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Science Mythology in Mary Shelley's *Frankenstein*: A Case Study Using Roland Barthes' Semiotics

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Abstract:- The debates between science and religion have been a long way discussion in many life aspects; especially how one is compared to another and seen as more superior or inferior. Science has dramatically developed since the Renaissance era in the 14th century to the Age of Reason in the late 18th century, until today. The tremendous science advancement has been portrayed well in Mary Shelley's book entitled Frankenstein where the scientific act of revival is clearly shown and practised. This study wants to emphasise the science mythology in the novel, related to how science and religion are depicted both in the novel and social practice. Using Roland Barthes' semiotic approach, this research has analysed how science and religion should be perceived through denotative, connotative, and myth interpretations. Finally, it can be concluded that there is a tangible bond between science and religion that is supposed to create harmony for both aspects of social practices.

Keywords:- *Act of Revival, Age of Reason, Frankenstein, , Religion, Science Mythology.*

I. INTRODUCTION

It is humans' nature to be curious and to explore everything. This nature encourages humans to discover the answers to their problems. To do so, humans have done many observations, studies, and provided statements for everything that they want to know. From here, science began as soon as the man started to ask a question. There are three questions in humans' mind: what are the issues that going to be researched? How can we discover the truth behind those issues? What are the values and use of discoveries or knowledge? In short, science was born from humans' inquisitiveness and interest, and those are triggered by humans' continual demands and necessity in their lives.

Throughout the time, science's development can be divided into five periods, those are ancient Greek, Islamic golden age, renaissance period, modern era, and contemporary era (Karim 2014). Among these periods, The Renaissance Period is highlighted to be a great intellectual and cultural movement in the western civilisation. It started around the 14th century and ended approximately in the 16th century, centred in Italy. The scientific revolution marked advancement in mathematics and science. Another remarkable invention during the Renaissance Era was the printing press throughout Europe. The printing press actively acted as a way to distribute information as well as new scientific findings to a wide audience.

While scientific development grew rapidly during the Renaissance era, more inventions were still made in the world, specifically in Europe, to ease human's life and for the sake of industrial needs. In the late 16th century, the Italian Renaissance came to the end as the country was dominated under the Spanish's influence. This was the beginning of the English Renaissance when Britain was in its golden era. Even though English Renaissance emphasises more to the art and literature aspects, the development of science was still ongoing until Britain in the 18th century initiated a progress namely Industrial Revolution that was eventually spread around Europe and other continents in the world. Technology, governance, agriculture, and medicine were the growing aspects at that time, affecting the English's social life. In short, there was great progress in the scientific field, and the use of logic for reasoning was heavily improved, leading to the name of the era itself as 'The Age of Reason'.

The use of logic for critical thinking brought a relatively different perspective to see the religion's role in society. At this time, religion acted as an institution, its ideologies were also involved in politics, but for some other people, religion was considered as a faith. When people relied on reasons and logic, it was evident that people would begin to question the purpose of religion. The church was nearly empty during the workdays. Some people from a higher social class might visit the Church, but such occasion usually happened on important holidays. Another issue related to religion as faith was the conflict with the Pagans who demanded the rise of natural religion where nature is the centre of people's devotion as the creator. As a result, might people decided to repel from their religion completely, those people were called as atheists and/or agnostics.

Historical books and even some literature have recorded the conflicts between science and religion in English social life during the Georgian Era. Mary Wollstonecraft Shelley is one of the authors in the 19th century with her work entitled Frankenstein. The novel revolves around the life of Victor Frankenstein, a Swiss artist, who is obsessed with a controversial experiment. He got an idea to recreate the dead humans for the sake of his desire. He has prepared everything to create his very first human. However, the desired 'perfect' man is born as a monster whom people avoid and are scared of. Frankenstein decides to abandon his creation; he runs away as his experiment has failed. The happiness he is longing turns to be a tense fear for the entire of his life (Shelley 1818).

The act of revival that is portrayed in Frankenstein may provoke agreements or disagreements among the readers, especially among the literary critics. On the surface, the power of science seems to want to overthrow the religious concept of life, thus it sparks a question, "Is it God or Science that has a right to create life?" (Bissonette 2010). Victor Frankenstein revives the dead man whose body parts are taken from other different dead bodies by fusing it with an electric shock. This can be seen as the greatest of scientific discovery to dismiss the general perspective that one cannot bring back the dead to life, but the action is against the religious moral since God is the only one who can decide people's lives and deaths. In this case, science and religion are not in the same line any more. Science and religion seem to have different ways to 'control' the world's view. Eventually, science and religion can even against each other.

