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Frankenstein in the Twenty-First Century

As one reflects on the history of human behavior, it is clear that we are not always ethically sound. Wars rage, people murder each other, and governments make unjust decisions. However, as time has went on, the basic moral standards of a typical human being have risen. For example, whereas it was once legal to claim ownership of another person, if this were attempted in the twenty-first century, the transgressor would be imprisoned. This idea of an increase in ethical standards is demonstrated in the distinct differences among the scientific practices of Mary Shelley's novel, *Frankenstein*, and those of today. Throughout her novel, Shelley utilizes different aspects of eighteenth century science, exhibiting the common practices and beliefs demonstrated by the scientists of her time. Through contrasting them with the customs of today, the increase in scientific morality is clear; consequently, this shows that had Shelley utilized the sound practices of today, her tale would not have unraveled the same way.

The findings and experimental methods of Luigi Galvani, Italian physician and physicist, greatly impacted the plot of *Frankenstein*, giving rise to Dr. Frankenstein's experimentation. In 1786, Galvani pioneered the science that is currently identified as bioelectromagnetics, the study of electricity on organic beings. After detaching the leg of a frog, Galvani discovered that when conducted with electricity, the appendage will undergo spasms. As a result of this discovery, Galvani began utilizing a number of different animals to research animal electricity, which he considered to be the causation of life in organisms (Blum; Krischell). Following the death of Galvani, the association of electricity and life continued to be studied by Galvani's nephew, Giovanni Aldini. Between the years of 1800 and 1805, Aldini travelled throughout Europe, publicly demonstrating the use of electrical stimulations on recently executed criminals. The experiments failed to revive the dead bodies, but the accounts of the witnesses traveled. Many

spectators observed the body move, and some stated that, when the electricity was applied, “the body became violently agitated and even raised itself as if about to walk” (Blum; Turney 22). In “Electricity in 19th Century Medicine and Mary Shelley’s *Frankenstein*,” Krischell explains that the animation of *Frankenstein*’s monster is an obvious example of the use of galvanism. He verifies this claim by quoting *Frankenstein*: “I collected the instruments of life around me, that I might infuse a spark of being into the lifeless thing that lay at my feet... it breathed hard, and a convulsive motion agitated its limbs” (Shelley 35). Although Shelley never specifically identifies the instruments Victor uses, there are hints that “electricity and galvanism” are employed to animate the lifeless creature (Krischell). For example, in the preface to her novel, Shelley writes, “[p]erhaps a corpse would be reanimated; galvanism had given token of such things” (viii). Clearly, Shelley had heard accounts of Galvani’s and Aldini’s experimentation, thus giving rise to the use of Galvanism in *Frankenstein*.

However, had Shelley utilized today’s scientific ethics, her novel would be drastically different. For years, it has been debated as to whether or not scientific research involving animals is ethical. Many believe that there is nothing morally wrong with it, because animals cannot reason. However, in spite of this, numerous others are not in favor of the practice, due to the fact that animals can still suffer. As a result, the Prevention of Cruelty to Animals Act of 1960 was enacted, stipulating that when using animals for research, it must be ensured that the animals are not subject to any unnecessary pain and suffering before, during, or after experimentation is conducted on them (Mandal and Parija). This modern scientific ideology differs significantly from the one utilized by Galvani in 1786. Although the animals he utilized for his experiments were dead, as he was trying to determine the secret of reanimation, he killed them in order to test them (Krischell). The act specifies that the animal must not undergo needless suffering prior to

