TRANSHUMANISM IN FILM

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A Thesis Submitted to the Graduate Faculty of

WAKE FOREST UNIVERSITY GRADUATE SCHOOL OF ARTS AND SCIENCES

in Partial Fulfillment of the Requirements

for the Degree of

MASTER OF ARTS

Bioethics

August 2014

Winston-Salem, North Carolina

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ABSTRACT

Technological progress is a defining theme across human history. Man has long relied on technology to influence the world around him. Modern advancements in fields such as neuroscience and robotics present significant ethical challenges to society. The transumanist movement that focuses on the process by which humans transcend their natural limits through technology is at the forefront of these new discoveries. Many of the questions surrounding these technologies are deep, moral dilemmas that have occupied human minds for generations. In an effort to better understand these deep-seated questions, this thesis evaluates transhumanism through the medium of film. Films can act as case-studies by which to discuss the ethical issues at hand. In addition, film connects generations, individuals, and societies – allowing for an exchange of perspectives. I present a number of films that provide insight towards understanding the moral concepts of personhood, moral status, and perfection. I conclude by acknowledging the importance of film as a communication tool by which members of the moral community can grow their understanding of their place within the world.

INTRODUCTION

The use of technology has been an integral part of the history of the human race. From the rudimentary tools of our ancient ancestors to the supercomputers of today, humans have an intimate relationship with technology. It has defined how we as humans interact with the world and with each other. Technology has allowed us to leave our planet, as well as become capable of destroying all existence of our life. Humans have come to where we are as a result of our use of technology.

At the heart of this relationship is our desire for progress. Progress is the visible pursuit of perfection. We as humans develop, innovate, and seek to push the boundaries of what we know and what we can do – humans are not satisfied with the status quo. Our advances in moral, religious, scientific, and other areas of thought are all part of the larger human quest of reaching understanding, or perfection. In the last 100 or so years, this quest for perfection and understanding has spurred technological innovation at a rate that has never before been seen in our history. Rapid advances in the fields of genetics, nanotechnology, neurology, and many others have led us to discussions regarding transhumanism.

What is transhumanism? And why is it important? Transhumanism is an understanding of the human relationship with technology. It is a movement that seeks to enhance the human condition through biological and technological means. Whether it is focused on intellectual enhancement or physical improvement, transhumanism is focused on progress and surpassing our current limitations. The Latin meaning of 'trans' is "above" or "beyond", leading transhumanism to quite literally mean beyond what is

human. The purpose of this thesis is to examine transhumanism and why it is important. Transhumanism is a contentious movement, invoking strong opinions on both sides of the debate. Many scholars have already put forth their take on transhumanism. I will attempt to do the same using a combination of ethical frameworks and film to bring to light the issues involved with transhumanism. Film is a method of storytelling and can serve purposes beyond that of entertainment. Films are case studies that offer insight into perspectives and beliefs of different individuals, societies, and generations.

Film is a type of storytelling – a communication device. Much like oral histories or written works, films are visual tools that both entertain and promote ideas. Films rely greatly on the ancient traditions of theater as a performing art. The act of showing through dramatizations is seen throughout much of human history. Analyzing transhumanist ideas through the medium of film provides a unique perspective that offers insights that written work alone does not. Movies cater to more of our senses. We can feel the effects and implications of technology, much more so than if we are reading a journal article. More importantly, films are an expression of our emotions, our rationality, and our beliefs. In addition, films, like other modes of storytelling, are not bound to one period of time, but can transcend generations. With respect to transhumanism, films can offer us a glimpse into our hopes and fears regarding a future technology, or act as a critical tool for analyzing current ones. In short, films offer us an understanding of our relationship with technology that complements our rational, professional discourses. Movies can tap into the subconscious emotions and beliefs that may not present themselves in our written work.

The purpose of this thesis is to use films to explore transhumanism and discuss the ethical underpinnings of its ideas. Films offer much in the way of hypothetical case studies that can be dissected and analyzed. The transhumanist issues that come about in the films are largely issues of justice. Justice serves as a connecting topic between the implementation of transhumanist technologies and the ethical frameworks that individuals and societies employ. Through the lens of justice, the transhumanist ideas in the films can be discussed. The issues of justice that display themselves in the films are relevant to contemporary and forthcoming issues. The characters and stories offer perspectives into the consequences of our actions. Matters of justice also connect to two overarching themes of personhood and perfection. The films are powerful visual tools for deepening our understanding and consideration of what we understand about personhood and perfection.

The first chapter is dedicated to an introduction of transhumanism and its major principles. It is necessary to understand how transhumanism developed in the consciousness of human society. Despite its relatively young roots, many of the ideas of transhumanism are older than the concept itself. This chapter also discusses a number of types of technology that currently exist or are being developed that fall under the category of transhumanism. Just as it is important to understand where transhumanism came from, it is equally important to know where it stands today and what direction is will likely go. These technologies include genetic engineering, gene therapy, and human-machine interfacing. In addition, artificial intelligence and neurological manipulation technologies are also discussed. While there are a number of other technologies that fall

under the umbrella of transhumanism, these technologies are substantial fields of research that also appear in film.

Chapter One also discusses the three major normative ethical frameworks that are commonplace in Western philosophy. Deontology and its foundations with Immanuel Kant is the first ethical framework to be discussed. The discussion focuses on a succinct summary of Kant's prevailing philosophy. This includes examining Kant's idea of the 'good will', as well as his categorical imperative. The importance of rationality and duty in decision-making is discussed. Utilitarian-based ethical theory is also discussed. Noting the works of Jeremy Bentham and John Stuart Mill, the discussion focuses on the major tenet of utilitarian theory – maximizing utility. Defining utility, as well as the types of utilitarianism, is also included. The last theory that is discussed is that of virtue ethics. With a rich history dating back to Aristotle, virtue ethics is discussed in terms of its distinguishing characteristics from other normative ethical theories. The focus is on the importance of motivation in decision-making.

Lastly, chapter one also provides insight into well-established arguments in favor or against transhumanist technologies. These positions are examples of the scholarly work that has already been put down with regards to transhumanism. Nick Bostrom and Julian Savulescu offer moral defenses of transhumanist technologies and their potential outcomes. They consider and argue for advancements in technology that can bring transhumanist ideas to fruition. Two other prominent thinkers are introduced to explore moral arguments against transhumanism in some form or another. Leon Kass and Francis Fukuyama defend an anti-transhumanist position, employing several ethical frameworks to make their case.

Chapter Two focuses on the selected films. The films are separated into three categories based on the transhumanist technologies represented within: Genetic Engineering/Therapy, Artificial Intelligence/Human-Machine Interfacing, Neurological Manipulation. These three categories incorporate the technologies that were addressed in Chapter One. Each film in the chapter is given a summary and analysis. The summary highlights the necessary plot details, while also emphasizing important elements to the later discussion of transhumanism. The analysis portion centers on elements of the film that reflect on transhumanism. As such, the analysis focuses on the characters, plot, and tone of the film to understand how the film displays a particular issue. The central justice issues of each film are also discussed, with emphasis placed on character responses to these issues. This chapter is intended to set up a discussion of ethical frameworks with respect to the decision-making of the film characters. The final film, Blade Runner, serves as a concluding film that ties in aspects of all the other films.

The final chapter is a discussion of the films, the ethical and justice issues they bring up, and the larger themes of personhood and perfection. Transhumanist films, as well as many other films, can shed light on a plethora of social, economic, ethical, and legal issues that modern and future societies do or may face. The human perspectives on various transhumanist technologies that appear in film serve as hypothetical case studies that can be looked at. There are two themes, personhood and perfection, that underlie each and every film. These themes are larger, cosmic ideas that transcend discussions of transhumanism to those of human nature. With these two themes in mind, the films are analyzed through the lens of issues of justice. Justice is at the center of conflict in every

film and serves as a connecting tool between the two themes and the ethical frameworks discussed in Chapter One.

Utilizing the summaries and analyses of the films presented in Chapter Two, this chapter breaks down the central justice issue of each film. The decision-making process of the characters in each film are analyzed based on the normative ethical frameworks that they employ. How and why the characters come to the conclusions they do is also discussed. The reactions of the characters regarding issues of justice are then used to consider the themes of personhood and perfection. With respect to personhood, the films are used to challenge modern notions of personhood, particularly human-centric definitions. These discussions focus on the implications of granting non-human characters, such as cyborgs and androids, personhood. This includes discussing the importance of moral agency as a conferral of legitimacy and respect, as well as the implications of appearing to fit the criteria of personhood. In addition, several films are considered based on their relationship to the theme of perfection, or the pursuit of it. Progress is a defining feature of human history and the pursuit of perfection plays a central role in society. In a manner similar to discussions of personhood, the films are analyzed based on the central justice issue. The responses and ethical frameworks that the characters utilize to defend and motivate their actions are considered. In addition, the definitions of perfection that different characters and groups in the films subscribe to are of particular interest. The differences in opinion of the characters regarding what perfection means is often the source of conflict in the film. Contemporary parallels are discussed, as there are similarities between the consequences experienced in the films and

in reality. The discussion focuses on the importance of identifying the role of perfection in our society and what the pursuit of it may or may not lead to.

The chapter concludes with a short discussion about what transhumanist films can offer in ways of ethical considerations. Films are case studies that can be used to understand issues that already exist or may exist in the future. They offer insight into the variety of perspectives an individual or group may take with respect to a particular idea of transhumanism and how differences can lead to conflict. The importance of defining and discussing concepts such as personhood and perfection is also noted. As technology continues to advance towards transhumanist goals, the justice issues become more and more apparent. In conjunction with scholarly work, film can act as a communication tool that challenges us to think about our beliefs and those of others.

CHAPTER ONE:

TRANSHUMANISM

"The human species can, if it wishes, transcend itself – not just sporadically, an individual here in one way, an individual there in another way – but in its entirety, as humanity. We need a name for this new belief. Perhaps transhumanism will serve: man remaining man, but transcending himself, by realizing new possibilities of and for his human nature"

- *Julian Huxley, Biologist (1927)*

Julian Huxley, the brother of famed author Aldous Huxley, appears to be the first individual to use the term "transhumanism".[1] The ideas contained in the idea of transhumanism were not new at that time, but the means of achieving those ideas was changing. Rapid technological advances prompted scholars of the 20th century to view enhancement to humans as a more realistic possibility. Scholarly and entertainment articles sprang up in the latter half of the 20th century describing the transhumanist technologies of life extension, cryonics, etc. In 1992, Max More and Tom Morrow founded the Extropy Institute – an organization that sought to become a center for futuristic thinking.[2] While the Extropy Institute served as a commons for futuristic thinkers to discuss their ideas, Nick Bostrom and David Pearce saw further practicability in founding an organization with more a more academic focus. With that in mind, they set up the World Transhumanist Assocation (WTA) in 1998.[1] The WTA adopted the

[1] Bostrom, "A History of Transhumanist thought", 6.
[2] Ibid., 11.

Transhumanist Declaration – an outline of the goals of the transhumanist movement. The Transhumanist Declaration states that humanity and technology can overcome many of the challenges that we face today as a society. The document prompts research into understanding realistic technologies that can push the boundaries of what we can currently do. There is an emphasis on moving forward at a morally acceptable pace, being sure to incorporate our respect for individual rights and freedoms. The Declaration asserts that individuals should have a choice to enhance themselves, and that well-being should be promoted for sentient beings of any origin.[3] In 2008, the WTA renamed itself as Humanity+ in an effort to promote transhumanism as a legitimate school of study.

Technology

There are a number of technologies that currently exist, or are being developed, that could be deemed transhumanist technologies. Many of these technologies overlap in their affiliations as having applications to both standard biomedical uses and transhumanist ones. Five main areas of biological and technological innovation represent a significant portion of the transhumanist technologies displayed in the films to be presented: genetic engineering of offspring, genetic manipulation of adult humans, human-machine interfacing, neurological enhancement, and artificial intelligence. Each of these technologies can be utilized to promote transhumanist goals. Much of the debate around use of such technologies focuses on whether or not transhumanist ideas align with our moral beliefs. Before we can get into the ethical issues surrounding such technologies, brief explanations of each technology is required.

[3] "Transhumanist Declaration", 1.

