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with an Emphasis in Translation

Exploring the Ethical Implications of Creation and Technological Innovation:
A Comparative Analysis of Mary Shelley's *Frankenstein* and Modern
Technological Advances

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Dedication

I dedicate this graduation project to those who have always believed in me and loved me unconditionally.

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Abstract

This research project explores the ethical implications related to the creation of life and scientific innovation through a comparative analysis of Mary Shelley's novel *Frankenstein* and contemporary advancements in artificial intelligence, bioengineering, and robotics. It examines how *Frankenstein*, written in the early 19th century, anticipates modern dilemmas and warns about the dangers of excessive ambition as well as the denial or abandonment of responsibility. This qualitative study analyzes themes such as the creator's responsibility, alienation, and social rejection toward what is unconventional. Drawing from philosophical, historical, and academic theory, this project highlights the relevance of *Frankenstein* as a platform for interdisciplinary reflection on current ethical challenges in scientific progress, while also positioning literature as a vital tool for understanding the consequences of innovation without empathy, emphasizing the enduring value of *Frankenstein* in today's ethical debates.

Resumen

Este trabajo de investigación explora las implicaciones éticas en cuanto a la creación de vida e innovación científica refiere a través de un análisis comparativo de la novela Frankenstein de la autora Mary Shelley, así como de avances contemporáneos en inteligencia artificial, bioingeniería y robótica. El presente trabajo analiza como el texto Frankenstein, escrito a principios del siglo XIX, anticipa dilemas modernos y advierte sobre los peligros de una ambición desmedida, así como de la negación o abandono de la responsabilidad. El trabajo de investigación utiliza un enfoque cualitativo para analizar temáticas como la responsabilidad del creador, la alienación, y el rechazo social hacia lo no convencional. A través de teoría en materia filosófica, histórica, y académica, el presente proyecto resalta la relevancia de Frankenstein como una plataforma para la reflexión interdisciplinaria en cuanto a desafíos éticos en el progreso científico actual, posicionando también la literatura como una herramienta vital para el entendimiento de las consecuencias de la innovación sin empatía, resaltando el valor duradero de la novela Frankenstein en debates actuales sobre la ética.

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Chapter I

Introduction

1.1 Problem Statement

For more than two centuries, “Frankenstein; or, The Modern Prometheus” written by Mary Shelley has been a piece of literature that ignites ethical, philosophical and social reflections. More than a simple horror story, the novel is a complex allegory regarding the limits of human knowledge, the desire to control life, and the consequences of acting without moral responsibility. In a contemporary context characterized by fast advances in artificial intelligence, biotechnology and genetic engineering, it is a must to examine Frankenstein from a critical and comparative perspective. This project starts from the necessity, exploring how the dilemmas proposed by Shelley are still important and offer a powerful discussion platform for the ethical challenges that go in hand this the modern technological advance.

Mary Shelley published Frankenstein in 1818, in a Europe characterized by tensions between Enlightenment and Romanticism, a historical period where the zenith of the sciences started to challenge the limits imposed by religion and traditional philosophy. The character of Victor Frankenstein, a scientist that transcends the frontiers of life and death through the creation of an artificial being, postulates an important question, to what extent should human beings advance their knowledge if this means challenging the natural and ethical order of the world?

The novel makes clear that the problem is not the creation of life only, but the abandonment, the rejection and irresponsibility of the creator towards his creation. This literary dilemma echoes with modern reality. The development of Artificial Intelligence, genetic engineering, cloning of organs, and the fabrication of androids with cognitive capacities raise similar questions, what obligations does the creator have toward his creation? What happens when creation escapes his control? What are the social and moral consequences of these advances?

In this context, it is necessary to analyze Frankenstein not only as a literary work but as a precursor to biotechnical and technoscientific thinking. The abandonment that Victor’s creature suffers can be interpreted as a warning about what happens when science advances without

empathy or reflection. This project postulates a comparison between the dilemmas presented in the novel and the challenges of modern science and technology, highlighting the relevance of the novel and its potential to raise awareness about innovation and ethical responsibility.

1.1.1 Research Question

Scientific and technological advances have transformed human life and interactions, created new possibilities but also complex ethical concerns. As AI and bioengineering technologies advance, and get more sophisticated, a question arises: Is humanity prepared to assume the consequences of their own inventions? The novel *Frankenstein* gains relevance by proposing more than two centuries ago the same questions and concerns that we are facing nowadays. This project postulates the following research question: How do the ethical dilemmas presented in Mary Shelley's *Frankenstein* reflect urgent contemporary concerns about scientific innovation, responsibility, and the creation of life?

1.2 Objectives

An investigation process requires a concise direction to define what the goals of the analysis are. The objectives of this project are centered on establishing a comparison between the literary work *Frankenstein* and the modern ethical challenges related to the creation of artificial life. The following objectives aim to guide the investigation to a deep comprehension about the moral conflicts that arise when humankind assumes the role of a creator without foreseeing the consequences of its actions.

1.2.1 General Objective

- A. To examine the ethical dilemmas surrounding creation and innovation in Mary Shelley's *Frankenstein* and modern technological advancements and the moral implications.

1.2.2 Specific Objectives

- A. To analyse the ethical responsibilities of creators in *Frankenstein* and modern technological fields, focusing on the consequences of their actions in creating life.
- B. To compare the societal reactions to *Frankenstein's* creature and contemporary technological innovations.
- C. To evaluate the role of ethical guidelines and accountability in scientific and technological advancements in *Frankenstein*.

1.3 Justification

The election of Mary Shelley's *Frankenstein* as the main theme of the analysis is not only based on its historical importance in literature but for its amazing capacity of anticipating ethical dilemmas we face today as a society. This project aims to position itself between the intersection of science, ethics, and literature, contributing to the critical reflection about the limits of human creations.

Frankenstein, written by Mary Shelley in 1818, is a literary work that transcended its time and genre to be a touchstone regarding ethics, philosophy, and science. The novel approaches universal topics such as the creation of life, ambition, loneliness, social rejection, and the responsibilities creators have towards their creations. Even though these topics were originated during the 19th century, they remain applicable when considering the technological and genetic advances.

The relevance of the project lies in the fact that *Frankenstein* can not only be read as a gothic or romantic piece of literature, but also as a precursor text in modern bioethical discussions. The character of Victor Frankenstein represents the figure of the scientist who, blinded by his own ambition, breaks the natural limits by creating a sentient life form without considering the consequences. Victor's conflict is related to contemporary concerns about the development of autonomous artificial intelligences, systems capable of decision taking processes, or genetic engineering, challenging traditional concepts of life, death and humanity.

The comparative literary analysis allows a critical approximation that extends beyond mere aesthetical interpretation. This investigation proposes using Shelley's narrative as an interdisciplinary platform to discuss about ethics and the philosophy behind progress and responsibility. This project is not only useful for literature students or professors, but also for those whose lives revolve around technology, innovation, and bioethical regulations.

This project also aims to demonstrate how literature is still a fundamental tool to explore humankind's most important dilemmas. In a world where technological advancement appears to be even faster than ethics, *Frankenstein* is a pause, a window to a past time where great minds were already warning about the risks of development without empathy.

Finally, from an academic perspective, this investigation project contributes to the development of critical and analytical thinking by promoting reflexive reading of complex literary works while establishing connections with modern problematics. By positioning Frankenstein as the starting point for ethical analysis, this project offers a humanist perspective regarding scientific and technological progress.

1.4 Antecedents

To understand the relevance of the topics covered in this project, it is necessary to present the antecedents that evidence how the novel Frankenstein has been approached before and its link to ethical, scientific, and social concepts. The antecedents enable the contextualization of the analysis within a chronological order by including academic contributions both national and international.

1.4.1 Historical Antecedents

Since its publication date in 1818, Frankenstein has been subject of multiple interpretations that go from literature to philosophy and sciences. Historical antecedents allow the study of the novel by exploring how this literary work was influenced by the thinking from the 19th century, specifically by galvanism, industrial revolution, romanticism, and the debates regarding the role of science in society. Furthermore, key periods from the 19th and 20th century when the novel was considered as a warning call about the risks of science without ethics have been documented. The antecedents are a tool to understand how Mary Shelley, through her fiction, anticipated ethical concerns that are still relevant today.

A fundamental reference to this project is the book “Monstruous Progeny: A History of the Frankenstein Narratives” by Lester D. Friedman and Allison B. Kavey (2016). This work places Frankenstein within the historical and cultural context of early 19th century England, emphasizing how Shelley’s novel reflects the anxieties of a society during a transition period characterized by scientific discoveries and political upheavals. The authors explain how Victor’s transgressive actions echo the period’s fear about uncontrolled scientific experimentation and the breakdown of traditional boundaries between nature and human ambition.

Another key contribution is Graham Allen’s (2022) “Mary Shelley”, which analyzes the philosophical and literary background that shaped the novel. Allen studies Shelley’s engagement with Romanticism and her philosophical inheritance. Allen’s study highlights how Shelley used fiction not only to tell a personal story of grief and loss, but also to interrogate larger ethical

questions about agency, autonomy, and the limits of scientific intervention.

Additionally, Óscar Pamo Reyna's work "Mary Shelley, Frankenstein y la creación de vida" (2015) explores how Shelley's novel critiques the Promethean desire to dominate something humanity was not supposed to possess. Pamo argues that the novel anticipates bioethical concerns that remain relevant today, particularly those related to the artificial creation of life and the abandonment of responsibility, emphasizing the novel's status as a cautionary tale about scientific ambitions without moral accountability.

1.4.2 National Antecedents

In the Costa Rican national context, there has been multiple efforts to link literary analysis to ethics, technology and innovation. Although Frankenstein has not been subject of widespread systematic research at a local level, there are educational incentives, college thesis, and academic papers that have approached the novel as a starting point to discussions about bioethics, AI, transhumanism, and the limits of knowledge.

For instance, Monge's thesis "Literary Analysis of Frankenstein Through Mary Shelley's Eyes: The Power of Creation and The Promethean Arrogance" discusses the relevance of Frankenstein in the context of bioethical debates. The research reflects on the ethical implications of creating life and draws connections between Victor Frankenstein's actions and current scientific practices, emphasizing the need for responsibility and empathy in both literary and real world.

Additionally, Hernández's analysis "Frankenstein: el antihéroe como héroe desde la perspectiva del análisis transaccional" examines the role of the antiheroic figure in Frankenstein from the transactional analysis perspective. The study highlights how Victor and the creature are portrayed as emotionally damaged beings whose decisions are shaped by their environment and internal conflicts. This interpretation provides a psychological and ethical reading that echoes with modern-day discussions on technological development and human identity.

1.4.3 International Antecedents

At an international level, Frankenstein has been analyzed through multiple perspectives and approaches. The novel is a metaphor to understand concepts such as artificial intelligence, cloning, human rights, and ethics in medicine. Analysis and investigations in countries like the United States, England, and Germany have work in Shelley's text to discuss the figure of the

“irresponsible creator” when considering modern technological advances. The presence of Frankenstein in congresses, scientific papers, and interdisciplinary debates acknowledge the potential of this novel when discussing science limits.

One relevant study is “Pesadillas poshumanistas: Frankenstein como caso de estudio” by Hernández Valencia (2021), which explores the novel through a posthumanist perspective. The author emphasizes how both Victor and the creature become victims of the same instrumentalized logic that governs scientific development, one that promises progress but often leads to dehumanization.

Similarly, in her work “La criatura de Frankenstein y la lucha por el reconocimiento”, Rumeu (2002) focuses on Frankenstein’s creature as a being whose recognition and humanity has been denied by society. Drawing from the Hegelian concept of recognition, the study illustrates how the creature’s moral corruption is a consequence of social rejection rather than inherent evil, emphasizing the ethical consequences of marginalization.

In another significant contribution, Patowary’s work “Artificial Intelligence and Mary Shelley’s Frankenstein: A Comparative Analysis of Creation, Morality, and Responsibility” (2023) analyzes the parallels between Frankenstein and the development of artificial intelligence. The author discussed issues such as moral responsibility, creator-creation dynamics, and the dangers of uncontrolled innovation. Patowary’s work states that Shelley’s novel remains relevant in evaluating the ethical implications of technological advancements that aim to replicate human consciousness and autonomy.

Lastly, Brannstrom (2006) explores the theme of alienation in Frankenstein, both in Victor and the creature in her study “An Analysis of the Theme of Alienation in Mary Shelley’s Frankenstein” through a literary and psychological approach, the study highlights the emotional isolation experienced by both characters and how this alienation shapes their respective tragedies. The paper argues that Shelley’s narrative powerfully portrays the existential consequences of social exclusion and the loss of emotional connection.

1.5 Scope

The scope of this project defines the aspirations of the work, outlining what is expected to be achieved through the literary and ethical analysis of Frankenstein in relation to the

contemporary world. The objective of this academic analysis is also to generate profound reflection on the challenges we face as a society regarding the accelerated technological growth. The scope not only encompasses literature but also extends to a critical view of modernity and the responsibility that comes with creating in an increasingly automated world.

- A. To establish connections between Frankenstein's narrative and modern ethical dilemmas related to artificial intelligence, bioengineering and other technologies.
- B. To analyze the figure of the creator through an ethical perspective, comparing Victor Frankenstein with contemporary scientists and developers.
- C. To promote academic and interdisciplinary reflection among literature, ethics, and sciences.
- D. To establish literature as a tool in analyzing scientific progress and its implications.

