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Thesis Paper

BRAVE NEW CREATURES:

**A COMPARATIVE STUDY OF MARY SHELLEY'S FRANKENSTEIN AND THE
CREATURES OF THE NEW MILLENIUM**

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Abstract

This thesis intends to analyse Mary Shelley's creature in her novel *Frankenstein*, and how the creation of this creature may have adumbrated the birth of present creatures—clones, genomes,¹ Artificial Intelligence (AI) creatures like robots and androids—that spring from the latest technological and scientific advances. The Promethean ambition to play God in order to create life persists, and it is present today more than ever before. Within the frame of Cultural Studies and Intertextuality, I dwell upon the similarities and the differences between Mary Shelley's creature and these "brave new creatures." Mary Shelley's *Frankenstein* was provided with spiritual life and human characteristics such as suffering for love, neglect, and scorn, but the idea of the human as matter was already present in Shelley's novel: Frankenstein was an ensemble of pieces of corpses. In this thesis I explore to which extent and how the creatures of the new millennium depart from or are similar to the original creature Frankenstein. In *Brave New World* (1932) Aldous Huxley had already speculated about genetic engineering, test tube babies, and a materialistic conception of human life. Today science and technology challenge us with a future new human race as the cases presented in this study. In view of all this, to ponder what the future may bring about is worth a try.

Key words: creature – clones – genomes – AI – robots – androids – materialism-
spiritual life.

¹ By "genomes" I mean: any kind of genetically modified being.

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INTRODUCTION

Mary Shelley's *Frankenstein or the Modern Prometheus* (1818) has remained a gripping novel over practically two centuries, and it still today captures the readers' attention. In fact, it appeals to a myriad of audiences. This may be due to the fact that this story has been re-invented and re-made to suit the likes of different times, and different political, social and scientific environments. However, the creature, which, I do believe, holds the key tension of the story's conflicts, is the one that has undergone the most outstanding metamorphosis. What is more, nowadays there seems to be an explosion of many other types of "creatures:" clones, androids, robots, genomes and Artificial Intelligent machines. They are the outcome of technological advances. Some years ago, they were merely science fiction creations, but now, apparently, they are here to stay.

But, can we consider Victor Frankenstein's creature as well as all these new creatures, "created" by human beings, "human"? And here, another question arises. Shall we follow the traditional (Christian) conception of humankind, i.e., the dualist conception of humans having a soul separate from the body? Or, as New Materialists claim, are we composed of just "matter" and the so called "soul" does not exist? And, in any case, do these "new creatures" feel, think, create, etc. like we, humans, do? And, last, but not least, could Mary Shelley have foreseen the

advent of all these “new creatures”? Did Mary Shelley actually predict genetic engineering? Did she anticipate the current efforts of present science to artificially create intelligent creatures? Did Dr. Frankenstein set a landmark towards the beginning of the studies of Clonation, Genetic Engineering, and the creation of Artificial Intelligence and Robotics? How important are our cells and neurons in our everyday actions, in our will power, our relationships? If we, human beings, are like these creatures, mere creations, or just “matter,” what role do feelings have?

In the midst of all this, we stay to ponder, where are we heading towards? Is it ethical to try to create, clone, or manipulate human life? Are we in the presence of a new, dehumanized being? And, to that matter, what is it to be “human”? What is “humanness”? Which is “the secret of life”?

Without attempting to make a scientific analysis, and just on the basis of available information in popular, scientific literature, I will explore the scientific breakthroughs of our modern, “materialist” era, and I will try to find an answer to the question, “what are the dangers lurking around all this?” I will try to assess if we, human beings, are still in control of these creatures or if we are running the risk of letting all these creations govern our lives.

It is my contention in this study that Shelley’s creature adumbrates the birth of the “brave creatures” of the new millennium which just like him are the product of man’s promethean ambition to create life. In Shelley, we observe a more traditional view of man which is anchored in the Christian dualistic conception of body and soul: Frankenstein was matter, he was composed of pieces of corpses, but he had a “soul,” even if that soul was an electrical current that went through his body; whereas the creatures of the new millennium seem to be mainly matter and cells

(metal in the case of the robots) and have little or no spiritual life. However, this is not so much the case in the movies I will analyse, since the organic creatures still display feelings, will power, a “spirit,” but in the scientists’ conception of the new creatures, and of the human being in general. In relation to this the geneticist James Watson, the discoverer of DNA (deoxyribonucleic acid) and the director of the Human Genome Project, when asked if humans are essentially organic machines he answered the following: “My father didn’t believe in God, and so he had no hang-ups about souls. I see ourselves as products of evolution” (Discover Dialogue 2). And, later, he speaks of love, violence, or anger as dependent on a person’s having or not having a certain gene, and he even speaks of chemical circuits which influence our genes (Discover Dialogue 4). Obviously, Watson’s position is very extreme. He adheres to the theory of “genetic determinism,” which in Kirby’s words is “the belief that human behaviour, personality, and physical appearance are determined **exclusively** by a person’s genetic makeup” (6, my emphasis). Later, Kirby adds the following: “Genetic determinism is a reductionist ideology in that it seeks to explain a complex whole (a human being) in terms of its component parts (individual genes).

In the next section I will go through a great variety of theorists who have devoted their time and effort to the study of *Frankenstein* along these two centuries. They have approached this novel from different perspectives and theoretical backgrounds.

BIBLIOGRAPHICAL REVISION

Mary Shelley's novel was first reviewed by her husband Percy B Shelley, who tried to protect his wife's novel from the possible harsh criticism of his contemporaries, and he did so in his article "On Frankenstein" (1838) in which he mainly focuses on the reason why the main character is a monster. *Frankenstein* was not considered part of the canon until the 1970s, when scholars started to see its literary value.

Harold Bloom, in "Frankenstein and the new Promethean" (1965), claims that Mary Shelley may have inadvertently written this novel to portray the struggle between human beings and God, since in the novel we observe a person creating life, playing God, as Promethean did when he defied God, and we can see how that creation is doomed to failure, since it brings about the death and downfall of human beings, who, in their attempt to be like God, just destroy themselves. Charles Schug in "The Romantic Form of Mary Shelley's Frankenstein" (1977) points out the romantic elements present in the novel, such as the close link between characters and the environment that surrounds them; gloomy, dark nature mirrors the sorrowful, the tormented lives of the characters, in some terrible moments of their lives. Instead, when they remember "the good old days," those glorious moments are set in sunny landscapes and splendid weather, full of colour and joy.

Ellen Moers in "Female Gothic" (1976) strengthens the Gothic elements present in the novel. She mainly refers to the gloomy moments, full of agony and

suffering, mainly related with the life of a lonely doctor locked up in his lab, determined to create life and, thus, defy God, which afterwards brings about terrible consequences for himself and all his loved ones.

In the 70s, Feminism studied the degree of “domesticity” women showed in the novel, and, as Johanna M Smith says in her article “Cooped up with Sad Trash: Domesticity and the Sciences in Frankenstein” (2000), this novel clearly shows to which degree middle class women of the 19th century were subdued to the household chores and to everything related to the realm of the house. From the psychoanalytic point of view, David Collings (2006) proves that Victor Frankenstein creates this monster due to a serious Oedipus complex he suffers, with the intention of replacing his mother with that being, after her death.

The Marxists also took an interest in this novel, and Warren Montag, among others, wrote “The Workshop of filthy creation” (1991) where he points out that Victor represents the bourgeois class and that he creates this being, which represents the lower classes, to afterwards abandon and leave it to die. The poor creature fights for survival, he argues, in much the same way the working classes of the Industrial Revolution did, back in the 19th century. And from a Historicist point of view, Fred Botting, in “Frankenstein and the language of monstrosity” (1991) claims that in times of crisis, previous to revolutions, there are always monsters which foreshadow hard times to come and threaten to break the pre-established order of things.

These authors, among many others, impossible to include in this thesis, have analysed the novel *Frankenstein* and its characters from a wide array of points of view, although little has been said so far about the relationship between

the creature in Shelley's novel compared with the creatures born from the latest technological breakthroughs of the new millennium.

I will, therefore, concentrate my analysis on the development of the Frankenstein creature, its human side, if any, its cognitive and emotional aspects, its autonomy and its behaviour and reactions in relation with his creator, and I will look for and assess these traits in the new creatures, found in movies and articles of scientific interest. Afterwards, and I will try to compare and contrast the new creatures with Mary Shelley's original and see if she could have adumbrated the birth of the new creatures back in 1816, when she first published her novel.

METHODOLOGY

Comparative Literature

In this thesis I will make a *thematic* comparison of Mary Shelley's creature, its "human side", or lack of it, and the modern creatures, their human-like behaviours, or lack of them. In relation to this kind of comparative analysis Philippe Chardin² explains that it consists in tracing one particular theme in the corpus pointing out the analogies and also the oppositions (135; 141).

The comparative approach draws our attention towards the thematic relationship of works; therefore, it will enable me to study in the corpus the creatures and their human nature, their spirituality and materiality, their relationship with their creators (or scientific manipulators) and with the other creatures. It will be particularly helpful to compare the creature Frankenstein and the creatures of the new millennium, despite the fact that not all of them come from literary texts, but from the visual arts, although they all stem from other areas of knowledge, like biomedical engineering, genetic engineering, robotics, and clonation. I will point out the similarities but also the differences between them.

Following Tania Franco Carvahal's lead,³ who argues that Comparative Literature is an activity that bases its analysis on the relationship between history and the corpus under scrutiny (56) I will place each creature in the historical moment in which it was born. Firstly, Mary Shelly's original creature will be analyzed as immersed in the Romantic period, thus, in accordance with the

² I have translated quotations from Chardin's into English.

³ I have translated quotations from Carvahal's into English.

philosophy of the times of its creation. Next, comes the cloned creature of David Wickes' film in the early 1990s, and I will relate it with the advent of clonation practices and all its implications to the scientific world. And, finally, I will explore the creatures of the new millennium, born in the last fifteen years of our post-modern times, when technology advanced immensely and at a very fast speed.

Franco Carvalhal also mentions that the interdisciplinary activity between literature and other areas of knowledge like the arts, psychology, folklore, history or music can widen the points of interest in the study of comparative literature, while setting relationships between works of different types of nature (101).

Similarly Henry Remak stated the following, back in 1961:

Comparative literature studies literatures beyond the frontiers of a particular country, and also studies the relationship between literary texts with other forms of knowledge, like the arts (music, painting, sculpture, architecture) philosophy, history and social sciences (e.g. politics, economics, sociology), natural sciences (like medicine, ecology, etc.) and religion. To sum up, it is the comparison between one type of literature with another, or between literary texts with other types of human expressions. (Ctd. in Alonso Martí)

In this study I will compare Mary Shelley's creature and the cloned version in David Wickes' film, and again, I will compare Frankenstein with the new creatures derived from the scientific breakthroughs of the new millennium. So we will see that literary texts can be confronted and compared with other forms of culture like cinema, art, modern customs, the media, etc. This kind of analysis introduces us in the field of Cultural Studies, and I will refer to it in the next chapter

THEORETICAL BACKGROUND

Cultural Studies

Cultural Studies is the study of all types of cultures, a multidisciplinary field that embraces a variety of texts and discourses that include economics, anthropology, sociology, politics, advertising, television, film, computers, media, literature, and history. Obviously, the field is very broad. But, particularly, cultural studies focuses on works that are largely seen as marginal, such as the ones produced by minority groups, mass culture, the so called popular literature, soap opera, cartoons, magazines. In sum, it works on non-canonical texts. Cultural Studies subverts the distinctions between “high art” and “low art,” and questions traditional value hierarchies. It also fosters relativism because this attitude is apt to accept other cultures and ideologies.