Regarding the science and religion depicted in Shelley's Frankenstein, there have been numerous previous studies for the mentioned subject. First, Hindle (1990) in her article Vital matters: Mary Shelley's Frankenstein and Romantic Science mentions about Victor Frankenstein's wishes to bring back the dead are to 'pour a torrent of light into our dark world' by 'bestowing animation upon lifeless matter' (Shelley 1818: 54), his motive can be his idea to act as a creator of new species and many happy and excellent beings would worship and owe their lives to him. 'No father could claim the gratitude of his child so completely as I should deserve theirs' (Shelley 1818: 54). Therefore it is safe to consider whether or not Victor Frankenstein tries to interfere with God's work or not; or whether he is just a selfish man or a religion disbeliever.

Another study is conducted by Huxford (2000) in his article entitled Framing the Future: Science Fiction Frames and The Press Coverage of Cloning depicts Victor Frankenstein as an "arrogant scientist who flouted God's laws, and the soulless, uncontrollable creature that resulted from that violation" (Huxford 2000: 194). His attempted experiment is later related to Dolly's case, the cloned adult sheep in 1997, though the Dr Wilmut, a scientist that led the experiment has mentioned that they were not planning to create Frankenstein-styled human clones. Even so, the cloning activity, while it shows an advancement in science and technology, it also brings fear to the scientific expertise and even society in general. Huxford mentions a survey conducted by CNN that three of four people in America believe that cloning research is against God's will (Huxford 2000: 194).

Those results above are just a few examples to show the connection between science and religion in Frankenstein. However, the results still could not provide a bigger image for what we call as 'mythology', that is the ideology or principle believed by many (or not, all) people in the world. Moreover, those two studies still focus merely within the text without considering that the context behind the literary work, that is the time when the novel was published. For that reason, this article wants to emphasise the science mythology as it is portrayed in Mary Shelley's Frankenstein through semiotics approach offered by Roland Barthes. Barthes' semiotics concept proposes three steps to analyse a literary work, and those are denotation, connotation, and myth in the literary work (Noth 1995). This article aims to illustrate the denotation and connotation meanings from the novel related to science and religion and to reveal the science mythology that underlies the novel's interpretation.

II. METHOD

Paradigmatically, this research is qualitative. It is qualitative research because the analysed data are not used to agree or disagree hypothesis. Instead, the result of this analysis are descriptions and the phenomena that are observed and not necessarily in a form of numbers or coefficient between variables. This research purposes to describe the ideology behind Mary Shelley's Frankenstein; what the ideology is, and how the ideology is delivered through semiotic interpretation. The approach used in this study is Roland Barthes' semiotic revolving around the three concepts of sign, which are the denotative, connotative, and myth. Researcher thinks that Barthes' semiotic is the most suitable approach to study the sign thoroughly in a literary work and to examine the mythology behind the literary work, as mythology itself is "…close to what Durkheimian sociology calls a 'collective representation', can be read in the anonymous utterances of the press, advertising, mass consumer goods; it is something socially determined, a 'reflection." (Barthes 1977: 165).

This study is conducted by using the semiotic approach offered by Roland Barthes. The semiotic approach is a part of structuralism in which the critique on literary works is heavily influenced by the text. Roland Barthes' semiology is a development from other previous semiotic approaches, especially Saussure's semiology that focuses on the language aspect in the text, classified as *langage, langue,* and *parole*. Roland Barthes' semiology concept consists of three aspects that would be analysed in this article: denotative, connotative, and myth that revolves around the product of the culture (Noth 1995).

Denotative interpretation is the interpretation that shows how the text as it is. According to Lyons, denotative interpretation is the translation of a sign to its literal meaning (Lyons 1977). For examples, the defined words in dictionaries are converted into their actual meaning, and denotative interpretation of a novel is to show the novel's purpose in the beginning. It is contrast, but still related to each to, with connotative which deals with interpretation beyond what has been written in the text or literary works. After examining the denotation and connotation from the text, *myth* is required to show the sign in the form of a language (Barthes 1993: 109). The language here refers to ideas, speculations, or in another word, ideology. In short, denotation, connotation, and *myth* are Roland Barthes' three kinds of language, and these related languages (signs) refer to something and that is the meanings.

