excess of control, surveillance and modification. Human freedom is replaced with technological governance, and the posthuman body becomes the site of both transformation and trauma. Emotional intelligence, relational depth, and existential reflection—key features of the human condition—are compromised in the pursuit of efficiency, longevity, and superiority.

This study thus argues that posthumanity, if pursued uncritically, risks creating a world where neither the enhanced nor the unenhanced are truly free. Science fiction reveals the double bind: those who embrace technology may lose their humanity in the process, while those who resist are exiled to the margins of a new techno-civilization. These narratives challenge readers to confront the costs of posthuman integration—not merely in technical terms, but in deeply ontological and ethical terms. What kind of beings are we becoming? What do we sacrifice when we optimise?

While technophilic discourse continues to celebrate posthuman enhancement as the ultimate realization of human potential, it often fails to address the unintended consequences of these transformations—the loss of empathy, the commodification of identity, and the institutionalization of inequality. Likewise, technophobic perspectives, though critical of dehumanization and control, often generalise the dangers without recognizing the intersectional experiences of exclusion and resistance. Marginalised groups—racial, economic, gendered—may face different kinds of erasure in the posthuman world, not because of lack of access to enhancement, but because of the sociopolitical forces that determine who is considered “worthy” of augmentation. This study exposes such blind spots, calling for a more comprehensive and inclusive understanding of the human condition in the posthuman world.

Moreover, current posthumanist debates often neglect the weaponization of biotechnology, the militarization of enhancement technologies, and the possibility of engineered pandemics or synthetic life forms spiraling beyond human control. The selected texts confront these unspoken anxieties. Whether it is Crake’s viral apocalypse, Moxyland’s nanotech-induced social segregation, Borne’s biotech-dystopia, or Natural History’s emotionless engineered species, the

message is clear: without ethical oversight and philosophical grounding, technological power becomes a force of oppression rather than liberation.

In a world already fractured by racial hierarchies, economic stratification, and epistemic injustices, the posthuman future threatens to establish these divisions further. The augmented elite may monopolise not only biological superiority but also cultural legitimacy, erasing the experiences and identities of those who cannot—or will not—assimilate. Thus, the posthuman condition is not merely a matter of technological progress, but a contested field where questions of power, morality, and personhood are violently negotiated. To resist this dystopian trajectory, science fiction urges humanity not to retreat into despair, but to reclaim ethical agency. As Baccolini reminds us, even within dystopia, there lies a utopian impulse—a warning that can galvanise action. The future is not fixed. The political agenda moving forward must foreground ecological responsibility, ontological reflection, and justice-oriented technology policies. Scientists, ethicists, and policymakers must resist the allure of techno-solutionism and instead engage with the profound questions posed by literature: What does it mean to be human in an age of machines? Who gets to decide the terms of posthumanity? And how can we ensure that freedom, dignity, and emotional integrity are not lost in the race toward artificial perfection?

This study demonstrates that existing posthumanist discourse—both utopian and dystopian—remains insufficient. By centering the experiences of both enhanced and unenhanced characters in speculative fiction, we uncover the urgent need for a more intersectional, justice-oriented, and human-centered approach to understanding the posthuman future. The fate of the human condition—its freedom, fragility, and worth—hangs in the balance.

This study contributes to the ongoing discourse on posthumanism by providing an analysis of how dystopian science fiction reflects and critiques the potential consequences of technological



determinism. Unlike previous studies, this research integrates the evolution of humanism, transhumanism, and posthumanism with a detailed examination of literary works, offering a comprehensive understanding of the ethical and philosophical challenges posed by emerging technologies. Posthumanism as a theoretical concept has not been discussed widely in the Pakistani academia, the present research may ignite the interest of many researchers to explore the field and the issues related to it. It also provides a caution to the authorities who control the affairs of the country. I have emphasised the need for proper regulation but, in Pakistan, usually, the rules and regulations are violated. If this happens, some day, in the matter of bio/nano-technology or AI, the whole system and the whole bulk of population may suffer. Along with that, with millions of unemployed young people, the introduction of robotic technology or any other technology that reduces human labour might bring economic collapse for million.

## **6.5 Recommendations and Future Directions**

Given the potential real-world parallels to the dystopian futures depicted in the analysed novels, this research suggested the need for robust ethical frameworks and regulatory policies to govern the development and deployment of AI and biotechnologies. Ensuring that technological advancements did not erode fundamental human rights or lead to new forms of social inequality was crucial for safeguarding the future of humanity.

The important factor that seemed missing from all the narratives was the presence of law. No lawyers, regulatory bodies were present and no companies or corporate industries sought any permission of the regulatory authorities before initiating or launching any project or product. Biotechnological and modification projects on human beings and animals were launched without taking any social, ethical consideration or environmental issues into account. Nevertheless, this did not imply that these institutions were any less significant than other more visible ones because

the regulatory structures and frameworks were absent from the texts analysed. Instead, the broad use of biotechnology was made possible by the seeming lack of legislation or the inability of the legal system to control its advancement and use. It is possible to deduce that the public's fascination with the innovative biotechnology advancement and corporate supremacy had damaged or even corrupted regulatory organizations and frameworks. The absence of regulatory bodies and frameworks appeared to have several implications for the development of the posthuman creatures, genetically modified animals, the unchecked experimentation of medicines on human subjects and surveillance technology. One effect was that there was no examination or review of the potential dangers associated with genetically modified animals. It was up to the firms and their workers to research, produce, and commercialise their genetically altered goods and services however they see 'appropriate', since there were no "independent bodies" to safeguard the public's health and welfare.

I also argue for the robust formulation of the bodies that could approve and permit any project before its initiation. As the arguments between technophiles and technophobics do demonstrate the pros and cons of AI and bio-nanotechnology, the philosophical inquiries should be done to evaluate their arguments against or for technology. The concepts like human dignity, freedom, agency, autonomy should be revisited to provide tangible solutions of the existential, psychological, neurological, economic threats faced by the public in the age of biotechnology and AI. There is no denying that certain regulatory authorities exist at international level but all countries of the world do not have such regulations. Even the presence of regulations does not guarantee that no illegal enterprise will be introduced because the world in which genetically engineered animals exist is messy and contingent, introducing, strengthening, or consolidating legal or regulatory frameworks (like those requiring the evaluation of the health, safety, and

environmental impacts of genetically engineered animals, viruses) will not necessarily result in a different outcome. It can be that the benefits of breaking the law exceed the consequences, that the laws are disregarded, or that they are not enforced.

While this research provides significant insights into the depiction of the human condition in a posthuman world, it is limited by its focus on a specific set of dystopian science fiction novels. Future research could explore a broader range of literary and cultural works, including those from non-Western perspectives, to provide a more diverse understanding of posthumanism, the synthetic biology, artificial life and its impact on natural world, artificial consciousness, AI and the human identity, the impact of AI on labour markets, surveillance, control, and the posthuman Subject in AI-driven Societies, the influence of posthumanism on religious beliefs, education in the age of AI and posthumanism, wars in the posthuman age, creativity and AI, and the future of underdeveloped nations and those who will not be able to afford technological innovations. Furthermore, empirical studies could be conducted to examine how these fictional narratives influence public perceptions of technology and human identity.