One of the main advocates of Cultural Studies is Simon During. In his book *Cultural Studies: A Critical Introduction* (2005) he wonders: “Why study popular culture? Basically, because it is by definition the main cultural expression of our time” (193). In relation to the multidisciplinary dimension of Cultural Studies he mentions the following:

In a 1998 volume of the flagship journal *Cultural Studies*, one can find a traditional literary-critical essay on *Hamlet* and Marx; a sociological essay on consumerism and the Louvre; an archaically based piece on colonial science in South India; a feminist critique of the theory of cultural hybridity; an essay on Bob Marley and black transnationalism; a contextualising historical essay on Fu Manchu, the Chinese baddie hero of a number of popular early twentieth-century novels by Sax Rohmer; an essay on breast

cancer and the .public body in the USA; as well as self-reflective essays on the discipline itself. (5-6)

Simon During also highlights the proximity of Cultural Studies with the less privileged, the variety of cultural expressions, and everyday life:

Cultural studies is *engaged* in three different senses. First, in the sense that it is not neutral in relation to the exclusions, injustices and prejudices that it observes. It tends to position itself on the side of those to whom social structures offer least, so that here engaged means political, critical. Second, it is engaged in that it aims to enhance and celebrate cultural experiences: to communicate enjoyment of a wide variety of cultural forms in part by analysing them and their social underpinnings. And third, and this marks its real difference from other kinds of academic work, it aims to deal with culture as a part of everyday life, without objectifying it. In fact cultural studies aspires to join —to engage in— the world, itself. (1)

This, in turn, takes us to Rob Pope's observations. He tells us that in our globalized and technological contemporary culture, the mass media, (radio, newspapers, magazines, TV, videos and information technology) have become of vital importance, and that we can no longer make a distinction between "high art" and "popular culture." Electronic audio-visual culture will not destroy but supplement printed culture (39).

He also claims that there is a strong tendency nowadays to the "Globalizing and technologizing of contemporary culture" (40). We just have to observe around us to see how technologies have become part of our daily lives and, in many cases they govern most of our daytime. We are a click away from people who are in distant places, so, thanks to technology (computers and the Internet), we can see them, and talk to them face to face. Cultural Studies intends to analyse how all this affects our lives, and what consequences this outburst of new machines can have in our culture.

What is more, high technology, nowadays, is no longer the realm of just the rich and famous; on the contrary, state-of-the-art cell phones, tablets and computers are cheaper and cheaper each day. In this scenario, Cultural Studies observes all the technological products that permeate our lives; it is an interdisciplinary study of all the products of human culture, regardless of their rank, and there is a blurring of distinctions between the high and the low category, between rich and poor, between far and short distances.

The above mentioned theoretical framework will guide my analysis of all the creatures of the new millennium, since it will enable me to compare Shelley's original creature with the cloned one in Wickes' film version, and the other creatures, also taken from popular movies, that spring from the latest scientific discoveries. Cultural Studies is an interdisciplinary field of studies that does not make any difference between high culture or culture with a capital "C" on the one hand, and low culture, or culture with a low "c" on the other. I find this approach particularly suitable for my analysis, since, just like the movies under scrutiny, the story on Frankenstein was deemed part of "popular culture" till just some decades ago. As Johanna Smith says when referring to different conceptions given to the term "culture" and the distinction between "high" and "low" culture:

Cultural critics are as likely to write about "Star Trek" as they are to analyze James Joyce's *Ulysses*. They want to break down the boundary between high and low, and to dismantle the hierarchy that the distinction implies. They also want to discover the (often political) reasons why a certain kind of aesthetic product is more valued than others. (396)

Thus, Cultural Studies includes the study and analysis of all sorts of popular manifestations and productions of a certain social group at a certain historical period. It tends to question the rigid idea of the *literary canon* that is, "the once-

agreed-upon honour role of Great Books” (Smith, 397) and considers all sorts of cultural manifestations as equally valuable as those of the “canon”, as part of the social expressions of the people. Clothes, music, the mass media, the cinema, and foods, among others, are all the social manifestations analysed by Cultural Studies to examine the complex relationships between the dominant powers and the masses (or other social classes) to control ideologies.

What characterizes Cultural Studies and what will make my analysis feasible is the fact that it maintains the idea that we should show literary works in reference to other works and cultural productions, in broader social discourses within whose contexts the work makes sense (Smith 313). This is what I will do when I compare Mary Shelly’s original creature with the cloned creature in Wickes film and the other “brave” creatures.

Cultural Studies will also help me analyse how the creatures of the new millennium may affect our lives, our relationships with each other and our lifestyles. With the advent of so many high technology gadgets, it is very possible that, in the near future, we will live surrounded by machines that will become part of our daily lives, will do most of the tedious work we hate, and will take care of most chores at home. This may be the case of robots in charge of the housework, or those that can take care of the elderly, or do the work we, humans, reject or discard. Also, it is quite feasible that we will be able to choose the colour of our babies’ eyes, hair and complexion, or even their intelligence or lack of addictions, since all this will be easily determined at the moment of conceptions, in lab test tubes. This, very possibly, will be at everybody’s reach in the near future. And Cultural Studies explores how all this may affect our lives.

Cultural Studies will also be most helpful when I analyse, in future chapters, the dangers of Genetic Engineering, such as the danger to fall in the temptation to manipulate life to exercise power over others. Indeed, Foucault emphasized that power is not just *repressive* power: a tool of conspiracy by one individual or institution against another. Power, rather, is a whole complex of forces; it is that which produces what happens (Smith 316). I will analyse the whole “complex of forces” that has resulted in the construction of each of the creatures.

The “forces” I will consider in this thesis are Rousseau’s philosophical conception of man’s inborn capacities, as an influence on Shelley’s creature; also the forces of cloning technology and scientific developments related to the Human Genome Project of the 90s, which surely influenced the creation of Wickes’ cloned creature. And last, I will also explore the forces present in the amazing advances in Artificial Intelligence and its subsequent developments in Robotics and Androids. This concept of Foucault’s “forces” will incorporate similar concepts and text-culture relationships found in Intertextuality.

Intertextuality

Intertextuality is the presence of texts of one author in the works of others. The term “intertextuality” was firstly introduced in the field of literary criticism by Julia Kristeva in 1966, in her article, “Le mot, le dialogue et le roman,” that was later included in *Séméiotikè. Recherches pour une sémanalyse* (Kristeva 438-65).

Although, we must say, intertextual practises are as old as the textual productions of the Western tradition, intertextual theories as such belong to the 20th

century. Intertextuality as a theory holds the idea that a text does not stand on its own, self-sufficient, i.e., as a closed system. Just as Kristeva states, “every text is constructed as a mosaic of quotes, every text is the absorption and transformation of another text” (*Séméiôtiké*. 146).

Based on Kristeva’s assumption, I will examine how Shelley’s creature has been “absorbed” and “transformed” in the film version of the cloned creature, considering that the different social conditions that shaped these creatures are the causes of their “textual” transformations. According to Laurent Jenny, in “La stratégie de la forme,” a work that relates with another one “explicitly...reveals its relations with other texts” (Jenny 257). In my thesis I will make use of Jenny’s concept of explicit intertextuality, since film maker Wickes intentionally took Shelley’s text and adapted it to his contemporary scientific advances in the field of cloning, present in the 90s. For Jenny, “intertextuality does not design a confusing and mysterious addition of influences, but it is the work of transformation and assimilation of several texts operated by a central text which maintains the *leadership* of meaning” (262). In my thesis the “*leadership* of meaning” will be Mary Shelley’s creature, because that is my “central text,” and I will compare that creature with the different re-interpretations springing from it, which are the creatures born in the 20th and 21st centuries. The film maker, as in Wickes’ case, or the scientists that conceived the Artificial Intelligence of Robots, the creators of a new myriad of transformed beings, take the position of remakers of the original creature in Shelley’s novel, since according to post-modern views nowadays writers and artists (and scientists, for that matter) are not truly original but they take hold of voices and texts of different sources and re-function them to suit their own

objectives (from Stanford University on Postmodernism and Hyperreality: <http://plato.stanford.edu/entries/postmodernism/#6>, 2005).

Specific Theoretical Background for Each Creature

Jacques Rousseau's *Emile* (1762) will guide my analysis of Mary Shelley's creature Frankenstein, since in that work Rousseau gives the highest priority to love in the education of all human beings, and he stresses the importance of nurture over nature in their education.

To explore the creature's spirituality, if any, I will follow Martin Willis' analysis in "Frankenstein and the Soul." In this article Willis searches for the causes that might have led Mary Shelly to conceive a creature with a soul (the dualist theory that springs from Christian philosophy), although the actual making of the creature was mainly materialist: the juxtaposition of body parts to make up an adult human being.

I will base my analysis of the relationship between Frankenstein, the original creature, and the creatures of the new millennium, on Catherine Waldby's article: "The instruments of life: Frankenstein and cyberculture." In it, Waldby points out the relevance of Mary Shelley's subject today, when it is confronted with the latest technological advances of our times. She also condemns the risks of "playing God" and emphasizes how Mary Shelley took the first steps into the creation of Artificial Intelligence, with all the harmful consequences for the humanity this may bring about.

In the analysis of David Wickes' film and its cloned creature I will be guided, by Gregory E. Pence (1998) who strongly believes in the right to clone human beings, and Leon R. Kass (2002), who, on the contrary, seriously warns us against the dangers of cloning in a document presented to President George W. Bush. Here, also, he considers the unethical ramifications of cloning practices.

When dealing with the Human Genome Project, I will follow James Watson, author of "The human genome project: past, present, and future" (1990), and discoverer of the structure of DNA. I will consider Watson's position about genetic engineering, and I will also refer to other scientists who, like Watson himself, reject any kind of limitation to the manipulation of cells.

Regarding Robotics, I will follow Michael Zimmerman (2013), Ben Goertzel (2013) and James Barrat (2015) who believe in the potential development of AGI: Artificial General Intelligence. However, I will point out its counterpart argument by Hugo De Garis (2015) who points out that AGI may "re-programme" and thus acquire more power than the scientist who created it.

Next, I will explore the latest theories of New Materialism to see, further in my study, to which extent they underlie the conception of both the creature Frankenstein and the new creatures.

New Materialism

In the twenty-first century a vigorous reconsideration of the matter has taken place. Thinkers coming from the fields of ontology, natural sciences, sociology, anthropology, ecology, physics, and the humanities, have got involved in the new

ways of conceptualizing materiality. No longer is it considered according to the dualistic paradigms of transcendental humanism but in terms of a radical immanence. The “new materialism” (alternatively called “new materialisms” or “neo-materialism”) is a reinterpretation of materiality and of material dynamics: matter is filled with energy and agency and it is not connected with any kind of intentionality, be it human or divine intelligence. Matter is not static but a generative becoming. Matter as energy has the power of determining itself, and bodies constantly interact with each other. In *Vibrant Matter: A Political Ecology of Things* Jane Bennett puts it so:

What I am calling impersonal affect or material vibrancy is not a spiritual supplement or “life force” added to the matter said to house it. Mine is not a vitalism in the traditional sense; I equate affect with materiality, rather than posit a separate force that can enter and animate the physical body.