The first of the technologies to be introduced is genetic engineering of human offspring. Genetic engineering can operate on different levels of development, in both embryonic and non-embryonic humans. It is critical to separate between engineering human offspring and human adults, as the ethical issues surrounding such interventions are not collapsible into a single category. Engineering human offspring is a technology on its way to becoming a reality. There are two methods by which to alter the genetics of an embryo: selection and enhancement. Genetic selection is a process by which embryos created via in-vitro fertilization are screened for and selected based on their genetic make-up.[4] Pre-implantation genetic diagnosis (PGD) is embryo screening and selection. The biomedical application of IVF/PGD screening is to isolate embryos for certain disease genes.[5] However, non-medical applications have already arisen, with a number of future parents selecting embryos based on sex. Genetic enhancement will be realized once researchers develop methods of altering the DNA in embryos. This will allow parents to customize their offspring. The potential applications are only limited by our knowledge of genetics and any natural limitations that we may face. The deterministic nature of genes and their interplay with the environment remains largely a mystery. Future research will likely shed more light on the direct and indirect impact genes have on traits and behavior. Genetic manipulation of human offspring has both biomedical applications, with disease gene removal, and transhumanist applications, including physical, intellectual, and moral enhancements.[6]

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[4] *Molecular Diagnostics 2nd Edition* 2010, 485.

[5] Voorhis, "In Vitro Fertilization", 379-380.

[6] It should be noted here that enhancement is not the same as therapy. A therapy is a remedy for a problem, the result of which brings an individual back to the status quo, or accepted level. An enhancement, on the other hand, goes above and beyond remedying the problem – enhancements transcend normal thresholds.

A technology closely related to genetic engineering of offspring is genetic manipulation of adult humans. Gene "therapy", or the alteration of human DNA, is a current biological technique for changing adult human DNA. It has had revolutionary success as well as shocking failures ever since its inception in 1972.[7] Adult human genetic engineering has a more difficult task than engineering a human embryo because of the quantity of human cells and the complexity of an adult human. Gene therapy has recently been successful in a number of clinical trials in leukemia patients.[8] The engineering is done via a biological vector that inserts the desired DNA into the host. Vectors can be plasmids, viruses, or even artificial chromosomes.[9] Researchers have managed to create artificial human chromosomes that are taken up into the host cells, replicated during cell division, and then passed on to offspring like endogenous chromosomes.[10] Other researchers are focusing on methods by which mutated DNA can be 'snipped' out of the genome. Gene therapy has both biomedical and transhumanist potential.

Human-machine interfacing is another field of research that has clinical and transhumanist applications. Put simply, human-machine interfacing represents the coming together of man and machine. Such interfacing already exists if one considers individuals with prosthetic limbs. Some may argue that the interfacing needs to be at a deeper level, something that researchers have done with brain implants. Several new studies have led scientists to connect paralyzed patients to computers via brain implants.

[7] Sheridan, "Gene therapy finds its niche", 121.
[8] Marchione, "Gene therapy scores big wins against blood cancers", 1.
[9] Sheridan, "Gene therapy finds its niche", 121-123.
[10] Kouprina, "A new generation of human artificial chromosomes for functional genomics and gene therapy", 1135-1136.

The patients are able to visualize their thoughts via computer software that is designed to interpret their neurological activity. A truly remarkable achievement, this technology has incredible biomedical potential. This technology has also been shown to allow paralyzed patients to move mechanical arms and other devices by thought. Prosthetics may reach a new level of functionality as a result of brain-device connections.[11] Brain implants also have non-medical applications as well. They may one day be used to connect us with the internet, allowing us to access vast quantities of information merely by thought. Prosthetic limbs may be replaced with exoskeletons that offer humans exceptional strength and speed. The culmination of this interfacing is the common example in science fiction, the cyborg – a combination of organic and mechanical parts.

Another scientific endeavor that has significant transhumanist implications is the area of neurological enhancement. Neurological enhancement exists today in every college across the United States in the form of Adderol/Ritalin. Students use these medications for the non-medical purpose of allowing them to focus on their schoolwork or during exams. The focus comes at a price, with some students noting how distanced they feel from everything around them. Neurological enhancements take the form of pharmaceuticals that alter the way we experience the world. Enhancements may include improvements to memory, psychological states, and potentially moral inclinations. Neurological enhancements are particularly contentious because of their impact on our brains. Neurology is a burgeoning field that has barely broken into the iceberg that is our brain. The brain is the most complex thing that is known to exist in the universe. The

[11] Marcus and Koch, "The Plug-and-Play Brain", 1.

neurological manipulation of the brain may be the most significant in terms of potential impact of the technologies presented in this thesis.

The last transhumanist technology that will be seen in the films is that of artificial intelligence. Artificial intelligence is a non-human machine that demonstrates some level of intelligence. It can simply be a computer game that responds to our actions based on set response algorithms. The ultimate goal of artificial intelligence is to reach what is deemed 'strong AI' or artificial general intelligence. A strong AI is a machine that demonstrates human levels of intelligence.[12] Such an AI has powerful implications for humanity. There are tremendous biomedical applications for strong AI to assist and facilitate care of patients. The transhumanist applications of strong AI include one central application of using strong AI to develop and further promote transhumanist technologies.

Ethical Frameworks

There are a number of ethical frameworks that are employed to argue in favor of or against transhumanist technologies. The three main ethical approaches are deontology, utilitarianism, and virtue ethics. Each of these frameworks have been long understood to be the leading normative approaches in ethics. They offer three different perspectives by which to analyze the ethical quandaries that arise as a result of transhumanist technologies. While this thesis will not attempt to debate which framework offers the best take on morality, I believe that all offer insight that can be valuable. Despite their varying methodologies, they represent three human perspectives on morality. The issues involved

[12] Mooney, "Philosophical Argument Against 'Strong' AI", 2.

with transhumanism will probably require such a multitude of perspectives, as many of the issues will challenge us as a species more than any have before. Our ethical theories have been formulated in attempts to determine how we should act, and transhumanist technologies may eventually take us to the point where we experience a shift in why we act. That being said, many of the arguments about transhumanist technologies and their consequences rely on a blend of deontological, utilitarian, and virtue ethics theories. The basic underpinnings to each theory follows.

Deontology is most famously associated with Immanuel Kant. Kant and his philosophy is guided by rationality. According to Kant, reason is how we achieve the ultimate good. The only thing that is absolutely good is a 'good will' for Kant.[13] The will is completely under the agent's control, thus it can be free from interventions. From this position, Kant develops his moral law, or categorical imperative. The categorical imperative states that an action is moral if you could wish that action to become universal. In other words, is it logical and reasonable to will it that everyone acts in the same manner. Kantian ethics also promotes the idea that an individual must never use another individual merely as a means.[14] For Kant, the morality of an action is determined by the action itself, not its consequences. There are several forms of deontological theory, but a standard position of agent-centered deontological theory is that the agent has a duty to follow the moral norms. As in Kantian ethics, the agent's actions are moral if they are in accordance with the moral law as determined by reason. The rightness or wrongness of the consequences has no merit, as long as the action abides by the norms.[15] Modern

[13] Rohlf, "Immanuel Kant", 1.
[14] Ibid., 1.
[15] Alexander and Moore, "Deontological Ethics", 1.

biomedical concepts of autonomy and decision-making capacity have strong roots in Kantian and deontological ethics, as these theories promote individual control and rationality.

In sharp contrast to Kantian and deontological ethics is utilitarianism. Utilitarianism was first championed by Jeremy Bentham and, shortly after, John Stuart Mill. Utilitarianism is a form of consequentialism – a general framework that focuses solely on the consequences of the actions. What is good is what results in the maximization of what is valued. In the case of utilitarianism, the thing of value is well-being.[16] Utility, thus, is generally taken to mean intrinsic goods, such as happiness. The morality of an action under the principle of utility is whether or not it maximizes utility and prevents loss of utility. Another common manner by which to express this principle is the maximization of pleasure and minimization of harms. There are two forms of utilitarianism: act and rule. Act utilitarianism says that each individual act is referred to the principle of utility, while rule utilitarianism sets rules that are based on the principle of utility. Utilitarian theory, unlike Kantian ethics, pays no heed to the action, but only the consequences.[17]

Another prominent theory of ethics is virtue theory. Virtue ethics predates deontological and utilitarian theories by thousands of years. Virtues, in the simplest sense, are character traits. Where deontological and utilitarian theories focus on the action and consequences, respectively, virtues focus on the individual. Virtues are a state of being, something that Aristotle noted. He carefully distinguished between correct actions

[16] Beauchamp and Childress, *Principles of Biomedical Ethics*, 337.
[17] Ibid., 336-337.

and right motives. An individual may do what is right, but it is the motivation that is key.[18] Moreso, it is not enough to be motivated to take right action or take the necessary steps. The agent must be deciding from a "firm and unchanging state" – the state of being virtuous.[19]

The complexity of virtues makes virtue theory difficult to implement.[20] Unlike Kantian and utilitarian theories, virtues require cultivation by the individual. Aristotle saw virtues as skills that individuals develop over time on a "continuum of moral development".[21] As Beauchamp and Childress note: "The Aristotelian model does not expect perfection, only that persons strive toward perfection".[22] Thus, virtue ethics asks more of us than do Kantian and utilitarian theories. An individual must act out of virtues that he or she has cultivated in order to perform a virtuous action. Despite the practical difficulties of virtue ethics, virtues have a strong tradition in Western culture and are still very much relevant in modern society.

Prominent Positions

There are a number of prominent scholars who fall on different sides of the transhumanism debate. While several are notably advocates or critics of the the main tenets of transhumanism in general, others are more focused on certain technologies and their respective transhumanist goals. In this section I will present the views of two individuals who fall in favor of transhumanism or certain technology: Nick Bostrom and

[18] Ibid., 31.
[19] Ibid., 32.
[20] Ibid., 32.
[21] Ibid., 53.
[22] Ibid., 53.

Julian Savulescu. In addition, I will highlight the views of two prominent scholars who are opposed to transhumanism and its technology, those being Leon Kass and Francis Fukuyama. The goal of this section is not to give a comprehensive overview of all the positions that one make take up on either side of the debate regarding transhumanism and related technology. Rather, my hope is that this section highlights the significance and weight of the issues surrounding transhumanism. These arguments are focused on powerful human motivations, such as the search for perfection and taking care of offspring.

Nick Bostrom, as mentioned earlier, is one of the founders of the World Transhumanist Assocation (now Humanity+). A professor of philosophy at Oxford University, Bostrom has spearheaded the modern transhumanism movement. He is staunchly pro-transhumanist, having taken part in the writing of the Transhumanist Declaration. Bostrom notes that he, like many other transhumanists, believes that humans have barely begun to reach their potential.[23] As a result, Bostrom says that we need to develop technologies to allow us to lead much longer and healthier lives. While opponents of the transhumanism movement may suggest that transhumanists are playing God, Bostrom argues that they are simply working with "human potential". Humans, according to Bostrom, should push for progress because we have not reached our complete potential. Bostrom states that humans should take an "active approach" when it comes to transhumanist technology, rather than the "reactionary approach" that he says common ethical frameworks lead us to. In addition, Bostrom says that historical and

[23] Bostrom, "Human Genetic Enhancements", 493.

modern moral theories can only take us so far, while transhumanism may lead to the understanding of values that cannot be fully appreciated at the moment.[24]

Bostrom has positions on a number of transhumanist technologies, but I will focus on his take on genetic engineering. He says that genetic engineering of offspring is frequently depicted as a harmful technology, whereas the reality is that there are substantial reasons for continuing with this technology. According to Bostrom, many of the arguments against using genetic enhancements on our offspring suggest that children would be seen as products and not given the love that a 'natural' child would have. Bostrom says that if anything, parents will love their children more because they are more what they desired in the first place. Bostrom acknowledges the role of critics in preparing society for potential dangers, but says that enhancement of offspring clearly has significant positive potential. He goes on to further state that the mere possibility of undefined negative and positive outcomes does not warrant prohibition of a technology. In addition, Bostrom argues that unimaginably good scenarios are just as likely as dystopian ones. The ability to alter disease-genes, in addition to allowing us to become more athletic and intelligent, are possible benefits of such technology. Bostrom believes that enhancement may lead to greater human understanding of our own moralities, as well as reduce suffering in the world.[25]

Julian Savulescu, also a professor of philosophy at Oxford University, has a position similar to Bostrom's on genetic enhancement of offspring. Savulescu offers a transhumanist perspective when it comes to human enhancement. He argues for what he

[24] Ibid., 495.
[25] Ibid., 497-498

calls his principle of Procreative Beneficence.[26] The principle states as follows: "Couples (or single reproducers) should select the child, of the possible children they could have, who is expected to have the best life, or at least as good a life as the others, based on the relevant, available information".[27] In other words, Savulescu argues that the 'should' in his definition means that there is a moral imperative for the parents – if the child can be made better off, the parents have a moral responsibility to make it so. For Savulescu, the enhancements he has in mind go beyond biomedical applications, like disease-gene removal. He argues that any proven alteration that would have a beneficial effect on a child, in comparison to its unaltered version, should be done. Savulescu says that the enhancements should take place even if social inequality rises as a result. This is because he believes that people with disabilities should be seen with equal respect regardless of the numbers of individuals who are enhanced.[28] For him, enhancement is a social issue, not a genetics issue.