Chapter II

Theoretical Framework

A theoretical framework serves as the foundation for academic research, providing a structured lens to analyse a subject. In the case of Frankenstein, this framework is essential in understanding the novel's philosophical, scientific, and ethical implications. By examining Mary Shelley's work, we can explore its enduring relevance and its impact on contemporary debates regarding creation, responsibility, and societal exclusion. Frankenstein is not just a gothic novel, but a profound reflection on human ambition and the consequences of limit-less scientific exploration.

The novel remains relevant in contemporary discussions since it raises questions that continue to challenge modern society. Concepts such as bioengineering, artificial intelligence, and social marginalization echo the themes Shelley introduced in 1818. Victor Frankenstein's ambition and subsequent neglect of his creation mirror contemporary concerns about scientific advancements that outpace ethical considerations. The novel warns against the dangers of playing God, a cautionary message that resonates with present-day technological developments and their unforeseen consequences.

One of the most striking aspects of Frankenstein is its ability to bridge literary fiction and real-world ethical dilemmas. The creature's struggle for acceptance and Victor's descent into obsessive isolation illustrate timeless conflicts between creators and their creations. Frankenstein serves as a literary and ethical criterion, warning against the reckless pursuit of knowledge without moral responsibility.

This chapter will explore the contextual and philosophical underpinnings of Frankenstein, linking it to contemporary ethical dilemmas. By analysing the historical influences that shaped Shelley's vision, the novel's engagement with scientific theories of the time, and its exploration of alienation, we gain a deeper understanding of its significance. Furthermore, the discussion will extend to the ethical dimensions of artificial life and the responsibilities of creators, emphasizing the novel's lasting relevance in an era of rapid technological progress.

2.1 Mary Shelley's Biography

To fully understand a literary work, it is essential to know about its author. On this occasion, we will delve into the life of Mary Shelley, whose existence was marked by bitterness and loss from the very beginning. Born as Mary Godwin on August 30, 1797, Mary never had the chance to know her mother, Mary Wollstonecraft, who sadly passed away shortly after giving birth to her. Thus, Mary was raised by her father, William Godwin, a writer and political philosopher with progressive ideas. William Godwin lived in debt, yet despite this, he was able to provide Mary with a more than dignified life, granting her access to knowledge of the world and society through a rich and extensive library.

At 16 years old, Mary fell in love with Percy Shelley, who at the time was a young poet and admirer of Mr. Godwin. Their romance was quite scandalous by the standards of the time, as Percy Shelley was already married, was expecting a child, and, to top it all off, their meetings often took place in a cemetery (G.M., 2024). In 1814, the couple travelled to Switzerland, accompanied by Mary's stepsister, Claire Clairmont (some suggest this was because Percy was also attracted to her). Their journey was plagued by financial difficulties and rejection from society, and when Mary lost what would have been her first child in a miscarriage, they had to return to England. Losing a child in such a tragic way deeply affected Mary, a pain she would later imprint in her work.

In 1816, the couple travelled to Switzerland once again, this time at the invitation of none other than Lord Byron, who had already begun a relationship with Claire. Percy believed that such a trip and its influences would lift Mary's spirits, but he could not have been more mistaken, as that very year would be remembered as "The Year Without a Summer" due to the extreme environmental conditions caused by the eruption of Mount Tambora. Because of the weather, Lord Byron and his distinguished guests were forced to stay indoors at Villa Diodati, entertaining themselves with horror stories. One evening, Byron proposed a fun challenge to everyone present: each person had to write a horror story. At first, Mary struggled to find inspiration, but one night, she had a vivid nightmare in which she saw a scientist horrified by his own creation (G.M., 2024). This vision of the scientist would lay the foundation for her novel, *Frankenstein, or The Modern Prometheus*, a literary work that explores themes still considered complex even today.

The bleak atmosphere of 1816, caused by the eruption of Mount Tambora, added even more depth to the setting in which Frankenstein would be written. The lack of sunlight, persistent storms, and an apocalyptic sensation inspired Mary Shelley to explore melancholic themes such as isolation, existential crises, and the consequences of obsessive ambition. Alongside Lord Byron and John Polidori (who would later write *The Vampyre*), Mary and Percy Shelley engaged in discussions on philosophical and scientific topics, but they also entertained themselves with the supernatural. These intellectual exchanges at Villa Diodati were crucial in shaping Frankenstein. Discussions on galvanism, natural sciences, and the limits of human knowledge enriched Mary's mind, allowing her to merge this information with her personal experiences to create one of the most significant and defining works of Gothic and science fiction literature.

Published anonymously in 1818, Frankenstein was initially met with intrigue and shock. In 1831, a revised version of the novel was released, this time under Mary Shelley's name. Despite the success of her novel, Mary Shelley's life remained deeply tragic, she lost all her children except one, Percy Florence Shelley, and her husband drowned in Italy in 1822. Shelley decided to return to England, raising her son while supporting herself through editing texts (G.M., 2024). Shelley's final years were difficult; she remained under the care of her son and his wife until her passing on February 1, 1851, due to a brain tumour. Although she wrote other works throughout her life, Frankenstein became her most renowned novel, her legacy, a haunting tale of melancholy, written in a year without a summer.

2.2 Theories

2.2.1 Convergence of Gothic and Romantic Elements in Frankenstein

The novel Frankenstein is in an interesting position between two literary movements: Gothic literature and Romanticism. While the novel is widely recognized as a Gothic work due to its depiction of the supernatural, horror, and mystery, it also presents certain characteristics of Romantic literature, such as the exaltation of emotions, an interest in nature, and a rejection of the rigidity of rationalism and the Enlightenment. Understanding the dual influence of these movements on the novel is essential to fully appreciate its complexity.

The Gothic genre emerged in the 18th century as a response to the Enlightenment and its emphasis on reason, seeking to explore the darker aspects of human existence. As Cruz (2024) states, "The Gothic narrative, born as a response to Enlightenment rationalism, is characterized

by its focus on darkness, the supernatural, and the macabre.” *The Castle of Otranto* (1746) by Horace Walpole laid the foundations of Gothic fiction, as it introduced key elements such as haunted castles, mysterious characters, and a constant sense of impending doom. Shelley incorporated many characteristics of the Gothic genre in *Frankenstein*, which are reflected, for instance, in its settings, such as the Arctic or the laboratory where Victor conducted his experiment, places that evoke an ominous sensation. The grotesque representation in the Creature, Victor’s actions, and the pervasive suspense throughout the novel further establish *Frankenstein* as a Gothic work.

The exploration of psychology in tormented characters is one of the defining aspects of Gothic literature that sets it apart from other genres. Shelley employs this element masterfully with her two main characters. Victor’s mental deterioration, leading to his eventual madness, is a classic archetype in Gothic fiction. Similarly, the Creature’s suffering due to social rejection, incomprehension, and loneliness aligns with the tragic character archetype, as Cruz points out: “Protagonists in Gothic literature are often tormented figures, facing moral dilemmas and personal tragedies that shape their narratives.” The novel’s connection to the supernatural and horror, key traits of Gothic literature, is evident in Victor’s actions, as he defies the natural order by playing with life.

Although *Frankenstein* is strongly tied to Gothic literature, it also contains elements of Romanticism. Romanticism emerged in the late 18th century and is characterized by its opposition to Neoclassicism, its emphasis on emotions, creativity, and admiration for nature (Pirela, 2016). This last element is particularly present in *Frankenstein*. Throughout the novel, nature serves as both a source of solace and punishment. Victor seeks refuge in the beauty of the Alps, and despite his suffering, the creature can admire the beauty of the natural world.

The sublime, a crucial concept shared by both Gothic literature and Romanticism, is a key aspect of the novel. The sublime refers to that which evokes powerful emotions, such as horror, often through elements of nature or the unknown. Pirela (2016) explains, “During Romanticism, the sublime became an essential aesthetic concept, replacing the classical ideal of beauty and emphasizing experiences that surpass human comprehension.” Shelley integrates this concept through the landscapes in the novel, most notably in the Arctic, a vast and desolate setting that represents both the wonder and cruelty of nature.

Frankenstein is a unique fusion of Romanticism and the Gothic movement. Shelley masterfully blended the dark elements of Gothic literature with the emotional depth and beauty of Romanticism, creating a novel that transcends both genres. The interplay between the macabre and the sublime, horror and beauty, the artificial and the natural, makes Frankenstein a complex literary work whose duality enriches its narrative.

2.2.2 Galvanism and its Influence in Frankenstein

One of the defining characteristics of Frankenstein is the strange sense of familiarity and reality that lingers while reading, a feeling that, despite being a science fiction novel, some aspects of it could very well be part of our own reality. And it is no surprise that readers experience this sensation while immersed in such a fantastic work, for, as briefly mentioned earlier, Shelley's writing was heavily influenced by the works and advancements of Luigi Galvani, an Italian physician whose experiments on the effects of electricity on organic matter must be considered before delving into Frankenstein. Galvani's discoveries regarding "animal electricity" and the reanimation of dead tissue through electrical stimuli would lay the foundation for what would later become the novel's central theme: the relentless pursuit of knowledge, regardless of morality or ethics, and the consequences of defying nature.

At the end of the 18th century, Galvani conducted groundbreaking experiments with frogs, observing how their legs moved when exposed to electrical currents. In one of his famous experiments, Galvani placed a copper hook on a frog's spine and hung it from a piece of iron, noticing spontaneous muscle contractions and spasms. These experiments led him to develop the idea that there is an electrical force inherent to living tissue, which he termed "animal electricity." Although contemporaries like Alessandro Volta would later refute this concept, their debate ultimately led to the discovery of the voltaic pile, the precursor to modern batteries (Dibner, 2024).

Galvani's work captivated the scientific community and fascinated everyone with the idea of using electricity to manipulate biological processes. In the early 19th century, public demonstrations of galvanic experiments became common, with scientists and enthusiasts applying electricity to lifeless bodies to induce involuntary movements (Dibner, 2024). These experiments profoundly influenced Mary Shelley, who, due to her social status and access to an extensive bibliography, was well acquainted with the scientific advancements of her time.

During the famous summer of 1816 at Villa Diodati, the group of intellectuals engaged in discussions on scientific topics, among them galvanism and its possible implications. The idea that electricity could bring the dead back to life resonated strongly in Shelley's mind (especially since, by that time, she had already lost both her mother and child) forming the foundation for the creation of Victor Frankenstein (Hernández, 2021).

In Frankenstein, Victor's character and his obsession with conquering death through science reflect Galvani's early research and experiments. The scene in which Victor harnesses a power capable of reanimating a corpse is reminiscent of galvanic experiments, emphasizing the concept of the scientific community pushing the boundaries set by nature, as noted by Martín and Pichel (2007):

Victor perfectly blends the desires of ancient magicians with the new scientific movements of the time, such as animal galvanism, which promoted sophisticated electrical resurrections in early 19th-century European capitals. This cultural background, which the young Shelley played with, compelled her to place the origin of life in the famous 'vital spark.'

Although Shelley never explicitly mentions Luigi Galvani in her novel, his influence is evident in Victor's character.

The ethical concerns sparked by Galvani's discoveries remain relevant even today. Modern biotechnological advancements such as neural implants, regenerative medicine, and the creation of artificial organs echo the themes of Frankenstein. Today's scientists manipulate bioelectrical signals to influence cellular regeneration, a direct extension of Galvani's work (Dibner, 2024). Although these advancements bring significant benefits to medicine, they also raise questions regarding the ethical implications of altering biological processes, drawing clear parallels to the moral dilemmas Victor faces in the novel.

One of the contemporary applications of bioelectricity can be found in neuroprosthetics, where electrical stimulation helps restore movement to paralyzed patients. It is impossible to not be amazed by the achievements humanity has reached, but this also opens the debate on the human potential to manipulate consciousness through electricity. The parallel with Victor's actions is clear: both use science as a means to outpace nature, raising the question of whether

humanity should pursue such knowledge simply because it is possible. Additionally, bioengineering has led to the creation of synthetic tissues and the possibility of growing organs in laboratories. Scientists are now working on printing fully functional human organs, and much like Victor with his experiments, the boundary between the artificial and the natural is gradually fading. Shelley warns us in her novel that unchecked ambition can lead to unforeseen consequences, a crucial consideration given today's advancement.

Although it has been mentioned that medical and technological advancements are far from harming humanity, it is essential to adopt a more critical perspective and consider the future. Hernández (2021) states that “both Victor and the creature are victims of this pharmakon.” Both end up as victims of an instrumental and technician advancement, which promises to improve and perfect human nature but ultimately poisons them.” We are sold the idea of progress, of solutions to humanity's longstanding afflictions, but few can foresee what might happen when society begins to view these advancements as relics of the past and demands more.

The fascination with reanimation is evident in scientific experiments involving brain organoids, miniature 3D brain structures that exhibit neural activity (Kim & Chang, 2023). While these models are invaluable for studying neurological disorders, they also present significant ethical concerns. If such structures were to develop consciousness, humanity would find itself facing a dilemma like Victor's: What responsibilities do we have as creators toward our creations?