My aim, again, is to theorize a vitality intrinsic to materiality as such, and to detach materiality from the figures of passive, mechanistic, or divinely infused substance. This vibrant matter is *not* the raw material for the creative activity of humans or God. It is my body, but also Darwin’s worms, as well as the not-quite-bodies of electricity, ingested food, and stem cells. (xiii)

Similarly, Melissa A. Orlie, following Nietzsche’s lead affirms the following:

Mind is body. This is not to say that mind or mindedness can be reduced to some particular physical location or organ, such as the brain; rather, it is to claim that various forms of mental activity are aspects or manifestations of matter. All mental activity, from the so-called highest states of consciousness to what Freudians call primary process and refer to as unconscious, arises, according to this view, from the same basic material elements that compose the physical body.... If this is the case, why do we associate thinking, willing, and acting with something immaterial, with “spirit” rather than matter? How do we arrive at the idea and experience of ourselves as having a mind that is distinct from, indeed master of, the body?....What we conventionally call mind is, in short, matter working upon matter. (120-12; 134)

Bearing in mind the above mentioned observations, in the next chapter I will deal with Frankenstein, the original creature. I will describe him in the light of the philosophical ideas of Mary Shelley's times, the spiritualism at the basis of Romanticism and Jean Jacques Rousseau's *Emile*. But I will also place the creature amid an upsurging belief in materiality (Frankenstein was an ensemble of pieces of corpses put into motion by an electrical current). Then, I will proceed to explore to which extent the creatures of the new millennium follow or depart from Mary Shelley's monster.

FRANKENSTEIN: MARY SHELLEY'S CREATURE

The Cultural Historical Context

Mary Shelley conceived her creature at the height of the literary and philosophical period called Romanticism. The “forces” that marked this period were the many changes that were being carried out, such as political (French and American revolutions), economic (from rural to urban economy and the beginnings of the industrial revolution), scientific (discoveries in medicine, neurology, electricity, and chemistry), and social (growing importance of education of the masses). Mary Shelley introduces her very original story in the midst of this historical turmoil, and her story is closely involved with most of these changes in some way or another. Romanticism permeates all of Mary’s life and work.

Her father, William Godwin, and her mother, Mary Wollstonecraft, were crucial exponents of this era. Both were very famous thinkers representing the philosophical values of their time with a highly revolutionary nature. Her mother, Mary Wollstonecraft, was a feminist militant. She had written *A Vindication of the Rights of Woman* (1792), where she asserted that intellectual companionship is the ideal of marriage and pleaded for equality of education and opportunity between the sexes. And her *Vindication of the Rights of Men* (1790) clearly shows Mary Shelley’s mother’s deep feelings to fight for the rights of human beings and the abolition of all sorts of human slavery, something that our writer later takes on again so as to defend her creature’s position and to make us, readers, ponder

about how cruel scientist Victor Frankenstein was to leave his creature all by himself, depriving the 'fiend' of the bare essentials:

But where were my friends and relations? No father had watched my infant days, no mother had blessed me with smiles and caresses. . . I had never yet seen a being resembling me, or who claimed any intercourse with me. What was I?. (*Frankenstein* 110)

Similarly, Mary Shelley's father, William Godwin, voiced the political ideas of the French Revolution in his "*Enquiry concerning Political Justice*" (1793). Here, Godwin also presents his objections to the social order of the times and expresses his profound belief in human beings' power of reason. In the meantime, Mary Shelley showed great interest in John Locke's "Essay Concerning Human Understanding" (1689), which can be clearly seen in her novel, since Locke considered that "character is acquired rather than innate" and we can surely perceive this principle in Mary's conception of the creature. What is more, she had also read Rousseau's *Emile* (1759). In it, Rousseau held the idea that we had to "educate for the development of natural virtue", where **nurture** is more important than **nature** (Jean Jackes Rousseau 37-38).

Lilian Furst, in her book *Romanticism* provides a definition of Romanticism which particularly suits the creature Frankenstein:

In general a thing is romantic when, as Aristotle would say, it is wonderful rather than probable; in other words, when it violates the normal sequence of cause and effect in favour of adventure...--the savage, the peasant, and above all the child.

Frankenstein is a vivid example of the Romantic spirit of the wild, the rough, and the innocent. However, all these characteristics we find in the creature are later twisted in the wrong direction by society, which changes the creature for the worse and turns him into a "fiend."

Another romantic principle that permeates the story is, “The child is the father of the man” (Rousseau 38). Children (in much the same way as the creature Frankenstein) are conceived as superior in spirit and wisdom when compared to adults. Because of their ingenuity and innocence they are far purer than the mature beings that compose society.

For the romantics “the return to Nature” (Rousseau 38) was crucial. In *Frankenstein* this is clearly seen since the creature turns to and depends on Nature for survival. Having been deprived of nurture and the motherly love that every child is entitled to, Nature is for him the main way to learn on its own about the outside world.

The laws of nature were considered by the romantics to be the best and safest choice to avoid mistakes. In his search for a cure to all illnesses, Victor also claims to be following the laws of nature. But in the creation of the monster, however, he contradicts himself because what he is trying to do, looking at his work from a different perspective, is to violate the natural death of people and play God by giving life to a very “unnatural” creature. Therefore, when the creature turns to *nature*, he should be good-natured and benevolent, but in fact he is not so because he is missing the *nurturing* from his creator (Rousseau, in *Emile*).

As Victor Hugo mentions in the Preface to *Cromwell* (1827), romanticism mingles “the grotesque with the tragic or sublime” (65). This is also true in Mary Shelley’s case, since her mingling of the grotesque with the sublime is evident in the portrayal of this “gross” creature and the sublime spirit she allotted to it.

The romantics showed a fascination with the Gothic, the demonic, and the mysterious. Lilian R. Furst puts it so:

“Strange though it seems beside the traditional romantic cult of beauty, this penchant towards the darkly mysterious aspects of life represents another facet of the romantic interest in the exceptional and also the urge to explore the uncharted.” (29)

This fascination for the gothic and the mysterious is also present in Mary Shelley’s novel.

We can assert that *Frankenstein* is a truly romantic story, conceived by a truly romantic author whose own life was fully romantic as well. When she wrote *Frankenstein* in 1818, Mary Shelley was only 20. However, she had already eloped, at the age of 16, with a married man and famous writer, Percy B. Shelley, thus, showing her truly free spirit devoid of all pre-established rules and conventions.

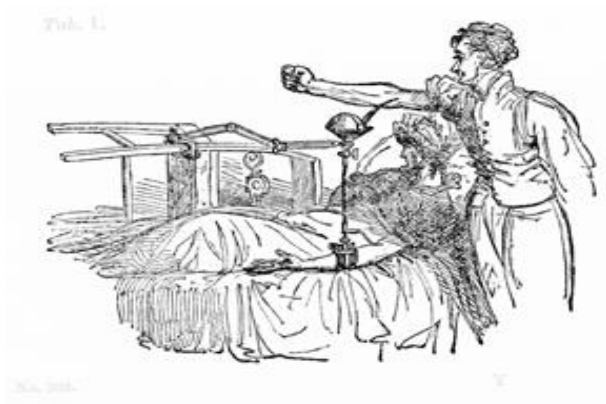
On the other hand, however, *Frankenstein* also reveals that Mary Shelley was well acquainted with the scientific materialism that permeated her times. Her work presents both the romantic and the materialistic views, very subtly. A further conception of the creature can be described as a product of the scientific advances of the moment, when scientists, like Victor Frankenstein, attempted to be like God, with the terrible consequences this dreadful sin carried out for the creature and his creator. To support this, here I mention some examples of the medical advances of the period:



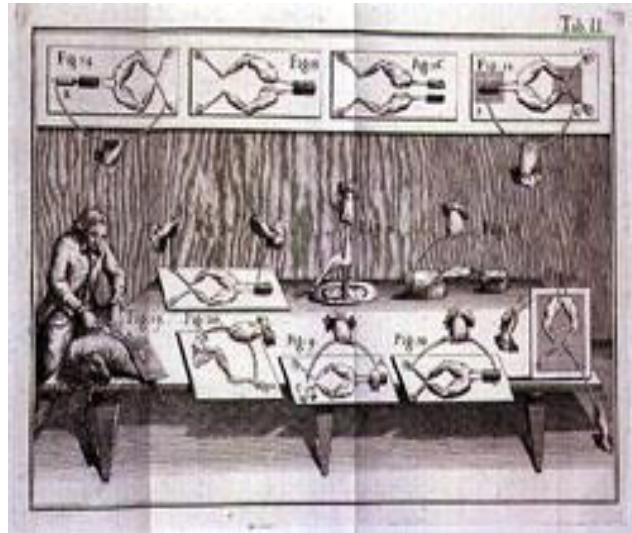
(1) This cartoon shows Edward Jenner, the vaccine discoverer, administering it, despite serious reluctance of some of his patients. The smallpox vaccine, made many people fearful of usurping God’s will of the unknown (from:

http://www.nlm.nih.gov/exhibition/smallpox/sp_vaccination.html)

(2) Blood transfusions: James Blundell, a London physician troubled by the many women who died after childbirth from massive bleeding, introduced blood transfusion among humans, using the simple apparatus shown here. (Reproduction of an illustration from *The Lancet*, 1828-1829. From: <https://www.mtholyoke.edu/courses/rschwart/hist257s02/students/Stacy/Medical.htm>)



(3) Galvanism: During the 1790s, the Italian physician Luigi Galvani demonstrated what we now understand to be the electrical basis of nerve impulses when he made frog muscles twitch by jolting them with a spark from an electrostatic machine. When *Frankenstein* was published, however, the word “galvanism” implied the release, through electricity, of mysterious life forces. (From <http://faculty.uml.edu/bmarshall/frankensteinandbodyissues.html>)



Also, as Tom Asunder states in his article “Tracing the Split Between Medicine and Philosophy in Romantic Brain Science,” the romantic era has to be considered the time which gave birth to Neuroscience, as we know it today.

The creature Frankenstein is built up of sepulchral material held together. It personifies the scientific materialism of Shelley’s times. Martin Willis in “Frankenstein and the Soul” reminds us that, “By the time Victor Frankenstein completes his undergraduate training at university, his scientific pragmatism has

blotted out all trace of the romantic outlook of his youth” (2). Willis explains later that in relation to the introduction of an animating electrical shock in the monster, the materialists and romanticists expressed divergent views, either “asserting or denying that the vitalism of electrical power is the basis not only of mechanistic animation but also of a spiritual psyche.” Whether or not the monster was imbued with a “soul” is at the centre of the narrative (3). Mary Shelley seems to partake of both positions, the materialist and the romantic. It is my contention, however, that she seems to endorse the romantic rather than the materialist, because she seems to believe in the spiritual life of the monster, which might be a soul; she believes in his natural innocence, his needs of affection and nurture, and the damage society provokes on him. Willis draws our attention to the end of the novel when the monster’s spiritual qualities (from which he has been so long alienated) appear again:

“But soon,” he [the monster] cried, with sad and solemn enthusiasm, “I shall die, and what I now feel be no longer felt. Soon these burning miseries will be extinct....My ashes will be swept into the sea by the winds. My spirit will sleep in peace; or if it thinks, it will not surely think thus. Farewell. (*Frankenstein* 189)

The Creature: His Cognitive-Affective Life

As I have already mentioned, we can establish many relations between Mary Shelley’s conception of the creature and her own conflictive times. To start with, the creature was like a big baby, conceived by Victor in his laboratory, although no clear details can be found in the original novel about the actual way in which Victor carried out his experiment. So, being a baby, the creature was not

able to do anything on his own. He needed all the care and attention a baby does. However, immediately after Victor sees the creature come to life, he realizes the terrible sin he has committed and flees in despair, leaving the creature to cater for himself and without assuming the responsibilities of fatherhood:

It was on a dreary night of November, that I beheld the accomplishment of my toils...the rain pattered dismally against the panes, and my candle was nearly out, by the glimmer of the half-extinguished light, I saw the dull yellow eye of the creature open; it breathed hard, and a convulsive motion agitated its limbs.