Leon Kass is a prominent intellectual who has served on the President's Council for Bioethics during the presidency of George W. Bush. He is staunchly against transhumanist values, favoring caution over progress. Kass has a number of well documented positions regarding transhumanist technology, but I will focus on his take on human cloning. Human cloning, as Kass indicates, is the next logical step after genetic enhancement of offspring. According to Kass, human cloning is immoral because it attempts to play God and to alter the true nature of the individual. The commonality in these perspectives is repugnance. For Kass, repugnance or aversion is not simply an

[26] Savulescu, "Procreative Beneficence", 413.
[27] Ibid., 413.
[28] Ibid., 421-424.

emotion, but a moral emotion. The reason we feel so strongly, without reason in some cases, is because we instinctively know that something is immoral.[29] Kass says that "repugnance, here as elsewhere, revolts against the excesses of human willfulness, warning us not to transgress what is unspeakably profound".[30] It is precisely because of our repugnance, according to Kass, that we should prohibit cloning and other related technologies. The revulsion stems from our intuitions of human nature: "We are repelled by the prospect of cloning human beings not because of the strangeness or novelty of the undertaking, but because we intuit and feel, immediately and without argument, the violation of things that we rightfully hold dear".[31] He fears that biomedical technologies are being promoted in a manner that conceals our ability to sense our repugnance – our descriptions of new technology fail to characterize it for what it really is. Ultimately, Kass states that "the burden of moral argument must fall entirely on those who want to declare the widespread repugnances of humankind to be mere timidity or superstition".[32]

Another former member of the President's Council for Bioethics, Francis Fukuyama, is also ardently anti-transhumanist. Fukuyama is harshly critical of transhumanist technologies because he considers them to threaten equality. He acknowledges that with all of the issues that current humans face, it seems a good thing to pursue transhumanist technologies that could alleviate our crises. He warns, however, that the moral price to be paid for such technologies is too great. Fukuyama notes that in the history of the United States, defining what it means to be a person has been a long,

[29] Kass, "The Wisdom of Repugnance", 687.
[30] Ibid., 687.
[31] Ibid., 687.
[32] Ibid., 689.

and is still an incomplete, process.[33] But, he says, we have reached a point where we acknowledge that "being human entitles a person to political and legal equality".[34] Transhumanist technologies, he argues, seek to change that by modifying what it means to be human. By becoming 'trans'-human, and potentially post-human[35], we are altering the system of equality that we have worked so hard to maintain. He takes issue with the fact that the most powerful countries will inherently have access before third world countries, thus enhancing current inequalities.

Fukuyama also takes issue with the idea that transhumanists may know what the "good" is. Defining what is "good" is a notoriously difficult concept in philosophy, and getting everyone to agree on the result is even harder. Fukuyama says that humans are part of a long process of evolution and that we are incredibly complex. To him, it seems ridiculous to maintain that enhancing humans will promote some "good". Our tendencies, he argues, have good and bad results. The aggressive nature of humans can serve to protect us in times of danger or to cause harm to others. In addition, our morality is a part of our evolution. If we seek to alter core aspects of our nature, we are thus altering our morality. Fukuyama says that we cannot foresee the outcomes, thus it may either be futile or dangerous to continue.[1536]

While there are a number of other prominent scholars who weigh in on the transhumanism debate, these four offer keystone positions. Their views are much more

[33] Fukuyama, "Transhumanism", 1.
[34] Ibid., 1.
[35] The distinction between trans-human and post-human is difficult to make. I am inclined to say that transhumanism deals with the process by which humans alter themselves, while post-humanism refers to individuals who are clearly defined as separate from the precursor human.
[36] Ibid., 1.

defined than outlined here, as they have spent many years formulating their positions. This section was meant to provide a general understanding of the substantive positions on each side. Each of these positions relies on the ethical frameworks presented previously.

The next two chapters involve analysis of the themes and perspectives presented in the films, focused on the issues and ethical norms used to defend the various positions. Understanding the moral arguments and, more importantly in some respects, the reasoning behind claims is the essence of this thesis. My purpose for not explicitly outlining the frameworks in the films, at least not right away, is to acknowledge the diversity that is human reasoning. Humans rarely can abide by absolutes. We often rely on a variety of beliefs to carry us through our lives, all of which may change based on our experiences. These films highlight human experiences and reactions to technologies that have a profound impact on the human condition. Our responses, as seen in the films, are often jumbled, incoherent, and difficult to understand. But despite the difficulties, progress can be made by taking time to understand our rationality and emotions, and how they influence how we act.

There are a few questions and values to keep in mind when proceeding to the film section. The first is perfection. Perfection plays a role in our nature, as a guiding force. To what end should we pursue perfection? How much are we willing to sacrifice (as individuals and society) to grasp at perfection? In addition, what would we require to be a post-human? And similarly, what does it mean to be human? These questions rely on defining what is necessary and sufficient to be one or the other.

Two important values that play a prominent role in biomedical ethics, as well as all aspects in life, are autonomy and justice. Transhumanist debates are often centered on

arguments over these two principles. Proponents suggest that transhumanist technologies will give greater freedoms and allow us to reach a just society, while opponents argue that those technologies will reduce individual autonomy and increase injustice in the world. These values and questions are repeated again and again in films, as well as in common culture. They are present, and have been present, for much of human history.

CHAPTER 2:

TRANSHUMANISM IN FILM

Films are everywhere. U.S. and global culture is saturated with advertisements for movies and their stars. Movie theaters are present in towns and cities of almost any size, while DVD players allow for access in the home. Recent advances in internet streaming technology allow for movies to be watched anywhere there is an internet connection. Our lives are shaped by the pervasive nature of films. Like other communication tools such as written works and television, films are conduits for ideas. As a medium, film explores the visual and auditory senses in a manner that books cannot and television rarely achieves. That is not to say that written works and television do not have as much merit as film, rather they emphasize different aspects of human communication at different levels. Films are particularly interesting because of their scale. The tremendous amount of money and human collaboration required to produce a feature film is staggering. While blockbuster movies are clearly designed as profit-machines, some, but not all, offer valuable insights into deep cultural and philosophical issues.

We are all familiar with the action-packed adventures that capture the world's attention for a summer, but every so often some films offer more than a viscerally pleasing experience. The transhumanist films selected for this thesis are such films. Many are "classics" in that they transcend generations. Their stories and characters belong to more than just one moment in time. These films are important because of the ideas that they present. Many of the ideas are not new – simply revisited over and over again. Human history is simply the passage of thoughts and memories over time. Human

perspectives define our history; transcending our lifespan. Oral history, written works, music, art, television, and film all represent tools by which we attempt to record and pass on our experiences. Films, in particular, are glimpses into the human perspective. Our hopes and fears are presented on the screen. Our values are challenged, our way of life analyzed. The human collaboration that creates a film is a reflection of human beliefs and experiences. No matter how much computer processing goes into a film, it is still a product of humans. It represents a snippet of our experience on this planet, regardless of whether we knowingly or unknowingly sought to present it as such.

With respect to transhumanism and related technologies, there are a number of films spanning the last nine decades that offer worthwhile perspectives. These films are important simply because of what they can tell us about our reactions to such technologies. Films are often sensationalist in nature on some level because of the requirement of attracting an audience. They are, thus, unlikely to present mundane, day-to-day issues that might arise a result of these technologies. That being said, they are nevertheless important because they can guide our overall, long-term goals by highlighting consequences that may prove to be exceptionally good or bad. In film we can see our worries transform into terrible realities, as well as our hopes into fantastic solutions. So while the dramatic nature of films may leap to unrealistic conclusions, the emotions and experiences presented are much less unrealistic. Thus, it is important to see these films through a 'human' lens and consider the perspectives from each point of view. Life is rarely as absolute as film plots are.

In this chapter a number of films regarding transhumanism are looked at. The films are separated into three categories based on the respective technologies presented:

Artificial Intelligence/Human-Machine Interfacing, Genetic Engineering/Manipulation, Neurological Manipulation. Whilst the films have been categorized, the delineations are rough. Many of the films have elements that touch into other categories. The major themes were taken into account when categorizing the films. The method of analysis for each film is done in two parts: Summary and Reaction. The summary section gives a succinct overview of the film and necessary information, while the reaction section highlights the moral questions presented in the film. The reaction section presents the emotions, experiences, and reactions to the transhumanist technologies of the characters in the film. An in-depth analysis of what we can learn from the films and the experiences shown in them is done in Chapter 3 of this thesis. This chapter's primary purpose is to present the films in a manner that facilitates deep discussion in the following chapter. The chapter does not conclude with a formal summary, but with a summary film (Blade Runner) that encompasses many of the elements of the other films.

Artificial Intelligence/Human-Machine Interfacing

2001: A Space Odyssey (1968)[37]

Directed and produced by Stanley Kubrick in 1968, 2001: A Space Odyssey is a sci-fi epic. Kubrick and Arthur C. Clarke wrote the screenplay of what has become one of the highly recognized films of all time. The film is a sweeping look at man's exploration of space and of ourselves. It is broken down into four distinct parts. Part 1 (The Dawn of Man) opens on a group of early hominids three million years ago. The hominids scavenge for food in a Savannah-like environment, with one of the members falling prey to a lone

[37] *2001: A Space Odyssey*, Dir. Stanley Kubrick, 1968.

leopard. The hominids come across a waterhole that they rest at, only to have another group of hominids come and chase them away. The displaced hominids take shelter in the protection of a nearby cave. Upon awaking in the morning, they find that a mysterious black obelisk has appeared in their midst. Shortly after, one of the hominids finds an animal bone and discovers the potential of using the bone as a tool. Equipped with bones, the hominids return to the waterhole and proceed to kill the leader of the other group. They roar triumphantly at the success they have achieved as a result of their new tools.

The film then cuts to Part 2 (TMA-1) in the late 1990's. Dr. Heywood Floyd is taking a space plane via PanAm to the space station orbiting the Earth. The space plane, resembling a commercial airliner, is a comfortable ride to the circular station. On the station, Floyd runs into two Soviet counterparts, Elena and Dr. Smyslov, who question him on the apparent 'epidemic' loose at the moon base, Clavius. Floyd says that he is not at liberty to discuss the on-goings at Clavius, despite it being his intended destination. Upon arriving at Clavius, Floyd thanks the staff for maintaining the secrecy of his operation by claiming that there is an epidemic. He hints that they may have found the first evidence of life outside of Earth and that his job is to prepare a report for the Space Council on how best to proceed. The general public, Floyd asserts, needs to have the information given to them in a careful and precise manner. Shortly after, Floyd and a small team take a shuttle to the dig site where a black monolith has been found. They discover that the monolith has been buried for four million years. The team lines up to take a picture with the monolith, which results in the monolith sending out a powerful radio signal.

Part 3 (The Jupiter Mission) takes place 18 months after the events of Part 2. Having discerned the destination of the monolith's radio signal to be Jupiter, a mission is planned to send a crew to investigate. The U.S. spacecraft Discovery One is piloted by two scientists, Dave and Frank. In addition, three survey scientists are put into cryostasis, only to be woken upon arrival at Jupiter. The extremely long, advanced Discovery One is comfortable, yet practical. The ship has an onboard computer, HAL 9000, which controls all aspects of the ship's functioning. HAL is designed to be an intelligent as possible and to be able to converse with the crew. The HAL series computers are famous for never having made a mistake in the history of their operation. While on the journey, Dave, Frank, and Hal give an interview that include topics such as HAL's intelligence. HAL responds to questions much like any human would, prompting the interviewer to ask Dave and Frank if HAL has genuine emotions. Frank responds that no one can really be sure, but it seems like he does.