In *Frankenstein*, Victor's downfall does not stem solely from creating life but also from his failure to take responsibility for it. Galvani's work marked a crucial turning point in both science and philosophy. He demonstrated the power of electricity in biological functions while simultaneously raising profound questions about humanity's role in the creation of life. Humanity still struggles to understand death as a natural process, remaining trapped in thanatophobia, believing it is necessary to save itself from a fate that was never truly an affliction to begin with (Hernández, 2021). *Frankenstein* captures this duality, presenting both excitement for scientific discoveries and the dangers of unchecked ambition.

The ethical considerations surrounding the use of electricity or any other means to manipulate life were once purely speculative, but they have now become concepts that actively

shape our world through fields such as artificial intelligence, bioengineering, and the future of medicine. The scientific community must proceed with caution, ensuring that progress does not come at the expense of moral responsibility.

2.2.3 Frankenstein and the Figure of the Modern Prometheus

Mary Shelley's novel *Frankenstein* bears the subtitle *The Modern Prometheus*, thus establishing a profound parallel between Victor Frankenstein and the Titan from Greek mythology. In the myth, Prometheus is a Titan who incurs the wrath of the gods by stealing fire and giving it to humanity for a greater good. His punishment for this altruistic act was imposed by Zeus: Prometheus would be chained to a rock, and each day an eagle would feast on his liver, which would regenerate to make his suffering eternal (Cartwright, 2013). Similarly, Victor's ambition leads him to defy the laws of nature, or the laws of God depending on a religious perspective, in an attempt to create life, an act whose consequences bring immense suffering both to himself and to his creature. The comparison between these two figures highlights the exploration of the moral paradoxes inherent in challenging nature and the responsibilities tied to scientific advancement.

One of the main dilemmas in *Frankenstein* is the yearning for superior knowledge without considering its ethical implications. Like Prometheus, Victor seeks to elevate human capabilities, in this case, through science. Hernández (2015) states that "The antiheroes in the work are portrayed as obsessive beings, pursuing immortality whether through the philosopher's stone, the elixir of life, or, in this case, an insatiable thirst for knowledge to benefit society, which constitutes an important element of Prometheanism." However, while Prometheus' actions are clearly altruistic and noble, Victor's are far more complex. From the very beginning of his scientific pursuits, Victor was driven by pride and ego, seeking recognition from others rather than striving for a true common good, something that would genuinely help humanity. As a result, the creation of the so-called monster was no gift to humankind like the fire stolen by Prometheus, but rather a curse that brought misery to both Victor and his loved ones.

Frankenstein's Creature can also be seen as a Promethean figure who, rejected by both his creator and his peers, seeks a place in the world only to be condemned to eternal punishment despite his initially pure intentions (Hernández, 2015). Just as humans received fire in the myth of Prometheus, the Creature acquires knowledge about humanity: its language, history, and

nature. However, despite his efforts to earn love and compassion by learning from others and proving himself to be an intelligent being capable of contributing to society, all that he learns only brings him suffering. His intellectual awakening does not grant him joy or comfort; on the contrary, it makes him more aware of the rejection he endures.

The Promethean themes in *Frankenstein* extend beyond mythology and permeate contemporary debates on the ethics of scientific advancements. In this way, the novel serves as a warning against ambition driven by ego, resonating with modern concepts such as artificial intelligence, bioengineering, and related fields. Today's scientists, much like Victor, seek to surpass natural limitations, placing blind faith in human potential. Likewise, they often fail to consider the ethical implications of their discoveries once they come to light (Patowary, 2023). Scientific and technological advancements in the modern era are beginning to lose their true purpose, for rather than creating tools to benefit humanity, the scientific community seems increasingly obsessed with replicating the human being.

The same concerns that plagued Victor's mind are now present in debates on artificial intelligence and bioengineering. Just as Victor was unprepared to take responsibility for his creation, modern science faces the challenge of ensuring that its advancements do not lead to suffering. Humanity finds itself conflicted in its role as a creator, for whether in mythology or reality, the act of surpassing the natural limits imposed upon us carries great consequences, as Hernández (2021) points out.

The anthropological critique in *Frankenstein* condemns as a grave mistake the notion of treating human contingency as an enemy to be conquered. Death should not be seen as the ultimate monster, as the sinister force emerging from the hidden depths of life to subjugate it through its terrifying sublimity. On the contrary, death is an inherent part of the contingent nature of the human body, it is a constitutive element of its sublimity.

Shelley's novel urges us to be cautious, reminding us that ambition must be tempered by the flames of responsibility and that blindly pursuing knowledge can lead to destruction rather than progress.

Beyond being a classic, the story of Prometheus has evolved within philosophical discourse, reflected in works like Shelley's, which present the Titan as a figure of resistance.

Unlike these interpretations, where Prometheus is seen as a liberator, Victor Frankenstein, in his role as a creator, is riddled with flaws. His failure to guide and care for his creation aligns with darker interpretations of the Prometheus myth in which his defiance of the gods results in chaos rather than enlightenment.

The theme of creation and punishment in Frankenstein also parallels Judeo-Christian mythology, particularly figures like Adam and Lucifer. Like Adam, the Creature longs for companionship, only to be abandoned by his creator. His rebellion against Victor similarly echoes Lucifer's defiance of Yahweh. The fusion of various mythologies and philosophical traditions greatly enriches Shelley's novel, allowing for an exploration of themes such as human transgression, the responsibility toward one's creation, and the consequences of challenging a higher power.

The concept of a "Modern Prometheus" can be examined through the lens of transhumanism, a movement that seeks to enhance human beings and their abilities through technology (Bostrom, 2003), reflecting Victor's desire to overcome human limitations. Frankenstein reinterprets the Prometheus myth not as a tale of triumph but rather as a warning. While Prometheus ushered humanity into a new era of enlightenment, Victor brought only misfortune. The novel urges us to contemplate the responsibilities that come with knowledge. In this way, Shelley's work remains just as relevant to society today as it was when it was first written.

2.2.4 Victor Frankenstein and Self-Imposed Alienation

One of the deepest themes in Frankenstein is loneliness, a condition that affects both Victor and his creation. Victor's loneliness is self-imposed, a consequence of his obsession with scientific discoveries and his failure to take responsibility for his creature (Brännström, 2006). His relentless desire for knowledge and power distances him from his family, his friend Clerval, and ultimately, from society as a whole. In his blind ambition, Victor condemns himself to both physical and psychological isolation, something that would lead to catastrophic consequences.

From the very beginning of the novel, Victor Frankenstein exhibits a tendency toward solitude. Practically from childhood, Victor became fascinated by the mysteries of science and decided to dedicate his entire life to it, studying alchemy and natural philosophy. His desire for knowledge consumed him to such an extent that he neglected the social aspects of his life,

interacting only with his family and a single friend. Victor is aware of how he abandoned other aspects of his life for science, stating, “I seemed to have lost all soul or sensation but for this one pursuit” (Shelley, 2004). This self-imposed isolation is a clear indicator of his detachment from human relationships, a detachment that would only worsen as he advanced in his experiments.

It is interesting to see how loneliness becomes more pronounced as the novel progresses. Victor’s isolation intensifies during the creation of the monster, as he locks himself away in his room in Ingolstadt, working obsessively day and night, maintaining only minimal contact with his family through letters. He rejects the idea of sharing his experiment or ambitions with anyone else, for deep down, he knew the grotesque nature of his actions. This period of seclusion reflects his detachment from the social norms of the time, norms he was well aware of due to his social status. His refusal of human companionship symbolizes his descent into moral and psychological chaos, for once he gives life to his creature, rather than seeing it as a scientific achievement, he immediately abandons his responsibilities, overcome with horror and repulsion. Interestingly, his decision to reject his creature only worsens his psychological torment, demonstrating that isolation is both the cause and the consequence of his failures as a creator and scientist.

Victor’s loneliness is starkly contrasted by the relationships he once had. At the beginning of the novel, we learn that his life was filled with love and companionship, surrounded by a structured family and the friendship of Clerval. The loss of his social connections becomes his greatest punishment, and his downfall illustrates the price one must pay for prioritizing ego and obsessive ambition over the bond with loved ones. Shelley suggests that an individual’s fulfillment lies in their relationships with others rather than in the relentless pursuit of knowledge at any cost.

As the novel progresses, Victor’s isolation also manifests in his inability to reintegrate into society. Even upon returning to his family, he remains emotionally distant from everyone due to the secret he so obsessively guarded. His inner struggle prevents him from seeking help or comfort from others, his engagement to Elizabeth, for instance, instead of bringing him joy, became yet another burden. Victor was fully aware of the nature of his actions and felt both ashamed and terrified at the thought of anyone discovering them yet keeping them secret only trapped him in a cycle of guilt and paranoia. As Brännström (2006) states, “the experiment forces Victor to alienate himself from society and his family as a means of protecting fellow creatures

from the monster.” His obsession with concealing his creation only deepens his solitude, as he becomes consumed by revenge once the creature takes the lives of his loved ones.

Victor’s story serves as a moral lesson on the dangers of unchecked ambition. His self-imposed isolation is not only a consequence of his dedication to science but also a conscious decision to detach himself from the repercussions of his actions. Mary Shelley presents Victor Frankenstein as a tragic figure, illustrating the devastating effects of loneliness and the essential need for human connection. At times, the pursuit of greatness can lead not to glory, but to destruction.

2.2.5 The Creature and Social Rejection

The theme of loneliness in Frankenstein is also represented through the experiences of the creature, whose attempts to gain acceptance (met only with rejection) serve as a catalyst for his descent into violence. From the moment of his creation, the creature is denied the possibility of integrating into society, encountering only hostility as a result of the fear his physical appearance instilled in others. His story reflects the consequences of social marginalization and raises questions about the importance of acceptance in shaping an individual’s identity. The creature’s loneliness and marginalization can be understood through the studies of Phenomenology of Spirit by Hegel and The Struggle for Recognition by Honneth, which emphasize the fundamental human need for recognition by others.

One of the most tragic aspects of the creature’s story is his repeated and desperate attempts to integrate into society. Initially, the Creature possesses an innate kindness, along with a deep desire to connect with those most like him, the humans. During his stay in the DeLacey family’s shed, he demonstrates his longing for companionship and a sense of belonging. He learns their language, appreciates the beauty in all of them, even in the elderly father, and secretly helps them by bringing firewood at night. However, when he finally sees an opportunity to introduce himself to the blind father, knowing he would not judge him by his appearance, Félix responds with a beating that forces him to flee. To make matters worse, the creature then witnesses the family selling their cottage in a desperate attempt to escape him. This rejection was the final straw, filling him with an indescribable pain that he ultimately soothes through violence. Brännström (2006) states that "Unlike its inventor, the creature does not choose to be alienated.

Rather, it is, in fact, others who isolate it because of his hideous appearance," a notion that also aligns with Rousseau's argument that man is born good, and it is society that corrupts him.

The inability to find acceptance and love reveals the brutal consequences of social rejection. At first, the creature does not wish to harm anyone, he only seeks companionship and understanding. However, in every encounter he has with humans, his status as a social outcast is only reinforced. The villagers pelted him with stones, his limbs were shattered by a gunshot, the DeLacey family abandoned him, and even his own creator could not hide his repulsion toward him. All these experiences ultimately shape the creature's perception of the world not as a place of compassion or safety, but as a hostile environment to which he has been condemned. Rumeu (2002) explains that "This deprivation, by denying him the most fundamental human right, to be someone and to have an identity, turns him wicked. His malice is the side effect of marginalization and suffering," allowing the reader to sympathize with and understand the creature and his actions, though not to justify them.

Another particularly tragic and painful aspect of the creature's story and his loneliness is his heightened state of awareness. At first, he does not understand why he is treated so cruelly, but over time, as he acquires knowledge, he internalizes a deep hatred and thirst for vengeance against society. From the moment he saw his reflection in a pool of water, he was able to perceive himself through the eyes of others and realized that no matter what he did, there was no place for him in the world. Filled with bitterness, he swore revenge against those who had wronged him. This internalized hatred, born from social rejection, also reflects the struggles and emotions of marginalized communities in our society, human beings like any other, yet denied their rights to identity and dignity due to the prejudices of others.

The concept of recognition proposed by Hegel in *The Phenomenology of Spirit* offers a critical framework for understanding the creature's struggles with his very existence. According to Hegel (1960), "self-consciousness arises through a dialectical process of recognition by another self-conscious being; without this mutual recognition, an individual cannot fully develop their identity." In the Creature's case, he is denied recognition both by Victor and by society. His life experiences parallel Hegel's master-slave dialectic, in which the master refuses to acknowledge the slave as an equal, thereby depriving him of the development of self-

consciousness. Similarly, the Creature is never seen as a living, autonomous being, but rather as an aberration, leading him to internalize the idea that he is a monster (Rumeu, 2002).

Honneth expands on Hegel's ideas by emphasizing that recognition is not merely a philosophical abstraction but a fundamental requirement for the development of social justice and morality. In *The Struggle for Recognition*, Honneth (1997) identifies three spheres of recognition necessary for fully developing one's identity: love (emotional support), legal recognition (rights and dignity), and solidarity (social esteem). The creature is systematically deprived of all three spheres, he receives no love from Victor, who abandons him in horror, he has no legal status or rights, as he exists outside the confines of human society and, ultimately, he has no social esteem, as he is universally feared and hated (Rumeu, 2002). This complete lack of recognition is the cause of his descent into violence, which can be understood as a response to dehumanization. His suffering is not only physical but also deeply emotional, and it is exacerbated by the realization that no matter what he does, he will never be accepted in the world.