How can I describe my emotions at this catastrophe, or how delineate the wretch whom with such infinite pains and care I had endeavoured to form? ...He might have spoken, but I did not hear; one hand was stretched out, seemingly to detain me, but I escaped, and rushed downstairs. I took refuge in the courtyard...where I remained during the rest of the night, walking up and down in the greatest agitation, listening attentively, catching and fearing each sound as if it were to announce the approach of the demoniacal corpse to which I had so miserably given life to. (*Frankenstein* 60)

Therefore, the creature is left alone to learn through experiences. The creature first experiences the physical sensations of light, dark, heat, cold, hunger, and pain. This is his period of infancy when he feels the sensations but has no conscious expression of them. In Chapter XI he says, "It is with considerable difficulty that I remember the original era of my being....A strange multiplicity of sensations seized me, and I saw, felt, heard, and smelt, at the same time..." (92).

Also when he says:

One day, when I was oppressed by cold, I found a fire which had been left by some wandering beggars, and was overcome with delight at the warmth I experienced from it. In my joy I thrust my hand into the live embers, but quickly drew it out again with a cry of pain. (*Frankenstein* 93-94)

Through time and experience the creature eventually learns to distinguish the various sensations and how to interpret them. He learns to gather food, clothe himself, and acquire shelter. In other words, his sensitive experiences cause him to learn from them and provide for his basic necessities.

The creature obtains a moral and intellectual education through his observation of the De Lacey family, who live in the cottage adjoining his hovel. The De Laceys provide the creature with an example of a loving, kind and virtuous family. They stimulate his emotions and inspire him to do good deeds for others, such as collecting firewood for the family or abstaining from eating part of their food store. This is seen when he says:

I had been accustomed, during the night, to steal a part of their store for my own consumption; but when I found that in doing this I inflicted pain on the cottagers, I abstained, and satisfied myself with berries, nuts, and roots, which I gathered from a neighbouring wood." (*Frankenstein* 99)

Here, we can also observe his kindness towards this family, his only kin, since he voluntarily deprives himself from stealing food from them so as not to cause them pain. This is one clear instance of the creature's kind and benevolent soul, since, as we can see, he was naturally good but then he was corrupted by society.

By observing De Lacey family, the creature is also stimulated intellectually and he is introduced to spoken and written language. He accounts for that when he tells Victor, "I found that these people possessed a method of communicating their experiences and feelings to one another by articulate sounds" (100). And then he goes on to explain how he managed, little by little, to acquire the habit of reading

and writing while observing Agatha teaching English to Safie, an Arabian girl who visited the cottagers.

It is through the De Lacey family that the creature learns all what Victor, his creator, has failed to teach him. This shows how “nurture” is more important than “nature,” as Rousseau says in *Emile*. And it is through these cottagers, also, that the creature starts to distinguish the differences between good and evil, the laws of social order, and, eventually, the origins of his own existence, since he reads from Victor’s diary how he came into being (117). Therefore, he also starts to hate Victor, his creator, since he realizes that it was not good of his father to abandon his child and leave him alone to wander around the world in solitude and deprived of all care and love. This is clearly seen when he claims. “But where were my friends and relations? No father had watched my infant days, no mother had blessed me with smiles and caresses” (107).

After his secret relationship with the De Lacey family and his great deception when he feels rejected by them when they finally meet him and attack him due to his monstrous appearance (still another instance of Rousseau’s philosophy that man is good but society corrupts him), the creature decides to take revenge on his creator and make him suffer, and thus, he becomes a murderer of Victor’s own family. The first one he kills is William, Victor’s little brother. Then, he leaves Victor’s medal in Justine’s neck to make her appear guilty and thus she is hanged for William’s death. Victor, thus, starts to feel guilty for these deaths, and his inner turmoil begins to torture him since he feels he has provoked all this suffering. It is then when the creature faces him and asks for a female creature, promising Victor to leave him in peace for ever if his creator complies with his wish:

I am alone and miserable; man will not associate with me; but one as deformed and horrible as myself would not deny herself to me. My companion must be of the same species, and have the same defects. This being you must create. (*Frankenstein* 128)

But Victor cannot fulfil his promise and the creature feels again devastated and, thus, he becomes furious with his creator; therefore, as he has promised, the creature kills Elisabeth, Victor's newly wedded wife, and then Victor chases the creature to the North Pole, trying to put an end to all his miseries and suffering. Finally, Victor dies of exhaustion and the creature drowns himself, as a way to put an end to such a miserable life he never asked to live.

As I have already mentioned, this final scene carries a lot of weight, since it reveals the dualist conception of body and soul present in Mary Shelley's novel. Here the creature dies in a way, to purify his soul. This dualist conception—in accordance with Christian faith—seems to govern the depiction of the creature Frankenstein. We may wonder whether the creature did or did not have a soul, but if we stop to observe the creature's suffering due to abandonment, rejection and discrimination, we cannot think but he did.

Mary Shelley's creature was born in the romantic period; however, at that time materialism was in the air as well. So we can say that the way Frankenstein was created (just by the juxtaposition of body parts) is truly materialist; the way he died, responds to the dualist conception—the body burns to purify its soul (Willis 4).

As mentioned earlier in this study, electricity plays a very important role in the creation of the creature, and here, we wonder, does electricity also account for the soul? At a time when electricity shocks were used to cure some psychological

disorders, we might be led to believe that Mary Shelley thought electricity could give birth to both, a body and a soul.

As I have already pointed out, at Mary Shelley's times there were two important philosophic principles exerting pressure on her. One was the Christian faith, which favours, as today it still does, that we, human beings, are made of a body and a soul, and when we die, our body disappears but our soul continues to live and goes with God, wherever we might believe God is. And the second, the materialist view, which holds the idea that we are just matter and when we die, nothing is left. In relation to Mary Shelley's conception of the spiritual dimension of a human being, Willis expresses the following: "To some extent Mary Shelley's narrative defends this view" (4). Following Willis's lead I want to put into evidence how intense the spiritual life of the creature was and how greatly he suffered. Yet, we ask ourselves, what is the origin of feelings? Are they just part of the matter our brain is made of? Or are they part of our soul or mind?

Nancey Murphy, a theologian who has written widely on neurology and the relevance of our neurons in our everyday actions, explains in "Neuroscience and the Soul" that, due to the recent developments in the cognitive and neurosciences, the issue of physicalism as opposed to dualism (body-soul) has become prominent. She distinguishes, however, between "reductive physicalism" and "nonreductive physicalism." The reductive physicalist says that humans are purely physical beings and thus all of our thoughts, emotions, and experiences are *nothing but* brain states. For example, the laws of neurobiology could, in principle, explain all of human life, including rationality and morality. The nonreductive physicalist, in contrast, says "yes," humans are purely physical, but this leads us to

recognize that our brains just *enable* us to think, and to make moral choices. According to Murphy the nonreductive physicalist position is equally opposed to dualism and to reductive physicalism.

In her book *Did my neurons make me do it?* Murphy argues that humans are not purely physical, and that free will, moral responsibility and reason are, in fact in control of us, humans.

This interest in reductive or nonreductive physicalism is rather modern. I venture to say that in Mary Shelley's times the distinction was mainly done between the body-soul dualism (the established view since the Middle Ages onwards) and materialism.

The creature in relation to Rousseau's *Emile* (1762)

As mentioned earlier, Mary Shelley had read Rousseau's *Emile* and she was greatly influenced by it. In many ways the creature Frankenstein corroborates Rousseau's theory. In *Emile* Rousseau states that man is intrinsically good, but that goodness is beaten out of him by society, "God makes all things good; man meddles with them and they become evil" (Book 1).

Rousseau specifically attributes moral failings to the lack of a mother's love. Without mothering and a loving education, "a man left to himself from birth would be more of a monster than the rest" (Book 1). In *Frankenstein*, Mary Shelley shows how a rejected and un-mothered child can become a killer, especially a killer of its own family.

In the battle of nature vs. nurture for development, Shelley, just like Rousseau, definitely sides with nurture. She also subscribes to Rousseau's theory of the natural man as a "noble savage, born free but in chains"⁴ and corrupted by society. The creature Frankenstein is Rousseau's natural man. It is only later, through the contact with the De Lacey's –here representing society – that the creature realizes that he is a social outcast and decides to take revenge. Mary Shelley considered that man is born with cognitive and affective capacities because the creature, even without receiving the proper nurturing, is intelligent enough to manage to get an education on his own, just by observing and copying the daily life of the De Lacey's. The monster is depicted as a kind being, and, though deprived of love and care, he shows great capacity to think, feel and learn on his own, just as when he becomes aware of all the bare essentials he lacks, and which make him feel miserable. We can clearly see this when he talks about the De Lacey's:

They were not entirely happy. The young man and his companion often went apart, and appeared to weep. I saw no cause for their unhappiness; but I was deeply affected by it. If such lovely creatures were miserable, it was less strange that I, an imperfect solitary being, should be wretched. Yet, why were these gentle beings unhappy? They possessed a delightful house (for such it was in my eyes) and every luxury; they had a fire to warm when chill, and delicious viands when hungry; they were dressed in excellent clothes; and, still more, they enjoyed one another's company and speech, interchanging each day looks of affection and kindness. (*Frankenstein* 98-99)

Another clear instance of Rousseau's influence is the way in which the creature finds out the existence of fire. In *Emile's* first book Rousseau says that

⁴The chains Rousseau mentions are very well explained here, "El hombre civilizado nace, vive y muere en esclavitud; al nacer le cosen en una envoltura; cuando muere, le clavan dentro de un ataúd; y mientras tiene figura humana, le encadenan nuestras instituciones." (*Emilio y otras páginas* 13)

“we are born sensitive, and as from the very start, we are impressed by different objects. And we are conscious of sensations, we try to get or reject those objects that produce these sensations” (Rousseau 8). Such is the case of the creature, since it was through fire that he started to be conscious of his own sensations.

The creature was all alone to discover these sensations without anybody to guide him in the process. Regarding this point, Rousseau considers that education plays an important role in guiding men in what they should reject as a bad influence on their personality, and what they should acquire in order to become better persons, with better habits.

Rousseau also points out that “education” in ancient times was used with the connotation of “food”; that is why he spoke of “nurture” when dealing with education. To “nurture” a person is to feed him/her with that which is suitable for his/her well-being, something our poor creature never had and was forced to find for himself.

Rousseau’s conception of education is very well delineated here:

Nacemos débiles y necesitamos fuerzas; nacemos desprovistos de todo y necesitamos asistencia; nacemos sin luces y necesitamos inteligencia. Todo cuanto nos falta al nacer, y cuanto necesitamos siendo adultos, se nos da por la educación. (6)⁵

This quote clearly supports my argument that all the miseries of Mary Shelley’s creature were due to the lack of care and attention, i.e., lack of education, he suffered.

⁵ My translation: We are born weak and we need strength. We are born deprived of everything and we need assistance. We are born in the dark and we need intelligence. All we need at birth and later, in adulthood is given by education.

Shelley's creature was a product of the era, so we can expect to see changes in the creatures that were produced later in film versions, and in scientific labs. This will be discussed in the following chapters.

THE CREATURES OF THE NEW MILLENIUM

CLONATION

Theories of Transposition from Literary Texts to Film Versions

Before going into the actual analysis of each of the creatures I have purposefully selected, I will describe different types of transposition of literary texts to film versions. Most specialists agree that there are basically three types of adaptations:

1. - **literal/faithful,**
2. - **re-emphasis, and**
3. - **borrowing**

Literal / faithful, is described as “attempt[ing] to give the impression of being faithful, that is, a literal translation” (Klein 8). This is best exemplified by Andrew Dudley when he defines it as “a refusal to adapt: rather, an attempt to present the distinctness of the original text and to give it life on the screen” (9). Typical examples of this type are Kenneth Branagh’s Mary Shelley’s *Frankenstein*, the four *Harry Potters*, and *Lord of the Rings*, since these films mean an attempt to respect the book in full detail. Obviously enough, however, the directors use special techniques and additional elements in order to attract a cinema audience and to change a long novel into a screen version.