After the interview is over, HAL questions Dave about the secrecy behind the mission. Dave and Frank, despite being the pilots, have no knowledge of the real purpose of the mission. While discussing the secrecy, HAL suddenly reports that an antenna on the ship will fail within 72 hours. The HAL computers on Earth suggest that it is a computer miscalculation, but the mission commanders tell Dave and Frank to replace the unit anyway. Dave and Frank question HAL about the possibility of a miscalculation, to which HAL responds that it must be due to human error. This leads Dave and Frank to agree to disconnect HAL if it turns out to indeed be a computer malfunction.

During Frank's spacewalk to fix the antenna, HAL cuts the oxygen supply to Frank's suit, causing him to die and float out into space. Dave, not knowing that HAL is

behind Frank's death, quickly takes a space pod and goes after Frank to retrieve his body. While Dave is attempting to bring back Frank, HAL shuts down the life support for the three scientists in cryogenic sleep, killing them. With Frank's body clutched in the robotic arms of his space pod, Dave asks HAL to open the bay doors to allow him inside. HAL tells Dave that he cannot do that because he cannot jeopardize the mission. HAL reveals that he is aware of Dave's plan to shut him down and he refuses to let that happen. Dave, having forgot to bring his spacesuit helmet, tries a last-ditch effort to survive the vacuum of space and enter through an emergency door. Barely making it inside, Dave dons his helmet and proceeds to HAL's memory core. As Dave slowly erases HAL's memory banks, HAL attempts to reason with Dave. HAL then begs with Dave as more of his memory goes, until eventually HAL expresses fear up until his memory is wiped, all in his monotone voice. Once HAL's memory has been erased, a video plays for Dave that reveals the purpose of the mission. The mission director informs the crew about the black monolith found on the moon and how it sent a signal to Jupiter.

Part 4 (Beyond the Infinite) opens with Dave having made it in Discovery One to Jupiter. He takes a space pod out to investigate a black monolith that is floating around the planet. As he nears the monolith, Dave is taken into a tunnel of swirling lights and colors. After riding through the constantly changing tube of light, Dave appears in a French-Revolution Era bedroom. He sees himself in a mirror, an older version of himself in a spacesuit. He proceeds to walk into another room, before turning around and seeing an older version of himself eating at a table. The perspective then jumps to the Dave who is eating. This older Dave then looks over to the bed, where he sees an older version of

himself lying down. As the perspective moves to this Dave, the previous Dave is gone. The black monolith then appears in front of the bed, causing Dave to reach out to touch it. Dave then transforms into a fetal being surrounded by a ball of light. This fetal-Dave then appears above Earth, looking down on it as the movie fades out.

Reaction:

2001: A Space Odyssey is certainly a sweeping epic. The film is largely silent, with periodic groupings of dialogue throughout. The dialogue is therefore inherently more noteworthy. Classical music fills some of the empty background, yet the bulk of the film is taken in through the eyes. The scenery and backdrops are incredibly grandiose, highlighting man's small place in the universe. The overall theme of the movie appears to be man's exploration and ascent to something higher.

The early hominids in Part 1 are greeted with a triumphant chorus upon discovering and utilizing tools to enhance their survival. Part 2 of the film showcases the comfort of space travel – comfortable space planes, space stations, and moon bases. Only the monoliths appear out of place and are always welcomed with dramatic turns of music. Part 3 continues to highlight the importance of technology and the comfort it brings. Discovery One is a practical, yet spacious ship that offers everything Dave and Frank might need. HAL is an impressive on-board computer that can run all of the ship's systems and communicate problems with the crew. Part 4 and Dave's transportation through the tunnel of colors and light leaves the viewer utterly lost. Much like Dave, the movie watcher is being taken into the unknown. As Dave experience a rebirth, the viewer does as well.

There are two main points of discussion in 2001: A Spacey Odyssey, the first of which is HAL. The HAL-9000 computer aboard Discovery One is designed to be as human-like as possible in its emotional state. That being said, HAL is also designed to be perfect – as seen in its flawless track record. The creators themselves, as well as Dave and Frank, are not sure if HAL has genuine emotions or not. That is, HAL is so complex and human-like that they cannot know if it is simply programmed or functioning on its own accord. HAL can argue, sympathize, and do anything else that a human can in a conversation. He comes up with solutions and answers to problems, but with an infallibility that a human cannot match. HAL can even kill, albeit through the use of tools, but humans often use tools to do so as well.

HAL's similarities to a human personality make him such an iconic character. He is relatable enough that Dave and Frank treat him like another member of the crew. As the film progresses, HAL's actions develop his personality in such a way that it brings into question whether HAL is more than a machine, more like a person. When HAL falsely reports that the ship's antenna is failing, Dave and Frank begin to question HAL's decision-making abilities. The viewer may attribute the mistake simply to a miscalculation on HAL's part, but when HAL kills Frank it becomes clear that HAL has motives of some kind. As Dave attempts to figure out what exactly is going on, HAL becomes a fully-fledged personality in the film. HAL goes to great lengths to keep the mission on-course.

His two confrontations with Dave present HAL in a chilling emotional light. The first confrontation arises when HAL refuses to let Dave back into the ship, essentially sentencing him to die in space. HAL's determination and harshness contrasts with Dave's

hopelessness. The roles switch when HAL is at the mercy of Dave as he removes HAL's memory banks. At this point of "death" for HAL, it is where we see HAL as the most fully-developed. His anger and his fear come through in this scene – challenging our perceptions of him.

The second point concerns Dave as he transcends time in Part 4 of the film. Dave is shown to see progressively older and older versions of himself. He appears to be just as confused as the viewer is in this dramatic conclusion. While the incredulity of the tunnel of light and colors, as well as the French Victorian-era room, captures the attention, a more interesting point to note is that of Dave in his various versions. This scene brings up questions of who Dave really is. The versions of himself are shown to exist, though only for a second, at the same time. He repeatedly has the chance to see himself slightly older before he then becomes that older version. So, while it is interesting to consider where this scenario is taking Dave, it is equally intriguing to consider if Dave is still Dave.

The Terminator (1984)[38]

The Terminator, written and directed by James Cameron in 1984, is a sci-fi action film that follows the actions of a cyborg assassin in 1984. The movie opens with a scene from 2029, where humans and machines are battling it out in a post-apocalyptic wasteland. The film then shifts to Los Angeles in 1984. A brilliant burst of lightning results in a muscular, naked man, the Terminator, appearing in a street. The Terminator runs into three unsavory individuals and relieves them of their clothing. The film then pans to an alley in another part of Los Angeles where another flash of lightning results in

[38] *The Terminator*, Dir. James Cameron, 1984.

another individual, Kyle Reese, appearing out of nowhere. Both Kyle and the Terminator are then shown looking up the name Sarah Connor in the phonebook.

The film transitions to Sarah Connor, who is a waitress who lives with her friend Ginger. The Terminator makes his way to a sporting goods store where he murders the shopkeeper and collects an array of weapons. He then arrives at the house of the first Sarah Connor listed in the phonebook, and proceeds to walk into the front door and shoot her. The focus then shifts back to the real Sarah Connor who sees the news report about the death of the Sarah Connor that the Terminator just executed. Not thinking much of it, Sarah proceeds to go home. Later that night as she is eating at a restaurant, Sarah sees a news report about how another Sarah Connor has been murdered. Sarah quickly checks the phone book, only to find herself as the next Sarah Connor on the list. When she frantically leaves the restaurant, she realizes that she is being followed by Kyle Reese. Sarah hurries into a Techno Club, where she attempts to call her roommate, Ginger. Little does she know that the Terminator made his way to her apartment, where he murdered Ginger and her boyfriend. The Terminator finds out from Sarah's messages where she is and sets out for the Techno Club. Meanwhile, Sarah calls the police station and is informed that a police officer will be there soon to escort her to the station for protection. The Terminator arrives before the officer does and almost succeeds in killing Sarah before she is whisked away by Kyle.

Kyle informs Sarah during their escape that the Terminator is a cyborg – a mixture of organic and synthetic parts. The Terminator has a robotic skeleton with organic tissue on the outside. Kyle tells Sarah that she has been singled out for "termination". Meanwhile, the Terminator takes a police car and joins a number of police

officers in their search for Kyle and Sarah. During this time, Sarah questions why she would be singled out and Kyle divulges that where he comes from, 2029, the leader of the human resistance against the machines is Sarah's son, John Connor. He explains that a few years after 1984, a nuclear war blankets the Earth. The war is started by Skynet, a computer system that takes control of all the defensive technology that humanity has. The machines, in Kyle's world, force some of the humans to work, while executing the others. Kyle is a member of the resistance, led by John Connor, who fight back. John Connor leads the humans from near extinction to defeating Skynet. In a last ditch attempt, Skynet utilizes time-travel to send back the Terminator to kill John Connor's mother, Sarah, in order to prevent the humans from ever being able to defeat the machines. John sends Kyle back to protect his mother.

When the Terminator finds Kyle and Sarah they run him into the wall with their car, only to be arrested by a number of police officers a moment later. The Terminator flees the scene and Kyle is taken into custody. At the police station, the police psychiatrist is perplexed at Kyle and his futuristic claims. The psychiatrist proclaims that Kyle is insane and Sarah settles down for the night in the safety of the police station. Meanwhile, the Terminator comes to the police station and kills everyone as he attempts to find Sarah. Kyle and Sarah then proceed to a motel where they assemble home-made explosives in an effort to kill the Terminator if he ever finds them. The Terminator, in the meantime, has found Sarah's mother, kills her, and copies her voice so that he can call Sarah and determine where she is.

Kyle reveals to Sarah that he has always had a picture of her with him and is in love with her. The two proceed to fall for each other and have sex. Soon after, the

Terminator arrives and the chase resumes. In the violent car chase that ensues, Sarah and Kyle believe they have vanquished the Terminator, only to see him rising from the wreckage. The Terminator chases them into a factory where the Terminator kills Kyle and is then crushed as he attempts to get to Sarah. The film then pans to Sarah, who is driving to Mexico in a jeep. She records on tapes for her future son, John, to listen to when he is older. She decides that John should know that his father is Kyle.

Reaction:

The overall tone of The Terminator film is one of fear and darkness. From the very beginning of the movie, it is made clear that the story to come will decide the fate of mankind as a whole. The post-apocalyptic scene that opens the film is one of a war-torn battle between man and machine. The gritty and harsh lighting of the opening scene serve to highlight the vast chasm that has been opened between man and machine. When the viewer is taken back to 1982 Los Angeles, there is a sense of dread and trepidation that travels with it.

The mysterious and spectacular appearance of both the Terminator and Kyle builds on the uncertainty from the opening scene. Both of them begin as completely unknown figures that develop over the course of the movie. The Terminator displays his cold, clinical killing ability early on. His unrelenting search for Sarah provides the action in the film, as he will stop at nothing to see her dead. Kyle is shown to exhibit a similar drive in his quest to protect Sarah at all costs. It becomes a battle of cyborg versus human – programming versus unpredictability. As the fighting continues, the Terminator slowly loses more and more of his outer human appearance. Thus, whereas in the beginning of

the film he is mysterious and human-like, the end of the film shows him in his robotic form.

The central transhumanist discussion point in the film is that of the Terminator and what "he" is. Being a cyborg, the Terminator is a mix of organic and synthetic components. He has a mechanical skeleton and operating system (brain), as well as a biological outer layer that resembles a human. The Terminator is a machine designed by other machines to hunt and destroy humans. His human-like appearance allows him to blend in and avoid drawing attention to himself. In the film, it is shown that he has physical abilities superior to that of a human. He can see in different wavelengths, has super-strength, and cannot feel pain, to name a few. In addition, his operating system (brain) is complex enough for him to interact, albeit crudely, with humans in conversation to elicit the information that he needs.

An important takeaway from the film is the similarity between the reasoning behind the actions of both the Terminator and Kyle. Despite fighting for exactly opposite goals, the two of them display a complete disregard for consequences. The Terminator is instructed to take whatever steps necessary to kill Sarah Connor. Kyle, meanwhile, is sent back to protect Sarah at all costs. Skynet, and thus the Terminator, realized that Sarah was the key to their demise, so she became the target. Likewise, Kyle and the rest of the humans realized that without Sarah, her son would never have the chance to lead the humans to victory over the machines. While the film shows the battle between one machine (the Terminator) and one man (Kyle), it represents that clash of two distinct populations as a whole. The machines are clearly interested in their own survival, just as the humans are. The question then becomes whether the Terminator and the other

machines really are moral agents. As their values conflict with human values, their status, and even the status of humans, in the overall world becomes difficult to ascertain.