I am of the view that as human beings approach a future in which technology has the potential to alter the very core of humanity, it is critical that they do not lose sight of the values that define them as humans. The cautionary tales of dystopian fiction teach them that in their pursuit of development, they must also protect their liberty, identity, and dignity and comprehend the true meaning of progress because only exploiting nature for material gains, and running a rat race for money cannot be called development.

## Work Cited

- Adami, Valentina. "Between Bioethics and Literature: Representations of (Post-)Human Identities in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood*." *Pólemos*, vol. 6, no. 2, 2012, pp. 249–261.
- Adkins, Peter. *The Modernist Anthropocene: Nonhuman Life and Planetary Change in James Joyce, Virginia Woolf, and Djuna Barnes*. Edinburgh University Press, 2022.
- Agar, Nicholas. *Liberal Eugenics: In Defence of Human Enhancement*. Blackwell, 2004.
- . *Humanity's End: Why We Should Reject Radical Enhancement*. MIT Press, 2010.
- Agamben, Giorgio. *The Open: Man and Animal*. Stanford University Press, 2004.
- Aldiss, Brian. *Billion Year Spree: The History of Science Fiction*. Weidenfeld and Nicolson, 1973.
- Althusser, Louis. "Marxism and Humanism." *For Marx*, translated by Ben Brewster, Verso, 1969, pp. 219–247.
- Anders, Günther. "On Promethean Shame." *Prometheanism: Technology, Digital Culture and Human Obsolescence*, edited by Christoph J. Müller, Rowman & Littlefield International, 2016, pp. 29–95.
- Annas, George, Lori Andrews, and Rosario Isasi. "Protecting the Endangered Human: Toward an International Treaty Prohibiting Cloning and Inheritable Alterations." *American Journal of Law and Medicine*, vol. 28, no. 2 & 3, 2002, pp. 151–178.
- Ansell-Pearson, Keith. *Viroid Life: Perspectives on Nietzsche and the Transhuman Condition*. Routledge, 1997.
- Aristotle. *Eudemian Ethics*. Translated and edited by Jonathan Barnes, vol. 2 of *The Complete Works of Aristotle*, Princeton University Press, 1994.

- . *Politics*. Edited by Stephen Everson, *Aristotle: The Politics and the Constitution of Athens*, Cambridge University Press, 1996.
- Asimov, Isaac. *I, Robot*. Spectra, 2008.
- . *Futuredays: A Nineteenth Century Vision of the Year 2000*. Henry Holt and Company, 1986.
- Atwood, Margaret. *Oryx and Crake: A Novel*. Nan A. Talese, 2004.
- Badmington, Neil. "Posthumanism." *The Routledge Companion to Literature and Science*, edited by Bruce Clarke and Manuela Rossini, Routledge, 2006.
- Barbour, Ian. *Ethics in an Age of Technology*. Vol. 2, HarperCollins, 1992.
- Barkow, Jerome H., Leda Cosmides, and John Tooby, editors. *The Adapted Mind*. Oxford University Press, 1992.
- Barr, Bob. "Brave New World by Aldous Huxley." *Michigan Law Review*, vol. 108, no. 6, 2010, pp. 847–857. <http://www.jstor.org/stable/40645848>.
- Barrat, James C. *Our Final Invention: Artificial Intelligence and the End of the Human Era*. Thomas Dunne Books, 2013.
- Barris, Kelsey. "Re/Membering the Future? Speculative Fiction by Eben Venter and Lauren Beukes." *Current Writing: Text and Reception in Southern Africa*, vol. 29, no. 2, 2017, pp. 131–140. <https://doi.org/10.1080/1013929X.2017.1378122>.
- Baudrillard, Jean. *Simulations*. Semiotext(e), 1983.
- . "Simulacra and Simulations." *Jean Baudrillard: Selected Writings*, edited by Mark Poster, Stanford University Press, 1988.
- . *The Ecstasy of Communication*. Semiotext(e), 1988.
- . *The Vital Illusion*. Columbia University Press, 2000.
- . *Impossible Exchange*. Verso, 2001.

---. *Screened Out*. Verso, 2002.

Baumann, Frank. "Humanism and Posthumanism." *The New Atlantis*, no. 29, 2010, pp. 68–84.

<http://www.jstor.org/stable/43152560>.

Bear, Greg. *Darwin's Radio*. Ballantine Books, 2000.

Bergthaller, Hannes. "Housebreaking the Human Animal: Humanism and the Problem of Sustainability in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood*." *English Studies*, vol. 91, no. 7, 2010, pp. 728–743.

<https://doi.org/10.1080/0013838X.2010.518042>.

Bess, Michael, and Diana W. Pasulka, editors. *Posthumanism: The Future of Homo Sapiens*. Macmillan Reference, 2018.

Best, Steven, and Douglas Kellner. *Postmodern Theory: Critical Interrogations*. The Guilford Press, 1991.

Bhabha, Homi. *The Location of Culture*. Routledge, 1994.

Bloom, Allan. *The Closing of the American Mind*. Simon & Schuster, 1988.

Boas, Franz. *The Mind of Primitive Man*. The Macmillan Company, 1938.

Bolton, Matthew S. "Monstrous Machinery: Defining Posthuman Gothic." *Aeternum: The Journal of Contemporary Gothic Studies*, vol. 1, no. 1, 2014, pp. 1–15.

Booker, Keith. *Alternate Americas: Science Fiction Film and American Culture*. Praeger, 2006.

Borgmann, Albert. *Technology and the Character of Contemporary Life*. University of Chicago Press, 1984.

Bostrom, Nick. "Existential Risks: Analysing Human Extinction Scenarios and Related Hazards."

*Journal of Evolution and Technology*, vol. 9, no. 1, 2002.

<http://jetpress.org/volume8/symbionics>.

- . *The Transhumanist FAQ v.2.1*. The World Transhumanist Association, 2003.  
<http://www.nickbostrom.com/views/transhumanist>.
- . "In Defence of Posthuman Dignity." *Bioethics*, vol. 19, no. 3, 2005, pp. 202–214.
- . "Why I Want to Be a Posthuman When I Grow Up." *Medical Enhancement and Posthumanity*, edited by Bert Gordijn and Ruth Chadwick, Springer, 2009, pp. 107–137.
- . "The Future of Humanity." *Geopolitics, History, and International Relations*, vol. 1, no. 2, 2009, pp. 41–78.
- Bould, Mark, Andrew M. Butler, Adam Roberts, and Sherryl Vint, editors. *The Routledge Companion to Science Fiction*. Routledge, 2009.
- Boulter, Jonathan. "Postmodernism." *After the Human: Culture, Theory, and Criticism in the 21st Century*, edited by Sherryl Vint, Cambridge University Press, 2020, pp. 44–57.
- Bown, Alfie, et al. *Post Memes: Seizing the Memes of Production*. Punctum Books, 2019.
- Braidotti, Rosi. *Nomadic Subjects: Embodiment and Sexual Difference in Contemporary Feminist Theory*. Columbia University Press, 1994.
- . *Metamorphoses: Towards a Materialist Theory of Becoming*. Polity Press, 2002.
- . "Affirming the Affirmative: On Nomadic Affectivity." *Rhizomes*, no. 11–12, 2006,  
<http://www.rhizomes.net/issue11/braidotti.html>.
- . *Transpositions: On Nomadic Ethics*. Polity Press, 2006.
- . *The Posthuman*. Polity Press, 2013.
- Brooks, Rodney A., and Daniel Frank, editors. *Flesh and Machines: How Robots Will Change Us*. Pantheon Books, 2002.
- Brosnan, John. *The Primal Screen: A History of Science Fiction Film*. Orbit, 1991.