Re-emphasis, is described by Michael Klein and Gillian Parker as the “second category...[which]...retain[s] the core of the structure of the narrative while significantly re-interpreting, or in some cases de-constructing the source text” (8). In his “Commentary” Geoffrey Wagner speaks of “re-emphasis” or “re-structure” when an original is taken and either purposely or inadvertently altered in some respect (Klein and Parker 8).

David Wickes’ film *Frankenstein* (1992) is an excellent example of “**re-emphasis**.” This film takes a more psychoanalytical approach by exploring the doppelganger theory⁶, in which the creature is a clone of Victor Frankenstein and therefore becomes his second half. Although Wickes created a refreshing and insightful interpretation of *Frankenstein*, it received virtually no attention as it was made for cable television and it was not on in cinemas. However, I consider it very valuable in that it significantly deviates from the text and explores interesting avenues opened by the novel, mainly in view of the latest developments in cloning.

Borrowing, the third type of adaptation, “regards the source merely as raw material, as simply the occasion for an original work” (Klein 9). The first commercially successful film adaptation of *Frankenstein*, directed by James Whale in 1931, is a good example of this third film category. Whale transforms Mary Shelley’s *Frankenstein* from a philosophical speculation about creating human life to a simplified monster movie which creates a new movie genre, the “horror film.”

⁶“Doppelganger” is German for “double walker” - a shadow self that is thought to accompany every person

Regarding the significance of different types of adaptations and their relevance in the film industry, Sergio Wolf points out in *Cine / Literatura. Ritos de pasaje* that in “transposition” we should bear in mind the oxymoron “How to forget, while remembering”⁷—Cómo olvidar recordando— (77). This paradox presupposes that “what pre-exists disappears while remaining.” He, then, goes on to explain that “Cómo olvidar recordando” means that the origin of a story cannot be eliminated as if it had never existed, but that it cannot be absolutely present either, since in doing so, the very essence of “transposition” would be eliminated. Wolf also points out the following:

De allí la equivocación de quienes se obstinan en creer que lo más relevante es el respeto al texto primero, ya que ese vestigio que persiste en el filme no es la obra literaria —que sigue siendo igual, la misma— sino lo que ese film hizo con ella, a lo que la redujo, el lugar que le confirió, la clase de lectura que hizo de ella. Lo que quedó no es la obra literaria sino el modo en que el director, los guionistas y los actores leyeron o interpretaron ese material para construir a partir de él una película.⁸ (78)

It is clear, then, that Wickes’ film responds to Wolf’s theory of transposition, more precisely, to the second choice: “re-emphasis”. Wickes got his inspiration from Mary Shelley’s novel but he tinted it with the latest trends of scientific discoveries. He provided Mary Shelley’s story with a new scientific background, that of cloning. So, if we consider the advances in cloning we have at our disposal today, Frankenstein’s utopia has a more feasible breakthrough.

⁷ I have translated quotations from Wolf’s book into English.

⁸ My translation: Those who believe that the most relevant aspect to consider is an absolute respect to the original literary text are wrong. The vestige present in the film is not the same as in the literary text, but what the film made of that text, the place it provided for it and the type of readings performed on it. What is left is not the literary text, but what the directors, script writers and actors saw and interpreted in that material to build a new artistic product, that is the film.

David Wickes' Cloned Creature and its Comparison with Mary Shelley's Frankenstein

David Wickes's adaptation of the story of Frankenstein, as we have already said, is much in agreement with Wolf's idea that a movie is a deconstruction of the original story, and it involves a new reading of it. The director's and script writer's new tint brings about a new artistic creation, with its own identity.

Although in Mary Shelley's version little is known about the actual making of the creature, in Wickes' film the creation of the monster is clearly seen: Victor Frankenstein creates the monster from his own body, thus making a clone. He owns a big laboratory where he keeps strange animals that he has mixed and cloned to produce unthinkable species –a snake with a cat's head, for example – thus paving the way to the Genetic Manipulation we will refer to later in this thesis, and which can also be related to Mary Shelley's novel.

The actual making of the cloned creature in Wickes' film is carried out with a precision and sensationalism which Mary Shelley's novel lacks. The machine Victor uses to make the creature is depicted with great accuracy in the film. There is a scene when he shows Clerval, his friend, part of his experiments and we can see how he makes an exact copy of his own arm, by inserting it in the middle of some kind of electronic circuit that reproduces an exact copy of his arm in a crystal box. After that, the actual making of the creature takes place in a scene that carries a lot of weight and which drives us, viewers, to ponder about the very nature and riddles of the underlying principles of clonation. There is a human body lying in the same crystal box we saw before that contains a liquid which the spectator is made

to imagine must be some kind of mixture of blood and water, similar to the amniotic liquid pregnant mothers carry in their wombs. Victor starts the machine and a lot of electric circuits –electricity, once again, as in Mary Shelley’s original-- are put into action. The creature finally starts moving in this big crystal box until he breaks it into pieces, and we are now sure he is alive.

From the scene of the reproduction of Victor’s arm, the audience can rightly infer that this creature is an exact copy of Victor’s body and soul. This is a central scene in the film, one that really touches our souls, making us wonder, just as Victor does, what terrible sin he has committed and what consequences this sin will bring about. Like many moralists nowadays, Victor wonders, right after finishing his “masterpiece,” which results this irresponsible and unethical manipulation of genes will bring about to himself and mankind in the near future.

The main differences, consequently, between the novel and this film version lie in the very important fact that Wickes’ creature is Victor’s own clone. So, when the creature is injured, Victor feels the pain. When the creature falls from a cliff, Victor feels the vertigo derived from that fall as well.

There are, however, some similarities between Wickes’ creature and Mary Shelley’s. These are that in the film the creature is also capable of and willing to give and receive love, affection and tenderness, something this poor being never gets, showing that in both creatures, the original and the cloned one, feelings play an important role in the development of character. Again, we see the lack of affection (nurture) the cloned creature suffers, and how this brings about his downfall, when, as in the original novel, Victor fails to clone a female-creature to yield to the first creature’s need to have a mate.

Still another similarity of both creatures is their capacity to learn to speak. In the film, Frankenstein does so through a blind man, also called De Lacey. This blind man is the only person who gives the creature some care and attention. Since he cannot see his dreadful appearance, he does not reject him.

Yet, a further difference in this film is the way in which William and Justine die. Showing great tenderness, Wickes's creature goes to Justine's house to give her some flowers, but when she sees him, she gets terrified by his loathsome traits and starts screaming. Just then, William turns up, bringing a letter from Clerval, Justine's lover –also another difference with Mary Shelly's original – and it is then when William's horse is taken aback by the creature's sudden appearance and William suffers a deathly fall. Here William is not directly killed by the creature, but he dies in an accident, since the poor animal freaks out at the creature's appearance on a rainy, stormy night.

However, we should point out that, although these are minor differences with the original, they are all instances of a Gothic story. The movie keeps the Gothic macabre and the horrifying features in such a way that the audience cannot help feeling pity for the poor creature's unlucky fate.

Regarding the creation of a female creature, in Wickes' film the difference lies in the way in which Victor carries out the actual making of it. He does so by using Elisabeth to produce an exact clone. Here, like in the novel, Victor goes back on his word. He stops the creation, but this time it is due to the terrible pain that he inflicts on Mary while making use of the machine that produces Elisabeth's clone. As the creature observes this, he drives crazy, just as in the book, and he murders Victor's father (although in the novel Victor's father dies of sorrow), Clerval, and

Elisabeth on Victor's wedding night. The actual killing of all of them is performed with a brutality and sensationalism which are typical of film making but absent in Shelley's novel.

Wickes' creature also possesses all the Gothic characteristics present in the original story, such as his fantastic force, his dreadful appearance and his haggard nature, all of which drive him to commit those terrible crimes with an unusual ease.

Afterwards, just as in the novel, Victor follows the creature to the north pole, but in the film they finally embrace in a fatal hug that makes them fall in the Arctic Sea and drown, together, as a way to put an end to all their miseries and terrible suffering caused by the loss of so many lives due to Victor's attempt to play God.

As we have seen, in creating a clone from Victor, Wickes has tried to give his own version of Mary Shelley's novel, one in which the latest scientific breakthroughs of the 90s are present in its actual creation. And it is this particular making of it, through cloning, that the creature depicts, more than in the novel, the same features Victor, his creator, has. Thus we see how "humane" both are, how similarly both suffer despair and deep sorrow; the creature suffers all the perils derived from the lack of care and nurture from a loving family, in much the same way Victor suffers terribly when the creature kills all his family.

The fact that this creature was "made" in a lab, as an exact copy of his creator, with his own genes, makes Victor feel what his clone does feel. So, he can internally predict what is going to happen. Victor knows that his clone, the creature, will take revenge on him when he decides not to create his mate. Victor knows that this creature, his clone, is lurking around, ready to attack him or his family. He can feel it. He can feel what his clone feels or thinks. Both share the same "humanity,"

the same thoughts and fears. In this way, we can see they both adjust to the Christian conception of man with a body and soul, since even at the end, when they chase each other till the North Pole, exhausted and in misery, they end up their lives in a mortal embrace, sacrificing their lives, to live “together” forever, as a metaphor of their union: two bodies, made up of the same genes, sharing one anguished soul. The creature was born as part of Victor’s body and they die together, sharing their dreadful fate, perhaps, we ponder, paying for the dreadful sin of cloning?

I will now proceed to compare the clone in Wickes film with the clones of the film *The Island* (Michael Bay), their humanity and behaviour, their lack of knowledge and awareness of themselves, their naive conception of reality, and the way they were fooled to believe that their purpose in life was very different from what they thought. I will also show how, just as the creature in Wickes film, they were left to themselves, and ignored as humans, although they regarded themselves as real human beings.

David Wickes’ s Cloned Creature compared with the Clones in the Film *The Island*

Whenever we discuss the topic of cloning, we hear many opposing views. On the one hand, we have all the negative connotations associated with human cloning, mainly coming from horror movies or Gothic stories. But the most substantial arguments nowadays against human cloning are those that spring from a fear to manipulate life in such a way that we would be cloning humans just for the

sake of having extra body parts to replace ours in case we fall ill, or have an accident. This is clearly portrayed in the film *The Island* (Bay), where clones are “made” in machines that resemble huge “uteruses,” and these clones are kept indoors, in a big, protected building, with the false excuse that the world outside is terribly contaminated due to a nuclear war that has spoilt the environment. Thus they are kept there with the promise that one day they will be taken to “the island,” the one and only place that has been kept clean of all contamination.

But the real story is that they are mere copies: “clones” (because they are clones “made” from true human beings) of very rich people in the outer world (not contaminated at all), who buy these copies to have extra parts of their bodies, in case they fall ill. This business is run by a very unethical and corrupted company whose owners lie to both, its clients and the clones they artificially make in a very similar way as in Wickes’ film Dr Frankenstein makes his own clone. To the human beings who buy these clones, the company tells them that these clones will never have conscience; they will never suffer, feel, or have any illness, which, of course, is a terrible lie, since the clones actually feel, behave and think as any other human being. And to the clones inside, the company tells them that they have to wait until they will go to the island, to live happily ever after.

Here we can see the corrupted way of handling human cloning. That is why many scientists hold the idea that these practises are utterly dangerous, since they may fall in the hands of very unscrupulous scientists who, as in the film, feel they are “entitled” to play God and handle life at their own will, and to their own interests.

On the other hand, however, we have those whose views on cloning are quite different from the ominous picture the film *The Island* portrays. There are scientists like Gregory E. Pence who have written quite long defences of human cloning, such as the ones present in the book *Who's afraid of human cloning?* In it Pence states the top ten myths about human cloning and he destroys each of them with detailed explanations. So, for example, he states that human cloning is not the mere "Xeroxing" of humans but it "merely re-creates the genes of the ancestor, not what he has learned or experienced. Technically, it re-creates the genotype, not the phenotype" (Pence 1).