Genetic Engineering and Manipulation

Gattaca (1997)[39]

Gattaca, a 1997 film directed by Andrew Niccol, is a science fiction movie set in the not-too-distant future. The film focuses on the life of Vincent Freeman, a natural-born individual. In the world of Gattaca, eugenics and artificial selection of children is the standard operating procedure. A natural-born person is deemed an 'in-valid', while those who are created via genetics technologies are 'valid'. Scientists and physicians have the ability to determine the most likely cause of death and lifespan of an individual the moment they are born. This type of knowledge sets up a social class system that revolves around the superiority of one's DNA. The beginning of the film shows the birth of Vincent and the instant prognosis that a heart condition will kill him after 30.2 years. Vincent's parents decide that their second child will not suffer the same fate, so they use genetic tools to create a superior child, Anton.

Growing up, Vincent is shown to lag behind Anton. The film shows the two swimming in the ocean, with Vincent failing to keep up. Despite discouragement from his parents, Vincent dreams of going into space. A short while later, Vincent races Anton in the ocean and wins for the first time in his life, prompting him to leave home. While working as a cleaner at the space agency, Gattaca, he comes across an individual who offers him the chance to fulfill his dreams. A wealthy, 'valid' individual, Jerome

[39] *Gattaca*, Dir. Andrew Niccol, 1997.

Morrow, is willing to allow Vincent to become him. Jerome is perfect in almost every way, save that he was in an accident that paralyzed him from the legs down. Vincent agrees and undergoes painful leg-lengthening surgery to be as much like Jerome as possible. Jerome supplies Vincent with blood and urine samples for him to pass any drugs tests.

With Eugene's help, Vincent assumes his identity and works his way up the ranks at Gattaca until he is the top of the group. He is assigned to be on a mission to Saturn, a fulfillment of his dream. In order to make sure that he is not discovered, Vincent goes to extraordinary lengths to protect his identity. Vincent has to maintain his false identity while protecting his real one. He scrubs his body clean of all excess skin cells daily, leaves Eugene's hairs on his desk, and uses fake fingerprints. All goes smoothly until one of the top administrators at Gattaca is found murdered. As the police sweep the area, they find an eyelash that is found to belong to an 'invalid', Vincent.

The investigation eventually strays away from Vincent as the mission director of Gattaca confesses to killing the employee in order to keep the Saturn mission moving forward. As a result, the lead investigator closes the case. However, another investigator goes after Vincent because of their relationship – the investigator is Anton. When Anton finds Vincent alone at Gattaca, he tells Vincent that he should not be allowed to work here. Vincent says that he got to where he was on his own, regardless of his 'inferiority'. The two go to the ocean to race one last time. Vincent beats Anton again and promptly rescues him as he begins to drown. The film then pans to the space launch for the Saturn mission. Jerome says his goodbye to Vincent and tells Vincent that there is a lifetime of blood and urine saved up for him to use upon his return. He tells Vincent that he has

things to do of his own. As Vincent boards the rocket that will take him to Saturn, Jerome climbs into an incinerator with his second place medal and dies.

Reaction:

Gattaca relies on suspense and austerity more than it does on visual effects. Much is left up to the imagination of the viewer, as almost nothing of mainstream society is shown. However, a lot can be gleaned from what is shown. The theme of perfection is at the forefront of the film. The attainment of or the pursuit of genetic perfection defines the society of Gattaca. This is highlighted as the film shows the different routes undertaken by Vincent's parents to have Vincent and Anton. On one hand, Vincent's natural birth is shown to be a sad affair – the physicians declaring his probable lifespan to be only 30.2 years – while on the other hand, Anton is shown to be selected from a batch of suitable, screened embryos. From that point on in the film, the separation between naturally born individuals and engineered individuals is made clear. Vincent and Anton's differences are a lens by which the film allows you to view the larger issues between 'valids' and 'in-valids'. The agonizing struggles of Vincent as he attempts to beat Anton in swimming shows the superiority of the 'valids' and the identity crises of the 'in-valids'.

The beginning of the film takes a somewhat melancholy approach to depicting Vincent's childhood. He is constantly reminded, via either his brother or parents, of his position in society because of his genetic make-up. Vincent's decision to leave home is one of uncertainty. His subsequent employment in an "in-valid" suitable job as a janitor sees him at a lifetime low. Even when Vincent and Jerome agree to work together to help Vincent achieve his dream of space travel, it seems improbable. The painful steps that Vincent goes through to transform himself and maintain his new identity as Jerome are

extraordinary. His desperation to be seen as Jerome, as a 'valid', is evident. As the film progresses, Vincent must go to greater and greater lengths to cling this image of perfection.

Jerome is an interesting paradigm on the other end of the spectrum. A 'valid', Jerome is described to be perfect in every way. Despite the fact that he is paralyzed from the legs down, Jerome is the perfection that Vincent wishes he could be. And yet, Jerome is shown to be unhappy with who he is. He finds great satisfaction in supplying Vincent with a means by which he can achieve his dreams, as he never succeeded in finding his own happiness. Jerome reveals to Vincent that he threw himself in front of a car, hoping it would kill him, after he came in second place in a swimming race. To Vincent, second place is all he has ever known. Jerome is shown to be a loyal and faithful friend, seeing Vincent off to his space launch. Yet, Jerome never conquers his desire to end his life. The end of the film sees him clutching his second place medal, burning in a furnace. Vincent, on the other hand, achieves his goals in what is, at long last, a moment of happiness in the film.

The major theme of Gattaca is that of perfection, and it is accomplished via genetic engineering. Genetic engineering, especially for eugenic purposes, is the primary transhumanist technology utilized by the society depicted in Gattaca. The background of the film clearly outlines the fact that natural born children are becoming a rarity as more and more parents lean towards genetic engineering tools. The genetic tools on-hand for the physicians in Gattaca allow them to select offspring based on genetic notions of perfection. They select embryos that are in good condition and can manipulate them further if they wish. Parents are offered the chance to give their children the 'best'

possible life advantages. These desires, and the larger pursuit of perfection, lead to the formation of a society that is starkly split between those who are believed to embody perfection and those who do not. Both the aspiration to achieve perfection and the state of being perfect play significant roles in the film.

X-Men: The Last Stand (2006)[40]

X-Men: The Last Stand is a 2006 superhero film directed by Brett Ratner. In the X-Men universe, mutants are humans with a special X-gene that provides them with unique and powerful abilities. The X-Men themselves are a group of mutants set on protecting both humans and mutants alike. The third film in the X-Men franchise, The Last Stand focuses on a push by the humans to eradicate the X-gene from mutants via gene therapy. A science facility, Worthington Labs, has developed a 'cure' for the X-gene. This cure will use gene therapy techniques to suppress the X-gene, thus making mutants the same as normal humans. The owner of Worthington Labs is motivated by the fact that his son is a mutant who has a pair of gigantic wings attached to his back.

Upon learning that there is a cure for the X-gene, the community, both human and mutant alike, is split. Two of the most senior mutants, Magneto and Charles Xavier, have quite different perspectives on the matter. Magneto, always more aggressive than Charles, sees it as an attempt to wipe out mutants once and for all. He begins to assemble his Brotherhood of Mutants – a collection of mutants set on using force to achieve their goals. Meanwhile, Charles and his X-Men seek to protect the children that they teach at a mutant school.

[40] *X-Men: The Last Stand*, Dir. Brett Ratner, 2006.

Jean Grey, a member of the X-Men team who was presumed dead, comes back to life. Jean, now the Phoenix (a separate personality), escapes and rushes to her childhood home. Meanwhile, Magneto learns about Jean's revival as the Phoenix and sets out to sway her to his cause. He reveals that Jean as the Phoenix is the most powerful mutant ever seen, even more powerful than himself and Charles. Charles and Magneto both arrive at Jean's childhood home at the same time and each try to sway her to one course of action. With her intense power, Jean chooses Magneto, killing Charles in the process. Magneto and Jean as the Phoenix then continue on with Magneto's plan to attack Worthington Labs and rid the world of the cure. The X-Men are left in disarray at the loss of their beloved mentor, Charles.

Magneto proceeds to lift the Golden Gate Bridge and set it down so that it connects Alcatraz, the location of Worthington Labs, to the mainland. His Brotherhood proceeds to attack the labs, which are defended by the U.S. military. The soldiers manage to hold off the Brotherhood until the X-Men arrive, led by Wolverine. With fellow X-Men in tow, Wolverine and the others engage in a fierce fight with the Brotherhood. Several of the X-Men fight a battle inside the facility with the Brotherhood over Jimmy, a boy who provides the cure for the X-gene – his mutation is that he can suppress the powers of other mutants. The X-Men manage to save Jimmy just as one of the X-Men injects Magneto with the cure. Jean's Phoenix is woken at this point and none of the humans or X-Men can handle her powers, so they are pushed back as the facility is being destroyed. Only Wolverine, with his regeneration mutation, is able to get close to Jean. Once he fights his way to her, Jean relapses to her old personality for a split second and begs Wolverine to end it all. She then reverts to her Phoenix form, so Wolverine kills her.

After the fight, the X-Men reopen the school and rebuild their friendship with the public at large. The cure is no longer pressed upon the mutants, yet Magneto is revealed to be slowly regaining his power.

Reaction:

The Last Stand is a suspenseful, action-packed ride. The film builds on two previous X-Men films, which assumes that the audience is invested to some degree in the characters. Throughout the film we see that Charles and Magneto are at odds, as usual, but with much bigger consequences than before. The mutant cure developed by Worthington Labs sets the stage for a dramatic confrontation between the various groups at play. Charles and Magneto, the other mutants, and the humans all have significant stake in how successful the cure is. Society is split over the issue – a mirror to issues in our own world.

As Charles gathers his X-Men to seek a constructive solution with the humans and Magneto rallies his supporter to fight back, the energy of the film intensifies. The rhetoric of Magneto as the film goes on becomes more and more vitriolic. He condemns the humans' attempt to force a cure upon the mutants and deems it an act of war. His Brotherhood is shown to terrorize humans and any mutants who voluntarily seek the cure. Many mutants, in fact, do seek the cure. They fear discrimination from normal humans and desire to make themselves 'normal'. Charles and his X-Men represent the rest of the mutants who desire to keep their powers and a peaceful solution. This is shown by the X-Men attempting to thwart Magneto from killing humans and mutants alike. They advise the human military to prepare for Magneto and set up a dramatic final showdown at the Worthington Labs.

There are two main examples of transhumanism in The Last Stand, the first of which is the mutants themselves. According to the X-men universe, the mutants are exactly the same as humans except that they possess one extra gene – the X-gene. This X-gene provides each with his or her unique power. These powers are central to who each mutant is. They often take a name that represents their power in some way – it is a fundamental part of who they are. The Last Stand focuses on the collision between the mutants and their X-gene with another transhumanist technology – gene therapy. In this film, Worthington Labs develops a genetic suppressor that silences the activity of the X-gene in mutants, thus rendering it inert. The mutants then lose their powers and have the same abilities as a standard human. This targeted genetic therapy functions also as a social tool that humans and mutants use to argue their positions.

The conflict in the film over the cure and whether or not it should be available bring up questions of perfection. As in Gattaca, The Last Stand displays both the aspirational pursuit of perfection and static perfection. The humans and mutants have opposing concepts of what it means to be perfect. These conceptions of perfection drive each group to act the way they do. Some mutants and humans are violent in their quest to bring about a more perfect world, while others place their emphasis on accepting imperfection.

Jean's Phoenix is also noteworthy in the film. She is shown throughout to have two personalities that battle for control. The caring, teacher Jean ultimately falls prey to the voracious Phoenix Jean, which leads to her undoing. Jean is a particularly interesting case because it focuses on the topic of the next film, Neurological Manipulation, and also, personal identity. Throughout the film, the real Jean is shown to appear in brief

instances when she can break through the Phoenix personality. It provokes the interesting question of whether or not Jean is still the same person as we knew before – still responsible for her actions.