- Buchanan, Allen. *Better Than Human: The Promise and Perils of Enhancing Ourselves*. Oxford University Press, 2011.
- . *Beyond Humanity? The Ethics of Biomedical Enhancement*. Oxford University Press, 2011.
- Bud, Robert. *The Uses of Life: A History of Biotechnology*. Cambridge University Press, 1993.
- Beukes, Lauren. *Moxyland*. Angry Robot, 2008.
- Butler, Judith. *Gender Trouble: Feminism and the Subversion of Identity*. Routledge, 1999.
- Butterfield, Evan. *Sartre and Posthumanist Humanism*. Peter Lang, 2012.
- Byrne, Deirdre, and David Levey. "South African Identities on the Edge: Lauren Beukes's *Moxyland*." *English in Africa*, vol. 42, no. 2, 2015, pp. 71–87. <https://www.jstor.org/stable/26359418>.
- Campa, Riccardo. *Humans and Automata: A Social Study of Robotics*. Peter Lang, 2015.
- Canavan, Gerry. "Living in the Future." *Science Fiction Film and Television*, vol. 11, no. 3, 2018, pp. 491–497.
- Chasin, Alexandra. "Class and Its Close Relations: Identities among Women, Servants, and Machines." *Posthuman Bodies*, edited by Judith Halberstam and Ira Livingston, Indiana University Press, 1995, pp. 73–96.
- Claeys, Gregory, editor. *The Cambridge Companion to Utopian Literature*. Cambridge University Press, 2010.
- Clark, Andy. *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*. Oxford University Press, 2004.
- Clarke, Bruce. "The Nonhuman." *The Cambridge Companion to Literature and the Posthuman*, edited by Bruce Clarke and Manuela Rossini, Cambridge University Press, 2017, pp. 141–152.



- Clarke, Bruce, and Manuela Rossini. *Posthumanism and the Humanities: Essays on the Thought of Katherine Hayles*. Routledge, 2017.
- Clynes, Manfred E., and Nathan S. Kline. "Cyborgs and Space." 1960. *The Cyborg Handbook*, edited by Chris Hables Gray, Heidi J. Figueroa-Sarriera, and Steven Mentor, Routledge, 1995, pp. 29–33.
- Coleman, Jeffery. *Relativity for the Layman*. Penguin, 1990.
- Cole-Turner, Ronald. "The Singularity and the Rapture: Transhumanist and Popular Christian Views of the Future." *Zygon*, vol. 47, no. 4, 2012, pp. 777–796.
- Condorcet, Marquis de, and Jean-Antoine-Nicolas de Caritat. *Sketch for a Historical Picture of the Progress of the Human Mind*. Amsterdam University Press, 1979.
- Cooper, Melinda. *Life as Surplus: Biotechnology and Capitalism in the Neoliberal Era*. University of Washington Press, 2008.
- Couldry, Nick, and Ulises A. Mejias. "Data Colonialism: Rethinking Big Data's Relation to the Contemporary Subject." *Television & New Media*, vol. 20, no. 4, 2019, pp. 336–349.
- Csicsery-Ronay Jr., Istvan. *The Seven Beauties of Science Fiction*. Wesleyan University Press, 2008.
- Dagan, Tal, and William Martin. "The Tree of One Percent." *Genome Biology*, vol. 7, no. 10, 2006, p. 118.
- Davis, Erik. *Techgnosis: Myth, Magic and Mysticism in the Age of Information*. Harmony Books, 1998.
- Dawkins, Richard. *The Selfish Gene*. Oxford University Press, 1976.
- Degler, Carl N. *In Search of Human Nature: The Decline and Revival of Darwinism in American Social Thought*. Oxford University Press, 1991.

De Landa, Manuel. *Age of Intelligent Machines*. Zone Books, 1991.

Deese, Richards S. *We Are Amphibians: Julian and Aldous Huxley on the Future of Our Species*. University of California Press, 2015.

---. "Between Progress and Armageddon: The Stakes of Our Times." *Posthumanism: The Future of Homo Sapiens*, Gale, 2019.

Deitch, Jeffery. *Post Human*. DAP, 1992.

Deleuze, Gilles, and Félix Guattari. *Anti-Oedipus: Capitalism and Schizophrenia*. Translated by Mark Seem, Helen R. Lane, and Robert Hurley, Viking Press, 1977. Originally published 1972.

Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi, University of Minnesota Press, 1987. Originally published 1980.

Derrida, Jacques. *Of Grammatology*. Translated by Gayatri Chakravorty Spivak, Johns Hopkins University Press, 1976.

---. "The Ends of Man." *Margins of Philosophy*, translated by Alan Bass, Harvester, 1982, pp. 109–136.

---. *Of Spirit: Heidegger and the Question*. Translated by Geoffrey Bennington and Rachel Bowlby, University of Chicago Press, 1989.

Dery, Mark. *The Pyrotechnic Insanitarium: American Culture on the Brink*. Grove Press, 1999.

Descartes, René. *The Philosophical Works of Descartes*. Vol. 1, Cambridge University Press, 1968.

- DiMarco, Danette. "Paradise Lost, Paradise Regained: Homo Faber and the Makings of a New Beginning in *Oryx and Crake*." *Papers on Language and Literature*, vol. 41, no. 2, 2005, pp. 170–195.
- Dinello, Daniel. *Technophobia! Science Fiction Visions of Posthuman Technology*. University of Texas Press, 2005.
- Dinerstein, Joel. "Technology and Its Discontents: On the Verge of the Posthuman." *American Quarterly*, vol. 58, no. 3, 2006, pp. 569–595. <http://www.jstor.org/stable/40068384>.
- Doolittle, Ford D. and Eric Baptiste. "Pattern Pluralism and the Tree of Life Hypothesis." *Proceedings of the National Academy of Sciences*, vol. 104, no. 7, 2007, pp. 2043–2049.
- Dreyfus, Hubert L. *On the Internet*. Edited by Simon Critchley, Routledge, 2001.
- Dunlap, Alexandra. "Eco-Dystopia: Reproduction and Destruction in Margaret Atwood's *Oryx and Crake*." *Journal of Ecocriticism*, vol. 5, no. 1, 2013, pp. 1–15.
- Dupuy, Jean-Pierre. *The Mechanization of the Mind: The Origins of Cognitive Science*. Princeton University Press, 2009.
- Einstein, Albert. *Sidelights on Relativity*. E. P. Dutton, 1923.
- Ereshefsky, Marc. "Microbiology and the Species Problem." *Biology and Philosophy*, vol. 25, no. 4, 2010, pp. 553–568.
- Fairclough, Norman. *Analysing Discourse: Textual Analysis for Social Research*. Routledge, 2003.
- Farah, Martha J., et al. "Neurocognitive Enhancement: What Can We Do and What Should We Do?" *Nature Reviews Neuroscience*, vol. 5, no. 5, 2005, pp. 421–425.
- Fausto-Sterling, Anne. *Sexing the Body: Gender Politics and the Construction of Sexuality*. Basic Books, 2000.

