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RE-IMAGINING LIFE:
FRANKENSTEIN AND THE ETHICS OF SCIENCE

by

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Introduction

What is life? It is generally accepted that a moving body is taken as something alive, since dead matter cannot move on its own. But how will one know that the act of this motion is the same as life? Is there something inside the body which controls it to act and react upon internal and external stimuli, or does some life force exist in nature that controls all living things from the outside? Around 1790, the Romantic medical science made a lot of progress (see Holmes, 2008, 314) and the human body was decomposed for the purpose of understanding its anatomy. While science developed increasingly and slowly separated itself from the ancient alchemical doctrines, the thought emerged of the unconscious spirit as the invisible life force which manifested itself in nature as fiery electricity. Though this analogy between electricity as we find it in nature and the life force has, in the meanwhile, been rejected by contemporary science, the existence of the soul and the origin of the unconscious still remain a mystery nowadays (Holmes, 2008, 322). But what if this mystery had already been solved and human beings were capable of controlling this life force – would we be able to animate lifeless matter and thereby create life out of chaos?

Mary Shelley lets us ponder on this question in her novel *Frankenstein* (1818). Both literature and science are united in the novel by means of the creation of life by a scientific genius. Shelley began writing her story in the summer of 1816 as a result of a dream which she had after the reading of several German ghost stories from which a writing contest emerged between herself, her husband Percy Bysshe Shelley and their friend Lord Byron (Shelley, 2012, 6; Joseph, 2012, 170; 171). Both Shelley's resided at Byron's Villa Diodati at Lake Geneva between 16 and 20 June (Joseph, 2012, 170; Butler, 2012, 404) and Mary Shelley got inspired by the sublime mountain sceneries (Shelley, 2012, 6), which also frequently recur throughout her novel. However, as the daughter of political philosopher William Godwin and philosopher and feminist Mary Wollstonecraft (although she died several days after Mary's birth), it is also well-known that Mary had a childhood which was largely dedicated to intellectual purposes (see Shelley, 2012, xiii). Her father, for example, took her with him to one of the *Bakerian Lectures* about chemistry given by Humphry Davy at the Royal Society when she was only fourteen years old (Holmes, 2012, 183). It is also frequently mentioned that Percy Shelley and Lord Byron held intellectual discussions which Mary overheard. One of these conversations was about the galvanic experiments of Aldini (see Holmes, 2012, 185; Shelley, 2012, 168) and the principal of life which lead to Mary's dream the following evening (Joseph, 2012, 170). This way, Mary Shelley's own intellectual

life appears to be extended to Victor Frankenstein's gifted character. Victor's interest in natural science starts with his readings of his favourite authors Agrippa, Albertus Magnus and Paracelsus (see Shelley, 2012, 22). Once arrived as a student at the university in Ingolstadt, Victor learns that these old alchemical philosophies were no longer practiced. Professor of natural philosophy M. Krempe was amazed to find a student in this "enlightened and scientific age" (Shelley, 2012, 27) who still followed the ancient alchemical doctrines. According to professor M. Waldman, the natural philosophy of alchemy "promised impossibilities, and performed nothing" while modern science "have indeed performed miracles" (Shelley, 2012, 29). Victor gradually gained more sympathy for modern chemists and Waldman recommended him to study every branch of natural philosophy, especially chemistry in which the most progress had been made (see Shelley, 2012, 29). Waldman also stated that Victor should practice other branches of science such as mathematics in order to prevent him from becoming a "petty experimentalist" (Shelley, 2012, 29). Ironically, this statement turned out to be a rather self-fulfilling prophecy.

This thesis states that the alchemical philosophies laid the foundation for Victor's fatal project and that he never really lost his interest in alchemy. Furthermore, to understand the novel, this thesis also argues that it is worthwhile to think about Victor Frankenstein's comprehension of these philosophies and his awareness of the (ethical) consequences of practicing these theories. Is having exquisite knowledge and skills a license to put theory into practice? To analyze how Victor came to the completion of his fatal project, this thesis will start with an (historical) overview and interpretation of alchemy closely linked to the ideas of Romanticism. Thereafter, the emergence of the Vitalism debate in the context of electrical science¹ and the principle of life will be described. Finally, this thesis would like to further elaborate on the ethics of science in relation to Victor Frankenstein's educational background.