Neurological Manipulation

Eternal Sunshine of the Spotless Mind (2004)[41]

Eternal Sunshine of the Spotless Mind is a sci-fi, psychological thriller directed by Michel Gondry in 2004. The film is set in present day and follows the life of Joel Barish. The film opens with scenes of Joel's mediocre and boring life. He has a boring apartment, a shoddy car, and a personality to match. While waiting for the train that takes him to his work in New York City, Joel narrates his displeasure of Valentine's Day – highlighting his loneliness. He spontaneously decides to skip work and take a train at the last minute to Montauk, New York. While on the train he remarks about how strange his decision was, as it is unlike him to try anything new. He doodles in a journal that he keeps close to him and eventually arrives at Montauk. He wanders around a beach, as a woman walks in the background. While waiting for the train to take him back home, Joel sees this woman at the station. Her vibrant orange hair sticks out to him, as does her spunky personality. The woman, Clementine, is persistent in conversing with Joel and they hit it off. The scene ends as Joel is driving Clementine home and invites him to stay at her place. She runs inside, just as a man comes up to Joel's car window and asks him what he is doing. Joel replies that he has no idea what that question means, so the man walks off.

[41] *Eternal Sunshine of the Spotless Mind*, Dir. Michel Gondry, 2004.

The film then follows their love story as they have adventures in the snow, go hiking, and eat meals together. They bicker, cuddle, and face all of life's challenges together. Clementine remarks that he never opens up to her and Joel replies that he simply isn't that interesting. As Joel brings a Valentine's Day gift to Clementine, he is shocked when she appears not to know who he is. He retreats to a friend's house where he discovers that Clementine erased all memories of Joel from her mind.

Joel, furious, visits the mind erasure company, Lacuna Inc., and meets with the physician, Howard Mierzwiak. Howard apologies, saying that Joel should never have found out that he has been erased from Clementine's mind. Joel decides that he wants to have Clementine erased from his mind and Howard agrees to do so. Howard has Joel bring anything that reminds him of Clementine to the office so that the memories can be mapped for deletion using brain scans. Joel then takes a sleeping pill and two technicians arrive at his house to wipe his memory while he sleeps.

The next part of the film takes place inside Joel's mind. He relives each and every one of his memories with Clementine, only to feel them be stripped into nothingness as the technicians erase them. As he relives the memories, he becomes unsure of his decision to have Clementine erased. He realizes that he loves her and is not willing to part with his memories, so he attempts to preserve anything of her that he can. The Clementine in his memories begins to help him as they jump to other memories of his, causing Stan to realize that the procedure is not working as planned.

Meanwhile, Stan, one of the technicians, calls Howard in to help him get Joel back on track with procedure. Joel is frantically trying to get word to Stan and Howard while he attempts to save his memories. Eventually, Joel reaches his last memory of

Clementine and she tells him not to forget her. She tells him to go to Montauk. The memory fades and Joel wakes up to the same scene as he did in the beginning of the film. He has no memory of the operation or of his recent trip into his mind. He walks around his apartment and heads to the train for work before hopping on the train to Montauk. Joel then goes through the same sequence of events as at the beginning of the film, hitting it off with Clementine.

When Joel stops at Clementine's house, she checks her mail. It contains a cassette that is a recording of her decision to erase Joel from her mind and her reasoning behind it. A disgruntled employee at Lacuna Inc. decided to send back all the tapes to anyone who has ever had mind erasure done. The two listen to it in the car, stunned at what it represents. Joel, feeling like it is a sick joke, kicks Clementine out of the car and goes home. Clementine makes her way to Joel's apartment, only to find him listening to his own tape. The two struggle to grasp what it means and agree that it is best not to pursue the relationship any further. At the last second, Joel runs to Clementine and says that he'd like to try it anyway. Clementine agrees, and they start again.

Reaction:

The beginning of the film sets the tone for the rest of the film. Joel is shown to live in a drab apartment, drive a beat-up car, and join the mindless horde that commutes into New York City for work. The scenery is grey, cold, and particularly uninspiring. Clementine stands out from the beginning of the film because of her colorful appearance and demeanor. The contrast between Joel and Clementine is painful to witness, as the film pronounces their differences via excruciating dialogue. Joel is painted as a lost-soul. His journal and its elaborate drawings give the viewer a look into a troubled, lonely mind.

Clementine's quirky and somewhat bipolar personality is accentuated through her constant alteration of hair color. Yet, despite this, the relationship is shown to blossom. The film takes an uplifting look at their ongoing relationship while still maintaining a sense of dullness that has latched on from the beginning of the film. This is highlighted by Clementine's outbursts toward Joel in regard to being closed off, even after a number of months together.

The second portion of the film takes a powerful turn. While the first part of the movie was a typical love story, the second half turns the story on its head. As Joel travels through his memories, the weight of his decision to erase Clementine is slowly revealed. The loving, blissful moments that he shared with her are not worth losing in his mind. The memory sequences are shown to be something out of a nightmare – his memories being pulled from him while he is living them. His ability to manipulate his memories only goes so far, as he attempts to drag Clementine to safety. Joel proceeds to run Clementine to other memories, childhood memories. Eventually, Joel reaches the final memory he has with Clementine. They stand in a bookstore, a fitting final memory because despite all the knowledge around them, they are helpless without a means to act. Joel then wakes up, just as he does in the beginning of the film. No memories, no Clementine. When the two eventually come back together it is a culmination of all the pain, sorrow, and heartbreak that has led them to this point – the price of memory alteration.

Neurological manipulation is the example of transhumanist technology that is presented in Eternal Sunshine of the Spotless Mind. Many individuals in the film, including the two main characters, undergo mind alteration procedures. The company,

Lacuna Inc, offers individuals the chance to completely erase all traces of someone else from their mind. The process involves collecting anything and everything that is related to that individual. Once the items have been assembled, the physician uses the items to map neurological responses as a way of identifying memories that need to be erased. The map allows the technicians to locate and delete memories – a form of controlled brain damage. The patient wakes up in the morning with no knowledge of the operation or of the individual he/she has erased. Any friends or family of the individual receive a letter instructing them not to mention the deletion to the individual at any cost.

Perfection is again at work in Eternal Sunshine for the Spotless Mind. The brain wiping technology allows individuals in this world to customize their minds based on their desires. No longer does a person need to tolerate the memories of someone he/she hates or used to love. But with this tremendous power comes consequences. The entirety of the film depicts the desperation and heartbreak that motivate the decisions of Joel and Clementine to erase each other, followed by their regret in doing so. Their desire for achieving a better state of mind – of perfection – leads them down a dangerous path. Even the background characters in the film come to conflict over the consequences of years of mind erasing. Relationships are destroyed in the process. In an interesting addition, despite all their attempts to remove each other from their minds, Joel and Clementine end up coming back together. It suggests that something else may be at work that draws the two together.

Concluding Film

Blade Runner (1982)[42]

Blade Runner is a 1982 sci-fi film directed by Ridley Scott. The film is set in a dystopian version of Los Angeles in 2019. The story follows Rick Deckard, a blade runner. A blade runner is a special police officer who 'retires' Replicants. Replicants are the result of the genetic engineering technology of the day – genetically engineered androids. These Replicants are synthetic humans who are stronger than humans and can display emotion. Replicants are used on other planets to do labor and entertainment jobs that humans do not want to do. Replicants are not allowed back on Earth for security reasons, an issue that is negated for the most part by their 4-year lifespan. If Replicants do make it back to Earth, blade runners find them and retire them. The Replicants are created at the Tyrell Corporation – the setting for the opening scene of the film.

The film opens with a blade runner, Holden, interviewing a potential candidate for the Tyrell Corporation. He uses a Voight-Kampff psychological test to determine if the individual is human or replicant. If a Replicant takes the test, it becomes overwhelmed by the emotional burdens and react violently. The candidate undergoing the test, Leon, does just that. Leon is angered by the repeated questions of Holden about his non-existent mother and viciously attacks him before escaping. The film then moves to Rick Deckard eating at a Japanese restaurant in the pouring rain. A police officer, Gaff, arrests him for no apparent reason and brings him to the police station in his hover-car. Once at the station, it is revealed the Deckard is a retired blade runner who was brought in to the

[42] *Blade Runner*, Dir. Ridley Scott, 1982.

chief, Bryant, to track down a few Replicants. Bryant reveals that four new model Replicants have made their way to Earth and are now at large in Los Angeles. One of them, Leon, just attacked and seriously injured Holden. Bryant asks Deckard to retire Leon and his compatriots, Zhora, Pris, and the leader, Roy. Despite their four year lifespan, the Replicants are dangerous enough that Deckard agrees to go after them.

Deckard and Gaff then travel to the pyramidal fortress that is the Tyrell Corporation, where they meet Dr. Eldon Tyrell. Tyrell explains to Deckard that he does not believe that the Voight-Kampff test is a reliable indicator of Replicant status now that the Replicants are more advanced. He asks Deckard to administer the Voight-Kampff test to his assistant, Rachel. Normally it takes 20-30 questions for a blade runner to determine if an individual is a Replicant or not, but it takes Deckard 100 questions to realize that Rachel is in fact a Replicant. Tyrell reveals to Deckard that Rachel is one of his latest experiments – a Replicant who has memories and believes herself to be human. He goes on to further explain that Rachel's memories are not memories of her own, but are taken from humans and given to her.

Deckard then goes to Leon's apartment and scrounges for clues. He finds a pile of pictures and several scales from a snake skin that he takes with him. Meanwhile, Roy and Leon head to the laboratory of an engineer who designs the eyes for the Tyrell Replicants. They forcefully question the engineer about how they can change their lifespan to exceed four year, to which the engineer tells them to talk to Tyrell himself. The engineer provides them with a name, JF Sebastian, as someone who can take them to Tyrell.

In the meantime, Deckard heads home to analyze the photographs that he found in Leon's apartment. Rachel is waiting for him, and Deckard, harshly, tells her that she is a Replicant and doesn't have real memories of her upbringing. Rachel, furious, leaves Deckard to examine the photographs alone. Deckard's analysis brings up an image of Zhora, one of the fugitive Replicants. While Deckard is identifying Zhora, Pris is seen alone on a street until she bumps into JF Sebastian. Sebastian agrees to provide her with shelter and takes her to his apartment. He reveals that he is a genetic designer for the Tyrell Corporation, to which Pris responds by sending a message to Roy. While Pris is waiting for Roy, Deckard takes the snake skin he found in Leon's apartment to a store where he links the purchase to Zhora. Deckard finds Zhora in an exotic club and proceeds to retire her as she flees into the street. The police chief, Bryant, catches up with Deckard shortly after and notifies Deckard that Rachel has disappeared and needs to be retired. As Deckard is about to leave the crime scene, he notices Rachel in the distance. He attempts to follow her until Leon, having watched Deckard shoot Zhora, attacks him. Leon gets the better of Deckard and is close to killing him until Rachel takes Deckard's gun and kills Leon.

Deckard takes Rachel back to his apartment after assuring her that he will not retire her. The two bond in his apartment and when Deckard falls asleep he dreams of a unicorn. In the meantime, Roy arrives at Sebastian's apartment, where he convinces Sebastian to take him to Tyrell. Roy meets Tyrell, demanding that Tyrell extend his lifespan since he is their creator. Tyrell tells Roy that the technology to alter the lifespan to deviate from the pre-set four years has not been discovered. Roy is furious and tells Tyrell that he has made some unethical decisions, to which Tyrell responds that he has

done amazing things. Roy then proceeds to slowly murder Tyrell, after which he kills Sebastian.

Deckard, upon hearing the news that Tyrell and Sebastian are dead, goes to Sebastian's apartment, where he finds Pris. He and Pris engage in a violent fight that ends with Deckard shooting Pris several times. Roy then arrives at the scene and proceeds to toy with Deckard. He breaks several of Deckard's fingers, prompting him to run outside in an attempt to flee. The two run around the abandoned apartment building and engage in brief clashes. Deckard's injuries build up and it is shown that Roy is dying because his four-year lifespan is dwindling down. Deckard makes a last-ditch attempt to jump to another roof and barely makes it. Roy, being of superhuman strength, easily makes the jump to the other roof and pulls Deckard up. Roy has the opportunity to kill Deckard, but simply sits there and laments at the fact that his life will shortly end. Tears running down his face, Roy dies as Deckard watches. Gaff then arrives and picks Deckard up, congratulating him. He mentions that it is a shame that Rachel won't live for long. Deckard frantically races to his apartment where he left Rachel. Rachel is safe and sound, despite the comment from Gaff. Deckard rushes Rachel out the door and the two make to leave. As they walk out the door, Deckard sees an origami unicorn that Gaff left on the floor. He stares at it for a few moments before he and Rachel leave through the hallway.