Another myth Pence disclaims is that clones would be "less human than normal humans." He puts it so:

A human who had the same number of chromosomes as a child created sexually, who was gestated by a woman, and who talked, felt, and spoke as any other human, would ethically be human and a person. It is by now a principle of ethics that the origins of a person, be it from mixed-race parents, unmarried parents, in vitro fertilization, or a gay male couple hiring a surrogate mother, do not affect the personhood of the child born. The same would be true of a child created by cloning (who, of course, has to be gestated for nine months by a woman). (2)

And perhaps the most feared of all myths related to human cloning is that "people created by cloning could be used for spare organs for normal humans," just as the clones in the film *The Island* are used for. Pence refutes this as follows:

Nothing could be done to a person created by cloning that right now could not be done to your brother or to a person's twin. The US Constitution strongly implies that once a human foetus is outside the womb and alive, he has rights. Decisions backing this up give him rights to inherit property, rights not to suffer discrimination because of disability, and rights to US citizenship. A variation of this myth assumes that a dictator could make cloned humans into special SWAT teams or suicidal bombers. But nothing about originating people this way gives anyone any special power over the resulting humans, who would have free will. Besides, if a dictator wants to create such assassins, he need

not wait for cloning but can take orphans and try to indoctrinate them now in isolated camps. (2)

When reading these striking views on human cloning we come to the conclusion that, regardless of the scientific technique employed, as Pence states, it is up to us, humans, to use the latest developments of science for a good aim, the same as in all other walks of life. It is in our hands to discern what is wrong and what is right, and it is up to us to follow the right path.

Latest Developments in Clonation and its Ethical Considerations

Since advances in cloning have turned into some of the most spectacular scientific breakthroughs of the 20th century, it can be expected that mankind will be able to give life and beat death in the near future, just as Victor Frankenstein did in Mary Shelley's story. It is very important to point out, however, that cloning humans poses a great deal of controversy that engenders the same type of internal turmoil and concern Victor Frankenstein felt, as it is very well explained in this excerpt from "The Cloning dilemma" in *The World, the Word & You! Broadcasting*, (radio broadcast <http://www.wvy.org/>) in a commentary by Dennis L. Finnan, upon the announcement coming from Scotland in 1997, that a sheep had been successfully cloned,

Now, everyone knows of Mary Shelley's 19th century horror story of Dr. Frankenstein's scientific lurking around with the creation of life, as do we moderns who have gasped at the fiction of "Jurassic Park," –all of which warn us not to play around with the creative forces of life, or you will come to a bad end. Fictional cloning stories have abounded for years. From the writings of David Rorvik's book "In His Image," that claimed secret human cloning had been accomplished, to the host of bad taste films such as the "Boys from Brazil" which posits a plot to clone little

Hitlers. Indeed, Hollywood has been awash with warnings of man's sinful misuse of God's creative powers. Yet here we are. Cloning of a sheep is reality and it can never be turned back again. (Radio broadcast from <http://www.wvy.org>)

Since the birth of this lamb they named Dolly, cloning species has aroused heated discussions. Public opinion is divided between those who, like Victor, in both, Mary Shelley's and Wickes film, hold the idea that we cannot stop the advance of technology, and those who claim that it is unethical to "play God", for it is dangerous and even immoral to make an exact copy of a human being. Victor's unlimited quest for knowledge caused his downfall; similarly, many people believe that handling human life is very risky and that clonation of human beings will engender monsters that we will not be able to control.

Another announcement of clonation came in the article by Emma Young, "First cloned baby, born on 26 December, 2002" from <http://www.newscientist.com/>

The world's first cloned baby was born on 26 December, claims the Bahamas-based cloning company Clonaid. But there has been no independent confirmation of the claim. The girl, named Eve by the cloning team, was said to have been born by Caesarean section at 1155 EST. The birth at an undisclosed location went "very well", said Brigitte Boisselier, president of Clonaid. The company was formed in 1997 by the Raelian cult, which believes people are clones of aliens. (Young)

After this news, the *New York Times* magazine published on January 4th, 2003, that, "The company that said last week that it had produced the first human clone has backed away from a promise to provide genetic proof even as it said a second clone would be born in Europe over the weekend" (*Cloning Company Says Baby Might Not Be Tested After All*, by Kenneth Chang). As we can see again, clonation keeps the same characteristics of the Gothic, such as "the mysterious," "the macabre," and "the unknown." Information about cloning babies is kept by

those who handle life, the same as the actual creation of the monster was kept by Victor Frankenstein. Cloning species arouse many doubts in the scientific spheres, the same way scientists in Wickes' film doubted of Victor Frankenstein's true nature and validity of his experiments. However, we are made to believe that despite ethical controversy, scientists will go on experimenting and that the impulses of the same type of Romantic quest for knowledge that Victor and Walton felt, will, for sure, guide modern scientists in their quest to handle life and death at their own will.

Another sound objection to human cloning is the one the US government passed back in 2006, pointing out its unethical implication. In it, we read the following:

The scandal revealed that cloning research widely acclaimed by proponents of human cloning and embryonic stem cell research was a fraud. The scandal also brought to light the disturbing fact that women were paid large sums of money, and female assistants were coerced to donate, if that is the word, their eggs for stem cell and cloning research in violation of the Helsinki agreement. Embryonic stem cell research and human cloning have been intense political and societal issues for several years now. Embryonic stem cell research requires the destruction of living human embryos to harvest their stem cells, and research cloning involves the deliberate creation of cloned human embryos for the sole purpose of destroying them to obtain their stem cells. Proponents of these research areas promise they will result in therapies and cures for a range of maladies and diseases, although there has been little hard, empirical evidence to support these claims.

To conclude, Wickes' film shows, undoubtedly, a close relationship between a Gothic story, like Mary Shelly's *Frankenstein* and the latest news on clonation of human beings. In view of these experiments, Victor's wish to beat death and handle life as he pleased seems nowadays closer than ever before. Wickes' creature maintains all the features of the Gothic, such as a mysterious nature with

an unusually huge force, brutality and violence. Even the last fatal embrace in Wickes' film, which leaves, us, viewers, with a feeling of disgust and sorrow for the macabre destiny of Victor and his creature, accounts for the same type of "cultural anxiety" Heller mentions in her article "Frankenstein and the Cultural uses of the Gothic". The "cultural anxiety" Heller refers to in Mary Shelley's time was represented by Victor's desire to "play God" and handle life at his own will.

Nowadays this anxiety is derived from the struggle between ethical and unethical scientific practices and their impact on human beings. Victor's internal turmoil and final downfall for the creation of a monster he could not control can be an icon of our modern genetic scientists who manipulate life at their own discretion and whose practices may also end up in terrible consequences for humanity. As Saramago warns us in his novel, *El Hombre Duplicado*, the most terrible danger lying in cloning is the loss of individuality. In his book, Saramago presents the topic of clonation as something absolutely undesirable for mankind, and presents it as an apocalyptic end where the individual runs the risk of turning into a machine.

It is up to us, then, to discern whether we should or should not embark on the same Romantic quest for knowledge Victor engaged in and if we should let science follow its path towards unknown territories that may, perhaps, make Frankenstein's utopia come true. And it is up to us, too, to measure the consequences of such endeavour.

The main problem with human cloning lies is the fact that the "creations" are "humans", i.e. they can think, feel and act by themselves, thus, they are "materialised" as humans. Therefore, whether we follow the dualist, Christian philosophy of human beings having a body and soul, or we conceive us, humans,

just as cells and matter, these clones can feel, think and react to the miseries and joyful moments of life just as Mary Shelley's creature did, with all the implications this may have for themselves and their surrounding world.

In the next section, I will explore a very similar case related to human cloning and which poses great controversy as well, that is, Genetic Engineering and the development of the Human Genome.

HUMAN GENOME

Latest developments in Genetics

Other creatures of the new millennium that can be compared to the one in Mary Shelley's novel are those that spring from the advances in Genetic Engineering Technology (GET). This science, closely related with human cloning, also poses great controversy in modern societies and believers of varied religions. Its most radical advocates struggle for a complete freedom to handle genes at their own will, without accepting any kind of control over them. Such is the case of the discoverers of the structure of DNA, James D. Watson and his partner, Francis H.C. Crick, both creators of the Human Genome Project. Genetic determinists believe that human lives and actions are inevitable consequences of the genetic makeup of each individual. Watson once asserted that "we used to think our fate was in our stars. Now we know, in large measure, our fate is in our genes" (qtd. in Beckwith 330).

David. A. Kirby explains that the manipulation of human genetic makeup is very advanced in the scientific world, and a "new eugenics" is on the way. He observes also that the media reinforce this belief:

Molecular biologists have already isolated the genes that code for many physical traits, such as skin color, baldness, and stature. In addition, some scientists claim to have found genes that code for complex behaviors, such as shyness and homosexuality. Although many of these arguments have been shown to be fallacious, popular press coverage has contributed to the growing public belief that behaviors are genetically determined. (5)

Genetic manipulation has been highly criticized, and, in many cases associated with the story on Frankenstein, as Catherine Waldby mentions in “Prefiguring cyberculture: The instruments of life: Frankenstein and cyberculture.” There she states that there are clear manipulations of human life in different practices, such as: **Recombinant DNA technologies**, where DNA cells from one species can be dangerously combined/joined to those of other species (for example when scientists join plant DNA with bacterial DNA, or when human DNA may be joined with fungal DNA); or in **Cryopreservation** or **cryoconservation**, a process where cells, whole tissues, or any other substances susceptible to damage are preserved with chemical reactivity or by cooling to sub-zero temperatures; **Xenotransplantation**, the transplantation of living cells, tissues or organs from one species to another, just as we saw Victor experimenting with animal species in Wickes’ version of the Frankenstein story (Waldby 28-37).

In the next section I will show how these and other instances of Genetic manipulation are clearly exemplified in the film *Gattaca*, whose characters experience in their own flesh and at their own expense the consequences of “playing with genes.” This film does not endorse the ideology of genetic determinism, or the belief that humans are nothing more than their genes. On the contrary, it presents a sound counterargument against defining humanity in terms of genetic identity, since the genetically enhanced characters lack important human qualities that the unenhanced possess.

Genetic Manipulation of the Characters in the Film *Gattaca* compared with Mary Shelley's Creature

In *Gattaca* we see the bad consequences of genetic determination: Jerome Morrow, one of the main characters in the film, was born with all the characteristics required for difficult missions in space. On the contrary, Vincent Freeman, the other main character, was not, and he had to endure a difficult life, determined by birth, due to his weaknesses. This aspect resembles Mary Shelley's creature in that Vincent was considered "deformed" for his times just as Shelley's creature was "deformed." Frankenstein suffered the neglect and scorn of the society that surrounded him, as much as Vincent suffered the impossibility to wish for something else in life, apart from what his genes determined him to do.

In Vincent's futuristic world, still part of science fiction nowadays (Carbajales Terés), but very likely to come true in the near future, newly born babies are predicted the exact time of their death and the probabilities of diseases and disorders, due to the reading of their Genetic mapping at birth.

In this scenario, Vincent was conceived the old way, i.e., by sexual intercourse between a man and a woman, just as we know it nowadays. This way, he was born short-sighted, not very tall and with a heart disorder, and with these shortcomings, he is considered not good enough to become an astronaut, which is his ultimate dream in life.

Instead, when planning his younger brother, Vincent's parents decide to conceive him "the natural way" of this new world described in the film, i.e., with the aid of science, in test tubes. This way parents are able to choose sex, the colour of

the eyes, and everything related to the baby's future characteristics; even the smallest detail like a perfect health, lack of addictions and many other traits are predetermined by science. We see the doctor telling Vincent's parents "the child is still YOU, simply the best of you".