experimentation; consequently, Galvani's methods break conduct, because he could have utilized previously dead animals. Therefore, had Shelley based *Frankenstein* on the methods of today, Galvani's unethical practices would not have had an impact. As a result, the novel would lack Galvanism, and Frankenstein's monster would have risen due to alternative methods. Likewise, in the eighteenth and nineteenth centuries, Galvanic experiments, analogous to those performed by Aldini, were commonalities. However, currently, if electric experimentation occurred on corpses—whether executed criminals or not—they would be viewed as barbaric and revolting. According to common belief, one measure of a civilized society is the amount of respect demonstrated for their dead. Therefore, the scientific views of preceding centuries are no longer considered ethically correct, as electrocuting dead bodies is not civil. Consequently, if Shelley had utilized the sound practices of today, Galvanism would not have played a role in her novel. The “spark of being” Frankenstein infused into his monster would not have read as a symbol for electricity; rather, the monster would have risen due to a different method, perhaps involving the instillation of consciousness through technology (Shelley 34-35). Through the comparison of the ethics of eighteenth century scientific ideas to those of the twenty-first century, it is clear that if Shelley had utilized today's methods, *Frankenstein* would not have unfolded in the same manner.

Similar to the use of Galvanism, Shelley's novel demonstrates impact from scientific practices and ideas of her era, particularly those involving the human body. Well before 1818, the year the first edition of *Frankenstein* was published, the use of human cadavers for medical education was common. During the time period, executed criminals were often dissected, made legal by the Murder Act of 1752. However, many individuals were ambivalent about the practice (Turney 22). Therefore, according to Turney, Shelley was likely using her novel as a means of

drawing awareness to the trade of corpses and practice of snatching bodies from burial grounds. This is demonstrated through Frankenstein's descents into charnel-houses and graveyards, where he collects "human frames" for his research (Shelley 33; Turney 22). However, before the novel was written, it was already recognized that most of the individuals contributing to advances in anatomy were dissectors of cadavers, a tradition that began with Andreas Vesalius. In the sixteenth century, Vesalius pioneered the practice of "learning about the body by taking it to pieces." According to cultural historian, Jonathon Sawday, this provoked desire in the early modern period, excited at the prospect of unearthing knowledge about the human body. Drawing on this desire, Shelley illustrates Frankenstein's yearning for knowledge of the human physique, exhibited through the quote, "I became acquainted with the science of anatomy, but this was not sufficient; I must also observe the natural decay and corruption of the human body" (Shelley qtd in Turney 23). Furthermore, during the time period, grave robbers, hired to steal corpses for research, were known as resurrectionists. Many believed that as the doctors dissected and examined the body, the source of life would be discovered (Blum). Due to Frankenstein's study of anatomy and animation of a corpse, Blum states that Shelley was undoubtedly well aware of these scientific practices. In addition to eighteenth century scientists, Shelley utilized scientific practices and ideas of her time to give rise to her novel.

On the other hand, had Shelley utilized ethical practices demonstrated in today's culture, rather than those of the eighteenth century, *Frankenstein* would be considerably different. As stated previously, the Murder Act of 1752 legalized the use of executed criminals for anatomical research. However, there was a decrease in the number of executions, because fewer people were committing crimes; consequently, this led to a shortage in cadavers for research. As a result, the Anatomy Act of 1832 took its place, allowing for researchers to legally obtain donated bodies for

dissection (Turney 22-23). This practice is still utilized today, and it is considered to be significantly more ethical than the use of executed criminals, as the owners of the bodies willingly donated them for research. Furthermore, when the Anatomy Act was passed, a decrease in grave robbing was witnessed. Because of the abundance of bodies given to science, it was no longer necessary to acquire the cadavers by illegal means (Turney 23). In today's society, due to the immorality and illegality of the practice, grave robbing is still an uncommon occurrence. Therefore, had Shelley utilized scientific practices of today, *Frankenstein* would have occurred differently. Rather than Frankenstein learn anatomy from the cadavers he acquired from graveyards, his knowledge would have been obtained through studying the bodies donated specifically for that purpose. Similarly, the parts for his creation would not have been amassed from charnel houses; rather, due to the modern day obsession with technology, it is more likely that he would have fashioned his own parts. Through the comparison of modern day scientific ideas to those of Shelley's era, it is clear that *Frankenstein* would unfold dissimilarly in the twenty-first century.