Reaction:

Blade Runner is first and foremost a dark film. Shadows provide as much information as do the images themselves. The mucky backstreets and gruff looking populace illustrate that Los Angeles is not a pleasant place. Deckard, with his tired demeanor, is a reluctant figure forced back into one last job. As he views the files of

Leon's attack on Holden, he maintains his characteristic detached outlook. When Deckard travels to visit Tyrell, he realizes the complexity of the case before him. Tyrell's newest Replicant, Rachel, almost fools the Voight-Kampff test. As Deckard continues to hunt and retire several of the other escaped Replicants, Rachel sets Deckard off-course. He forms feelings for her, in spite of orders to retire her. His mission to stop the escaped Replicants also becomes a personal quest to find the truth – like that of Roy.

Meanwhile, Roy manages to make his way to Tyrell where the two have one of the most intense conversations in the film – the creation and the creator. The silence of the film strengthens Roy's emotional plea as he argues with Tyrell for a longer life. The dialogue is crisp and harsh between the two. Roy's accusations of unethical behavior are met with counter-quips by Tyrell that so much good has been achieved. Roy then kills Tyrell after they cannot come to an agreement and sets out on a collision course with Deckard. Deckard's final clash with Roy is another powerful moment in the film - Deckard is completely outmatched. However, the film turns as Roy pulls Deckard to safety as he is hanging on the edge of a building. His life leaving him, Roy laments to Deckard that he will soon lose his memories. Deckard experiences what may be the most personal and up-close death of a Replicant that he has ever witnessed. Roy's life fades, but his words do not. At the very last, Deckard whisks Rachel away, leaving to an uncertain future.

Transhumanism appears in Blade Runner in the form of the Replicants. The Replicants incorporate all three of the transhumanist technologies. Replicants are genetically engineered synthetic humanoids. They look and feel like humans, despite beings androids. In addition, they are artificial intelligences that operate on a

sophisticated level. In fact, they can even form memories and display emotion. Their memories can be manipulated, as can be seen in the case of Rachel. She has memories from a human implanted in her mind, thus giving her the illusion that she is that individual. The newest model of Replicant, like Rachel, is so complex with respect to emotion and memories that they can almost pass the Voight-Kampff test that is used to distinguish Replicant from human.

Blade Runner incorporates the larger theme of personhood. The development of Rachel's character and Deckard's understanding of her throughout the film illustrates the increasingly blurred line between human and Replicant. Questions are raised by the film about the status of Replicants as moral agents. In the existing society, Replicants are pieces of property. However, the story focuses on the qualities and lives of Rachel and Roy as significantly developed individuals. Deckard's own conflict mirrors the uncertainty that surrounds Replicants. Roy's encounters with Tyrell and Deckard certainly strain the boundaries of our understanding of personhood. The moral status and blameworthiness of all the main characters are central questions to the film.

CHAPTER 3

PERSONHOOD, MORAL STATUS, AND PERFECTION

Films are conduits for ideas within and between generations, societies, and individuals. In addition to providing entertainment, the selected films also act as a gateway to discussions of deep moral dilemmas. The transhumanist elements in the films present these moral quandaries from new, insightful perspectives. While the technology may be revolutionary and groundbreaking, the moral questions are not. Certain universal moral dilemmas have long occupied the collective consciousness of humanity. The shared and repeated human responses to these enigmas are passed down from generation to generation in mediums like film. Films are discussion tools that help us understand and discuss these age-old moral questions.

Two moral dilemmas that appear again and again in the films are those that revolve around two concepts: Personhood and Perfection. These concepts highlight larger, cosmic issues that have occupied human minds for generations. Personhood is a notoriously challenging concept to understand. There are distinct legal and moral understandings of personhood. In addition, the relationship between personhood and moral status is an ongoing discussion. Understanding personhood and moral status is an age-old task because of its central role in determining who or what are deemed moral agents – members of the moral community. Likewise, the concept of Perfection is another difficult idea to define. Perfection appears in both the films and in reality as either an aspirational pursuit or in a static form. The pursuit of perfection is a process that seeks perfection, while static perfection is a state of being perfect. While we can all understand and relate to these two forms of perfection, the question of what perfect is

varies widely. Nature provides examples of indisputable perfection, and yet individuals and societies have their own perception of what it means to be perfect – the concept of perfection appears in both a universal and a human sense.

This chapter explores the deep moral dilemmas raised in discussions of personhood and perfection through film. The responses of the characters in the films to transhumanist technologies revive these moral questions in fresh perspectives. These questions of personhood and perfection play a significant role in understanding the place of each character within their moral community. The actions and motivations of the characters are at the forefront of the discussions because of the link between moral status with moral rights and responsibilities. In addition, the forms of perfection that the characters either aspire to or embody also influence their actions in the moral community, both towards moral agents and non-moral agents.

Personhood and Moral Status

Personhood and moral status are two widely discussed concepts in philosophy. Personhood generally equates to possession of higher mental faculties, while moral status represents membership in a moral community.[43] The role of moral agency – the ability to make moral decisions – is also relevant in understanding these two concepts. Personhood is often used interchangeably with being human. The two ideas are related but distinct, as personhood is a psychological concept, while being human involves biological concepts.[44] This makes sense, as we often see scenarios in which a human being is not a person – e.g. an irreparably brain-damaged individual. Personhood is also related to

[43] Golam, "On the Notion of Moral Status and Personhood in Biomedical Ethics", 83.
[44] Warren, Moral Status, 90.

moral status. As renowned philosopher Mary Anne Warren noted, "there is a strong conceptual link between being a person and having full moral status".[45] Whether or not personhood implies full moral status is up for debate, but often personhood is taken to imply some level of moral status. And with it, moral status implies moral obligations for moral agents. For Warren, "Moral agents 'invent' moral status, by reasonably agreeing to accept specific moral obligations towards one another – and, often, towards other beings and things".[46]

Understanding what personhood entails, as well as its relationship to moral agency, is difficult. Warren notes, "A distinction is made between (1) 'maximalist' definitions of personhood, which make moral agency – or at least the potential for it – a necessary condition for being a person; and (2) 'minimalist' definitions, which do not require moral agency, but only some capacity for thought and self-awareness".[47] The maximalist position, championed by Kant, goes on to state that moral agency is necessary and sufficient for moral status. Warren counters this claim by noting that "we have moral obligations towards all sentient beings – including those that are not, never have been, and never will be moral agents".[48] In fact, Warren takes another view, which says that "being a moral agent is sufficient for full moral status, but it is not necessary".[49] A near-maximalist position would then say that moral agency is necessary for full moral status. And while Warren discounts this view and Kant's, she also disagrees with the minimalist view that does not make any connection between personhood and moral agency. Her

[45] Warren, Moral Status, 91.
[46] Ibid., 121.
[47] Ibid., 90.
[48] Ibid., 90.
[49] Ibid., 90.

position is that moral agency and mental capacities can both play a role in defining personhood.

The discussion about personhood, moral agency, and moral status goes much deeper than I have presented. Without getting lost in the details, there are a few key points that will be enough for analysis of the films. If we take Warren's view of personhood, then we find that moral agency and mental capacities – sentience and related concepts, as she calls it – play a role in determining personhood. Moral agency is deemed sufficient, but not necessary for full moral status. Thus, full moral status may be granted in the absence of moral agency. In addition, we may find that things or beings should be ascribed some lesser level of moral status – worthy of moral recognition. For the purposes of this thesis we can assume that in most cases, personhood begets some level of moral status.

Warren suggests five criteria as a measure of personhood:

1. Consciousness (of objects and events external and/or internal to the being), and in particular the capacity to feel pain;
2. Reasoning (the *developed* capacity to solve new and relatively complex problems);
3. Self-motivated activity (activity which is relatively independent of either genetic or direct external control);
4. The capacity to communicate, by whatever means, messages of an indefinite variety of types, that is, not just with an indefinite number of possible contents, but on indefinitely many possible topics;

5. The presence of self-concepts, and self-awareness, either individual or racial, or both.[50]

For Warren and many others, these criteria cover the core tenets of what it means to be a person. Moral agency is not on the list, but is often implied to be co-present with the suggested criteria. Warren notes that these criteria need not all apply for personhood. For her, 1-3 may be sufficient for personhood or potentially even necessary.[51] Her purpose in delineating this set of criteria is to serve as an exclusion tool – to find non-persons. This is an acknowledgement of the complexity and on-going debate over what personhood is and where it fits with moral agency and moral status.

Although Warren's primary intention for this set of criteria was to apply to the debate over abortion, she specifically mentions its applicability for aliens, cyborgs, androids, and artificial intelligences. In her famous article on abortion, Warren suggests a thought experiment in which a human explorer discovers an unfamiliar being on another planet –

> "Imagine a space traveler who lands on an unknown planet and encounters a race of beings utterly unlike any he has ever seen or heard of. If he wants to be sure of behaving morally toward these beings, he has to somehow decide whether they are people, and hence have full moral rights".[52]

This scenario has use as a tool for understanding personhood and how it relates to non-human entities. A familiar version of this is E.T. from Steven Spielberg's synonymously

[50] Warren, "On the Moral and Legal Status of Abortion", 435-436.
[51] Ibid.
[52] Ibid.

named film.[53] If we apply the five criteria that Warren has laid out, we find that E.T. is a prime candidate for personhood, and thus some level of moral status. E.T. clearly has consciousness and can feel pain (1). He can reason (2), is self-motivated (3), and can communicate (4). His famous line, "E.T. phone home" demonstrates his capacity of self-awareness (5). He easily meets all of the criteria and thus he is deserving of some level of moral status. If he has moral agency, which is likely because he meets all of the criteria, then by Warren's standards he has full moral status.

While E.T. is a more relatable example of a non-human person, the characters in the other films make substantial arguments for at least some level of moral status and potentially personhood. As Warren concludes, "Citizens of the next century should be prepared to recognize highly advanced, self-aware robots or computers, should such be developed, and intelligent inhabitants of other worlds, should such be found, as people in the fullest sense, and to respect their moral rights".[54]

A concept closely related to personhood is personal identity. Personal identity deals with who a person is over time. Numerical identity is the concept that you at one moment in time are the same person at a later moment in time. If one is numerically identical to herself later, she cannot logically be two different versions of herself. This may seem straightforward; we seem numerically identical with ourselves in the moment and five years ago. However, issues arise when considering what maintains personal identity across time. The two bookend views pertaining to this subject are psychological continuity and biological continuity. They represent the extreme in both directions.

[53] *E.T. the Extra-Terrestrial*, Dir. Steven Spielberg, 1982.
[54] Ibid.

Psychological continuity is a prevailing theory among Western philosophers that has significant following. It is an approach that, in general, states that your psychological faculties (mind) are required, and may be the only things required, for you to be who you are. In the words of philosopher Eric Olson, "You are the future being that in some sense inherits its mental features – beliefs, memories, preferences, the capacity for rational thought, that sort of thing – from you; and you are the past being whose mental features you have inherited in this way".[55] The psychological view, then, is simply put as the mind is who you are. The polar opposite view can be roughly labeled as the biological continuity view. This view takes the position, as Olson notes, that "You are the past or future being that has your body, or that is the same biological organism as you are. Whether you survive or perish has nothing to do with psychological facts".[3] Thus, the biological view is that your human biological body is you and is needed for you to be you.

These two views have usefulness in their ability to compare and contrast psychological and biology faculties with respect to their influence on identity. That being said, the correct understanding of identity will likely be somewhere in a middle-ground between the two. A hypothetical scenario can highlight the usefulness and also lack of nuance that the psychological and biological continuity views provide. Imagine a normal, human person. This individual has average human levels of intelligence and is biologically human. Scientists have figured out a way to transfer his consciousness to a robotic body. This new body has beyond-human strength, in addition to having exceedingly advanced non-human senses such as electroreception. When the individual's

[55] Olson, "Personal Identity", 1.

mind is transferred to this advanced, robotic body, what becomes of his identity? The psychological view would suggest that he is still the same person he was before. On the other hand, the biological view would say no, he is not the same person. But what these two views fail to appreciate is the middle-ground. Such a view might see the robotic version of the individual to be a partially new identity that is grounded in the old one. A middle-ground view allows for more consideration of how changes in capacities and preferences influence personal identity. While not as central to my discussion as personhood, questions of personal identity appear in several of the films and are worth considering.