- Feenberg, Andrew. *CTransforming Technology: A Critical Theory Revisited*,. Oxford University Press, 2002.
- Ferrando, Francesca. “Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations.” *Existenz*, vol. 8, no. 2, 2013, pp. 26–32.
- . *Philosophical Posthumanism*. Bloomsbury, 2019.
- Ferre, Frederick. *Philosophy of Technology*. University of Georgia Press, 1995.
- Ford, Carin T. *Andy Warhol: Pioneer of Pop Art*. Enslow Publishers, Inc., 2001.
- Forrest, Catherine. *Something Past Provoked by Something to Come: The Dystopian Complex in Selected Texts by Lauren Beukes*. Master’s thesis, Rhodes University, 2016.
- Foucault, Michel. *The Order of Things: An Archaeology of the Human Sciences*. Pantheon Books, 1970.
- Foucault, Michel. “*Society Must Be Defended*”: *Lectures at the Collège de France, 1975–76*. Picador, 2003.
- Franklin, Sarah, and Celia Roberts. *Born and Made: An Ethnography of Preimplantation Genetic Diagnosis*. Princeton University Press, 2006.
- Freedman, Carl. *Critical Theory and Science Fiction*. Wesleyan University Press, 2000.
- Freud, Sigmund. *Totem and Taboo*. Routledge, 2003.
- Fry, Edward F. *Cubism*. Oxford University Press, 1964.
- Fukuyama, Francis. *The End of History and the Last Man*. The Free Press, 1992.
- . *Our Posthuman Future: Consequences of the Biotechnological Revolution*. Profile Books, 2002.
- . “Transhumanism.” *Foreign Policy*, no. 144, 2004, pp. 42–43. <https://doi.org/10.2307/4152980>.

- . *Identity: The Demand for Dignity and the Politics of Resentment*. Farrar, Straus and Giroux, 2019.
- Fürsich, Elfriede. "Analysing Text." *The International Encyclopedia of Media Studies*, 1st ed., vol. 7, John Wiley & Sons, Ltd., 2014.
- Eberstadt, Nicholas. "World Population Implosion?" *Public Interest*, no. 126, 1997, pp. 3–22.
- Eagleton, Terry. "Utopias, Past and Present: Why Thomas More Remains Astonishingly Radical." *The Guardian*, 16 Oct. 2015, <http://www.theguardian.com/books/2015/oct/16/utopias-past-present-thomas-more-terry-eagleton>.
- Garreau, Joel. *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—And What It Means to Be Human*. Random House, 2005.
- Gelernter, David. "Machines That Will Think and Feel: Artificial Intelligence Is Still in Its Infancy—And That Should Scare Us." *Wall Street Journal*, 18 Mar. 2016, <http://www.wsj.com/articles/when-machines-think-and-feel-1458311760>.
- Gellius, Aulus. *Noctes Atticae*. Translated by J. C. Rolfe, Loeb Classical Library, 1967.
- Gerstein, Esther. "Metropolis." *American Film Criticism*, edited by Stanley Kauffmann and Bruce Henstell, Liveright, 1972.
- Ghosh, Amitav. *The Great Derangement: Climate Change and the Unthinkable*. Penguin Books, 2016.
- Glanvill, Joseph. *The Vanity of Dogmatizing*. Ex-classics Project, 2011, <http://www.exclassics.com>.
- Glover, Jonathan. *Choosing Children: The Ethical Dilemmas of Genetic Intervention*. Clarendon, 2006.

- Gomal, Erika. *Science Fiction, Alien Encounters, and the Ethics of Posthumanism: Beyond the Golden Rule*. Palgrave Macmillan, 2014.
- Gombrich, Ernest H. *Art and Illusion: A Study in the Psychology of Pictorial Representation*. Phaidon, 1960.
- . *The Sense of Order: A Study in the Psychology of Decorative Art*. Phaidon, 1979.
- Graham, Elaine L. *Representations of the Post/Human: Monsters, Aliens and Others in Popular Culture*. Rutgers University Press, 2002.
- Gray, Chris H, editor. *The Cyborg Handbook*. Routledge, 1995.
- , editor. *Technohistory: Using the History of Technology in Interdisciplinary Research*. Krieger Publishing Co., 1996.
- Grimbeek, Morné. "Wholesale Apocalypse: Brand Names in Margaret Atwood's *Oryx and Crake*." *Names: A Journal of Onomastics*, vol. 64, no. 2, 2016, pp. 88–98. <https://doi.org/10.1080/00277738.2016.1159448f>.
- Grusin, Richard. *Posthumanism: A Critical Exploration*. University of Minnesota Press, 2015.
- , editor. *The Nonhuman Turn*. University of Minnesota Press, 2015.
- Gunn, James. *Alternative Worlds: The Illustrated History of Science Fiction*. McFarland & Company, Inc., 2018.
- Habermas, Jürgen. *The Future of Human Nature*. Polity, 2003.
- Hackett, Pat, editor. *The Andy Warhol Diaries*. Warner Brothers, Inc., 1989.
- Halberstam, Judith, and Ira Livingston, editors. *Posthuman Bodies*. Indiana University Press, 1995.
- Hallward, Peter. "The Singular and the Specific: Recent French Philosophy." *Radical Philosophy*, no. 99, 2000, pp. 6–18.

- Hamilton, William. D. "The Genetic Evolution of Social Behavior." *Journal of Theoretical Biology*, vol. 7, 1964, pp. 7–52.
- Haraway, Donna. "A Cyborg Manifesto: Science, Technology, and Socialist Feminism in the Late 20th Century." *The International Handbook of Virtual Learning Environments*, edited by Joel Weiss et al., Springer, 2006, pp. 117–158.
- Harari, Yuval Noah. *Homo Deus: A Brief History of Tomorrow*. Harper, 2017.
- Harris, John. *Enhancing Evolution: The Ethical Case for Making Better People*. Princeton University Press, 2007.
- Hassan, Ihab. "Prometheus as Performer: Toward a Posthumanist Culture?" *Georgia Review*, vol. 31, no. 4, 1977, pp. 830–850.
- Hauskeller, Michael, Thomas D. Philbeck, and Curtis D. Carbonell, editors. *The Palgrave Handbook of Posthumanism in Film and Television*. Palgrave Macmillan, 2015.
- Hawton, Hector. *The Humanist Revolution*. Barrie & Rockliff, 1963.
- Hayles, Nancy. K. "The Seductions of Cyberspace." *Rethinking Technologies*, edited by Verena Conley, University of Minnesota Press, 1993.
- . *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. University of Chicago Press, 1999.
- Heidegger, Martin. *The Question Concerning Technology and Other Essays*. Garland Publications, 1977.
- . "The Question Concerning Technology." *Martin Heidegger: Basic Writings*, edited by David Farrell Krell, Harper & Row, 1977, pp. 287–317.
- Heinlein, Robert A. *Grumbles from the Grave*. Edited by Virginia Heinlein, Ballantine, 1989.