The primary source of this analysis is Mary Shelley's *science-fiction* novel entitled *Frankenstein, Or, The Modern Prometheus*, and the secondary sources are ranged from several different studies,

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Barthes' *Mythology* and many more to explain the necessary terminologies and explore the data. The data is going to be collected through documentation. The documentation is done by noting the presence of scientific activities in the novel. Finally, the data will be analysed in three steps. First, identifying the denotative meaning in the novel. Second, interpreting the connotative meaning in the novel. And third, describing the science mythology and the relation with religions.

III. RESULT AND DISCUSSION

This analysis focuses on Barthes' three steps to acquire the ideology in the literary text: denotative meaning, connotative meaning, and *myth*. To answer these questions and to make a brief yet reliable explanation, this analysis will be divided into three subchapters as follows: (1) the science mythology in *Frankenstein* and (2) the mythology related to science and religion construction reflected in the early 19th century and today.

- *The Science Mythology in Frankenstein (Denotative and Connotative)*

Firstly, before this analysis wants to cover the interpretation of *Frankenstein*, it is necessary to look what this novel is about in general; what has been written related to the issue without thinking beyond the text. Denotatively speaking, *Frankenstein* promotes the theme of 'creation' through a scientific approach. The main character in this novel, Victor Frankenstein, has introduced himself to life and death, human anatomy, and eventually establish his creature. Unfortunately, Victor abandoned his creation since its sole appearance terrifies him as the creator, and on the other hand, the creature experiences a longing lonesome, thus it seeks for Victor and demands its rights. His ambitious scientific research eventually becomes an ultimate weapon that ruins Victor's life and his loved ones.

After we figured the general depiction or the denotative interpretation of the novel, we need to reveal the connotative interpretation on *Frankenstein*. First of all, Victor has been influenced by natural philosophy since he was around thirteen. Later after that time, Victor still holds his principles to Ingolstadt where he tells one of the professors M. Krempe for studying from theologian and scientist Albertus Magnus and Swiss occultist and alchemist Paracelsus. M. Krempe said to Victor Frankenstein:

"The professor stared. 'Have you,' he said, 'really spent your time in studying such nonsense?' Good God! In what desert land have you lived, where no one was kind enough to inform you that these fancies which you have so greedily imbibed are a thousand years old and as musty as they are ancient? I little expected, in this enlightened and scientific age, to find a disciple of Albertus Magnus and Paracelsus" (Shelley 1818, 43).

According to that quotation, it is presumably that ancient studies should be forgotten, and that, modern science is, after all, more superior. However, another professor, M. Waldman shares a different perspective regarding ancient knowledge, and this perspective is what leads Victor to his research. On the contrary, M. Waldman believes that ancient science is the root that should have never been forgotten. Ancient science consists of miracles, ascended from the heavens (Shelley 1818, 46). In this case, religion is also a part of ancient knowledge. Though based on faith, it is still considered true by the believers. Furthermore, Victor looks up to Cornelius Agrippa, Albertus Magnus, and Paracelsus, who are not only scientific philosophers but also theologians.

From there, Victor is even more than convinced to pursue his study based on old science. But before he figures out how to create life, he needs to overcome the tangible boundaries between life and death. More than that, he has to fathom in human anatomy. For this research he has done many studies; it is tiring but he is very passionate about it. After all, Victor once claims that his need for this particular 'interest' is like human's need on food; full of wondrous discovery (Shelley 1818, 50). He cuts his connection with his family, he becomes thinner, suffering his own body to finish this project. After he breaks the bond between life and death, he hopes to be the saviour of human beings, which he will prove later with this supposedly 'beautiful' creature that he has designed in his mind. Moreover, Victor declares himself that:

"I was surprised that among so many men of genius who had directed their inquiries towards the same science that I alone should be reserved to discover so astonishing a secret" (Shelley 1818:52).

"A new species would bless me as its creator and source; many happy and excellent natures would owe their being to me. No father could claim the gratitude of his child so completely as I should deserve theirs. Pursuing these reflections, I thought that if I could bestow animation upon lifeless matter, I might in process of time (although I now found it impossible) renew life where death had apparently devoted the body to corruption" (Shelley 1818:54).

The quotations above show his ambition and even his arrogant tendency to be the only one to discover the secret of life. He wants to diminish the human's unavoidable death by renewing their lives. He wants his creation to be the first survivor on that matter. It is astonishing to see how a classical novel, one from early 19th century even before the second wave of the industrial revolution (which is also called as 'technology revolution') in 1870 discusses creating and reviving one's life.