¹ The term "electrical science" is taken from Christa Knellwolf & Jane Goodall, *Frankenstein's Science: Experimentation and Discovery in Romantic Culture, 1780-1830* (Cornwall, 2008), 154.

Chapter 1. Unity in Alchemy and Romanticism

Until the end of the Renaissance around the seventeenth century, with the rise of modern science, alchemy was a natural philosophy often characterized by experiments with chemical substances and with transformation. The ultimate aim was to create the philosopher's stone in order to transform metals into gold and to develop the elixir of life to extend human life. Chang (2011, 323) stated that, according to alchemy, the workings of life and the processes of matter are the same. To explain this statement, one can say that for example, the transformation of an ordinary liquid into an elixir of life can be compared to the cycle of life. Since alchemy also had an influence on the spiritual life of people during the Middle Ages, one can interpret alchemy as a science that dealt with life but, more importantly, also with the human psyche (see Jung, 1980, 476). In a way, alchemical texts described chemical transformations as such, but also interpreted these experiments as mental processes. During the twentieth century, psychologist Carl Jung further elaborated on the mental aspect of alchemy by the use of analytical psychology. He drew parallels between the alchemical practice and psychological processes, such as the imagination, that possibly emerged during the reported experiments. According to Jung, alchemy had a "double face" (Jung, 1980, 270). He further stated: "On the one hand, the *opus alchemicum* took place in the laboratory, on the other hand it contained a psychological process, in part consciously psychic, in part unconsciously projected and seen in various transformations of matter" (Jung, 1980, 270). This implies that the alchemist is both a scientist who, like Victor, resides solely in the laboratory and a Romantic genius who infused a part of its own divine imagination on its practical work. In this way, the alchemist projected (consciously and unconsciously) its own mind upon its project (see Jung, 1980, 267; 297). This projection is necessary, since it got rid of the dark half of the psyche, so eventually the alchemic practice worked in a therapeutic way (see Jung, 1980, 29).

The unity between mind and matter and conscious and unconscious are all present in the alchemical practice. However, in order to acquire this unity, Jung stated that: "The mind must be in harmony with the work" (1980, 270). Once the mind is in harmony with the alchemical experimentation of matter and empty of psychological burdens, the possibility emerges to gain access to the spiritual or the imagination. Alchemy used the term "*meditatio*" (meditation) to describe the free and empty mind that has an "*inner dialogue*" with something unseen (see Jung, 1980, 274) which resided on a spiritual level. This dialogue, thus, seems to connect the conscious with the unconscious during the infusion of the psyche of the alchemist

upon its transformation of matter. By means of this dialogue, the alchemist established a connection between its own psychological state and the alchemical process (Jung, 1980, 277). It is safe to conclude that the alchemist (or scientist of genius) aimed to deliver a so-called *magnum opus* – masterpiece, which united two levels, namely the physical (transformation of matter) and the metaphysical (access to its own spiritual identity). This way, the alchemist emphasized the importance of the imagination. The act of imagining ensured that transformation took place through the spiritual power of the imagination of the alchemist. Moreover, the imagination can be seen as a power which both ruled and united the mind (spirit) and the body (matter).

At this point, it makes sense to wonder whether Victor Frankenstein interpreted these alchemical experiments psychologically at all. Alchemy flourished in an age when empirical psychology did not yet exist, hence Jung assumed that everything unconscious was projected upon matter at the time (see Jung, 1980, 277). The act of projection was done by the mind but described, in a rather vague and symbolic language (Jung, 1980, 243; 314), as seemingly repeatable practical experiments. It is stated in the novel that Victor was particularly interested in the quest for the elixir of life. About obtaining such an elixir he stated: “wealth was an inferior object; but what glory would attend the discovery, if I could banish disease from the human frame, and render man invulnerable to any but a violent death!” (Shelley, 2012, 23). Judging from this statement, Victor read the alchemical texts as if they were replicable by his own hands. The glory he would achieve of obtaining the elixir of life filled his mind and this statement does have a hint of (unintended) greediness and selfishness, since he would be responsible for discovering such an extraordinary cure. Victor’s mind was definitely not free and empty of psychological burdens in order to require unity as Jung described, since the urge to succeed weighed heavily on his shoulders. On an unconscious level, however, the alchemical works certainly appealed to Victor’s ingenious imagination and aroused his hopes and ambitions to follow through with his project. Thus, psychologically, one can say that Victor’s mental journey had just begun by the projection of the young scientist’s desperate aspiration upon his plan to create life which slowly developed in his mind. Yet, the fateful chasm between aspiration and reality would still remain in Victor’s unconscious, safely sheltered from introspection, until the moment his creature opened its eyes by the scientist’s use of the spark of life.

