

CHAPTER I

INTRODUCTION

1.1 Background of the Study

The concept of sacrifice is not a new phenomenon for humanity. Humans have been performing the act of sacrifice for a long time, not only to benefit themselves but also for the greater good of their group. Even for an extreme level of sacrifice like suicide, humans are not reluctant to do so, as the willingness to give one's life for the sake of a group has been documented worldwide and throughout human history (Whitehouse, 2018). Additionally, sacrificial acts that lead to destructive expense are also called altruism. As defined by Robert Trivers, altruism refers to behavior that benefits another unrelated individual while being obviously detrimental to the individual performing it, with the benefit and detriment measured in terms of their relation to inclusive fitness (1971). Moreover, sacrifice is also prominent in many literary works as it becomes one of the most compelling themes in literature. From Greek mythology, such as *The Iliad*, classics like *A Tale of Two Cities* by Charles Dickens, to contemporary works like *The Hunger Games* by Suzanne Collins, sacrifice has become an influential theme that echoes throughout time and literature. Eventually, it highlights how the act of sacrifice has been preserved.

Moreover, when humans engage in sacrificial acts, it can have detrimental effects. However, we see that the act of sacrifice has been preserved throughout history and appears in many literary works, suggesting that humans remain inclined to make sacrifices. Further, it implies that sacrifice is an evolved trait used by humans to adapt to this world, showing how it has become one of the tools humans use to survive.

Moreover, one literary work that profoundly uses the theme of sacrifice or altruism as a tool to survive is Andy Weir's science fiction novel *Project Hail Mary* (2021). Through the characters' striking altruism and self-sacrifice, the novel portrays human motives and tendencies when faced with a mission to save humanity from extinction. The novel *Project Hail Mary* follows the story of Ryland Grace, an amnesiac science teacher, who wakes up alone in a spacecraft in another star system. As Ryland regains his memory, he learns he is on an interstellar mission to save the Earth from the depletion of the sun by an alien microbe called Astrophage.

During the mission, Ryland faces several challenges, such as suffering from amnesia, psychological dilemmas, and the extreme demands of the space journey that require him to risk his own life. After waking from his coma, Ryland explores the Hail Mary spacecraft and discovers that the spacecraft is using the Astrophage as fuel. However, Ryland calculates that given its consumption rate, the fuel will not be sufficient for the journey back to Earth. Ryland realizes that he was on a suicide mission, as the spacecraft is not equipped with enough fuel to return home. As the realization hits, Ryland accepts the fact that he will die out there alone in order to save humankind. Furthermore, his journey develops when he encounters an alien being, Rocky, from a planet called Erid.

Despite their differences, Ryland and Rocky manage to find a way to communicate with each other. They then discover that they are in Tau Ceti for the same reason, which is to find out why the luminosity of the star is not affected by the Astrophage but affects their respective star systems. Along the way, they develop mutual trust and cooperation, even willing to sacrifice for each other. Moreover, the novel shows how Ryland is willing to risk his life to help Rocky and the people on

Rocky's planet, which shows how Ryland's sacrifices have expanded beyond his own kin. His altruistic behaviors then open the way to analyze the novel through a literary Darwinism perspective, because literature can be interpreted not just through cultural or ethical lenses but also in relation to the evolutionary mechanisms that influence human behavior.

Literary Darwinism is an approach in literary criticism that stems from Charles Darwin's evolutionary biology and combines the disciplines of sociobiology and evolutionary psychology. Literary Darwinism believes that the human mind has evolved through an adaptive process driven by natural selection, just as biological organs do (Carroll, 2011). Hence, literature is the product of the human mind that accommodates humans to adapt and survive in this world. Accordingly, Joseph Carroll states that literary works can be seen as the result of an adaptive need to make cognitive choices and to understand the world in ways that are both creative and emotionally meaningful (2004). Moreover, from a Darwinian perspective, literature trains us to make valuable and adaptive decisions. From this viewpoint, literature serves as a medium that helps humans navigate their lives through its narrative. As a product of the human mind, literature, as a medium, also reflects basic human motivations, one of which is the motive to survive, which is prominent in the novel *Project Hail Mary*.

Andy Weir's *Project Hail Mary* portrays how someone is willing to make a sacrifice and engage in altruistic behavior to save others. This intriguing portrayal invites us to question why people are willing to risk themselves for the benefit of others. Additionally, *Project Hail Mary* stands out from other literary works, as the altruism and sacrifices portrayed in the novel also extend to Rocky, an alien. This

shows how the novel promotes an unconventional and deeper connection among living beings. Moreover, this topic is compelling to explore with an academic viewpoint, as it can employ the literary Darwinism perspective to analyze how human motives influenced the altruism and sacrifices portrayed in the novel. Additionally, it allows the novel to be analyzed with related evolutionary disciplines to examine how the novel portrays self-sacrifice as a tool for survival. The writer assumes that the theme of altruism and sacrifice as a survival tool for humanity in *Project Hail Mary* centers on whether such actions contradict the survival instinct or, instead, are a logical and adaptive mechanism shaped by evolutionary traits.