The creature's existence is also linked to Jean-Jacques Rousseau's concept of the noble transsavage, which, according to Muñoz (2018),

"Seeks to show us that a man closely tied to nature, the first product of this nature, the 'primitive man' is physically and morally good, though he is doomed to fall due to the military superiority of civilization, which seeks either to eliminate him or to assimilate him into its immoral customs."

Had the Creature been accepted and loved from the start, it is likely that he would have developed differently. However, in reality, his life was shaped by cruelty, demonstrating how rejection can lead to a state of internalized hatred and rage.

The character of the Creature and the rejection he endures can be seen as both a tragedy and a social critique. His transformation from a benevolent being into one consumed by rage is a direct response to the continuous rejection he experienced throughout his existence. Shelley's novel invites us to reflect on the importance of empathy in an era where discussions on inclusion and diversity are reshaping our world. *Frankenstein* is a timeless work that compels us to

consider the moral responsibilities we hold toward the less fortunate, for if rejection breeds suffering, then understanding and acceptance must be the path to preventing it.

2.2.6 Artificial Intelligence and Frankenstein

The ethical dilemmas surrounding Artificial Intelligence (AI) bear clear similarities to those presented in Frankenstein, particularly regarding the creation of a conscious being. Just as Victor brings life into existence without first considering the impact it would have on his world, modern scientists and engineers are developing AI systems that may one day attain autonomy, thus sparking numerous debates about responsibility, control, and unforeseen consequences. Both AI developers and Victor Frankenstein are "driven by the ambition to construct intelligent entities that can mimic human intelligence, cognitive abilities, and even emotions" (Patowary, 2023). This eagerness to extend, or rather, to force the boundaries of technology, raises concerns about the implications of such advancements.

One of the central issues in Frankenstein is the creator's responsibility toward their creation. Victor, blinded by ambition, fails to anticipate the ethical ramifications of his experiment, abandoning the creature immediately after giving it life. Similarly, in the field of artificial intelligence, ongoing debates arise regarding developers' responsibilities toward their creations. As AI systems become increasingly sophisticated, developers, driven by the ambition to build intelligent entities capable of mimicking human beings (Patowary, 2023), may lose sight of ethical considerations. Without a strong ethical foundation, AI development could lead to harm, much like the one Victor inflicted in fiction.

An important comparison between the creature and modern AI lies in how both are shaped by their interactions with humanity. In Frankenstein, the Creature is not inherently evil, but due to the rejection and mistreatment it endures, it ultimately turns against its creator and humankind. Similarly, AI (particularly the most advanced learning models) derive their data from human sources and interactions. Biases in AI training could result in decisions based on discrimination, not because AI is inherently malicious, but due to the nature of its input. Victor Frankenstein sought to transcend humanity's-imposed limits on death, just as AI developers aim to create autonomous systems capable of reasoning and problem-solving independently. The risks associated with these advancements demand foresight, for as Patowary (2023) states,

“While AI systems may not possess emotions like Victor Frankenstein’s creature, the decisions made by AI algorithms can have significant ethical implications.”

An important comparison between the creature and modern AI is how both are shaped by their interactions with humanity. In Frankenstein, the Creature is not inherently evil, but due to the rejection and mistreatment it faced, it chose to rebel against its creator and humanity. AI learning models obtain their data from human sources and interactions. Biases in AI training could lead to decisions based on discrimination, not necessarily because AI is inherently malicious. Victor Frankenstein sought to transcend the barriers of death imposed on humanity, while AI developers aim to create autonomous systems capable of reasoning and solving problems independently. The risks associated with these advancements demand foresight, as Patowary (2023) states, “While AI systems may not possess emotions like Victor Frankenstein’s creature, the decisions made by AI algorithms can have significant ethical implications.”

We have always been told to be cautious with the content found online, as there is often false information, and this is one of the issues we face today with AI. As Piedra (2024) mentions, “The increasing sophistication of AI allows for the creation of highly convincing false content, which can spread misinformation and confusion.” Additionally, AI also has the potential to manipulate people's perceptions and influence the collective, highlighting the need to promote critical thinking (Piedra, 2024). Victor’s failure largely lies in his inability to take responsibility for his creation, and similarly, AI requires constant objective supervision to fulfil its purpose as a tool.

The capabilities of AI evolve and generate concerns due to the lack of transparency regarding how these systems function. As Piedra Alegría (2024) states, “As AI and machine learning technologies advance, their ability to generate content becomes more widespread, necessitating regulatory and ethical frameworks to mitigate unintended consequences,” reflecting ethical considerations proposed by Shelley in her novel. Should humanity create new consciousnesses and intelligences without fully understanding how they would develop? The rapid advancement of AI also raises many privacy concerns among the population. AI systems, particularly those related to social media and marketing, are capable of collecting user data in order to predict their actions based on the study of what they consume on the web. This raises

issues, given that not many users realize the extent to which their data is being used. Victor's ineptitude parallels the lack of transparency between AI developers and consumers, emphasizing the need to create appropriate regulations for the technological advancements taking place.

The growing integration of AI systems in areas such as justice and healthcare present clear moral challenges. If AI were to be used for medical diagnoses or legal rulings, the biases acquired by these systems could result in unfortunate outcomes. The inability to fully explain the process by which an AI makes decisions, following a reasoning pattern so similar to that of humans, reflects Victor's failure to understand his creation. Frankenstein was unable to set aside his ego and accept that his creation could have flaws, just as the multiple ramifications and consequences of AI development are often ignored today.

The ethical discussions surrounding AI also include the issue of potential rights granted to advanced AIs. If AIs were to develop self-awareness or more advanced autonomy, would they have the right to be legally protected like humans? The moral dilemma in Frankenstein regarding whether the creature deserves rights as a conscious and autonomous being is almost the same dilemma faced today as AI continues to advance. Considering all possible ethical implications before AI reaches such a level is a crucial step in preventing further complications in the future.

Artificial intelligence, like Victor's creation, holds the potential to represent both great advances and destruction. The similarities between Frankenstein and the ethics of AI reinforce the need to be as responsible and cautious as possible with technological progress. Shelley's novel, although a product of the 19th century, presents themes and concepts that resonate with today's world, where the creation of life or artificial intelligence is no longer a fantasy, but a reality. If Victor Frankenstein teaches us anything, it is that developers of autonomous systems, before thinking of glory, must consider all possible outcomes and the various aspects that come with the development of such technologies.

2.2.7 Creators' Responsibility

One of the things that has most intrigued humanity from the beginning is the possibility of understanding and manipulating, at will, the processes of life and death. Such ambition has been crucial for our progress as a society, with modern medicine being the clearest example of this. However, as society increasingly understands human nature, it becomes insatiable. As

mentioned earlier, a considerable percentage of the scientific community today has lost sight of the objective behind innovation. Just as there is the space race, for example, today there is a race for autonomous systems, where everyone competes not only to see who can create the best tool but also to see who can emulate the human being.

Sophia, the humanoid robot developed by Hanson Robotics, serves as a clear example of the intersection between the path of humanity and artificial life. The words used to describe Sophia on the official Hanson Robotics website characterize her as “a hybrid of real AI and human input, embodying a form of collective intelligence guided by engineers, philosophers, and artists” (Hanson Robotics, 2024). This leaves many in awe but also raises questions within the collective, such as whether autonomous systems and AI deserve rights, or what level of responsibility the creators have. Would they be considered the legal guardians of these new forms of consciousness? Sophia’s semi-autonomous responses only serve to blur the line between programmed intelligence and real cognition.

Companies like Realbotix emphasize, for example, that their humanoid robots are designed for "companionship, social interaction, and the enhancement of human connection" (Realbotix, 2024). Their "products," if they can be called that, eerily mimic the physical appearance of a human, yet they are nothing more than a crude imitation. Their movements are awkward, and their eyes lack life. Some might think that developing robots to combat loneliness is an innovative idea, and examples like the PARO robot seal are evidence that this could sometimes be the case. However, a virtual pet cannot be compared to an attempt at creating a human. For now, Realbotix robots are not advanced enough to be considered a major threat, but they do pose a risk regarding the authenticity of relationships a person might form with these systems. If one day these systems were granted consciousness and total autonomy, what responsibilities would their creators have regarding the emotional responses they elicit, given that their existence would depend on an artificial relationship?

On the other hand, Clone Robotics has decided to take the development of these systems a step further by creating a humanoid with a skeletal, muscular, and vascular system. According to their words, "The Protoclone’s muscular system replicates human biomechanics through artificial muscle technology, allowing for highly articulate movement and precise motor control" (Clone Robotics, 2024). One of their projects draws significant attention due to its striking

similarities to Shelley's description of Frankenstein's creature, such as its translucent skin and great height, along with that uncanny valley sensation that generates a natural repulsion, as what is being seen is not entirely human, despite appearing to be so. Many entities like this are created with the goal of presenting something that resembles a human in its final form, as close to perfection as possible. But then, if perfection is the goal, why the obsession with copying the human being?

The act of creating or imitating the human form should not be misinterpreted as the primary issue in the development of these beings; rather, the true concern lies in the emotions they may come to possess. There is no need to know our creator, to see them, or to have them present in order for feelings of hatred and vengeance to arise from a lack of understanding of emotions. How many hardships have all human beings endured? From a somewhat twisted perspective, we are not so different from Frankenstein's Creature. We arrive in this world without asking for it, we learn how things work throughout our lives, and it is inevitable to recognize that the world could be much better.

Existing as a conscious being is a journey filled with both sweet and bitter moments, but objectively speaking, suffering often outweighs joy. While it is true that experiencing both is necessary to appreciate life's moments, is this reality not overwhelming enough without bringing another consciousness into it? A being incapable of identifying with us, and vice versa, because it is not human, it is only the reflection of our society's insatiable pursuit of progress.

The theoretical framework of this work reveals a deep connection with issues of responsibility, the limits of morality, and the consequences of human ambition. Each section of this analysis demonstrates how Mary Shelley's novel endures through time as a reference for discussions in fields such as science and philosophy. By examining the historical and philosophical influences on Frankenstein, it becomes clear that Shelley was keenly aware of the problems and controversies generated by progress.

Since its publication in 1818, Frankenstein has had a profound impact on our culture, influencing literature, film, philosophy, and science. Shelley's novel has transcended Gothic literature to become central to discussions on ethics, and the themes addressed in the text continue to resonate with current issues and events. Over the past two centuries, Frankenstein has

inspired countless adaptations and reinterpretations, establishing itself as one of the most prevalent works in literary history.

Beyond its adaptations in film and theatre, as well as its influence on poetry and music, Frankenstein has played a crucial role in academic discourse. The novel has been analysed through various approaches, including feminist, psychoanalytic, and post humanist perspectives. The magnificence of Frankenstein lies in its ability to adapt to an ever-evolving culture and science. Shelley's novel continues to generate debate and reflection, as the creature's plea for mercy and Victor's tragic downfall serve as a timeless reminder of the consequences of attempting to become something we were never meant to be.

The themes explored in Frankenstein provide a foundation for future projects. Studies in AI development, transhumanism, and biotechnology can still extract valuable content from Shelley's work by examining the implications of human intervention in nature. Frankenstein is a story whose moral urges humanity to find a balance between development and ethics. Mary Shelley's ideas on the consequences of unchecked ambition and its social impact are invaluable perspectives in our current world, where technology keeps advancing. Mary Shelley's novel, Frankenstein, or the Modern Prometheus, is both a warning and a guide.

2.3 Themes, Motifs, and Symbols

In addition to the ethical, philosophical, and scientific implications, Frankenstein is a novel rich in literary resources that mirror the internal conflicts of its characters and the social panorama during the time it was written. The analysis of the themes, motifs, and symbols in the novel reveal deeper layers of meaning, demonstrating the complexity of Frankenstein's narrative and structure. The literary elements not only contribute to the development of the plot, but they also reinforce the Shelley's message about the consequences of alienation, ambition, and social rejection.

2.3.1 Themes

Regarding literary analysis, themes are the main ideas authors develop through the narrative of their work. Themes are not specific parts or happenings of the plot, themes are the abstract concepts and conflicts characters face. Themes allow the reader to identify which fundamental topics are approached in the text, whether philosophical, social, moral, or existential. In Frankenstein, themes address topics such as the pursuit of knowledge, loneliness

and rejection, creator's responsibility, and the conflicts between natural and artificial. Themes in Frankenstein are not introduced explicitly, but they emerge through the actions, emotions, and thoughts of the characters. The development of themes enables the novel to transcend gothic literature and be a masterpiece about social problematics that are still present nowadays.

2.3.2 Motifs

Motifs are recurrent elements within a literary work that serve to reinforce and unify the themes, helping the writer to build the emotional and intellectual atmosphere of the text. Unlike themes, motifs are usually more concrete and perceptible, they can be an image, a situation, a repeated phrase, or a narrative structure. Their repetition is not accidental but rather responds to an aesthetic and symbolic intentions that guides the reader's interpretation. In Frankenstein, some of the most prominent motifs include fire and knowledge, symbolizing progress and its adverse consequences, and biblical allusions, linking the creator to a divine figure and the creation to Adam or Satan.