In his essay *On Life* Percy Shelley stated: “The view of life presented by the most refined deductions of the intellectual philosophy, is that of unity” (2002, 508). According to Shelley, life includes all (see Shelley, 2002, 506), both invisible forces and objects that are

perceptible. However, he further stated: “The mist of familiarity obscures from us the wonder of our being” (Shelley, 2002, 505). The daily life, which forms our habits, has dulled our visions and only in our childhood we were most connected to our overwhelming sensations and (unconsciously) aware of the presence of an unseen force (see Shelley, 2002, 507). As we grow older, we gradually become “mechanical agents” (Shelley, 2002, 508) – we slowly transform into numbed automatons detached from feelings of wonder and the ability to imagine. Therefore, it seems that rationality, which becomes a growing source of knowledge when we get older, blurs the unity between the world as it is perceived by the senses and the world as it is created by the imagination. Victor, clearly, did have access to the imagination and, thereby, united these worlds by creating life as a response of his quest to the elixir of life. Creating unity and wholeness between the physical and the metaphysical was a central theme within alchemy as well as in Romanticism. Alchemy reduced matter to its most basic shape and rebuilt it into the desirable final form (see Jung, 1980, 297), like the transformation of metal into gold; a process in which both mental and physical processes were united through projection and evolution. Moreover, the Renaissance alchemist Paracelsus described the philosophical basis of alchemist practice as follows: “Everything external in nature points to something internal” (Paracelsus, 1958, 165). In this way, outward natural processes and inward mental processes are intertwined and attuned to each other. This alchemic unity of visible and invisible processes in the world gave the Romantic understanding of (human) nature a whole new dimension.

During the first two decades of the nineteenth century, the Romantics were particularly affected by Schelling’s *Naturphilosophie*. Schelling stated in his influential school of thought that nature was inhabited with mysterious forces and hidden energies (see Holmes, 2008, 315). Schelling also assumed that everything physical in the world aimed to become something better. Holmes stated: “So carbon for example ‘aspired’ to become diamond; plants aspired to become sentient animals; animals aspired to become men; men aspired to become part of the *Zeitgeist* or world spirit” (2008, 315). This mindset is comparable to the alchemical practice in which imperfect, basic matter is being transformed into something more valuable and perfect – something which appeals to the imagination. Furthermore, this philosophy of nature assumed that the invisible powers in the world also influenced the different stages of consciousness in all matter (see Holmes, 2008, 315). Since these forces are hidden, human beings are usually not aware of them and, thus, they only exist in our unconscious. Coleridge emphasized Schelling’s philosophy by the statement that: “A God not visible, audible, or tangible, can exist only in the sounds and letters that form his name and attribute” (2004,

430). According to Coleridge, human beings are born with so-called “*innate ideas*” (2004, 430) about the world which find their origin in an invisible force, since we are able to believe and assume that some transcendent powers exist in the world without ever having seen them. In this way, the mind is not a *tabula rasa*² – blank slate, but capable of having knowledge and beliefs without ever obtaining evidence through the senses (Coleridge, 2004, 428). As Coleridge’s theory about natural philosophy goes, the mind attempted to make the unconscious conscious which results in self-consciousness about ethics and the identity of the soul (see Holmes, 2008, 322). Victor Frankenstein’s psychological quest for the elixir of life is, in a sense, based on innate ideas which aroused his imagination to assemble a human body and animate it. However, after the monster has been awakened by him, he becomes aware of what he has created. Perhaps it is for a reason that innate ideas should not be perceptible and certainly not realizable by human beings.