1.2 Identification of the Problems

In Andy Weir's *Project Hail Mary*, the theme of risking one's life to save others is strikingly prominent and becomes the primary interest of the plot. In the novel, the protagonist, Ryland, displays a willingness to sacrifice his life for the continuation of other beings. Upon learning that he is part of a "one-way mission" and that he is going to die alone in a spacecraft that cannot return to Earth, Ryland still chooses to carry out the mission and sacrifice himself in order to save humanity. Moreover, his decision to save Rocky, an alien being, in critical and extreme moments further exemplifies the theme. Furthermore, Ryland's altruistic behaviors raise thought-provoking questions about survival. Because by nature, the idea of risking one's life that leads to death is precisely the opposite of survival. Nevertheless, in the novel, Ryland's self-sacrificial actions are presented as a means to ensure humanity's survival. Hence, self-sacrifice as a survival tool became a paradox when viewed through the lens of evolutionary

theory, since an evolutionary mechanism ultimately promotes self-preservation. In contrast, self-sacrifice involves ending one's life and thus appears to contradict this principle and the individual's instinct for survival. Likewise, the question of why one would risk, or even die, for the sake of others' continuation is challenging to explain. Therefore, this research investigates self-sacrifice as an evolutionary mechanism for survival, by utilizing literary Darwinism and supported by related theories, including evolutionary psychology and sociobiology.

1.3 The Review of the Previous Studies

Numerous studies have been conducted to examine Andy Weir's *Project Hail Mary*. In an article titled "Friend of Foe: The Development of Human-Alien Relationships Based on Ecological Awareness in Andy Weir's *Project Hail Mary*" (2022), Kalawantawanich examines human perceptions of nature and nonhuman species depicted in the novel through the development of interspecific relationships between humans and aliens. The article analyzes how different emotional responses to alien beings reveal broader human attitudes toward nature and nonhuman life by employing ecocriticism and affect theory. The article shows that humans interact with the emergence of aliens in different ways, depending on their collective emotions towards two aliens, the Astrophage and Rocky, despite both being unknown beings. Ultimately, the study concludes that the novel suggests that mutual understanding and emotional connection across species lines are essential for solving environmental and existential crises.

Furthermore, in an article titled “Born of Necessity: Alien Partners and Actor-Networks in Andy Weir’s *Project Hail Mary*” (2024), Nair examines the mechanics of the unlikely partnership between a human and an alien reflected in *Project Hail Mary* using the Actor-Network theory. The paper highlights how the novel presents an atypical first-contact, in which the protagonists engage in a close partnership rather than in conflict. The study analyzes how Ryland and Rocky shared matters of concern that led them to assemble elaborate networks of cooperation through a series of strategies called translational movements. The study concludes that the Grace-Rocky alliance is a metamorphosis of the unlikely partnership between a human and an alien into a true friendship, the most robust actor-network.

Moreover, in the thesis titled *Abductive Empiricism: The Significance of Substance in Andy Weir’s Project Hail Mary* (2024), Maloney examines a variety of ontological connections between Ryland Grace and Rocky in *Project Hail Mary* by proposing a new theory called abductive empiricism. The study combines science, philosophy, and literary studies to explore the empirical data that confirms the potential ontological connection between static entities based on their shared quantitative data. The study shows how Ryland and Rocky are ontologically connected through their overlapping ranges of hearing, which act as their quantifiable information. The study concludes that the connections of the universe can be found within entities, implying that we have the possibility to uncover the scientific proof of the interconnectedness of everything.

Additionally, in the thesis titled *Exploring the Representations of Otherness in Relation to Humanity in Science Fiction Literature: The Martian Chronicles and Project Hail Mary* (2025), Kontio explores the representation of otherness in science

fiction literature, especially that of alien others and their representations of humanity. The study utilizes a comparative approach to compare how Ray Bradbury's *The Martian Chronicles* (1950) and Andy Weir's *Project Hail Mary* (2021) represent different styles and eras within the science fiction genre, as well as different approaches towards the theme of otherness. The study reveals that *The Martian Chronicles* shows multiple different understandings of the concept of otherness and also frames humans as the other from the aliens' point of view, which connects the theme to broader issues such as colonialism. On the other hand, *Project Hail Mary* focuses on the theme of more personal communication between the two main characters, a human and an alien, which highlights an imaginative, complex representation of an alien other. The study concludes that science fiction can explore how the fear of the other may affect the connections with it, but also how the other can be seen as an equal regardless of the barriers arising from differences.

Besides, various studies have been examining the theme of sacrifice, particularly altruism, in literary works with varying theories. In an article titled "Act of Altruism in Nicola Davies' *Whale Boy*" (2022), Jenner and Jebakumar employ an ecocritical perspective to Nicola Davies' *Whale Boy* (2013) to examine the representation of altruism as an expression of ecological consciousness. The study investigates how the relationship between Michael and the whale led them to engage in altruism. Through the novel portrayal of the bond between humans and animals, the study highlights the possible kinship and the importance of coexistence. The study concludes by promoting the issue of ecological consciousness, especially about marine life, the problem of whaling, and conservation.