Furthermore, due to the Institutional Review Board, a modern day committee designed to review research proposals involving humans, the plot of *Frankenstein* would occur very differently in today's society. In Shelley's era, there was no group designated to determine whether or not an experiment involving humans was ethical; consequently, Frankenstein was allowed to reanimate a corpse without question. However, the Institutional Review Board protocols bring light to the moral issues of his experimentation, demonstrating that his research would not pass inspection (Gannon and Harrison). Despite the fact that Frankenstein was initially captivated with his experiment, once he witnesses it move for the first time, his euphoria turns into disgust: "the beauty of my dream vanished, and breathless horror and disgust filled my

heart. Unable to endure the aspect of the being I had created, I rushed out of the room... but I escaped, and rushed downstairs” (Shelley 35-36). Once he escapes and leaves his creation behind, he completely disregards it, failing to consider the obligation he would have to his rational creature. In doing so, he violates the International Review Board protocols involving human research, including respect for persons and beneficence. According to the Belmont Report of 1971—a document that summarizes guidelines for research involving humans—having respect for the subject stipulates that he must be treated as an autonomous agent, meaning Frankenstein’s creation must be allowed to live his life according to his own desires, rather than by motives that are a product of “distorting, external forces” (Gannon and Harrison). However, by choosing to leave his monster behind, Frankenstein fails to treat his creation as such. Because the monster was left to fend for himself, he was not motivated by his own longings; rather, his actions were a product of his treatment from others. The monster was not shown love by his creator; consequently, he seeks it elsewhere. Yet, whenever he attempts to find companions, they all treat him with disgust, causing him to lash out and kill. This demonstrates the impact of outside forces on the monster’s behavior, as he unorthodoxly demonstrates his desire for fellowship with destruction. Similarly, the aspect of beneficence guarantees that the researcher will protect the subject from harm and secure his well-being (Gannon and Harrison). Again, Frankenstein fails to follow IRB protocol. By fleeing the scene of his experiment with no intent of returning, he neglects his creation. The creature was left completely alone, unprotected from the outside world, and without the basic necessities for life. In telling his story to Frankenstein, the monster emphasizes this by saying, “I was a poor, helpless, miserable wretch; I knew, and could distinguish, nothing” (Shelley 71). Despite having a brain, the monster possesses none of the previous owner’s knowledge. This causes difficulties for him, as he has no idea how to feed

and protect himself. This leads the creature to wander the forest aimlessly, attempting to understand the wonders of world around him, such as fire, light, and sustenance (Shelley 71-72). Eventually, Frankenstein's creation learns how to care for himself, but it is through extensive suffering that could have been avoided had Frankenstein not abandoned the helpless being. Therefore, through this abandonment, he demonstrates negligence and violates the basic human subject rights. Had Frankenstein submitted a research proposal to the IRB, the basic principles of autonomy and beneficence would have come to light; consequently, he would have been forced to consider the creature's "moral worth and potential to suffer" (Gannon and Harrison). Following animation, he would have been obligated to ensure that his creation was sufficiently provided for; as a result, the monster would not have suffered like he did in the novel. With a lack of misery, the creature would have learned love, rather than hatred, and he would not have wreaked havoc on Victor's community and family. All in all, due to the Institutional Review Board, Shelley's novel would unfold differently in today's society.

When reflecting on the history of human beings, it is clear that our choices are not always ethical. However, as time has went on, an increase in moral standards of the typical human being is perceived. This increase in morals is demonstrated through the comparison of the science of *Frankenstein* to that of today. Whereas it was once legal to perform electric experiments on executed criminals or utilize their bodies for anatomical study, attempting either would send the transgressor to prison. Similarly, modern committees and laws, such as the Institutional Review Board, ensure that the research occurring is morally sound. All in all, this increase in scientific ethics demonstrates that if Shelley had written *Frankenstein* to model the science of today, the novel would have unfolded in a very different way.

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