- Heinz, Andreas, et al. "Cognitive Neuroenhancement: False Assumptions in the Ethical Debate." *Journal of Medical Ethics*, vol. 38, no. 6, 2012, pp. 372–375.
- Herbrechter, Stefan. "Before Humanity, or, Posthumanism between Ancestrality and Becoming Inhuman." *Transhumanism and Posthumanism in Twenty-First Century Narrative*, edited by Sonia Baelo-Allué and Mónica Calvo-Pascual, Palgrave Macmillan, 2021, pp. 20–32.
- Herbrechter, Stefan, et al., editors. *The Palgrave Handbook of Critical Posthumanism*. Palgrave Macmillan, 2022.
- Hicks, Heather J. "The Mother of All Apocalypses in Margaret Atwood's *Oryx and Crake*." *The Post-Apocalyptic Novel in the Twenty-First Century*, Palgrave Macmillan, 2016, [https://doi.org/10.1057/9781137545848\\_2](https://doi.org/10.1057/9781137545848_2).
- Hill, Christopher. *The World Turned Upside Down: Radical Ideas during the English Revolution*. Penguin, 1972.
- Hobbes, Thomas. *Leviathan*. Touchstone, 1651.
- Horkheimer, Max, and Theodor W. Adorno. *Dialectic of Enlightenment: Philosophical Fragments*. Edited by Gunzelin Schmid Noerr, Stanford University Press, 2002.
- Hughes, James J. "The Politics of Transhumanism." *Changesurfer*, Mar. 2002, <http://www.changesurfer.com/Acad/TranshumPolitics.html>.
- . *Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future*. Westview Press, 2004.
- . "Social Pressures for Technological Mood Management." *Free Inquiry*, vol. 29, no. 5, 2009, pp. 28–32.
- . "Transhumanism and Personal Identity." *The Transhumanist Reader*, edited by Max More and Natasha Vita-More, Wiley-Blackwell, 2013, pp. 227–233.



- Huxley, Aldous. *Brave New World*. Vintage Canada, 2007. Originally published 1932.
- Ihde, Don. *Technology and the Lifeworld: From Garden to Earth*. Indiana University Press, 1990.
- . *Postphenomenology: Essays in the Postmodern Context*. Northwestern University Press, 1993.
- . *Expanding Hermeneutics*. Northwestern University Press, 1998.
- Iklé, Fred C. “The Deconstruction of Death.” *The National Interest*, no. 62, 2001, pp. 87–96.
- Iqbal, Muhammad. *The Reconstruction of Religious Thought in Islam*. Stanford University Press, 2013.
- Iuculano, Teresa, and Roi Cohen Kadosh. “The Mental Cost of Cognitive Enhancement.” *Journal of Neuroscience*, vol. 33, no. 10, 2013, pp. 4482–4486.
- Jablonka, Eva. “Epigenetic Epidemiology.” *International Journal of Epidemiology*, vol. 33, no. 5, 2004, pp. 929–935.
- Jablonka, Eva, and Gal Raz. “Transgenerational Epigenetic Inheritance: Prevalence, Mechanisms, and Implications for the Study of Heredity and Evolution.” *The Quarterly Review of Biology*, vol. 84, no. 2, 2009, pp. 131–176.
- Jacobs, Lewis. *The Emergence of Film Art*. W. W. Norton, 1979.
- Jackson, Zakiyyah I. *Becoming Human: Matter and Meaning in an Antiblack World*. NYU Press, 2020.
- James, Edward, and Farah Mendlesohn, editors. *The Cambridge Companion to Science Fiction*. Cambridge University Press, 2003.
- Jones, Steve. *The Language of Genes: Biology, History and the Evolutionary Future*. HarperCollins, 1993.
- Karlsen, Carol F. *The Devil in the Shape of a Woman*. W. W. Norton, 1987.
- Kass, Leon R. *Toward a More Natural Science: Biology and Human Affairs*. Free Press, 1985.

- . *Life, Liberty, and the Defense of Dignity: The Challenge for Bioethics*. Encounter Books, 2002.
- . “Ageless Bodies, Happy Souls: Biotechnology and the Pursuit of Perfection.” *The New Atlantis*, no. 1, Spring 2003, pp. 9–28.
- Kaufmann, Walter, editor. *The Portable Nietzsche*. Penguin Books, 1982.
- Keenan, Cathy. “She Who Laughs Last.” *The Sydney Morning Herald*, 3 May 2003, <https://www.smh.com.au/entertainment/books/she-who-laughs-last-20030503-gdgp5w.html>.
- Keller, Catherine. *Apocalypse Now and Then: A Feminist Guide to the End of the World*. Beacon Press, 1996.
- King, Natalie. *Bodylands: Inscriptions of the Body and Embodiment in the Novels of Lauren Beukes*. Master’s thesis, University of KwaZulu-Natal, 2015.
- Kleinknecht, Konrad. *Einstein and Heisenberg*. Springer, 2019.
- Koch, Tom. “Enhancing Who? Enhancing What? Ethics, Bioethics, and Transhumanism.” *Journal of Medicine and Philosophy*, vol. 35, no. 6, 2010, pp. 685–699.
- Koosed, Jennifer L. *The Bible and Posthumanism*. Society of Biblical Literature, 2014.
- Kopnina, Helen. “Anthropocentrism and Post-Humanism.” *The International Encyclopedia of Anthropology*, 2020, pp. 1–8. <https://doi.org/10.1002/9781118924396>.
- Kreuter, Allyson. *The Elegant Velvet Glove: A Textual and Visual Reading of the Gothicised Female Form in Lawrence Durrell’s The Alexandria Quartet*. Doctoral dissertation, University of Amsterdam, 2014.
- Krippendorff, Klaus. *Content Analysis: An Introduction to Its Methodology*. Sage, 1980.
- Kurthen, Martin. “White and Black Posthumanism: After Consciousness and the Unconscious.” Springer, 2009.

- Kurzweil, Ray. *The Age of Spiritual Machines*. Viking, 1999.
- . *The Singularity Is Near: When Humans Transcend Biology*. Viking, 2005.
- Lacan, Jacques. *A Selection*. Tavistock, 1977.
- Lakoff, George, and Mark Johnson. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. Basic Books, 1999.
- Landon, Brooks. *Science Fiction After 1900: From the Steam Man to the Stars*. Twayne Publishers, 1997.
- Landgraf, Edgar, Gabriel Trop, and Leif Weatherby, editors. *Posthumanism in the Age of Humanism: Mind, Matter, and the Life Sciences After Kant*. Bloomsbury Academic, 2019, <http://dx.doi.org/10.5040/9781501335709>.
- Lanier, Jaron. "One-Half of a Manifesto." *Wired*, 1 Dec. 2000, <https://www.wired.com/2000/12/lanier-2/>. Lanier, Jaron. *Who Owns the Future?* Simon & Schuster, 2014.
- Laplace, Pierre-Simon. *A Philosophical Essay on Probabilities*. Dover Publications, 1951.
- Latour, Bruno. *The Pasteurization of France*. Harvard University Press, 1988.
- Latour, Bruno. "Where Are the Missing Masses? Sociology of a Few Mundane Artifacts." *Shaping Technology/Building Society: Studies in Sociotechnological Change*, edited by Wiebe E. Bijker and John Law, MIT Press, 1992, pp. 225–59.
- Latour, Bruno. *Pandora's Hope: Essays on the Reality of Science Studies*. Harvard University Press, 1999.
- La Valley, Albert J. "Traditions of Trickery: The Role of Special Effects in the Science Fiction Film." *Shadows of the Magic Lamp*, edited by George Slusser and Eric S. Rabkin, Southern Illinois University Press, 1985.