Yet, the Romantics saw the imagination as something transcendental, something which operates at a higher level (Eichner, 1982, 17). Eichner further elaborated on this statement with the following: “Individuals can only grasp and reveal that knowledge in the light of their own personalities, from their own individual and unique perspectives” (1982, 19). Victor Frankenstein was, at first glance, operating at such a high level, since Shelley portrayed him as an exquisite scientist who is seemingly excellent in “theory and practice” (Manson & Scott, 1993, 231) – the perfect description of a Romantic genius. Perhaps the desire for unification of the mind (theory) and the body (practice) is, therefore, best demonstrated in the way in which Victor attempted to create unity by using his imaginative power of creating life by using his exceptional practical skills. However, despite his gift of extraordinary intelligence, the power of the imagination is bound to earthly rules of what is humanly possible (see Manson & Scott, 1993, 231; 233). In order to escape from these worldly chains, the Romantics often left society (Siddal, 2009, 33) and lost themselves in nature. After completion of his project, Victor leaves his inescapable situation for a journey through the sublime hills of the Mont Blanc: “The sight of the awful and majestic in nature had indeed always the effect of solemnizing my mind, and causing me to forget the passing cares of life. I determined to go alone, for I was well acquainted with the path, and the presence of another would destroy the solitary grandeur of the scene” (Shelley, 2012, 66).

² The concept of “*tabula rasa*” was first coined by Aristotle. According to him, the mind or soul was empty and blank at birth (instead of consisting of inborn factors) and could, thus, be molded by experiences which, subsequently, formed one’s personality, behavior and psychological (social and emotional) well-being. Mark. H. Ashcraft & Gabriel H. Radvansky, *Cognition* (New Jersey, 2010), 13.

While approaching the transcendental state, the Romantic genius got the illusion that its abilities were immensely and almost non-human (Manson & Scott, 1993, 232; 233), which is where the danger lies. Hence, preoccupied with its divine imagination, the genius simply forgets to ponder on the epistemological question of what knowledge is and the extent of human knowledge. Are some things just unknowable?

During the seventeenth century, when the world was subjected to radical changes of a scientific revolution, alchemy became merely a practice which holds the key to a more profound understanding of reality (see Vermij, 2010, 124). Even though the natural philosophy of alchemy played an important role in the development of modern science (especially chemistry), it eventually collided with the emergence of astronomy and dynamics during the Enlightenment (see Eichner, 1982, 9; Vermij, 2010, 124). The Aristotelian view of the world slowly began to decay (Vermij, 2010, 80), God had to make 'space' since human beings were now placed inside the center of the universe. At this time, no one could deny the existence of a God or another unseen life force, although the emergence of modern science, which relied more and more upon measurable, reliable and evidence-based experiments and mathematics (Vermij, 2010, 90) and the static, mechanical view of the world that developed with it (Vermij, 2010, 79), made the presence of a divine power seemed almost impossible. The Romantics and especially the influence of Schelling's natural philosophy, therefore, posed the idea of the world as something organic which grows and evolves (see Eichner, 1982, 15). They praised the imagination above the precise calculations done with reason. Thus, it appeared to leave the door open for a world that is not mechanical and static, but a world that is developing and inhabited with unpredictable, hidden forces. The possibility of the existence of such life forces slowly continued the quest for unity inside the mind of the Romantic genius contributed by the rise of electrical science from which the Vitalism debate around the principle of life reappeared during the first two decades of the nineteenth century.

Chapter 2. Electrical Science and the Life Force

Frankenstein can be seen as a literary response to the Vitalism debate (see Holmes, 2008, 325), which prevailed from 1816 until 1820 between physician and surgeon John Abernethy and his pupil William Lawrence (Holmes, 2008, 310). Vitalist doctrines emerged alongside the scientific revolution which was described in the previous chapter. Benjamin Franklin's *Electrical Kite* experiment in June 1752 had a major impact on science (Jernegan, 1928, 180). During the experiment, Franklin would have flown a kite during a thunderstorm which was connected to a key and a Leyden jar and concluded that lightning and electricity were the same since he received an electric spark from the key and found that the jar was charged (see Jernegan, 1928, 183). As described earlier, the Romantics did indeed pose the idea of the existence of unseen forces in the world. People of all intellectual fields began to wonder what life distinguished from non-life, how human beings differed from animals and the explanation of the existence of the soul (see Holmes, 2008, 314). Did an unseen force exist in the world which controls the movements of the living, a force responsible for the processing of thoughts and originated in the soul and was manifested through the imagination?