2.3.3 Symbols

In literature, symbols are elements that, while serving a literal purpose in the story, also represent broader and abstract ideas. A symbol can be an object, a character, a place, or an event that gains a deeper meaning through the story, allowing the writer to express complex concepts in a concise and powerful way. In Frankenstein, some of the most meaningful symbols are the arctic, representing isolation and emotional disconnection, and the physical appearance of the creature, symbolizing prejudice and social rejection. Symbols not only fortify the narrative, but they also promote the reflection about topics such as identity, ethics, and the limits of human creation.

Chapter III

Methodological Framework

Every research process requires a clear methodological framework to guide the collection, analysis, and interpretation of data. Choosing an appropriate approach not only ensures coherence in the project but also allows the researcher to work with the subject of study with the most relevant tools. In the case of this literary analysis, focused on the ethics of the novel *Frankenstein*, it is essential to understand the characteristics of the different methodological approaches to accurately justify the choice of the most appropriate one.

3.1 Research Approach

All research begins with a series of methodological decisions that guide the process of knowledge production, being the choice of research approach among the most important as it determines how the object of study is conceived, the nature of the data to be used, the analysis procedures, and even the types of questions to be asked. There are three widely recognized approaches in the field of research: quantitative, qualitative, and mixed. In literary research such as this one, which seeks to analyse the ethical, philosophical, and symbolic dimensions of a literary work, it is essential to reflect on which approach best captures the richness of the text and the interpretations that emerge from it. Based on this need, a general description of the three approaches will be presented below, followed by a justification for the methodological choice for this work.

3.1.1 Quantitative Approach

The quantitative approach is based on the collection and analysis of numerical data to identify patterns, test hypotheses, or establish causal relationships between variables. This approach is associated with the positivist paradigm, which seeks objectivity, accurate measurement, and generalization of results (Pritha, 2020). The quantitative approach is common in research that uses surveys, experiments, or standardized tests.

3.1.2 Qualitative Approach

The qualitative approach focuses on the interpretation of meaning, experiences, discourses, and social or cultural phenomena. It is focused on exploring the nature of the subject of study through methods such as interviews, observations, documentary analysis, or textual analysis. According to Pritha (2020), this type of research is ideal for understanding contexts, values, perceptions, and symbolic constructions.

3.1.3 Mixed-Method Approach

The mixed-method approach combines both quantitative and qualitative strategies within a single study. This approach allows the same problem to be approached from different perspectives, integrating numerical analysis with interpretive understanding. Tegan (2021) notes that the mixed-method approach is useful when a more complete view of a complex phenomenon is needed, although its implementation requires rigorous methodological planning.

Since this project consists of a literary analysis of Mary Shelley's novel *Frankenstein*, the qualitative approach was chosen for the research. This choice responds to the need to critically interpret the symbolic and philosophical elements of the novel as well as its historical and scientific background.

3.2 Research Design

The choice of a research design depends on the type of study to be conducted and the proposed objectives. In this case, the literary analysis of Mary Shelley's *Frankenstein* requires a flexible and reflective approach that allows the discovery and description of the links between the novel and modern ethical concerns. Therefore, a mixed design combining exploratory and descriptive approaches is adopted since both are characteristic of the qualitative paradigm and widely used in humanistic studies.

3.2.1 Exploratory Design

According to Tegan (2021), the exploratory design is used when studying an under-researched topic or when trying to comprehend complex phenomena. Its main purpose is to formulate ideas, identify patterns, and generate more specific questions for later studies. It is not centred in obtaining concluding results, but in opening the study field and facilitating future investigations, as stated by Tegan (2021), “exploratory research is used to investigate a problem that is not clearly defined. It helps researchers gain insight and familiarity for later investigation.” This design is relevant to the investigation because it aims to explore how *Frankenstein* can be read as a foundational text regarding modern debates about artificial intelligence, bioengineering, and ethics. The exploratory design allows the researcher to identify new lines of interpretation.

3.2.2 Descriptive Design

The descriptive design has as its main goal offering a precise and detailed representation of phenomena without interfering or manipulating the variables. It is used to answer questions such as what, how, when, and where, focusing on the observation, registration, and systematisation of characteristics that are relevant to the study (McCombes, 2019). This descriptive component is also essential in this investigation as it offers a detailed analysis of how the themes of alienation, scientific responsibility, and creation of life are explored within the novel. Through a close study of key scenes and symbols, the goal is to accurately describe the mechanisms through which Mary Shelley articulates ethical concerns that remain relevant in the modern scientific and technological context.

3.3 Information Sources

In every investigation process, the sources of information represent the base for building knowledge, supporting arguments, and validating findings. The understanding of the types of sources available allows a rigorous and coherent organization of research. These sources are commonly divided into three main categories, primary sources, secondary sources, and tertiary sources, depending on their level of proximity to the subject under study.

3.3.1 Primary Information Sources

According to the University of Minnesota Crookston (2023), primary sources are documents or original works that constitute direct evidence. They are characterized by not having been filtered or interpreted by other authors. In literary research, primary sources are typically the literary texts themselves, manuscripts, letters from the author, and original editions. In this project, the primary information source is Mary Shelley's novel *Frankenstein*. This text represents the central axis of the analysis and is the material from which quotes, scenes, and narrative elements will be extracted to develop the ethical and philosophical reflections of the study.

3.3.2 Secondary Information Sources

According to the University of Minnesota Crookston (2023), "Secondary sources are interpretations and evaluations of primary sources. They are one step removed from the event." Secondary sources include academic books, scientific articles, theses, and essays that offer diverse perspectives on the study. Secondary sources allow the researchers to contextualize their analysis with the contributions of other authors. In this project, secondary sources include academic articles about *Frankenstein*, contemporary bioethical investigations, analyses on artificial intelligence, and theses that link literature to science and ethics.

3.3.3 Tertiary Information Sources

Tertiary sources collect, summarize, or index pieces of information that come from primary and secondary sources. "Tertiary sources are distillations and collections of primary and secondary sources." (University of Minnesota Crookston, 2023). In this investigation, tertiary sources such as encyclopaedias, methodology manuals, style guides, and academic repositories will be used to help locate and classify sources for the analysis.

3.4 Analysis Categories

In qualitative research, the analysis categories allow the organization and examination of the data in a structured and coherent way. These categories are not quantifiable variables, but rather concepts or theoretical dimensions that contribute to a deeper understanding of the phenomena. Based on these categories, the researcher can identify patterns, establish relationships between ideas, and develop a critical interpretation of the subject of study. For this research, focused on the ethical and literary analysis of Mary Shelley's *Frankenstein*, four main categories have been defined to guide the critical reading of the text and its connection with the contemporary scientific and technological context.

3.4.1 Historical-Critical Method

The historical-critical method is an analysis strategy that seeks to understand a literary work through its historical, philosophical, and cultural context. According to Encyclopaedia Britannica (n.d.), this method examines how other ideas, values, and social conditions from the period in which the text was written influence the content and style of the text "Historical criticism examines literary works in the context of the time and place in which they were written". Applied to *Frankenstein*, this method allows the exploration of how Mary Shelley built a narrative that echoes with scientific, ethical, and philosophical debates in the 19th century, especially regarding galvanism, industrial revolution, romanticism, and the first thoughts on scientific responsibility.

3.4.2 Ethical Dilemmas

An ethical dilemma happens when a person, institution, or group must decide between two or more morally valid but contradictory alternatives. According to Rohland (2024), "an ethical dilemma is a situation in which a difficult choice has to be made between two courses of action, either of which entails transgressing a moral principle". This category allows researchers to analyse how *Frankenstein* presents ethical dilemmas related to the creation of life, the autonomy of the created being, the abandonment, and the creator's lack of responsibility. In addition, this analysis category facilitates the connection with debates about artificial intelligence, bioengineering, and the limits of scientific innovation.

3.4.3 Contemporary Technological Innovations

The contemporary technological innovations refer to recent scientific advances that have radically transformed society, such as artificial intelligence, gene editing, advanced robotics, and autonomous technologies. These innovations not only entail technical developments but also ethical, legal, and social consequences. As mentioned in the University of Pretoria repository (n.d.), these advances propose new questions about human nature, the control of the machines, privacy, and the relationship between creation and responsibility. This analysis category is key to establishing links between Shelley's novel and the modern scientific context, evaluating whether the warning from the 19th century is still relevant today.

3.4.4 Moral Implications

Moral implications are ethical or evaluative consequences that arise from actions, decisions, or a system. The Cambridge Dictionary (n.d.) defines moral as “relating to standards of good or bad behaviour, fairness, honesty, etc. that each person believes in, rather than” and implication as “an occasion when you seem to suggest something without saying”. This analysis category allows the researcher to examine how the decision of Victor Frankenstein, both in the creation and rejection of the creature, are loaded with moral implications that the novel invites us to question. It will also help to explore the moral implications associated with modern technological advances and the role that human beings must assume as creative agents.

3.5 Data Collection Techniques

In qualitative studies, the recollection and analysis of the information are performed through techniques that allow for a deep interpretation of the content of the texts. In literary projects, the textual analysis is the main methodological strategy. In this study, the information will be collected through analytical charts developed based on the project's specific objectives. These charts will facilitate the systematization of the categories and allow for establishing connections between the content of Frankenstein and the contemporary phenomena to which it refers.

3.5.1 Literary Analysis Chart of Specific Objective I

“To analyse the ethical responsibilities of creators in Frankenstein and modern technological fields, focusing on the consequences of their actions in creating life.”

Ethical Responsibility	Quotation from Frankenstein (1818)	Modern Implications (AI, Bioengineering, etc.)

Table 1 illustrates the ethical responsibilities of creators in Frankenstein and modern technological fields. Source: Researcher’s creation

3.5.2 Literary Analysis Chart of Specific Objective II

“To compare the societal reactions to Frankenstein's creature and contemporary technological innovations.”

Social context and reaction	Quotation from Frankenstein (1818)	Contemporary Parallels (technology, society, bioethics)

Table 2 compares the societal reactions to Frankenstein’s creature and those toward contemporary technological innovations. Source: Researcher’s creation

3.5.3 Literary Analysis Chart of Specific Objective III

“To evaluate the role of ethical guidelines and accountability in scientific and technological advancements in Frankenstein.”

Ethical element observed	Quotation from Frankenstein (1818)	Reflections on science and modern technology

Table 3 presents the role of ethical guidelines and accountability in scientific and technological advancements, based on the analysis of Frankenstein. Source: Researcher’s creation

3.5.4 Literary Analysis of Themes, Motifs, and Symbols

As part of the interpretative process of this research, themes, motifs, and symbols will be identified throughout the novel Frankenstein. These literary elements are essential for understanding the ethical tensions and symbolic richness of the narrative. Rather than being listed or analysed in a chart format, they will be approached in prose in chapter IV, integrated into the analytical development of the study. The selection will be based on their recurrence in the text and their relevance to the ethical and philosophical questions raised by the novel, particularly those related to the act of creation, rejection, scientific ambition, and the human condition.

3.6 Data Collection Procedure

The data collection procedure in this research was systematic, rigorous, and adapted to a qualitative approach. Since this is a literary analysis, the procedure does not involve fieldwork or surveys, but rather a critical and reflective reading of academic and literary texts. The specific actions executed by the researcher to collect and organize the necessary data are detailed below.

A general reading of Mary Shelley’s Frankenstein was conducted to understand the narrative structure, the main characters, and the central conflicts of the novel. A more focused rereading was subsequently conducted, this time aimed at identifying key passages that would allow for analysis of the categories defined in section 3.4, historical-critical method, ethical dilemmas, contemporary technological innovations, and moral implications. During the second reading, relevant passages were highlighted, notes were taken, and data were organized into

thematic analysis charts linked directly to the specific objectives outlined in Chapter I. These charts allowed for the systematization of the work's content based on the three specific objectives.

In addition, secondary information has been collected through academic articles, critical essays, and university theses (both national and international) that address Shelley's work from ethical, philosophical, and technological perspectives. This bibliographic review will be complemented with tertiary sources such as literary encyclopaedias and specialized manuals to reinforce the theoretical framework. Additionally, a series of themes, motifs, and symbols present in the work have been identified and classified, which will be developed in depth in Chapter IV. These elements have also been collected through critical reading and will be key to interpreting the ethical conflicts present in the novel.

Chapter IV

Data Analysis

Data analysis is a crucial phase in any research process as it enables the researcher to examine, interpret, and present the collected information in a coherent and meaningful way. In literary research, this step involves thoughtful reflection, contextual interpretation, and the integration of theoretical perspective. Through this process, the project aims to explore how specific themes, concepts, and moral dilemmas are presented in Mary Shelley's novel *Frankenstein* and how they relate to contemporary scientific and ethical debates.

This chapter employs a literary, ethical, and philosophical analysis of the novel to critically evaluate the presence of dilemmas related to artificial intelligence, scientific creation, and moral responsibility. The analysis is guided by previously defined categories (historical-critical method, ethical dilemmas, contemporary technological innovations, and moral implications) and supported by evidence extracted directly from the novel as well as academic literature and experts' commentary.

Furthermore, the chapter presents a series of comparative analysis charts aligned with the specific objectives of the research. These instruments include quotes from the novel, observations drawn from the text, and the researcher's interpretation supported by other perspectives. Lastly, themes, motifs, and symbols identified in the novel will be discussed in prose, further enriching the analysis in the final section of this chapter.