- Lavigne, Carlen. *Cyberpunk Women, Feminism, and Science Fiction: A Critical Study*. McFarland and Company, 2013.
- Leutwyler, Konrad. "Interview with Stuart Kauffman: Forget In Vitro—Now It's 'In Silico.'" *Scientific American*, vol. 283, no. 1, 5 June 2000, pp. 62–63.  
<https://www.scientificamerican.com/article/interview-with-stuart-kau/>.
- Levy, Steven. *Artificial Life*. Jonathan Cape, 1992.
- Lewis, Megan E. "I, Borne." *Electric Literature*, 15 May 2017, <https://electricliterature.com/i-borne-ceb3e54fb719>.
- Locke, John, and Peter H. Nidditch, editors. *An Essay Concerning Human Understanding*. Clarendon Press, 1975.
- Loftis, Robert J. "Germ Line Enhancement of Humans and Nonhumans." *Kennedy Institute of Ethics Journal*, vol. 15, no. 1, 2005, pp. 57–76.
- Liotard, Jean-François. *The Postmodern Condition: A Report on Knowledge*. Manchester University Press, 1984.
- . *Postmodern Fables*. University of Minnesota Press, 1997.
- . *The Inhumane: Reflections on Time*. Stanford University Press, 2003.
- MacCormack, Patricia. *Posthuman Ethics*. Ashgate, 2012.
- Margolis, Howard. *It Started with Copernicus*. McGraw-Hill, 2002.
- Marx, Karl. *The German Ideology*. Lawrence & Wishart, 1938.
- . *Grundrisse*. Translated by Martin Nicolaus, Penguin Books, 1993. Originally published 1857.
- Masters, Roger D., and Michael T. McGuire, editors. *The Neurotransmitter Revolution: Serotonin, Social Behavior, and the Law*. Southern Illinois University Press, 1994.

- Mazlish, Bruce. *The Fourth Discontinuity: The Co-Evolution of Humans and Machines*. Yale University Press, 1993.
- McKee, Alan. *Textual Analysis: A Beginner's Guide*. SAGE Publications, 2003.
- McLuhan, Marshall. *Understanding Media: The Extensions of Man*. Abacus, 1974.
- Mead, Margaret. *Coming of Age in Samoa: A Psychological Study of Primitive Youth for Western Civilisation*. William Morrow & Company, 1928.
- Mendlesohn, Farah, and Edward James.. *A Short History of Fantasy*. Libri Publishing, 2012.
- Merjin, Hester. "There's No Escape from Contamination Above the Toxic Sea." *The New York Times*, 5 May 2017, <https://www.nytimes.com/2017/05/05/books/review/borne-jeff-vandermeer.html>.
- Metzinger, Thomas, and Elisabeth Hildt. "Cognitive Enhancement." *Oxford Handbook of Neuroethics*, edited by Judy Illes and Barbara J. Sahakian, Oxford University Press, 2011, pp. 245–264.
- Miah, Andy. "Make Me a Superhero: The Pleasures and Pitfalls of Body Enhancement." *The Guardian*, 30 Apr. 2009, <http://www.guardian.co.uk/science/2009/may/01/body-enhancement-cosmetic-surgery-genetics>.
- Michelson, Albert., and Edward Morley. "On the Relative Motion of the Earth and the Luminiferous Ether." *American Journal of Science*, vol. 34, 1887, pp. 333–45.
- Millán, Esteban. "Protecting Natural Beauty from Humanism's Violence: The Healing Effects of Alexander von Humboldt's *Naturgemälde*." *Posthumanism in the Age of Humanism: Mind, Matter, and the Life Sciences after Kant*, edited by Edgar Landgraf, Gabriel Trop, and Leif Weatherby, Bloomsbury, 2019, pp. 183–200.
- Minsky, Marvin. *Society of Mind*. Simon & Schuster, 1985.

—. “Will Robots Inherit the Earth?” *Scientific American*, 1 Oct. 1994,

<https://www.scientificamerican.com/article/will-robots-inherit-the-earth/>.

Mitchell, Kaye. “Bodies That Matter: Science Fiction, Technoculture, and the Gendered Body.”

*Science Fiction Studies*, vol. 33, no. 1, 2006, pp. 109–128.

<http://www.jstor.org/stable/4241411>.

Mitchell, William J. *Me++: The Cyborg Self and the Networked City*. MIT Press, 2003.

Moravec, Hans. *Mind Children: The Future of Robot and Human Intelligence*. Harvard University Press, 1990.

More, Max. “The Extropian Principles: A Transhumanist Declaration.” 1998,

[http://www.mrob.com/pub/religion/extro\\_prin.html](http://www.mrob.com/pub/religion/extro_prin.html).

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

Morton, Timothy. *Hyperobjects: Philosophy and Ecology after the End of the World*. University of Minnesota Press, 2013.

Murray, Charles, and Richard J Herrnstein. *The Bell Curve: Intelligence and Class Structure in American Life*. Free Press, 1995.

Murray, Stuart. *Disability and the Posthuman: Bodies, Technology and Cultural Futures*. Liverpool University Press, 2020.

Naisbitt, John. *High Technology/High Touch: Technology and Our Accelerated Search for Meaning*. Broadway Books, 1999.

Nayar, Pramod K. *Posthumanism*. Polity, 2014.

- Neel, Madeleine. “*Borne* by Jeff VanderMeer Review — After the Biotech Apocalypse.” *The Guardian*, 15 June 2017, <https://www.theguardian.com/books/2017/jun/15/borne-by-jeff-vandermeer-review>.
- Nesse, Randolph. “Is Depression an Adaptation?” *Archives of General Psychiatry*, vol. 57, no. 1, 2000, pp. 14–20. doi:10.1001/archpsyc.57.1.14.
- Niekerk, Anton A. “After Humanity? Philosophical and Moral Perspectives on the Idea of Posthumanity.” *Studies in Sociology of Science*, vol. 5, no. 2, 2014, pp. 119–124.
- Noble, David F. *The Religion of Technology: The Divinity of Man and the Spirit of Invention*. Knopf, 1997.
- O’Grady, John P. “How Sustainable Is the Idea of Sustainability?” *Interdisciplinary Studies in Literature and Environment*, vol. 10, no. 1, 2003, pp. 1–10. <https://doi.org/10.1093/isle/10.1.1>.
- Osborne, Catherine. *Presocratic Philosophy: A Very Short Introduction*. Oxford University Press, 2004.
- Osborne, Thomas, and Nikolas Rose. “Against Posthumanism: Notes towards an Ethopolitics of Personhood.” *Theory, Culture & Society*, vol. 41, no. 1, 2023, pp. 3–21.
- Oyama, Susan. *Evolution’s Eye: A Systems View of the Biology-Culture Divide*. Duke University Press, 2000.
- . *The Ontogeny of Information: Developmental Systems and Evolution*. Duke University Press, 2000.
- Pais, Abraham. *Subtle Is the Lord: The Science and the Life of Albert Einstein*. Pantheon Books, 1982.