These thoughts stimulated the Romantic imagination even more. Analogies between life and electricity began to emerge, since electricity has been shown as a powerful (and often invisible) force which, as has been demonstrated, existed in nature. This (mis)conception was reinforced with experiments on animal electricity and Galvanism. In 1792, Luigi Galvani used frog legs in order to demonstrate the existence of so-called "animal magnetism" (Holmes, 2008, 314; Pancaldi, 1990, 124). According to Galvani, frogs were "electrometers" which provided electric fluid from which their legs "contracted" (see Pancaldi, 1990, 124). Thus, Galvanism suggested that electricity existed inside the body of the frog, like an invisible life force and this belief has been generalized to all animals. Although Alessandro Volta, who discovered the electric battery, stated that the electrical effect did not come from the frog's body but from the "contact with metals and water during these experiments" (Pancaldi, 1990, 124), more experiments were conducted out of which the demonstrations of Giovanni Aldini were the most gruesome. In 1803, Aldini performed several public experiments on electricity in which he used dead animals and dead bodies of convicts (see Holmes, 2008, 317). The aim of these experiments was to revive those bodies from the dead by means of electricity. During these experiments, "eyes opened and closed," jaws quivered," "arms rose and fell," "fist clenched" and even "the natural respiration was artificially established" (Holmes, 2008, 317). Victor Frankenstein described the first moment after the animation of his monster as follows:

“I saw the dull yellow eye of the creature open; it breathed hard, and a convulsive motion agitated its limbs” (Shelley, 2012, 35). This narration is quite similar to the reports of Aldini’s controversial experiments, which Mary Shelley might have overheard as the discussion between Percy and Byron was going on.

Victor’s awareness of the power of electricity was established by the event with the oak briefly described in the novel. He recollected:

“I remained, while the storm lasted, watching its progress with curiosity and delight. As I stood at the door, on a sudden I beheld a stream of fire issue from an old and beautiful oak, which stood about twenty yards from our house; and so soon as the dazzling light vanished, the oak had disappeared and nothing remained but a blasted stump (...) I never beheld any thing so utterly destroyed” (Shelley, 2012, 23).

After the occurrence, Victor went to his father who demonstrated several (historically recognizable) experiments on electricity: “He constructed a small electrical machine, and exhibited a few experiments; he made also a kite, with a wire and string, which drew down that fluid from the clouds” (Shelley, 2012, 24). Ultimately, Victor gave life to his project by means of electricity: “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” (Shelley, 2012, 35). Apparently, Victor expected his creature to come alive by means of this ‘spark’ which he ‘infused’ into the lifeless thing and in doing so, Shelley sides with Volta and rejects animal electricity. This makes sense when one considers that the Shelley’s were acquainted with William Lawrence through many medical consultations with him (see Holmes, 2008, 311). It was Lawrence who attacked Vitalism by denying the existence of a soul in the body. He stated: “The theological doctrine of the soul, and its separate existence, has nothing to do with this physiological question... An immaterial and spiritual being could not have been discovered amid the blood and filth of the dissecting room” (Holmes, 2008, 313). Thereby, he denied the unity of body and mind, dismissed the existence of God or invisible force and, ultimately, rejected the similarity between electricity and the Life Force. This materialistic point of view collided with Abernethy who believed that an invisible substance, like electricity, was “super-added” to the body which caused its movements and acted like the soul (see Holmes, 2008, 309). Abernethy defended the Romantic concept of the existence of a life force by stating that it existed inside the body and, thus, united mind and matter. Furthermore, he connected this force to electricity which also exists in nature, hereby implying that the world is indeed filled with unseen forces and energies. Since this life force was “super-added,” he holds the

possibility of the existence of a God-like power who might have infused this force into the body from the outside (see Holmes, 2008, 309).

As has been made clear, Victor animated his creature by infusing a spark into the lifeless being. About the method he used to complete his project, Victor stated that he “returned to his old habits,” and “collected bones from charnel houses, and disturbed, with profane fingers, the tremendous secrets of the human frame” (Shelley, 2012, 34). By decomposing the corpses, as if he was some kind of surgeon, Victor did not find a soul, but he discovered the secret of the human anatomy. But why did he choose to animate his creature by means of electricity, or even better, why did he awaken the body at all in the first place, while his method was so carefully calculated and seemingly influenced by the alchemic tradition and subsequently inspired by modern scientific materialism? Victor was, apparently, very ambitious and after all the (anatomical) discoveries he had made, he considered electricity as a last resort to give life to his creature. However, the use of electricity is, in a sense, risky because it has the power to destroy. Perhaps he vividly recalled the event with the oak which was, indeed, destroyed by that powerful ‘stream of fire,’ but has also given him insight into his own intellectual capacities. According to alchemy, fire gave rise to the imagination. Jung described the power of fire as follows: “Firstly, because fire surrounds the throne of God and is the source from which the angels and, descending in rank and quality, all other living beings are created or “imagined” through infusion of the fiery *anima*³ into the breath of life, secondly because fire destroys all composite things and infuses their images back into the air in the form of smoke” (1980, 282). Fire resides, like a smoldering force, inside the human body which is infused by a divine spirit and animated through its divine imagination. This way, human beings are regarded as innate ideas by the world spirit (see Jung, 1980, 282) which, in turn, we aspire to become part of. However, it would not be possible for us to comply with these innate ideas of the divine, because then human beings would become equivalent to divine powers which is impossible. Moreover, it was already stated that innate ideas are probably not meant to be achieved, so all physical life on earth might only hope for achieving such a state of perfection while never be able to actually attain it.