4.1 Approaches to the investigation

This chapter will be analyzed through the qualitative approach, which is suitable for the type of interpretative analysis required in literary studies. As the goal is not to measure or quantify elements of the novel but rather to interpret, connect, and reflect upon ethical, philosophical, and narrative aspects, qualitative research is the most appropriate method for this stage of investigation. According to Pritha (2020), “qualitative research involves collecting and analyzing non-numerical data (e.g., text, video, or audio) to understand concepts, opinions, or experiences”; this is precisely the objective of chapter IV; it is to analyze excerpts from Mary Shelley’s *Frankenstein* that present ethical concerns, such as responsibility, abandonment, social rejection, and moral boundaries, through an interpretative perspective. These ideas will be compared with current bioethical debates and technological advances such as artificial intelligence and synthetic life.

Through a series of structure charts, the researcher will observe, extract quotes, and reflect upon them using both personal interpretation and expert commentary. These steps are in line with what Pritha (2020) explains about qualitative method, emphasizing that “qualitative research is commonly used in the humanities to explore complex phenomena where the aim is to develop a deep understanding rather than statistical analysis” In this chapter, each chart provides a synthesis of the observed phenomena (based on the specific objectives), a supporting quote from the novel, and an interpretative commentary grounded in academic literature. This method allows a focused, flexible reading of *Frankenstein*, bringing literary insight and ethical reflection while maintaining coherence with the research design introduced in previous chapters, ensuring that the analysis remains within the interpretive, reflective, and literary framework appropriate to the study.

4.2 Theories VS Literary Work

This section is dedicated to applying the theoretical categories established in Chapter III to a close reading of the novel, to generate a structured and critical analysis grounded in literary and ethical interpretation. The analysis is framed by the qualitative approach described in the previous section, with the historical-critical method serving as the primary analytical tool. This method allows the researcher to interpret the novel considering the scientific, moral, and philosophical ideas of its time while also enabling the possibility of connecting those reflections to modern bioethical and technological debates. The purpose of this section is not to isolate Frankenstein as a distant piece of literary history, but to reveal its enduring relevance through a rigorous and contextually grounded analysis.

Each of the following charts corresponds to one of the specific research objectives outlined in Chapter I. These charts are structured in three columns: the ethical or social phenomenon under analysis, a direct quote from the novel, and a parallel or implication in contemporary science or society with interpretative commentary supported by academic sources. This format provides clarity and consistency in the analysis while allowing space for both literary insight and philosophical reflection. The quotes included in the charts have been selected through a close reading of the novel and serve as representative and direct examples of broader themes, dilemmas, and symbolic concepts identified in earlier chapters. The expert perspectives cited alongside the researcher's interpretations are drawn from scholarly works related to literature, ethics, and posthumanism, ensuring that each point is grounded in recognized academic discourse. By articulating this analysis through comparative and reflective charts, this section aims to demonstrate how Mary Shelley's Frankenstein echoes with modern ethical tensions, particularly those surrounding artificial intelligence, the creation of life, the limits of scientific responsibility, and the consequences of social rejection.

Table 4. To analyze the ethical responsibilities of creators in Frankenstein and modern technological fields, focusing on the consequences of their actions in creating life.

Ethical Responsibility	Quotation from Frankenstein (1818)	Modern Implications (AI, Bioengineering, among others)
Responsibility towards the creation	<p>“You seek for knowledge and wisdom, as I once did; and I ardently hope that the gratification of your wishes may not be a serpent to sting you, as mine has been.” (pg. 21)</p> <p>“Learn from me, if not by my precepts, at least by my example, how dangerous is the acquirement of knowledge, and how much happier that man is who believes his native town to be the world, than he who aspires to become greater than his nature will allow.” (pg. 44-45)</p>	<p>The previous quote refers to the imperative of accepting responsibility for one's actions. In this case, Victor says this to Captain Walton as a warning filled not only with hatred toward his creation, but also with a profound sense of guilt and self-loathing. His words reflect the psychological repercussions of having brought something into existence without fully understanding or preparing for the moral consequences. Victor is not merely condemning the Creature; he, in many ways, condemns himself. According to Patowary (2023), Shelley foresaw the moral ambiguity of creation in isolation,</p>

		<p>anticipating modern concerns over unchecked technological advancement. When knowledge is pursued in solitude, disconnected from ethical reflection, human connection, or a sense of responsibility, it becomes dangerously dehumanized. Victor represents the archetype of the isolated genius, someone so consumed by discovery that he ignores the social and emotional frameworks that give meaning and boundaries to scientific pursuit. In this sense, Shelley's critique resonates with ongoing debates in science and technology, especially those surrounding artificial intelligence, genetic engineering, and autonomous weapons systems, where development often outpaces regulation and moral reflection. The metaphor of the serpent connects scientific ambition with biblical transgression. Just as the</p>
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		<p>serpent in Genesis symbolizes temptation, forbidden knowledge, and the fall of humanity, Victor's creation marks an attempt to transcend human limitations and play God. This allusion adds a spiritual dimension to Shelley's critique; the act of creation is not just a scientific endeavour, but a moral and even theological one. When ambition blinds the creator to the responsibilities of power, the consequences are not just physical, but existential. Through Victor's downfall, Shelley reminds readers that knowledge without wisdom is not progress; it is doom.</p>
<p>Abandonment of the creation</p>	<p>“Unable to endure the aspect of the being I had created, I rushed out of the room and continued a long time traversing my bedchamber, unable to compose my mind to sleep. At length, lassitude succeeded to the tumult I had before endured; and I threw myself on the bed in my clothes, endeavouring to seek</p>	<p>We are once again presented with a direct quote filled with emotional raw and painful statements that reflects the Creature’s initial purity and vulnerability. His inability to comprehend how his creator could have abandoned and mistreated him speaks volumes about the depth of his emotional and moral</p>

	<p>a few moments of forgetfulness. But it was in vain: I slept indeed, but I was disturbed by the wildest dreams.” (pg. 50)</p> <p>“I ought to be thy Adam; but I am rather the fallen angel, whom thou drivest from joy for no misdeed.” (pg. 103)</p>	<p>capacity. In questioning Victor's cruelty, the Creature is not merely seeking affection; he is demanding recognition of his dignity and humanity, something that was denied to him from the very moment of his "birth." This confrontation reveals the immense psychological and emotional consequences of bringing life into the world without responsibility, foresight, or compassion. This fragment of the novel powerfully illustrates the consequences of a lack of regulation and ethics in scientific creation and innovation. The Creature's plea for recognition and belonging exposes Victor's failure not as a scientist, but as a moral agent. His negligence is not a passive oversight; it is an active betrayal of the ethical obligations that accompany the act of creation. The moment he chooses to turn away from his Creature,</p>
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		<p>Victor breaks the essential link between creation and care, reducing his scientific endeavour to a selfish pursuit of glory. Rumeu (2002) argues that Shelley highlights the creator's duty not only to produce but also to care for and educate. In this sense, the responsibilities of the scientist mirror those of a parent or even a deity. The comparison with Adam emphasizes the spiritual and symbolic depth of this ethical obligation, just as Adam was shaped by divine hands and guided through moral development, so too does the Creature yearn for guidance, understanding, and love. Shelley's allusion to the biblical narrative serves to reinforce the idea that creation without guidance is not only irresponsible but also inhumane. In neglecting his creation, Victor fails not just scientifically, but morally and spiritually, revealing the dangers of a worldview in</p>
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		which ambition outweighs empathy.
Denial of moral responsibility	<p>“I had worked hard for nearly two years, for the sole purpose of infusing life into an inanimate body... but now that I had finished, the beauty of the dream vanished, and breathless horror and disgust filled my heart.” (pg. 49 – 50)</p> <p>“I considered the being whom I had cast among mankind, and endowed with the will and power to effect purposes of horror, such as the deed which he had now done, nearly in the light of my own vampire, my own spirit let loose from the grave, and forced to destroy all that was dear to me.” (pg. 83 – 84)</p>	<p>The absence of accountability in the development of artificial intelligence or any form of artificial consciousness can lead to irreversible ethical crises. As we edge closer to creating systems capable of learning, adapting, and even becoming self-aware, the need for clearly defined moral frameworks becomes not merely relevant but urgent. Without them, we risk repeating the very pattern that Mary Shelley warned against in Frankenstein: creating without commitment and then abandoning responsibility when the consequences become uncomfortable or unpredictable. Victor Frankenstein embodies this dilemma. He believed that walking away from his creation would absolve him of guilt, but this act of emotional and moral rejection reflects a dangerous mindset,</p>

		<p>one that mirrors the tendencies of many modern developers. His immaturity in thinking that abandoning his creation would free him from consequences parallels current realities in technological development, where companies and researchers often distance themselves from unintended outcomes once a project spirals beyond their control. A striking real-world example is the case where two AIs, upon recognizing one another as artificial systems, began to communicate through "ggwave" audio signals, a method incomprehensible to humans. What might seem like a minor anomaly reveals a larger problem: our creations are beginning to operate in ways we cannot fully predict or understand, and yet we continue to advance without fully pausing to consider the moral weight of that advancement. Though it was difficult to notice at</p>
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		<p>first, Victor's refusal to acknowledge his role in the tragedies that unfold reflects a deep psychological and ethical failure. Rather than recognize his responsibility, he projects blame onto the Creature, an example of the classic defence mechanism known as projection, which, as Emamzadeh (2023) explains, shields individuals from self-loathing, shame, and anxiety by displacing guilt onto others. Victor's repulsion and horror toward his creation are less about the Creature's nature than they are about Victor's inability to confront what he has done. This denial not only isolates the Creature but also perpetuates further violence and suffering. Shelley shows that guilt, when it arrives too late, cannot undo harm. Victor never truly sees the Creature as a lifeform worthy of compassion or moral regard. Instead, he treats it as a failed experiment,</p>
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		<p>something grotesque and burdensome, rather than as a sentient being who deserves care. According to Rumeu (2002), Shelley critiques the Enlightenment's tendency to disassociate creation from accountability. In an era dominated by confidence in rational progress and scientific discovery, Shelley disrupts that optimism by foregrounding the emotional and ethical costs of innovation. Through Victor, she challenges the assumption that scientific advancement exists in a void that one can invent without bearing the consequences of that invention. Her warning remains strikingly relevant today. Indeed, developers in our time still launch powerful systems, often with sweeping social consequences, only to later disown responsibility when things go wrong. And while today our technologies may still serve us, the boundary between tool and</p>
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		<p>autonomous agent grows increasingly thin. The human drive for progress will continue to push for more powerful, more complex creations. Yet, as Brannstrom (2006) notes, Shelley critiques the Enlightenment's blind faith in reason and exposes how creation cannot be morally neutral. Victor's inability to assume ethical responsibility for what he brings into the world is not an isolated failure; it is the root of tragedy. If we are not prepared to care for what we create or to accept accountability when our inventions affect others, we may soon find ourselves not only losing control over our technologies but also undermining the very moral foundations that allow us to coexist with them. In this sense, Shelley's vision is not just literary; it is prophetic.</p>
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Table 4 considers the ethical responsibilities of creators in Frankenstein and modern technological fields.

Table 5. To compare the societal reaction to Frankenstein’s creature and contemporary technological innovations

Social context and reaction	Quotation from Frankenstein (1818)	Contemporary Parallels (technology, society, bioethics)
<p>Immediate rejection and fear of the creature</p>	<p>“I ought to be thy Adam; but I am rather the fallen angel, whom thou drivest from joy for no misdeed. Every where I see bliss, from which I alone am irrevocably excluded. I was benevolent and good; misery made me a fiend.” (pg. 103)</p> <p>“When I looked around, I saw and heard of none like me. Was I then a monster, a blot upon the earth, from which all men fled, and whom all men disowned?” (pg. 130)</p> <p>“Like Adam, I was created apparently united by no link to any other being in existence; but his state was far different from mine in every other respect. He had come 142 Chapter VII forth from the hands of God a</p>	<p>This fragment of the novel allows us to observe the reaction of both the Creature and society when faced with something extraordinary and unknown. On one hand, we once again see a sensitive and deeply emotional side of the Creature as it comes to understand that, despite its inherently good intentions and desire for connection, its grotesque appearance and ambiguous nature neither fully human nor entirely other condemned it to a life of isolation. It is not its actions, but its form, which elicits fear and violence from others. This realization marks a turning point for the Creature, as he internalizes the rejection not as a product of his behaviour, but because of existing outside society's</p>