- Parrinder, Patrick. "Revisiting Suvin's Poetics of Science Fiction." *Learning from Other Worlds: Estrangement, Cognition, and the Politics of Science Fiction and Utopia*, edited by Patrick Parrinder, Liverpool University Press, 2000, pp. 36–50.
- Paul, Gregory S., and Earl D. Cox. *Beyond Humanity: Cyber Evolution and Future Minds*. Charles River Media, 1996.
- Peat, Francis D. *Einstein's Moon: Bell's Theorem and the Curious Quest for Quantum Reality*. McGraw-Hill/Contemporary, 1990.
- Pepperell, Robert. *The Posthuman Condition: Consciousness Beyond the Brain*. Phaidon, 2003.
- Perez, Janine E. "Sympathy for the Clone: (Post) Human Identities Enhanced by the 'Evil Science' Construct and Its Commodifying Practice in Contemporary Clone Fiction." *Between*, vol. 4, no. 8, 2014, pp. 1–24. <https://doi.org/10.13125/2039-6597/1303>.
- Pickering, Andrew. *The Mangle of Practice: Time, Agency and Science*. University of Chicago Press, 1995.
- Pines, Christopher, and Daniel Burnham, editors. *Understanding Nietzsche, Understanding Modernism*. Bloomsbury, 2019.
- Pinker, Steven, et al. *The New Eugenics? The Brave New World of Designer Children, Bionic Athletes, and Genetic Engineering*. Harvard University Institute of Politics, 2004, <http://forum.iop.harvard.edu/content/new-eugenicsbrave-new-world-designer-children-bionic-athletes-and-genetic-engineering>.
- Planck, Max. *The Origin and Development of the Quantum Theory*. Clarendon Polity Press, 1922.
- Nayar, Pramod k. *Posthumanism*. Polity Press, 2014.
- Rawls, John. *A Theory of Justice*. Harvard University Press, 2009.
- Reiff, Raychel H. *Aldous Huxley: Brave New World*. Marshall Cavendish, 2010.



- Roberts, Adam. *The History of Science Fiction*. Palgrave Macmillan, 2006.
- Robson, Justina. *Natural History*. Macmillan, 2003.
- Roden, David. *Posthuman Life: Philosophy at the Edge of Human Life*. Routledge, 2015.
- Rose, Nikolas. "The Politics of Life Itself." *Theory, Culture and Society*, vol. 18, no. 6, 2001, pp. 1–30.
- . *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*. Princeton University Press, 2007.
- Rothenberg, Micaela A. *The Excessive Subject: A New Theory of Social Change*. Polity Press, 2010.
- Rotman, David. "We Are Not Prepared for the End of Moore's Law." *MIT Technology Review*, 24 Feb. 2020, <http://www.technologyreview.com/2020/02/24/905789/were-not-prepared-for-the-end-of-moores-law/>.
- Rousseau, Jean-Jacques. *The Social Contract*. Penguin Books, 2004.
- Sandberg, Anders. "An Overview of Models of Technological Singularity." *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future*, edited by Max More and Natasha Vita-More, Wiley, 2013, pp. 376–94.
- Sandel, Michael J. *The Case Against Perfection: Ethics in the Age of Genetic Engineering*. Harvard University Press, 2007.
- Sanderson, Jay. "Margaret Atwood's *The Handmaid's Tale* and the Dystopian Tradition." *Canadian Literature*, no. 186, 2005, pp. 86–100.
- Sapospnik, Irving S. "The Anatomy of Dr. Jekyll and Mr. Hyde." *Studies in English Literature, 1500–1900*, vol. 11, no. 4, 1971, pp. 715–31. <https://doi.org/10.2307/449833>.

- Savulescu, Julian. "In Defence of Procreative Beneficence." *Journal of Medical Ethics*, vol. 33, no. 5, 2007, pp. 284–88. <https://doi.org/10.1136/jme.2006.018184>.
- . "The Perils of Cognitive Enhancement and the Urgent Imperative to Enhance the Moral Character of Humanity." *Journal of Applied Philosophy*, vol. 25, no. 3, 2008, pp. 162–67.
- . "Human Liberation: Removing Biological and Psychological Barriers to Freedom." *Monash Bioethics Review*, vol. 29, no. 1, 2010, pp. 4.1–18.
- . "The Maverick: It's Our Duty to Have Designer Babies." *Reader's Digest*, 2012, <http://www.readersdigest.co.uk/magazine/readers-digest-main/the-maverickitsour-duty-to-have-designer-babies>.
- Singer, Katherine, et al. "Introduction: Living in a New Material World." *Material Transgressions: Beyond Romantic Bodies, Genders, Things*, edited by Katherine Singer, Angela Cross, and Sarah Barnett, Liverpool University Press, 2020, pp. 1–28.
- Shapiro, Fred R., editor. *The Yale Book of Quotations*. Yale University Press, 2006.
- Sharon, Tamar. *Human Nature in an Age of Biotechnology: The Case for Mediated Posthumanism*. Springer, 2014.
- Smith, Andrew, and William Hughes. "Introduction: Defining the Ecogothic." *Ecogothic*, edited by Andrew Smith and William Hughes, Manchester University Press, 2013.
- Smith, Brian. "SF, Infrastructure, and the Anthropocene: Reading *Moxyland* and *Zoo City*." *Cambridge Journal of Postcolonial Literary Inquiry*, vol. 3, no. 3, 2016, pp. 345–59. <https://doi.org/10.1017/pli.2016.17>.
- Sobchack, Vivian. "American Science Fiction Film: An Overview." *A Companion to Science Fiction*, edited by David Seed, Blackwell, 2005.
- Sontag, Susan. *Against Interpretation and Other Essays*. Farrar, Straus and Giroux, 1966.

- Sorgner, Stefan Lorenz, and Brigitte Jovanovic. *Evolution and the Future*. Peter Lang, 2013.
- Sparrow, Robert. "A Not-So-New Eugenics: Harris and Savulescu on Human Enhancement." *Hastings Center Report*, vol. 41, no. 1, 2011, pp. 32–42.
- Spivak, Gayatri C. "Can the Subaltern Speak?" *Marxism and the Interpretation of Culture*, edited by Cary Nelson and Lawrence Grossberg, Springer, 1988.
- Steyn, Melissa. "White Talk." *Postcolonial Whiteness: A Critical Reader on Race and Empire*, edited by Alfred López, SUNY Press, 2005, pp. 119–48.
- Stobie, Cheryl. "Dystopian Dreams from South Africa: Lauren Beukes's *Moxyland* and *Zoo City*." *African Identities*, vol. 10, no. 4, 2012, pp. 367–80.  
<https://doi.org/10.1080/14725843.2012.735713>.
- Gould, Stephen J. *The Mismeasure of Man*. W. W. Norton, 1981.
- Stiegler, Bernard. *Technics and Time, 1: The Fault of Epimetheus*. Stanford University Press, 1998.
- Stock, Gregory. *Redesigning Humans: Choosing Our Children's Genes*. Profile, 2002.
- Stone, Allucquère R. *The War of Desire and Technology at the Close of the Mechanical Age*. MIT Press, 1995.
- Suvin, Darko. *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre*. Yale University Press, 1979.
- Swierstra, Tsjalling, et al. "Exploring Techno-Moral Change: The Case of the Obesity Pill." *Evaluating New Technologies: Methodological Problems for the Ethical Assessment of Technology Developments*, edited by Paul Sollie and Marcus Düwell, Springer, 2009, pp. 119–38.