Additionally, in an article titled “Building Altruism Through Novels” (2019), Purbasari et al. explore how altruism is represented in *The Bluest Eye* by Toni Morrison (1970), *The Great Gatsby* by F. Scott Fitzgerald (1925), and *David Copperfield* by Charles Dickens (1850). The study analyzes the behavior of the characters by using text analysis, focusing on the novel’s narrative. The study reveals that the characters’ altruistic acts stem from their moral qualities, and the socio-cultural context of each novel also affects those altruistic acts. The study also shows how the novel *The Bluest Eye* presents social interest in the altruistic acts, while classics like *The Great Gatsby* and *David Copperfield* indicate more individual interest. The study concludes that while altruism in these novels results in both negative and positive outcomes for the characters, it can foster altruistic attitudes among readers.

Similarly, in an article titled “The Portrayal of Altruistic Behavior in Three Selected Picture Books” (2025), Prayuna et al. explore how children’s picture books build awareness of helping others through the depiction of altruistic behavior in respective books. The study is done by analyzing three picture books through descriptive qualitative methods. The picture books are *Little Miss Mary and the Big Monster Makeover* by G.G. Toropov and Cleone Cassidy (2008), *Harold Loves His Woolly Hat* by Vern Kousky (2018), and *My Brother’s Wheelchair* by Salil Chaturvedi (2019). The study identifies various forms of altruistic acts performed by child characters in the picture books by observing the plot in the story and exploring the implicit message. The study concludes that these representations help foster social awareness in children as readers.

Moreover, in an article titled “Altruistic Personality as Depicted in the Main Character in Danielle Steel’s *Journey*” (2021), Susilo and Tama explore the altruistic traits of Maddy Hunter as the main character in the novel *Journey* by Danielle Steel (2000) using a psychological approach within Hunt’s theory of altruistic personality. Through library research and textual analysis, the study finds seven characteristics of Maddy’s altruistic personality. They are happy, empathy, popular, emotional, responsible, moral norms, and consequent. These characteristics then influence how Maddy interacts with others, making her a clear example of a selfless character in literary works. The study concludes that Maddy’s altruistic behavior has affected her life both inside and outside. On the outside, her society appears to show a sense of comfort toward her altruistic behavior, while on the inside, Maddy feels happy, with no doubt or regret.

Eventually, another study has also examined science fiction with a literary Darwinism perspective. In a doctoral dissertation titled *The Evolutionary Subject: Science Fiction from the Perspective of Darwinian Literary Studies* (2019), Bartłomiej explores how science fiction functions as a tool for the readers to experience novelty and otherness through the lens of Darwinian literary studies. The study applies textual analysis from novels, films, and video games with a science fiction genre to answer why science fiction remains popular despite its repetitive narratives and regularities. The study utilizes Edward O. Wilson’s theory of scientific consilience and theories of disgust to examine how the narrative patterns of science fiction align with evolved human psychological nature. The study reveals that science fiction stimulates mental and cognitive experimentation, which facilitates learning and culturally enhances fitness. The study also claims that science fiction offers many

opportunities for exploration and interaction through its portrayal of heterotopic spaces and paraspaces. The study concludes that science fiction is narratively and conceptually organized around innate psychological mechanisms and seems to possess features that could make it adaptively beneficial, which supports the correctness of the theoretical framework of Darwinian literary studies.

The related studies above demonstrate that numerous papers and theses have discussed Andy Weir's novel, *Project Hail Mary*, with varying theories and approaches. Moreover, various studies have examined altruism in literary works by employing different theories and explored the science fiction genre through the lens of literary Darwinism. This research, on the other hand, will be the first to apply a comprehensive literary Darwinism framework, supported by evolutionary psychology and sociobiology, to analyze self-sacrifice as an evolutionary tool to survive in Andy Weir's *Project Hail Mary*.

1.4 Research Questions

Regarding the topic, this research will try to answer two questions:

1. What altruistic behaviors does Ryland Grace exhibit in *Project Hail Mary*, and how can they be understood through the logic of his motivations and decision-making?
2. How does *Project Hail Mary* portray sacrifice as an adaptive strategy that ensures survival for humanity?

1.5 The Scope of the Research

This research focuses on examining the evolutionary motives behind Ryland's altruism and self-sacrifice in Andy Weir's *Project Hail Mary*. The analysis is limited to the novel's narrative to understand how altruism and sacrifice function not as a contradiction to survival, but as adaptive strategies that enhance collective survival. The study focuses on the logic of Ryland's motivations and the reasoning behind his altruistic behavior, furthermore, on his interactions with Rocky.

1.6 The Objective of the Research

This research aims to explore how *Project Hail Mary* portrays self-sacrifice as an evolutionary mechanism that guarantees survival "for the many." In particular, it seeks to analyze the logic of Ryland Grace's motivations for his altruistic behavior, alongside the evolutionary function of sacrifice as an adaptive strategy by employing literary Darwinism. Moreover, by utilizing supported sociobiological theories, this study seeks to explain how altruism and self-sacrifice as evolutionary survival mechanisms are logical and not a contradiction to the instinct of survival.