Judging from the use of ‘fiery’ in the event with the oak, the Romantics used both electricity and fire as metaphors for the life force. Alchemy remained cautious of the destructive power of fire, since it destroys all *composite* things and decomposed the soul of its

³ “Anima” refers to the soul. Carl Jung, *Psychology and Alchemy* (London, 1980), 231.

earthly body. Knowing that Victor has studied alchemy in his younger years it is, however, striking to realize that Victor used electricity to awaken a body which is made up of various body parts which he found in the charnel house. The Romantics, however, emphasized the connection between electricity and the imagination and praised this kind of force. The Romantic point of view was additionally emphasized by the connection between electricity and a higher level of consciousness which manifested itself through the transcendental and creative mind of a genius (see Gilmore, 2004, 473). The gained insight into this divine imagination might explain why Victor gave life to his creature by means of electricity, as if he was some kind of God, but fled from his monster afterwards. When his project was finished, the transcendental state in which he found himself slowly faded and he found himself chained to earthly rules again. He became aware of what he had done and changed into a soulless scientist, his mind detached from his body, his thoughts filled with fear and even his Romantic imagination had left him and had disappeared into thin air. How could such a promising scientist have ended up this way?

Chapter 3. The Scientist's Defeat

It is frequently assumed that Mary Shelley tried to warn readers for the dangers of science (Butler, 2012, 404). In her Introduction of 1831, she stated about the creation of her novel:

“Invention, it must be humbly admitted, does not consist in creating out of void, but out of chaos; the materials must, in the first place, be afforded: it can give form to dark, shapeless substances, but cannot bring into being the substance itself. In all matters of discovery and invention, even those that appertain to the imagination, we are continually reminded of the story of Columbus and his egg” (Shelley, 2012, 167).

Her literary creation, therefore, is comparable to Victor's project, since it is also made up of different elements and pre-existing parts (see Baldick, 2012, 175). As she ponders on the question how a creation has been established, she stated that it is both formed by pre-existing ideas obtained by the ingenious imagination and by the already acquired extraordinary skills of its creator (see Shelley, 2012, 167). Nevertheless, a project which has been brought to completion, always seems easier when one looks at it afterwards. It is, therefore, questionable if the price Victor has paid for creating his monster is proportionate to what he has achieved scientifically, since his discovery is not a mystery to humanity anymore and could be replicated. Furthermore, the project has depleted him, like an alchemic experiment, both emotionally and physically:

“Every night I was oppressed by a slow fever, and I became nervous to a most painful degree; a disease that I regretted the more because I had hitherto enjoyed most excellent health, and had always boasted of the firmness of my nerves (...) I had worked hard for nearly two years, for the sole purpose of infusing life into an inanimate body. For this I had deprived myself of rest and health” (Shelley, 2012, 35; 36).

Moreover, he has lost many of his loved ones due to the creature’s killing, all for achieving his goal of creating life.

Mary Shelley further stated in her Introduction that the nightmare, which inspired her novel, showed that: “Frightful must it be; for supremely frightful would be the effect of any human endeavour to mock the stupendous mechanisms of the Creator of the world” (Shelley, 2012, 168). Readers of the novel definitely get a so-called *uncanny*⁴ feeling, just like Victor, who became overwhelmed with uneasiness when he finally saw his creature, which was made out of dead body parts, being animated by his own human hands. The spark of life, which he infused in the creature’s body, extinguished, in turn, his divine imagination and finally he stood face to face with reality. Feelings of proud ambition and the (unconscious) urge to elevate himself above humanity, destroyed his objectivity: “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, 2012, 31; 32). Victor gradually transformed into a scientist whose insatiable hunger for knowledge reminds one of Faust. The more time Victor spent on his work, the more he had to face the fact that he actually still knew so little. His focus became eagerly fixed upon the result, which made him increasingly anxious as his ingenious work progressed, instead of paying attention to its fatal consequences: “But this discovery was so great and overwhelming, that all the steps by which I had been progressively led to where it were obliterated, and I beheld only the result” (Shelley, 2012, 32). Clearly, he has lost all rational connection with his work which, ruthlessly, paved the road to his inescapable defeat.