He gives life to lifeless beings, he is 'playing God' by himself. Any religions, specifically the Semitic religions forbid humans to interfere with God's works. If Hindle (1990) previously stated in her study that we cannot determine whether Victor wants to be the God for his own sake or an egotistical man, this study wants to emphasise that Victor Frankenstein maybe both. He wants to suppress God Himself by establishing his creature as perfect as it seems to be, only to be found out later that he has failed. Eventually, he gives up his passion and runs away from his project. His life is filled with anxiety and madness that even confused his relatives

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upon seeing the 'new' Victor Frankenstein. His prideful project has turned to something that becomes against himself. Ironically, when he was still trying to establish his project, he says this to himself:

"If the study to which you apply yourself has a tendency to weaken your affections and to destroy your taste for those simple pleasures in which no alloy can possibly mix, then that study is certainly unlawful, that is to say, not befitting the human mind" (Shelley 1818:56).

Victor's fear of his project and his intentional abandonment towards his creature, thus it sparks some new questions related to the science mythology: is science development cruel and forbidden? Are those inventions that are supposed to ease human's life dangerous? There are also a few related questions for what seems to be depicted as the opposition of science that is religions. Are religions always the right paths of truth? Have religions failed to satisfy human's needs? Those questions cannot be answered if we do not look at both perspectives: science and religion, and compile both in one explanation through the *myth* behind this novel as well as the early 19th century and today.

- *Between Science and Religion (Myth)*

The previous studies depicted science as something fearful and destructive, hence in a way we lose our direction to acquire more knowledge initiated for a better, advancing world. Then should the society rely more on religion, since religion has been involved in people's lives ever since the beginning of Hinduism since approximately 40 centuries ago, and Roman civilisation with the rise of Christianity as their state religion back in 7 BC? Moving onwards to our current time, which one is more important for our society, science or religion? Truthfully, no rule frankly exposes one is more necessary than another. In this modern time, we might have experienced the shift from religion impacts scientific impacts, and on the other hand, there are also a lot of different activisms that are based on particular religions.

The debate between science and religion has been a longing discussion ever since the early progression in the science itself. Back in the 17th century, where people believed that our Earth is the centre of our solar system, Galileo with his scientific discovery claimed that such a statement was false. Galileo supported Copernicus' heliocentric (Sun-centred) concept, for he had observed Venus that also undergoes the same phases as Moon, rotating and revolving. It was rather a controversial claim back then. Catholicism was the one with power at that time cannot accept Galileo's discovery, and he was asked to revoke his claim. He was called by the church inquisition, deemed that his actions were against the church. In 1632 Galileo published a book that even strengthened his and Copernicus' claim, and therefore he was imprisoned a year later.

Over the middle age era, the church became the source of political power in Europe. Until English renaissance took over and there were many new scientific and technological projects made. People had realised the importance of science, and society competes with each other for more discoveries. Things were proven empirically, logical reasoning became more popular than religiosity. People put aside their faith because faith had failed to explain the world through experiences. The church was shifted from the high institution. Even though religion seemed to decline around this time, exploration through Europe and the world had positively improved the English's acceptance for other religions other than Christianity and different ways of belief. This resulted in Christianity to be treated in a logical manner rather than the spiritual one. English society became more tolerant and open about different religiosity and they believed that religion should not be taken forcefully by threatening the people and that everyone has a right to worship God most comfortably.

What seems to be shown in novel Frankenstein, however, is how Victor diminishes the religious view to pursue his study. Unlike Captain Robert Walton, an explorer that saved Victor from dying near the North Pole, Robert Walton still holds his religious values firmly and eventually drives back to England because he starts to doubt his ambition. This novel shows an imbalance between science and religion, seeing how vast ambition can be deadly to anyone. Paradoxically, Victor explains to M. Krempe that he has been exploring Albertus Magnus' studies yet he seems to forget that Albertus Magnus both philosopher and theologian who believes in the harmony between science and religion.

To be more precise, Albertus Magnus created a study of nature as a lawful science within the Christian tradition, and later in 1941, he was declared to be the patron saint of natural sciences. Albertus Magnus differentiates the way to acquire knowledge by evidence and faith from a philosophical and scientific approach. Albertus Magnus eventually came up with a conclusion that two ways—science and religion—are not supposed to oppose each other. It had never been opposing each other. Albertus Magnus claimed that "double truth" had never existed; it was one truth for faith and a contradictory truth for logical reasoning. These truths are correct in a way, and they should be assembled and linked in harmony.