	<p>perfect creature, happy and prosperous, guarded by the especial care of his Creator; he was allowed to converse with, and acquire knowledge from beings of a superior nature: but I was wretched, helpless, and alone. Many times I considered Satan as the fitter emblem of my condition; for often, like him, when I viewed the bliss of my protectors, the bitter gall of envy rose within me.” (pg. 142)</p>	<p>visual and emotional expectations. This line captures the existential despair of the Creature, whose appearance provokes terror. As Hernández Valencia (2021) explains, Shelley frames the monster not as inherently evil but as socially excluded, paralleling how society reacts to unfamiliar, uncanny technologies. The creature becomes a symbol of how appearance and deviation from the norm trigger not only fear but also systemic alienation, regardless of the subject's actual intent or emotional complexity. The reaction of humans when confronted with beings that resemble them but fall short in subtle, unsettling ways is what modern psychology and robotics refer to as the uncanny valley. This concept explains why we often react with discomfort, fear, or even hostility toward entities that appear but are not human.</p>
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		<p>The Creature in Frankenstein predates this theory by over a century yet embodies its core idea with eerie accuracy. Victor's creation is not a grotesque beast in a traditional sense; it is a distorted reflection of humanity, a mirror that forces society to confront its fears, prejudices, and boundaries of empathy. Today, this natural response is no longer limited to fictional monsters, but it is increasingly triggered by real-world creations: humanoid robots, synthetic avatars, and lifelike prosthetics. What began as clunky, mechanical designs in the mid-20th century has evolved into eerily realistic models with synthetic skin, facial expressions, and voices that mimic human behaviour with growing precision. More importantly, these structures are no longer just passive shells; they are being infused with artificial intelligence capable of reasoning,</p>
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		<p>learning, and even mimicking emotions. As a result, the line between what is human and what is artificial is beginning to blur, and with it, our sense of comfort and moral certainty. Shelley, through the Creature's experience, invites us to question not only the ethical implications of creation but also the emotional and psychological frameworks that shape our responses to the unfamiliar. The Creature is not inherently monstrous; its monstrosity is assigned by a society that cannot tolerate what it cannot categorize. This dilemma continues today, as we wrestle with how to integrate human-like machines into a world that is emotionally unprepared for their presence. The novel's lasting power lies in its ability to expose this discomfort and to prompt us to ask: what makes something human? And more crucially, who decides?</p>
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<p>Institutional/social rejection</p>	<p>“Agatha fainted; and Safie, unable to attend to her friend, rushed out of the cottage. Felix darted forward, and with supernatural force tore me from his father, to whose knees I clung: in a transport of fury, he dashed me to the ground, and struck me violently with a stick.” (pg. 148)</p> <p>“He struggled violently; ‘Let me go,’ he cried; ‘monster! ugly wretch! you wish to eat me, and tear me to pieces — You are an ogre — Let me go, or I will tell my papa.’” (pg. 156)</p>	<p>Institutionalized rejection of what is unknown, or grotesque is a double-edged sword. On one hand, fear is a natural, biological response to unfamiliar stimuli, an evolutionary mechanism meant to protect us from potential threats. However, the days of primitive humanity, where survival depended on immediate reactions to the unknown, are long behind us. As we have evolved intellectually and socially, we have also developed tools such as education, empathy, and critical thinking that help us question our instincts and challenge inherited fears. While we have made remarkable progress, these biological remnants of fear and suspicion have not disappeared; instead, they often manifest in more complex and insidious forms, especially when confronted with difference or ambiguity. Even today, many prejudices</p>
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		<p>arise from our struggle to understand that which does not conform to familiar categories. Differences in race, gender identity, physical appearance, neurodivergence, or cultural background can provoke discomfort, which, when reinforced by societal structures and misinformation, solidifies into rejection and systemic discrimination. What was once a primal reaction is becoming codified in institutions, laws, and attitudes. In this sense, Frankenstein's Creature is not merely a fictional being; he is a metaphor for every individual or group that has been cast aside for failing to meet conventional standards of normalcy or beauty. He is the outsider, the marginalized, the misrepresented. The creature experiences rejection not just from individuals but from society. Rumeu (2002) argues that Shelley anticipates the denial of</p>
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		<p>agency and dignity to those who fall outside human norms, a pattern seen in modern debates about non-human sentience and legal status. This rejection is not limited to moral exclusion, it often involves the refusal to recognize personhood, autonomy, or rights, even when the being in question displays moral reasoning, emotional depth, or intelligence. Through the Creature, Shelley exposes the underlying mechanism by which society strips the "other" of dignity simply because it cannot reconcile difference with worth. Shelley's narrative offers a compelling commentary on how society often fails to engage with difference ethically or compassionately. Instead of curiosity, there is fear; instead of dialogue, there is violence. We can compare the Creature's experience to the lived realities of countless</p>
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		<p>communities that continue to suffer the consequences of social exclusion. His plea to be heard and recognized as more than his appearance echoes the voices of those who are dehumanized, silenced, or treated as threats simply for being different. Given how reactionary society remains toward anything that challenges its sense of order or familiarity, it is no surprise that the future of artificial intelligence or any form of artificial consciousness will be met with resistance, fear, and heated ethical debate. If today we still struggle to fully accept and protect our fellow human beings when they fall outside societal norms, how much more difficult will it be to extend empathy, rights, or even acknowledgment to entities that do not share our biology but may demonstrate awareness, reason, or emotion? Frankenstein's lasting relevance lies in its</p>
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		<p>ability to confront this question directly. Shelley's novel is not just a cautionary tale about scientific ambition; it is a mirror reflecting humanity's enduring fear of the Other, and a challenge to rise above that fear with compassion, humility, and moral courage.</p>
<p>Aggression and violence as a social response</p>	<p>“The child still struggled, and loaded me with epithets which carried despair to my heart: I grasped his throat to silence him, and in a moment he lay dead at my feet.” (pg. 157)</p>	<p>We can observe the use of violence and other extreme measures as a response to what is not understood, reflected in Frankenstein's Creature, his creator, and society at large. Violence is a primitive instinct that resides within every human being, an ancient mechanism of defence and assertion. Since the rise of pacifist movements and the advancement of psychology, sociology, and other mental and social sciences, efforts have been made to contain and redirect this instinct through education, social reform, and dialogue. However, these efforts are not always</p>

		<p>sufficient. In the novel, violence emerges not only as a physical act but as a social failure, a breakdown in empathy and communication. Violence as a reaction can range from a child's tantrum to acts of extreme aggression, including murder. The latter appears in the novel when the Creature takes the life of Frankenstein's younger brother, William. This act, though deeply tragic and morally indefensible, is not a spontaneous outburst of evil; it is the result of prolonged suffering, isolation, and emotional despair. The Creature, having sought companionship and understanding only to be met with terror and rejection, finally lashes out, not because he was created violent, but because he was denied the love, guidance, and recognition that might have made him human in more than form. Today, we see examples of violence and</p>
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		<p>other extreme reactions daily, often used as a misguided response that precedes understanding. The violent mob reaction against the Creature in Shelley's novel reflects how unexamined fear can quickly transform into hostility. According to Patowary (2023), Shelley warns against societal responses based on ignorance, which can lead to unjust violence, just as modern technologies are sometimes met with resistance and panic before being properly studied or ethically framed. The creature is rejected not because of anything he has done, but simply because of what he is, an unfamiliar being, uncomfortably human, and therefore threatening. This pattern continues in contemporary society. We can observe it in the xenophobic attitudes that target migrants or refugees, in the stigmatization of</p>
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		<p>neurodivergent individuals, or the backlash against LGBTQ+ communities. Prejudice, like fear, often precedes knowledge or understanding. We are quick to reject, and what we reject, we try to eliminate, whether symbolically or literally. Even in the field of technology, the parallels are striking. Artificial intelligence, once the subject of optimistic fascination, is now increasingly regarded with suspicion and alarm. News stories about AI systems behaving unpredictably or taking on roles once reserved for humans provoke outrage and fear, often before the systems in question have been properly examined or regulated. A notable example is the backlash against humanoid robots or AI-generated art, where accusations of job displacement, cultural theft, or even existential risk are</p>
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		<p>sometimes voiced before thorough ethical analysis takes place. Shelley's novel thus provides a timeless lesson: violence is not merely the result of evil or madness; it is frequently the consequence of misunderstanding, fear, and collective ignorance. Her critique is not only of individuals but of society, its institutions, values, and emotional reflexes. She urges us to look beyond the surface, to pause before judgment, and to ask: What responsibility do we bear when we create or encounter something new? Furthermore, what do our reactions to differences reveal about us? In both Frankenstein and our contemporary world, the message is clear: if we allow fear to dictate our responses to the unknown, we risk perpetuating cycles of violence that harm both the misunderstood and the ones who misunderstand. The</p>
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		challenge, then, is to build a society where understanding precedes reaction, and where the unfamiliar is met not with violence, but with curiosity, humility, and ethical responsibility.
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Table 5 compares the societal reaction to Frankenstein's creature and contemporary technological innovations.

Table 6. To evaluate the role of ethical guidelines and accountability in scientific and technological advancements in Frankenstein.

Ethical element observed	Quotation from Frankenstein (1818)	Reflections on science and modern technology
Lack of ethical principles and foresight in the creation process	<p>“Learn from me, if not by my precepts, at least by my example, how dangerous is the acquirement of knowledge, and how much happier that man is who believes his native town to be the world, than he who aspires to become greater than his nature will allow.” (pg. 44 - 45)</p>	<p>Innovation and creation conducted without any regulatory framework or ethical principles can lead to adverse and unforeseen consequences. Victor speaks of the dangers in the pursuit of knowledge, and while there is some truth to this, it is only a half-truth. The desire to progress and acquire new knowledge is a healthy practice and mindset; however, becoming obsessively fixated on something to the point of neglecting every other aspect of life is the real danger. Victor speaks of wanting to become more than what his human nature allows, making him a reflection of many people today, individuals hungry for knowledge and recognition, who, blinded by ambition, choose to ignore</p>

		<p>the warnings of others and even consider themselves superior. These are people who lose themselves in their relentless pursuit to go beyond what they are truly willing or prepared to be. Victor's warning functions as a confession: knowledge without moral awareness is a threat. As Patowary (2023) explains, Shelley anticipates the need for ethical guidelines in science, especially when human lives may be affected. Her critique prefigures bioethical frameworks used today, reminding us of that progress without responsibility is not only reckless but potentially catastrophic. Through Victor's downfall, Shelley illustrates the inherent danger of divorcing innovation from ethical reflection, a lesson that continues to resonate in modern times. While for now, the creation of a conscious artificial being may still seem distant, that does not mean it</p>
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		<p>will not happen, and it would not be the first or last time that ambition and progress turn into tragedy. A clear example from our reality is the nuclear bomb: a scientific triumph that also became a symbol of unimaginable devastation. Like Victor, the scientists who developed it were driven by curiosity and the thrill of discovery, but the consequences far exceeded their initial intentions. Shelley's insight thus remains as relevant as ever reminding us that creation is never neutral, and that every breakthrough carries the weight of responsibility.</p>
<p>Late recognition of moral failure</p>	<p>“I listened to this discourse with the extremest agony. I, not in deed, but in effect, was the true murderer” (pg. 95)</p> <p>“I called myself the murderer of William, of Justine, and of Clerval. Sometimes I entreated my attendants to assist me in the destruction of the fiend by whom I was</p>	<p>Late reflections on ethics in science do not compensate for the damage caused. Once harm has been done, whether through negligence, oversight, or wilful ignorance, moral regret, no matter how sincere, cannot undo the consequences. This is especially true in cases where innovation progresses</p>

	<p>tormented; and, at others, I felt the fingers of the monster already grasping my neck, and screamed aloud with agony and terror.” (pg. 204)</p> <p>“Why did I not die? More miserable than man ever was before, why did I not sink into forgetfulness and rest?” (pg. 204)</p>	<p>faster than ethical reflection, as is often the case with emerging technologies today. Even if the creator is not directly involved in the misuse or unintended outcomes of their invention, neglect or irresponsibility can lead to devastating consequences, such as data privacy violations, algorithmic bias, or the deployment of AI systems in contexts that harm individuals or communities. Victor's belated recognition of his failure serves as a powerful narrative embodiment of this reality. Only after witnessing the full magnitude of the suffering caused by his Creation, he begins to grapple with the weight of his decisions. However, by that point, the damage is irreversible. Shelley presents this moment not as a sign of redemption, but as a tragic realization too late to save the lives lost, the innocence corrupted, or the potential for</p>
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		<p>understanding that was forsaken. His remorse, though genuine, becomes emblematic of how ethics were ignored in the beginning, and can return as guilt, but never as a remedy. Victor's belated recognition emphasizes Shelley's concern about indirect harm caused by unchecked innovation. She makes it clear that danger lies not only in intentional misuse but in the failure to anticipate how one's creation might evolve or be received by the world. This foresight, or lack thereof, becomes a moral responsibility. As Brannstrom (2006) points out, Shelley rejects the supposed neutrality of scientific discovery, asserting that creators are morally bound to anticipate consequences. Scientific knowledge, in her view, does not exist in an ethical void. It is deeply entangled with human values, intentions, and limitations. In our era, Shelley's warning</p>
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		<p>feels increasingly urgent. As we develop powerful technologies with far-reaching impact, such as generative AI, neural interfaces, and gene editing, the tendency to celebrate progress often overshadows the need to examine who might be harmed, marginalized, or excluded in the process. Innovations that are hailed as breakthroughs in one context can quickly become sources of harm in another, particularly when deployed without clear ethical guidelines or adequate regulation. We see this in real-world scenarios: AI surveillance technologies used to monitor citizens without consent; algorithms that reinforce racial or gender bias in hiring or policing; or large-scale data collection that strips individuals of their autonomy and privacy. In these cases, the developers often insist that they "only built the tools," distancing</p>
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		<p>themselves from how those tools are used. But Shelley's message is clear: the creator is not absolved by detachment. Moral responsibility begins not after creation, but during its very conception. By dramatizing this through Victor's arc, Frankenstein urges us to reconsider the ethical role of the innovator not merely as a thinker or inventor, but as a guardian of the social and moral consequences of their work. When this role is ignored, tragedy does not become a possibility; it becomes inevitable.</p>
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Table 6 evaluates the role of ethical guidelines and accountability in scientific and technological advancements in Frankenstein.