During his teenage years, Victor was already susceptible to losing his objectivity, a characteristic he has not been able to escape from during his years in college. He spent days

⁴ “Uncanny” is a term elaborated by Freud. Uncanny is a feeling one gets, which is secretly familiar but also frightening and, therefore, repressed. For example, by looking at a corpse one gets an uneasy feeling that it may animate any moment, even though one knows it is dead. Sigmund Freud, “From The Uncanny” (1919), in: *The Norton Anthology of Theory & Criticism*, 2nd ed. (New York, 2010), 825-826.

of his youth on the reckless search for the elixir of life (see Shelley, 2012, 23) in which his Romantic imagination cut him off completely of rationality. In hindsight, he blamed his upbringing for his academic ignorance: “(...) our family was not scientific, and I had not attended any of the lectures given at the schools of Geneva” (Shelley, 2012, 23).

Nevertheless, Victor ambitiously examined the natural world around him and let himself be guided by the three alchemists. At one point, Victor stated something rather peculiar: “Distillation, and the wonderful effects of steam, processes of which my favourite authors were utterly ignorant, excited my astonishment” (Shelley, 2012, 23). According to alchemy, distillation is considered to be the sixth major operation of transformation (Hauck, 2015) and it would be unlikely that his favourite authors did not know of it. Perhaps their methods were old fashioned, however, psychologically, distillation was used to remove all impurities of the soul to return to one’s true identity by means of introspection (see Hauck, 2015; Jung, 1980, 124). Since the practice of distillation was detached from emotions and sentimentality and ruled by objective experimentation (Hauck, 2015), it is safe to conclude that Victor neglected a meaningful part of the alchemical practice.

However, this thesis does not want to prefer one branch of science over another, but it would like to conclude with the ethical aspect of science. Since Victor had no proper scientific guidance, his Romantic imagination took over his mind. Victor only got guidance in the practical field of science, his father showed him some electrical experiments, Krempe mocked him as a disciple of Albertus Magnus and Paracelsus (see Shelley, 2012, 27) and declared alchemy as nonsense, while Waldman, on the contrary, responded quite enthusiastic about the fact that he had a potential successor in modern science and rushed into his laboratory where he carefully explained to Victor the uses of his machines (see Shelley, 2012, 29). All these events contributed to Victor’s romanticized and narrowed vision of science and destroyed the possibility of the establishment of a harmonious connection with his project.

Furthermore, the Faust-like scientist in which Victor has gradually transformed and who is doomed to fail, proves that subjectivity and desperate ambition may never prevail in conducting a scientific experiment. His Romantic imagination, which aimed for unity between the body and the soul, has not been restricted and violated the boundaries of formal rules and ethics. Because how ‘human’ would someone be, who has drunk from the elixir of life and, subsequently, became immune to diseases? What is life? – when the “imaginary boundaries”, as Victor called them (see Shelley, 2012, 33), between life and death were removed for good? Those visions only speak to the imagination and may, perhaps, reside in our minds as innate ideas, but they should never become realizable out of selfish desperation. Mary Shelley’s

novel may have terrified the audience back in the nineteenth century because of its distressing relevancy, but the concept of her scientific ghost story continues to be relevant today. Nowadays, experiments are constantly subjected to moral, ethical values by means of the use of informed consents, systems of appraisal and hypothesis testing and scrutinized by human rights. In addition, experiments are continuously under attack, such as in the case of animal testing. Mary Shelley certainly got it right, because how dangerous would our knowledge become if these ethical values did not exist? How dangerous would our skills be if these standards were not there to broaden our visions and prevent us from becoming a victim of our own aspirations? But, no matter how one looks at it, one cannot deny to feel some compassion for Victor's condition and his sad fate, and moreover, to feel sorry for the loved ones who, by chance, knew such a lost soul and lost, thereby, their lives. Perhaps their 'aspiring' souls had already been released into the air as smoke by the impact of the fiery electricity, from which the world spirit would take care of the rest.

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