Thus, Anton, Vincent's brother, is born with a selection of the best of genes from his mother and father. He is the son "my father considered worthy of his name," Vincent mumbled to himself, hopeless and in despair. Whatever Vincent does to improve himself is never enough, since his "Resume is in his veins, his Genome." No matter how hard he tries, how desperately he wishes for things to happen, he is never up to standards. He is not even allowed to give it a try, since his destiny was mapped out at birth.

Tired of this, Vincent leaves his family, after saving his brother's life at sea, something which seems to have empowered him to try harder, and he decides to make his dream come true. This dream is to become an astronaut, despite belonging, by birth, to an "under class" in charge of the most basic chores. Here we can see that discrimination "is down to a science" (narrator's voice in the film) since it is science which determines what each person is bound to do, from birth, leaving persons with no expectations to do otherwise. However, Vincent has a goal and he is determined to go for it, despite all odds.

He exercises, studies and tries very hard. However, he knows that it will not be enough, since what counts for jobs or high positions is the blood test, just as we hear from the narrator in the film, "for the more genetically superior, success is more easily attained." Thus, we can see how genetic identity in this world is a "valuable commodity for the unscrupulous." And, this way, Vincent is forced to

change identities with Jerome Barome, a fitter human by birth, but crippled in adulthood; so, Vincent changes his “invalid self” for a “valid one,” that of Jerome’s, but with the aid of unscrupulous, corrupted people who help him do so.

Here we can see the dangers of Genetic manipulation, as stated in an article from Stanford University web, on *The Human Genome Project*, written by Lisa Gannett:

Prenatal genetic testing raises serious ethical questions about reproductive rights and eugenics. Reproductive rights are no longer just about the right not to have a child (to use contraception, to have an abortion) or the right to bear a child (to refuse population control measures). Reproductive rights have come to encompass the right to access technological assistance to procreate and to have a certain kind of child (Callahan 1998). The spectre of eugenics—and its images of involuntary sterilizations, immigration quotas, “fitter family” contests, and Nazi death camps—reappears once choices are being made about what sort of people are worth bringing into the world.

As we can see, Watson, the discoverer of the DNA, is the precursor of all these highly controversial derivations of more disputed issues, such as whether we, humans, are the ones to decide who should be born and with what characteristics, like Victor’s decision to give life to his loathsome creature, or if we should leave that in the hands of God or Nature.

Here, also, we find a similarity between Mary Shelley’s original creature, unfit for his society, and Vincent, unfit for his wishes. Shelley’s creature eagerly wishes for a similar mate that would look like him, and, having one would mean avoiding absolute solitude. Just as Shelley’s creature wishes for some company, Vincent wishes to be “accepted” in the more “demanding” status of society, and both, the creature and Vincent, try hard to obtain their goals. Although the creature

could not achieve his goal, since this depended on Victor, his creator, Vincent does fulfil his aim, and he becomes an astronaut and leaves for space for ever.

Here we see how, despite his “flawed genes,” Vincent achieves his goal. We are, thus, reminded of the phrase “There is no Gene for the human spirit,” which we hear from a commentator in *Gattaca*’s trailer. This statement summarizes which for me is the core of all this dispute, i.e. when a person, a human being, is determined to do something, no matter how difficult it might be, what predetermined conditions he/she may have, what social, cultural or economic caste he/she might belong to, “the human spirit” will make it happen. I do believe in human nature and all it has to offer towards the fulfilment of a goal.

However, as Carbajales states, what was science fiction in the past, turns into reality in the present. And in much the same way that Victor Frankenstein created his creature back in the 19th century, thanks to the developments in electricity and neurobiology, nowadays we see how we can preserve mother cells for the future of our babies, in case they fall ill or get terrible diseases like cancer (Carbajales Terés160).

But, as some Christian philosophers like Michael Gleghorn think, it is the misuse of technologies which holds the worst perils. He claims that if parents were given the chance to choose the best genes for their offspring, all of them would do so, just as Vincent’s parents do with Anton in the film *Gattaca*. And this is against morality and Christian philosophy because many embryos will be destroyed:

A good example of this mindset can be found in Lee Silver’s 1997 book, *Remaking Eden: Cloning and Beyond in a Brave New World*. In it, Silver believes parents will use it to enhance the lives of their children. He (Silver) predicts that if the technology to change or enhance genes becomes available, no one will be able to stop parents from using

it. So how close is the day when parents might request a genetic upgrade for their children? Well, judge for yourself. The successful development of in vitro fertilization in 1978 not only allowed scientists to cure a certain type of infertility, it also gave them access to the embryo. In principle, this makes it possible “to observe and modify . . . its genetic material before a pregnancy is initiated.”(7). Although such genetic modification has not yet taken place, it is now “possible to screen thousands of different genes within individual embryos” to see how such potential children might differ from one another (8).

Still, genetic *screening* is not genetic *engineering*. No genes are added or changed (9). It simply allows parents to choose from the selection of embryos generated by this procedure. But there is a problem: it’s currently legal to destroy the embryos that aren’t chosen!(10). And this constitutes a serious infringement upon the rights of the unborn. Furthermore, Silver predicts that “genetic engineering of human embryos” will become feasible by the middle of this century (11).

While such remarks may sound alarming, we must remember that it’s not the technology itself, but its *misapplication* that’s the problem. (from [PROBE: Are we speeding towards a Brave New World?](#))

So, what are we left with? Are we going to side with the scientists who think they can control our lives thanks to our genetic mapping at birth? And, what’s more, can that mapping ensure it will solve all our problems in the future? Vincent’s character in *Gattaca* proves this wrong. And how did he do that? He did so by using his “spirit.” Therefore, I think we should side with a more “humanistic” view of ourselves and give more importance to that “spirit” we all have, and, regardless the name we give it --resilience, will power, determination-- a “spirit” is something scientists or geneticists cannot find a “Gene” for.

Ethical implications of Genetic Engineering

In *Gattaca* we have seen examples of how Genetic scientists manipulate cells and life in many different ways. However, not everybody holds the same view on the implications of this manipulation.

On one side of the coin we have people like Michael Crichton who, in his novel *Next*, criticizes genetic engineering labs and unscrupulous corporations, accused of manipulating genes while taking advantage of legal gaps to impose their interests, mainly using Genes without intellectual property. The *X-men* (2000) series, by Bryan Singer, also shows the uncontrolled development of Genetics and its dangerous outcome when these practices are in the hands of unscrupulous humans.

Lee Silver, in his book *Remaking Eden: How Genetic Engineering and Cloning Will Transform The American Family*, foresees a gloomy future for mankind in which, given the possibility of the wealthier families to pay for the best genes for their offspring, while the poor cannot afford all this, there will come a moment when the gap between the “fitter classes” and “less fit” will be terribly wide, and the outcome may probably be having two very distinguished types of human beings (2-5).

And on the other side of the coin we have Russell Powell, in his article “The Evolutionary Biological Implications of Human Genetic Engineering” where he poses many questions, such as if Genetic Engineering Technology (GET) narrows, harms or ensures genetic variation. To him GET does not harm Genetic Diversity, which is one of the most criticized aspects of genetic manipulation. People against

GET claim that if we had the chance to choose, then we would all choose the same qualifications, and we would be in danger of suffering the perils of, for example, what is happening already, in many countries, that is, monoculture and genetic uniformity, something which is proved to bring about diseases, since, with less variety of species, there are more probabilities of vulnerability (Powell 205).

Instead, Powell asserts, we must bear in mind the concept of “plasticity of cells” brought about by “the environment.” This means that cells develop differently, depending on the environment where they grow. Thus, the environment gives cellular uniformity a “plasticity” that will “derive in a variation of development, despite Genetic Uniformity” (207). Also, cells relate with each other with “multiple realizability” and “nonlinearity”, which accounts for the nature of biological variation (Powell 207-208).

Among important opponents to GET, we find Eduardo Galeano, who, in his article “La Era de Frankenstein,” depicts a very dark side of Genetic manipulation, that is, the danger of “manufacturing genetically modified humans” in just the same way they already “manufacture genetically modified foods.” And he goes on to determine that these practices can be as dangerous as the big Nazi furnaces of WWII, used with the excuse of “improving or purifying the race.” He even expresses his earnest concern about the unscrupulous way genetically modified foods are being manufactured, endangering our health, and he is appalled at the lack of involvement of governments around the world.

Holding a similar view, David Suzuki PhD., a former geneticist who dropped that science due to his disenchantment with it, in “Time is Running Out: Ecology or Economics?” (2013) expresses his concern about all these topics, and he points

out the clash that exists between genetic manipulation and human values. He is against any type of manipulation of natural laws, from genetically modified foods, to “genetically manufactured” humans.

Thus, we are left to ponder, what is best for humankind? Is it worth trying to control life and avoid illnesses by manipulating genes, even before babies are born, as in *Gattaca* film? Or is this too risky and we should leave that in God’s or Nature’s hands, and face whatever comes to us, without altering genes? As we have seen, not all scientist agree on that, and there is great controversy regarding what is morally good or accepted and what is ethically wrong, or absolutely unacceptable. It will depend on us and on our values whether to accept those practices or disregard them altogether, and, once again, we wonder if science will allow humans to have a say on that or if they will be “forced” to control or predetermine the genetic mapping of the not-yet-born.

In the next section I will refer to another creature of our times, the one which derives from the development of Artificial Intelligence and which was, only a few years ago, just part of science fiction, but today it is here, in the real world. These new creatures are robots and androids.

ARTIFICIAL INTELLIGENCE

Latest Developments in Artificial Intelligence

Other creatures born in this new millennium and which engender much controversy are the products of Artificial Intelligence, AI, in the forms of robots and androids. Robots are by definition “a mechanical or virtual artificial agent, usually an electro-mechanical machine that is guided by a computer program or electronic circuitry” (*Wikipedia*).

Androids, instead, are human-like robots, i.e., robots that look like us, humans, but which are still controlled by a computer. Androids were, till a few years ago, just part of science fiction, but nowadays, with the advances in Robotics and Artificial Intelligence, they exist mainly in the most advanced societies, like Japan and some European countries, like Germany.

Both, robots and androids, are supposed to follow the laws of robotics, promulgated by Isaac Asimov:

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings, except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law. (Runaround, 1942)

If we compare Mary Shelley’s creature with robots or androids, we observe that the original creature possesses all the characteristics of the human species, despite

having been deprived of the period of infancy and adolescence which might have helped him grow into adulthood in a less dramatic way. Instead, he was born already an adult and this meant he learned all the essential things of life by himself, “the hard way.” However, he managed to learn how to do all that we, human beings, can do. And he had feelings, as well.

Unlike the creature, robots and androids “are told” what to do by a complex machinery which holds all the necessary data and commands to make the robot or the android work and do things. And, what is more, they are told what not to do, as Asimov’s three laws exemplify.

Dr. Henrik Schärfe, a creator of androids from Denmark, with whom I exchanged e-mails to discuss these topics, claims that “Robots are not just “tools” but they are also media and have media-like qualities” (Schärfe in a [TED interview](#)). He is particularly interested in knowing how humans would accept “human-like” robots around them. He goes on to say we are used to having machine-like robots that still do not interact with us, such as those in assembly lines, doing monotonous stuff that humans do not like to do. Instead, Schärfe’s android is built for social interaction: it is a “thinking tool” that makes us “think” about the role of technology in our life. It does not have any kind of Artificial Intelligence. It needs the computer to do things.

Robots and Androids in the Film *I, Robot* compared with Mary Shelley’s creature

If we compare Mary Shelley’s Frankenstein with androids, we observe that there is a great difference between them. Mary Shelley’s creature was born from

electricity and a juxtaposition of body parts, but he was never told what to do. Instead, famous robots like the main characters in *I, robot* are made to obey their masters' commands. And, since these robots do not feel that they are accepted by humans, due to their mechanical conditions, the "struggle for recognition" is always present. In *I, Robot* the robot performing the main part acquires "human-like" traits, such as a capacity to have feelings, to sense love and suffer rejection. Also this robot is not accepted as a human, just as our original creature was never accepted in the society he lived in and, not even, by his own creator.