- Swierstra, Tsjalling, et al. "Forging a Fit Between Technology and Morality: The Dutch Debate on Organ Transplants." *Technology in Society*, vol. 32, no. 1, 2010, pp. 55–64.
- Tabas, Brad. "Dark Places: Ecology, Place, and the Metaphysics of Horror Fiction." *Miranda*, no. 11, 2015. <https://doi.org/10.4000/miranda.7012>.
- Telotte, Jay P. *Science Fiction Film*. Cambridge University Press, 2001.
- Thacker, Eugene. "Data Made Flesh: Biotechnology and the Discourse of the Posthuman." *Cultural Critique*, no. 53, 2003, pp. 72–97. <http://www.jstor.org/stable/1354625>.
- The President's Council on Bioethics. *Beyond Therapy: Biotechnology and the Pursuit of Happiness*. Regan Books, 2003.
- Tipler, Frank J. *The Physics of Immortality: Modern Cosmology, God and the Resurrection of the Dead*. Doubleday, 1994.
- Trepanier, Lee, editor. *Why the Humanities Matter Today: In Defense of Liberal Education*. Lexington Books, 2018.
- Tsing, Anna L. et al., editors. *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*. University of Minnesota Press, 2017.
- Tymn, Marshall B. "Science Fiction: A Brief History and Review of Criticism." *American Studies International*, vol. 23, no. 1, 1985, pp. 41–66.
- Valentina, Andreea. "Between Bioethics and Literature: Representations of (Post-)Human Identities in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood*." *Pólemos*, vol. 6, no. 2, 2012, pp. 249–61.
- VanderMeer, Jeff. *Borne*. Penguin, 2017.
- Verbeek, Peter-Paul. *What Things Do: Philosophical Reflections on Technology, Agency and Design*. Penn State University Press, 2005.

- . *Moralizing Technology: Understanding and Designing the Morality of Things*. University of Chicago Press, 2011.
- Vinge, Vernor. “The Coming Technological Singularity: How to Survive in the Post-Human Era.” *Vision 21: Interdisciplinary Science and Engineering in the Era of Cyberspace*, NASA Lewis Research Center, 1993. <http://ntrs.nasa.gov/search.jsp>.
- Volkow, Nora D., et al. “Depressed Dopamine Activity in Caudate and Preliminary Evidence of Limbic Involvement in Adults with Attention-Deficit/Hyperactivity Disorder.” *Archives of General Psychiatry*, vol. 64, no. 8, 2009, pp. 932–40.
- Vourvoulias, Sabrina. *Ink*. Crossed Genres, 2012.
- Bijker, Wiebe E., and John Law, editors. *Shaping Technology/Building Society: Studies in Sociotechnological Change*. MIT Press, 1994.
- Waldby, Catherine. *The Visible Human Project: Informatic Bodies and Posthuman Medicine*. Routledge, 2000.
- Walker, Mark A. “The Case for Happy-People Pills.” *Free Inquiry*, vol. 29, no. 5, 2009, pp. 33–36.
- Warren, Bill. *Keep Watching the Skies: American Science Fiction Movies of the Fifties*. McFarland, 1997.
- Wayne, Mark. *The Quantum Revolution: The Power to Transform*. Amazon, 2016.
- Weatherby, Leif. “Farewell to Ontology: Hegel after Humanism.” *Posthumanism in the Age of Humanism: Mind, Matter, and the Life Sciences after Kant*, edited by Edgar Landgraf, Gabriel Trop, and Leif Weatherby, Bloomsbury, 2019, pp. 145–64.
- Weinberg, Steven. *Dreams of a Final Theory: The Search for the Fundamental Laws of Nature*. Hutchinson, 1993.

- Weinstone, Ann. *Avatar Bodies: A Tantra for Posthumanism*. University of Minnesota Press, 2004.
- Wells, Herbert G. *The Time Machine*. William Heinemann, 1895.
- Wertheimer, Taylor. “Blake Lemoine: Google Fires Engineer Who Said AI Tech Has Feelings.” *BBC News*, 23 July 2022. <https://www.bbc.com/news/technology-62275326>.
- Westermarck, Edvard. *The History of Human Marriage*. Macmillan, 1922.
- Westfahl, Gary. *Critical Explorations in Science Fiction and Fantasy*. McFarland, 2007.
- Wiener, Norbert. *The Human Uses of Human Beings: Cybernetics and Society*. Free Association Press, 1989.
- Wikler, Daniel. “Paternalism in the Age of Cognitive Enhancement: Do Civil Liberties Presuppose Roughly Equal Mental Ability?” *Human Enhancement*, edited by Julian Savulescu and Nick Bostrom, Oxford University Press, 2009, pp. 341–55.
- Williams, George C. *Adaptation and Natural Selection: A Critique of Some Current Evolutionary Thought*. Princeton University Press, 1974.
- Wilson, Scott, and Nick Haslam. “Is the Future More or Less Human? Differing Views of Humanness in the Posthumanism Debate.” *Journal for the Theory of Social Behaviour*, vol. 39, no. 2, 2009, pp. 247–66.
- Wilks, Yorick. *Artificial Intelligence: Modern Magic or Dangerous Future?* Hot Science, 2019.
- Winner, Langdon. *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought*. MIT Press, 1978.
- Wittgenstein, Ludwig. *Philosophical Investigations*. Blackwell, 2009.
- Wolfe, Cary. *What Is Posthumanism?* University of Minnesota Press, 2010.

- Wolfe, Gary K. "SF and Its Editors." *The Cambridge Companion to Science Fiction*, edited by Edward James and Farah Mendlesohn, Cambridge University Press, 2003.
- Wolfe, Tom. *Hooking Up*. Farrar, Straus and Giroux, 2000.
- Wynne-Edwards, Vero C. *Animal Dispersion in Relation to Social Behaviour*. Hafner Publishing, 1967.
- . *Evolution Through Group Selection*. Blackwell Scientific, 1986.
- Youngblood, Denise J. *Movies for the Masses: Popular Cinema and Soviet Society in the 1920s*. Cambridge University Press, 1992.
- Zimmerman, Michael. "The Singularity: A Crucial Phase in Divine Self-Actualization?" *Cosmos and History: The Journal of Natural and Social Philosophy*, vol. 4, no. 1–2, 2008, pp. 347–70.