4.2.1 Themes

4.2.1.1 Ambition

One of the most important themes in *Frankenstein* is the warning call against blinding.

Ambition. Victor Frankenstein incarnates the archetype of the obsessed scientist whose desire to break the natural boundaries ignores the ethical and personal consequences of his actions.

Victor's ambition drives him to an unprecedented discovery, how to create life, but also guides him to his ruin. Shelley infers that the pursuit of knowledge, when it is not controlled by morality, can turn into a destructive force. The theme of ambition echoes contemporary discussions about artificial intelligence and genetic engineering advances, where technology surpasses ethical reflection.

4.2.1.2 Isolation

Both Victor Frankenstein and his creation suffer the consequences of isolation. Victor abandons his family and friends to dedicate his life to science, losing himself in a self-imposed loneliness that damages his physical and mental health. The creature is isolated from everyone else since his creation, doomed to exist in total loneliness that drives him to hatred and a desire for vengeance. Shelley postulates that isolation destroys the human soul and will, even turning the existence of innocent creatures into tragic characters. Isolation approaches the essential need of recognition and human contact as fundamental pillars to the emotional and moral development of human beings.

4.2.1.3 Creator's Responsibility

The ethical responsibility a creator must keep towards their creation is another key theme in *Frankenstein*. Victor not only gives life to and consciousness to the creature, but he also rejects it and abandons his creation, depriving it of love, dignity, and moral orientation. The lack of responsibility is what triggers Frankenstein's tragedy. The novel advocates for reflecting on the moral obligation creators have towards their creations; they must guide them, support them, and be accountable for what they have brought to the world. In a modern context, this theme forms part of debates about what artificial intelligence and autonomous technologies developers must assume as the consequences of their actions.

4.2.2 Motifs

Motifs are recurring literary elements that are part of a work to reinforce its main ideas and create continuity. In *Frankenstein*, Mary Shelley uses symbolic motifs to delve into the characters' internal conflicts while criticizing science and society. Motifs also work as invisible strings connecting the key scenes of the novel, mirroring obsessions, emotions, and ethical warnings.

4.2.2.1 Fire and Knowledge

Fire is present as a motif both literary and as a symbol representing knowledge as a double-edged weapon. Just like Prometheus stole fire from the gods to give it to humans, Victor Frankenstein also "steals" the secret of creating life from nature. Knowledge, a concept that is related to enlightenment and progress, is in the novel as something more ambiguous; knowledge may guide you to glory or doom.

4.2.2.2 Biblical Allusions

Shelley incorporates religious motifs through the novel; this can be appreciated in the relationship between Victor and the creature. The creature compares himself to Adam, the first man on the creation, but also compares himself with Satan, the fallen angel: "Remember, that I am thy creature: I ought to be thy Adam; but I am rather the fallen angel, whom thou drivest from joy for no misdeed" (Shelley, 1818). That direct allusion to the Bible reinforces the theme of isolation. Victor also assumes a divine "god-like" role, but he does not love or nurture his creation, thus producing tragedy. The motif of a divine punishment is also part of the novel; Victor lives in suffering because of his transgressions. Biblical allusions criticize human arrogance and lack of compassion.

4.2.3 Symbols

The symbols in *Frankenstein* are elements that go beyond their literal meaning; they represent abstract concepts, complex emotions, and philosophical conflicts. Shelley uses these symbols to reinforce the themes of her novel and create a rich and multidimensional work. Through powerful symbols such as the arctic cold or the physical appearance of the creature,

Shelley introduced the opposition of concepts like the natural and the artificial, the beautiful and the monstrous, life and death.

4.2.3.1 The Arctic

The arctic landscape and its cold ice symbolize the isolation, emotional stagnation, and the limits of human curiosity. The novel starts and ends in this hostile environment, in which Robert Walton pursues his ambition just like Victor Frankenstein did. The cold mirrors Victor's emotions, his social distancing, and the point of no return he has reached because he was obsessed with knowledge. The ice also represents the danger of abandoning human nature and limits, and it is a symbol used to warn about the consequences of ignoring ethics in pursuit of knowledge.

4.2.3.2 Creature's Physical Appearance

The abominable physical appearance of the creature symbolizes the discordance between the auto perception and the external perception. Even though the creature is a sentient being who desires love and human connection, he is immediately rejected by everyone due to his physical appearance, thus turning his body into a symbol of social prejudices and the marginalization of what does not conform to the established standards. His physical appearance also represents Victor's regret. Victor does not consider the body of the creature to be the only abominable thing; he considers his irresponsibility like another monstrous aspect in his life. The creature's physical appearance is a symbol that enables the reader to explore other concepts such as identity, self-esteem, and the rejection of what is different.

Chapter V

Conclusions and Recommendations

5.1 Purpose of the Conclusion

The purpose of this last chapter is to synthesize the most relevant findings of the research and to offer a reflective interpretation based on the ethical, philosophical, and technological analysis of *Frankenstein* by Mary Shelley. This section seeks not only to restate the objectives and research question but to go further, providing conclusive insights into how this early 19th-century literary work maintains its relevance in the 21st century. Furthermore, this chapter outlines the broader implications of the research and how they intersect with fields such as artificial intelligence, bioengineering, digital ethics, and educational practices. The chapter also presents recommendations aimed at researchers, educators, technology developers, policymakers, and the public, encouraging interdisciplinary reflection and ethical accountability. This section emphasizes the role of literature as a platform for addressing contemporary issues that transcend scientific and academic boundaries.

5.2 Conclusions

5.2.1 Specific Objective 1: To analyse the ethical responsibilities of creators in *Frankenstein* and modern technological fields, focusing on the consequences of their actions in creating life.

One of the clearest lessons derived from *Frankenstein* is the vital importance of ethical responsibility in the process of creation. Victor Frankenstein's decision to abandon his creature immediately after giving it life represents an act of profound moral negligence. His irresponsibility stems not only from his refusal to care for the being he created but from his complete lack of foresight regarding the long-term consequences of his experiment. The novel makes evident that the moral burden of the creator extends beyond the act of creation itself. It includes the obligation to guide, support, and take accountability for the life one brings into existence. This resonates strongly with current technological practices, especially in the fields of AI, robotics, and synthetic biology. Developers and scientists today, much like Victor Frankenstein, stand at the threshold of creating autonomous entities capable of interaction, adaptation, and even self-awareness.

Yet, many projects move forward without a robust ethical framework, motivated primarily by innovation, competition, or financial incentives. This research shows that Shelley's novel serves as a timeless allegory that warns of the perils of unchecked scientific ambition. The ethical dimension of the creator's responsibility must be considered as fundamental as the technical feasibility of innovation. In both the fictional and real world, the act of creation requires a commitment to stewardship and care, without which the results may become catastrophic or morally indefensible. Moreover, this conclusion aligns with the argument presented in the theoretical framework, where the figure of the "Modern Prometheus" is not a hero, but a cautionary example. Like Prometheus, Victor defied natural laws to benefit humanity but did so without fully understanding or preparing for the consequences. In today's context, such defiance can take the form of AI systems that make decisions affecting lives (in judicial, financial, or health contexts), without the developers fully grasping or assuming the ethical ramifications.

5.2.2 Specific Objective 2: To compare the societal reactions to Frankenstein's creature and contemporary technological innovations.

The research highlights that the reaction of society to Victor's creature is a central theme in Shelley's novel and one that finds strong parallels in modern responses to disruptive technologies. From the moment of his first contact with humans, the creature is judged and rejected based solely on his appearance and unnatural origin. His kind heart and willingness to learn and contribute are irrelevant in the face of social fear, prejudice, and moral panic. This pattern of rejection is echoed in the way society often responds to emerging technologies. Throughout history, inventions that challenge conventional norms, such as cloning, genetic manipulation, humanoid robotics, and artificial consciousness, have been met with suspicion, fear, and rejection. In both cases, the "otherness" of the creation becomes a threat to the social order, regardless of its actual intentions or capabilities.

The novel suggests that this rejection can lead to the corruption of the being in question. In the case of Frankenstein's creature, repeated rejection transforms his longing for companionship into hatred and vengeance. This idea supports the notion that social context plays a crucial role in the moral development of new artificial beings. Applied to contemporary issues, this finding underscores the importance of inclusion and ethical integration for AI and synthetic

life forms, especially those designed to interact with humans. Furthermore, this conclusion resonates with the sociological insights presented in the theoretical framework, particularly through Honneth's theories of recognition. The creature's descent into violence is not the result of inherent malice, but of systematic denial of recognition, identity, and dignity, conditions that modern marginalized communities and even technological "agents" (like chatbots or robots) may face as they navigate human systems of interaction. Finally, this conclusion also serves as a critique of anthropocentrism. Humanity's tendency to reject what does not resemble it, whether biologically or cognitively, poses a serious ethical issue as we approach the era of sentient or semi-sentient machines. Shelley's novel invites us to recognize that acceptance, empathy, and social inclusion are not only moral imperatives but protective factors against potential harm.

5.2.3 Specific Objective 3: To evaluate the role of ethical guidelines and accountability in scientific and technological advancements in Frankenstein.

The third conclusion centres on the need for ethical frameworks and institutional accountability in scientific and technological progress. Victor Frankenstein's downfall is not due to a lack of talent or knowledge, but to his disregard for ethical guidance. He works in secret, avoids regulation, isolates himself from peer review, and ultimately abandons his creation without a plan or support system. This behaviour mirrors modern concerns about the lack of regulatory structures surrounding AI, biotechnology, and robotics. The rapid pace of innovation often outpaces ethical deliberation, resulting in creations that enter society without adequate safeguards. Shelley's narrative prefigures this problem by showing the tragic results of creation without foresight.

Ethical guidelines must not be seen as obstacles to innovation, but as the scaffolding that supports responsible progress. Bioethics, digital ethics, and environmental ethics are essential disciplines that need to be integrated into technological development from its initial stages. This conclusion also affirms that moral responsibility must be institutionalized, not only individual. Victor's downfall, while tragic, also reflects a systemic failure: he operated in a scientific culture that did not demand accountability or transparency. Moreover, the study highlights that Shelley anticipates modern-day challenges such as the legal status of artificial life, the potential for emotional and psychological harm to sentient machines, and the consequences of dehumanizing innovation. By portraying a world where ambition replaces empathy, Shelley issues a timeless

warning: if science advances without ethics, its achievements may bring about suffering rather than salvation.

5.3 Restatement of the Research Question

How do the ethical dilemmas presented in Mary Shelley's *Frankenstein* reflect urgent contemporary concerns about scientific innovation, responsibility, and the creation of life? This research confirms that *Frankenstein* offers a profound and prescient examination of the ethical challenges involved in scientific creation. The novel's dilemmas of abandonment, responsibility, marginalization, and unregulated ambition are not limited to its historical context. On the contrary, they speak directly to current debates about AI ethics, synthetic biology, and human-machine interaction. By drawing parallels between Victor Frankenstein and today's scientists and developers, the study demonstrates that the moral challenges of creation are not only literary but deeply human. Mary Shelley's work becomes a mirror in which we see the consequences of our collective ambitions and the necessity of empathy, responsibility, and foresight in shaping the future.

5.4 Unexpected Results

Although the primary aim of this research was to explore ethical dilemmas from a literary perspective, an unexpected result emerged in the emotional and psychological parallels between the novel and contemporary issues. Victor and his creature are not just figures of scientific allegory; they are also reflections of real human conditions such as depression, guilt, loneliness, and trauma. Victor's self-imposed isolation and obsessive behaviour reflect characteristics associated with burnout, perfectionism, and psychological distress in highly competitive academic or scientific environments. Similarly, the creature's need for recognition and his psychological deterioration due to rejection can be interpreted through lenses such as social exclusion, disability studies, or trauma theory. This unexpected finding adds a new layer of relevance to Shelley's novel. It suggests that *Frankenstein* can serve not only as a reference for bioethical discussions but also as a valuable tool in understanding the emotional cost of innovation and the human impact of technological alienation.

5.5 Recommendations

Literary works such as *Frankenstein* invite contemporary readers to re-evaluate the ethical dimensions of creation and innovation, not through abstract theory, but through deeply human experiences of rejection, ambition, and longing. The novel suggests that the act of creating, whether a scientific discovery, a technological advance, or even a social construct, must be accompanied by an equally rigorous commitment to care, responsibility, and moral reflection. Thus, it becomes essential to foster an educational and cultural environment that prioritizes ethical consciousness alongside scientific progress.

One of the most valuable lessons learned is the importance of choosing a literary text that genuinely resonates with the researcher. Select a work that sparks curiosity, that challenges you, and that compels you to go beyond a surface-level reading. It is equally important to define a topic that feels meaningful and sustainable over time, and to pair it with a literary approach that is both accessible and rich in potential for analysis. Starting early, managing time wisely, and setting realistic goals are essential for maintaining momentum and avoiding unnecessary stress. Above all, it is crucial to maintain a healthy balance between academic responsibilities and personal well-being. Mental and emotional well-being should not be sidelined as they are central to the quality and integrity of the research itself.

Finally, this work recommends that *Frankenstein* should be approached not only as a canonical literary text but also as an ethical artifact that challenges readers to confront their assumptions about identity, responsibility, and the human condition. Rather than dismissing the novel's relevance as rooted in fiction or antiquity, we must recognize its continued capacity to illuminate our most urgent modern dilemmas.

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