If Albertus Magnus is considered as an 'ancient' scientist and theologian, then there is one modern scientist who holds a similar concept about the connection between science and religion. Even though Albert Einstein has announced that he was an agnostic—meaning that his spiritual belief in God does not necessarily depend on a particular religion—he believes that there is a 'miraculous order that establishes itself in both nature and the world of ideas'. He added that he believes in personal God who acts as the moral keeper, rewarding and punishing individuals based on their good or bad behaviours. "God is a mystery—a comprehensible mystery. I am so full of wonder when I examine the law of nature. There are no laws if there is no lawmaker, and this lawmaker is certainly not like an extravagant man." he said in Hermanns (1983, 60) Albert Einstein refuses the debates between science and religion, even argues that, "Science without religion is lame, religion without science is blind" (Einstein 1956, 26). Similarly to Albertus Magnus, Albert Einstein believes that science and

religion are two perspectives that need to be integrated into a peaceful synchronisation.

Victor's failed experience in his scientific project proves that science alone will not be successful. Religion needs to be involved as the supporting arguments and vice versa. Moreover, science can only be successfully done if it is initiated by one's creed; in a way that projecting science, not only one needs to believe in themselves, but also needs to acknowledge their limitations. Creation, specifically human creation, is not a work that humans can do. Some nature phenomena are intended left to be a mystery, it is not a human's job to reveal and make it overt.

IV. CONCLUSION

There are at least three summaries that can be concluded from this analysis. First, through the denotative interpretation, the novel tells about how the act of revival is made through a scientific approach, by understanding and breaking the boundary between the life and death, thus Victor Frankenstein decides to animate a lifeless matter, only end up regretting his decision later. Second, through the connotative interpretation, the importance between science and religion is questioned as a form of ancient and modern science and also the figures whom Victor relies on his initial studies. Third, through the *myth* interpretation, it is believed that there should not be an opposition between science and religion, as both aspects should have aligned in harmony, as what Albertus Magnus and Albert Einstein have stated. It is also important to note that both science and religion have their limitation, therefore one aspect can support another. This perspective does not only apply during the Georgian Era when the reasoning was very popular on the contrary to faith, but this also applies to modern days, especially that advanced technology allows us to create many things, including the use of artificial intelligence (AI) to create robots as the human's utilities or subordinates (or even replacement), such revival act is quite similar to what Victor Frankenstein did in the novel.

REFERENCES

[1]. Barthes, Roland. (1977). *Image, Music, Text. Translated by Stephen Heath.* London: Fontana Press.
[2]. Barthes, Roland. (1993). *Mythologies.* New York: Vintage.
[3]. Bissonette , Melissa Bloom. (2010). "Teaching the Monster: Frankenstein and Critical Thinking." *College Literature, Vol. 37, No. 3* 106-120.
[4]. Einstein, Albert. (1956). *"Science and Religion," Ideas and Opinions.* New York: Citadel Press.
[5]. Harris, Mason. (2015). "Vivisection, the Culture of Science, and Intellectual Uncertainty in The Island of Doctor Moreau." *Gothic Studies* 99-115.
[6]. Hindle, Maurice. (1990). "Vital matters: Mary Shelley's Frankenstein and Romantic science." *Critical Survey, Vol. 2, No. 1, Science and the Nineteenth Century* 29-35.
[7]. Huxford, John. (2000). "Framing the Future: Science fiction frames and the press coverage of cloning." *Continuum: Journal of Media & Cultural Studies* 187-199.
[8]. Karim, Abdul. (2014). "Sejarah Perkembangan Ilmu Pengetahuan." *Fikrah, Vol. 2, No. 1* 273-289.
[9]. Lyons, John. (1977). "Semantics." *Language in Society* 897.
[10]. Noth, Winfried. (1995). *Semiotik edited by Prof. Dr. Abd. Syukur Ibrahim.* Surabaya: Airlangga University Press.
[11]. Raitt, Suzanne. (2017). "Immoral Science in The Picture of Dorian Gray." *Strange Science* 164-178.
[12]. Shelley, Mary Wollstonecraft. (1818). *Frankenstein, Or, The Modern Prometheus : the 1818 Text.* Oxford: Oxford University Press, 1998.
[13]. Wang, Fuson. (2011). "We Must Live Elsewhere: The Social Construction of Natural Immunity in Mary Shelley's The Last Man." *European Romantic Review* 235-255.