Apparently, as seen in this film in question, when given more human-like looks, robots start to mimic humans and wish to be respected and treated as humans. They expect, just as Mary Shelley's creature, to be accepted by society as an equal, something neither robots nor the creature could achieve.

But this desire of the robots and androids to be accepted by society and as part of our daily lives is still part of science fiction. So far, robots and androids are activated by computers and need to be told what to do. And if not, they are useless, and they are considered like an old piece of a worn out computer, ready to be disposed of at any moment.

Instead, Shelley's creature had conscience, free will and could determine what to do, all by himself, and his good and bad deeds were the products of his free will, although provoked, as we have seen, by the lack of care and attention of his creator.

When confronted with state-of-the art androids, people tend to be alarmed and this comes from science fiction, where androids are seen taking over the world and threatening humans (like in *I, robot*). Here Dr Schärfe says reality is pretty far from that.

Instead, he claims, “What we should be afraid of is how technology is taking over our lives,” but we do not seem to care about that. Schärfe defines “robots as a machine with moving parts, controlled by a computer.” What he thinks is that we tend to be more alarmed by an android because it resembles humans; however, so far, robots cannot do anything without a computer telling them what to do, despite the advances in computer vision, grasping, moving, which may, in the near future, give us a whole different picture. This, Schärfe says, “entails a whole different scenario and it will require for us, humans, to decide what kind of technological world we want. Perhaps, we want one where robots take over, not just the dirty jobs, but in fact, big portions of our lives?” Schärfe does not want that; he just wants robots to help us solve problems we have to face in the new world and also to help us understand ourselves better. What else is lying there that impresses us when confronted with androids? Is it the “soul / mind” we think androids might have? Is it their “consciousness” we are afraid of? Do they possess a mind or an individuality?

Schärfe wonders, do we want computers to take over “that”? (And by “that” I interpret “that which makes humans unique”) Schärfe thinks this will never happen, i.e., robots and androids will never have the same kind of intelligence we, humans, have, because our intelligence is of a completely different kind. Emotions play a big role in it, and bring about consequences as well. Schärfe also mentions the capacity we, humans, have but not the Androids of showing “empathy.” This can be very well exemplified in the *I, robot* drowning scene, where the main character and a girl are drowning and the man tells a robot that comes to their help to save the girl’s life, instead of his. The robot, since it is a machine, prepared to measure statistics and act accordingly, quickly sees that the man has more chances to live than the girl, due to probability charts saved in the robots’

hard disk. Thus, the robot saves *his* life instead of the *girl's*, despite the man's desperate orders to do otherwise.

So empathy is another human capacity androids lack. Moreover, in *I, robot*, we have robots actually taking over and attacking humans except for one robot who was programmed or "taught feelings." This is a compelling scene in the film, and a very revealing one. From that moment on, we tend to change the view we have of that robot.

The robot tells the main character "I was frightened," and the main character answers: "Robots don't feel fear, they don't feel anything, they don't get hungry, they don't sleep." To which the robot interrupts "I do! I have even had dreams." To this, the main character answers, "Human beings have dreams; even dogs have dreams, but not you! You are just a machine, an imitation of life." And this, we, spectators, see, greatly affects the robot's "feelings," since from this moment on, we are geared to believe this one robot, just like the humans, did have feelings.

Next, the robot stands up to the main character by saying that he (the man) cannot write a symphony or paint a masterpiece. This robot shows anger, a human emotion, by punching the table at one of the detective's questions. In another scene, the robot shows its dreams to the detective and the doctor. Dreams are characteristic of human beings but robots are not supposed to have them, since they are not supposed to share human-like qualities. We feel astounded because we do not expect to find these attitudes and behaviour in a robot.

At the beginning of the film, the woman doctor trusts robots because, she says, they are made based on the 3 Laws of Robotics (Asimov's) I have mentioned above. However; the detective does not like robots, precisely because once he had a terrible experience (the drowning scene) where human judgement would have saved a girl's life

and, instead, the robot saved his, because he had more chances to live in that drowning situation.

But these robots still belong to the realm of science fiction. What is real is this new generation of robots that can recognize speech, walk, sing, move their arms, body parts, and even dance if they are told what to do. They can walk, ask and answer simple questions, fetch things and carry them for humans, but they cannot go far beyond that. Now, we stay to ponder, what will the future bring? Shall we ever create a robot that “will bridge the gap between mankind and machine?” Shall we ever make a robot that will have feelings and human traits?

Ethical Implications of AI

The term Artificial Intelligence was first coined by Ben Goertzel to refer to Machines that can apply their "minds" to identifying and solving a wide variety of problems, just as human beings do. A.I. always serves specific human purposes, such as the smart phone with its zillions of apps. Some people maintain that A.G.I. with capacities similar to the human brain/mind will be created by mid-century, although others give estimates of at least a century or more, assuming that A.G.I. can in fact be constructed. In any event, if such intelligent beings were created, and then began to redesign themselves rapidly, they might very well become far more intelligent and powerful than human beings. This event is often called the Singularity (Zimmerman).

Although Dr Schärfe denies this categorically, as we have seen above, many other scientists and philosophers fear that this may come true one day and that robots and androids will “take over” our planet. This is Zimmerman’s warning:

Although AI promises enormous good, the fractious human family needs to have a serious conversation about the potential downsides of AI, in case it becomes far more powerful than human intelligence.

Zimmerman compares the development of Frankenstein’s original creature of 1818 with the latest advances in AI performed by the engineers of the new millennium. He also points out how Shelley with her novel did clearly anticipate the outcome of these discoveries in search of manufacturing artificial intelligent beings, and, just as Dr Victor Frankenstein did, back in 1918, these engineers of present times do it “without asking for anybody’s permission,” and, what is worse, without measuring the consequences (Zimmerman).

Also, Zimmerman wonders where we are heading towards, how far we shall reach and what will come out as a result of all these discoveries. With great concern he points out that these researchers or AI engineers do not feel shame or remorse for what they are doing. Much on the contrary, they openly show their discoveries to the world, bringing about serious heated discussions over those topics (Zimmerman).

Now, what are the immoral implications of building robots that can be as intelligent as humans? Is it wrong to create machines that may, one day, take over the world? I guess it is. And it is dangerous, too. Since, as we have already seen in the examples above, humankind is at risk when machines take over.

What I do believe is that if we, human beings, create machines that are a copy of ourselves, with all our traits, and machines that can feel and act as we,

humans, do, then we will run the risk of being “taken over” by them, since they will have the same thirst for power and crave for more dominance that we, humans, have. So, I think scientists should be very careful before fully plunging into AI experiments and before making these robots or androids so much like we, humans, are. Because the more these robots take after us, the more dangerous they will become to humankind.

CONCLUSION

As a conclusion I think we should ask, do the creatures presented in this thesis have a soul, mind or spirit, i.e., that which makes them “unique”? Or do they not? To have that “uniqueness” is, to me, the big issue here.

In relation to that dilemma we have seen several theories. We have referred to the Christian dualism theory which envisages humans made up of a body and soul as opposed to the New Materialists who claim we are just matter, and what dualists call “soul” is just “matter working in matter” (Bennett; Orlie).

We have mentioned the studies of neurobiology, originated already in Mary Shelley’s times, (that have developed greatly lately) which account for a whole new theory of the origins of free will, identity and the workings of the human mind.

To the more radical reductionist neurobiologists, all we do, think or feel is reduced to the work of our neurons. If this is the case, then, it is quite feasible that, in the near future, scientists will manage to study the workings of our minds in detail and, then, they will be able to reproduce exact copies of our brains and, thus, clones, robots and androids will share the world with us, without any difference from humans. And, if this happens, we will be in danger of being “taken over” by these new creatures in unthinkable ways.

To theologians like Nancey Murphy, however, neurons are not always “the doers” of our actions, but it is in the human’s spirit, not in the neurons, the answer to the good and evil side of humans. As Murphy says in her lecture, regarding personal identity, free will and moral responsibility, “genetics and neurobiological

determinism are part of a broad thesis called causal reductionism,” which, she does not think, accounts for all our actions, and neither do I.

What, then, makes us, humans, do our actions? What, then, made Mary Shelley’s creature and the clones in Wickes film and in *The Island*, in *Gattaca*, or even the special robots in *I, robot* perform actions the way they did? I do believe that in order to create life in inanimate matter, something like a life force needs to be added. Regardless of the name we give it –energy, God, spirit—this is what makes, us, humans, unique, what gives us identity, free will and consciousness. This is what gives us that “uniqueness” which makes us human.

As a conclusion, I would like to quote Dr Schärfe’s answer to my question:⁹
Do you agree with the new-materialists conception of "humans as being just matter"? Or do you believe in a dualist principle of us having a body and soul? Where do you place Androids in that respect? Are they just matter? Machines? Or what?

I do not subscribe to the new-materialist view.

We have a lot to gain from studying biology, medicine, neuroscience etc. but to believe that all answers can be found that way is a mistake. I have worked with problems in artificial intelligence for nearly two decades, and from a technical point of view there is no reason to believe that every aspect of human existence can be formalized.

The prerequisite for believing in 'brain download' and similar ideas, is that a human being can be reduced to information. The contemporary answer is to name two kinds of information: genes and the accumulated sum of experience. But in

⁹ I exchanged some e-mails with Dr Schärfe and he provided me with his outlook on this topic.

fact, there is very little scientific support for the reductionist view that this information can be stored digitally.

It is my personal belief that part of the human condition finds its answers in a non-physical part of reality, just as real as the physical part. Religions across the globe have many different names for this. It is, however, the collected experience of the majority of all the humans who have ever lived, that a non-physical aspect of our lives is as real as the physical processes in our bodies, and that value and significance stems from this.

A machine form of conscious, sentient, or self-aware being (if it should arise - and we don't know that for a fact) will be of a different nature than ours. One pressing question becomes: Would such a consciousness develop moral or ethical behaviour? To some extent I believe they could. But they will never be able to relieve us from our moral and ethical obligations. The biggest threat to humanity is not that machines will take our place, but that we insist on treating each other as machines.

(Thanks a lot, Dr Henrik Schärfe!!)

POSTSCRIPT

I do agree with the idea that “we are not near an android takeover of the world, but we are already in a technological takeover of the world” (Scharfe). This is so because though machines still cannot replace us, we have become already too dependent on them, which is a dangerous type of “dependence.” We are already too “conditioned” by the use of machines.

Also, we observe some kind of disenchantment with machines: they can solve many of our problems, but our happiness does not depend on them. Happiness stems from an inner attitude towards life and life events. And that inner attitude, we observe, is part of human nature, and it seems very unlikely that machines will acquire it.

When there is “human touch,” instead, everything is possible. Such is the case in Mary Shelley’s original creature, and the clones in Wickes’ film, in *The Island*, and in *Gattaca*. In the latter, genetic determination does not seem to prevent Vincent from achieving his goal. He attains it in the end, thanks to his determination and free will.

On the contrary, machines or Artificial Intelligence products like robots or androids do as they are told. Regardless of how similar to humans they might look, they lack these “human-like qualities” that make us, humans, unique. Humanity in them is “still part of science fiction” (Carbajales.) Will those human-like beings leave the realm of science fiction one day and become real? Nobody knows.

I have faith in human nature and all it has to offer. Thus, I sincerely hope human nature will surprise us for the GOOD, and if we are going to share this

world with clones, robots and androids I hope we will be able to find the good in us and discover the best way to relate with them in the best possible way.

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