The Terminator, as we have seen, is a film that follows a killer cyborg, his potential victim, and her protector. While the terminator seems to be just a machine, in actuality he is a mixture of both mechanical and organic parts. At first glance, he looks and acts human. He has human DNA in the biological material that covers his mechanical underpinnings, though his brain is mechanical. With this in mind, it is interesting to ask where he stands with regard to being human. Essentially, the question becomes: "What percentage of human material, and which materials in particular, make a thing a human?" Many people today wear glasses, have hearing aids, and even brain implants. We most certainly still consider them human, but future modifications may be difficult for us to accept. It is likely that the process will be gradual, like transhumanism as a whole. At present, we do not have the capacity to alter a human so much that at one point in time it clearly becomes something beyond human, something everyone would describe as a post-human. However, incremental processes by which humans move in that direction can be described as transhumanism.

The Terminator's human appearance may be mistaken for personhood, as I have mentioned people are often apt to do. But can we consider the Terminator – or perhaps the collective consciousness of the machines, which controls the Terminator – to be a person and deserving of some level of moral status? The actions of the Terminator shed some light on this matter. In the film, the Terminator operates with a clearly consequentialist framework. The overall machine consciousness has defined the survival and flourishing of the machines as the 'good'. In fact, the Terminator is rule utilitarian in his approach because his actions all appeal to the larger goal. He singles out Sarah for death, and is willing to kill anyone that gets in his way. All that matters for the Terminator is that Sarah Connor dies. While the Terminator is clearly the bad guy in the films, it is interesting to consider his point of view. The machines, in their quest to wipe out humanity, clearly ascribe little to no moral worth to humans. They come off as morally absolutist, but then again so do the humans. Human society is just as guilty of absolutism as the machines – they ascribe no moral worth to the machines and cyborgs.

We can consider the personhood, and thus moral, status of the Terminator and others like him using Warren's five general criteria for personhood. It is clear that the Terminator has reasoning and the ability to communicate. He also seems to be aware of things around him, though he does not seem to feel pain. He does indeed have self-motivated activity, though this becomes difficult to define considering his programming. Lastly, the Terminator may or may not be self-aware. So, the Terminator neatly fits several of the criteria, while potentially fitting into the others. As Warren noted, only several of the criteria may be necessary and sufficient for personhood. The fact that the Terminator does not feel pain presents the largest obstacle in the discussion of

personhood. The capacity to feel pain in a physical or emotional sense is generally recognized as a core trait of a person. This may, however, be the result of humans defining criteria based on our own biological properties. The Terminator and other machines, then, may very well be persons and deserving of some level of moral status. If their capacity to be moral agents is discovered, then they deserve some level of moral status.

A similar case presents itself in the form of HAL from 2001: A Space Odyssey. HAL, as we are told, is an artificial intelligence that operates almost all aspects of the spacecraft, can interact with humans, and has never made a mistake. The film also shows Dave and his fellow astronaut being interviewed about HAL's ability to reason, communicate, and feel. Dave and his co-pilot respond that HAL appears to give his own reasoned answers and seems to have legitimate emotions. Despite the fact that they do not fully know the extent of HAL's capacities, they consider him a member of their crew nonetheless.

If we were to consider which of Warren's criteria HAL would meet, which ones would they be? Like the Terminator, HAL clearly can reason and communicate. The other conditions are where it becomes particularly interesting. Although HAL does not have any organic material like the Terminator has, HAL appears to display a level of self-awareness that the Terminator does not. As Dave begins to shut HAL down, HAL knows what is happening. He tries to reason with Dave, before becoming angry and ending with begging. In addition, HAL appears to have awareness, though not pain. Much like the Terminator example, pain might be an unnecessarily human component of personhood

criteria. And as for self-motivated activated, again, it appears that HAL has some level of that.

So, why is it important to determine if HAL is a person and/or a moral agent? In the film, HAL kills four of the astronauts and attempts to kill Dave as well. If HAL is considered a person and has moral status, HAL would be blameworthy for the deaths. HAL may in fact have full moral status because he displays moral agency as seen in his actions. Much like the Terminator, HAL operates with a very utilitarian viewpoint. For HAL, he sees the success of the mission as the primary goal. He recognizes the threat that Dave and Frank poses, so he attempts to take the necessary actions. While we may or may not agree with HAL's decision to kill the astronauts to keep the mission going, it is certainly important to our decision to consider whether or not HAL is a moral agent. As I mentioned, if HAL is a person and a moral agent, then he is morally blameworthy or praiseworthy for his actions. With this in mind, the situation on-board the starship becomes much more ethically complex than before. HAL is a particularly interesting case in comparison to the Terminator because he does not resemble a human in appearance whatsoever. This challenges us to set aside the notion that personhood depends on human characteristics.

The very end of 2001: A Space Odyssey provides an interesting look into issues of personal identity. When Dave finds the black monolith floating near Saturn, he is transported through a beam of light into a French Victorian-era room. He then finds himself in a series of older and older versions of himself, sometimes seeing an older version in front of his current self. We can ask if Dave is the same person throughout the entire process. The psychological view would lead us to believe that he is the same

person being transferred from one body to another. However, the biological view may lead us to believe that we are seeing a number of Dave's because the body is no longer the same. A middle-ground view might see the situation in a different light – Dave might be a new version of himself each time. If his psychological and biological faculties change each time he assumes the older bodies, then each of these Dave's may be a version dependent on the previous Dave, but with a separate future track.

The film Blade Runner also has parallels to the personhood and identity issues brought up in The Terminator and 2001: A Space Odyssey. While not dealing with cyborgs or artificial intelligences, the focus of Blade Runner is on the androids - Replicants. They are robots designed to mimic human behavior, although they differ from humans in several key ways. First and foremost, Replicants have a shortened lifespan of only four years. As we find out in the film, they were partly designed this way for the safety of humans, and because, until Rachel and others of her model, their design complexity limited lifespan. They are quick of mind and body, surpassing humans with their strength. Replicants are designed to perform the menial and dangerous tasks that humans do not desire to do. Due to their physical similarity with humans, the Replicants can be distinguished only by their lack of empathy. Emotional response tests are used in the film to determine if an individual is a Replicant or not. It is noted that the creator of the Replicants, Tyrell, realized that as the Replicants experienced the world, they gained their own memories. As their personalities develop, they become emotionally unstable towards the end of their four year lifespan because they have no past memories on which to build their new ones.

As the film follows Deckard on his journey to retire the escaped Replicants, the boundaries between human and Replicant blur. Two of the Replicants, Roy and Rachel, are excellent cases to consider personhood. The status of their personhood and moral status is critical to understanding their place in society. If Roy and Rachel, along with the other Replicants, are found to have moral status, then Deckard is not retiring them, but killing moral beings. Furthermore, if the Replicants were found to be persons and moral agents, then they would be ascribed full moral status. Full moral status as moral agents would mean that Roy and Rachel have moral obligations and rights as contributing members to the moral community. This means that they would be morally responsible for their actions. Their position in society as having full, partial, or no moral status is central to understanding how we should view and treat them.

Roy's actions provide insight into the status of Replicants as persons and/or moral agents. His pursuit of a longer lifespan for himself and his fellow Replicants takes him on a dark path. During his journey, he kills a number of humans in order to meet Tyrell. When he finally faces Tyrell, he argues for more time – more life. Whereas the newest model, Rachel, has the lifespan of a human, Roy and the other Replicants do not. As mentioned before, the moral status ascribed to Roy is paramount to understanding the moral weight behind his claims. If we consider the five criteria of personhood, Roy appears to meet each and every one. In addition, this gives credence to the idea that Roy is a moral agent. He is capable of making moral decisions – he saves Deckard from falling to his death. If Roy is a moral agent, then he is blameworthy for the people that he has killed, but also has a right as having full moral status not to be killed himself.

Granting the Replicants even just partial moral status would make killing them morally wrong, even if they remained property in another sense.

While Roy brings up questions of personhood and moral status, Rachel provides insight into personal identity. Tyrell implanted human memories (from his niece) in Rachel so that she would believe that she was human. She is inherently more stable than other Replicants, like Roy, who only have memories from their four year lifespan. Rachel almost fools Deckard when he administers the emotional response test. She appears and acts so human, and legitimately believes herself to be so, that it is almost impossible to tell that she is not. If we grant that Rachel is a person, then was she ever Tyrell's niece? Or is she her own individual person built upon the memories of Tyrell's niece? The middle-ground approach to numerical identity again has utility as it may suggest that the latter is true. Rachel may act as a twin to Tyrell's niece, and has developed on her own using the other girl's memories as a groundwork.

Perfection

The other major concept that presents itself in the transhumanist films is that of perfection. The concept of perfection is familiar on some level to us all. Some of us seek to attain it, while others enjoy the absence of it. Regardless, perfection has played a major defining role in human culture throughout its history. In the Merriam-Webster dictionary, perfect is as "being entirely without fault or defect" or as "corresponding to an ideal standard or abstract concept".[56] These two definitions shed light on an important note to consider when thinking about perfection. The first definition relates to what I call a

[56] "Perfect".

universal type of perfection – an indisputable perfection. Examples of this universal perfection include a circle or exactly symmetrical fractal patterns in nature. The second definition of perfect is a human type of perfection. Examples of this human perfection can include a person's belief that golden retrievers are the perfect type of dog or that, on a much more sinister tone, Aryans are the perfect race. Human concepts of perfection are obviously subjective. While we can all agree that a circle is perfect in a universal sense, we may not agree what genetic background represents perfection.

When considering perfection, there is another important distinction to consider. On the one hand, there is the pursuit of perfection, while on the other there is the state of perfection. In other words, perfection can be an aspirational pursuit – a goal that one desires to meet. The state of perfection is, thus, a static form of perfection – an inherent quality of the person or thing. Both the aspiration for and state of being perfect play a significant role in the following films. Much of the conflict centering on perfection in the films revolves around the consequences of these two forms of perfection as they shape individual and social consciousness. The pursuit and attainment of perfection often clashes with desires for balance – a topic discussed by the President's Council for Bioethics. In their discussion, "Beyond Therapy", the Council argues that while some individuals may desire to pursue perfection, most individuals will be fine with small to no improvement to their current faculties. In fact, they note that other concepts separate from perfection offer a more balanced, fulfilling life – "the quest for happiness, success, and self-esteem, especially in our society, may prove to be more powerful motives for an interest… many more people will probably turn to it in search of advancement,

contentment, and self-satisfaction for themselves and for their children".[57] Determining what perfection is and whether it is worth pursuing are questions that we consider in film and life alike.

X-Men: The Last Stand is one of several of the selected films that deals with the pursuit of perfection and the consequences that follow. The mutants in the X-Men universe are described as genetically similar to humans in every way except for the fact that they contain an extra gene – the X-gene. This one gene provides them with their unique powers. As seen in the summary and analysis of the film, the backdrop for the movie is that of a fragmented society with regards to mutants' rights. The Government is seeking the most amicable scenario, while the mutants square off against a private company (Worthington Labs) that has designed a 'cure' for the X-gene. This cure is a gene suppressor that permanently silences the functioning of the X-gene, thus rendering the mutant 'normal'. Magneto and a number of other mutants take offense to these claims that the serum is a 'cure'. They argue that a cure implies sickness and they do not see themselves as sick. Magneto's response to this perceived act of aggression is violent. Charles Xavier and the X-Men advocate against the cure, but in a much different manner. Their goal is to prevent hostilities and find a diplomatic solution.

The center of the conflict is the definition of perfection that each side promotes. Worthington Labs, and many normal humans, view the X-gene as imperfect. To them, mutants are outcasts that need to be brought back into society. The mutants, on the other hand, see themselves as normal (Charles) or even superior (Magneto). These different

[57] The President's Council on Bioethics, "Beyond Therapy", 19.

interpretations of the so-called human type of perfection account for the hostilities seen in the film; social and military responses to perceptions of perfection lead to disastrous consequences.

The pursuit of perfection shows itself clearly in the film as the humans and Magneto both strive for what they deem to be a more perfect world. The ethical frameworks that each party invokes to justify their actions in respect to achieving their version of a more perfect world give interesting insight. Worthington Labs and their supporters exemplify rule utilitarianism in their approach to handling the mutant cure. Rule utilitarianism focuses on maximizing utility, happiness for example, not in one specific case, but overall. As such, the humans seek to offer the serum to any mutant who desires to become 'normal'. Disregarding a sinister section of the military that is bent on destroying the mutants, the general human population stand by the path that Worthington Labs set forth. They legitimately believe that mutants are sick and it is not suggested that they force either mutants or humans to cooperate in treating the mutants.

In contrast, Magneto embraces a separate form of utilitarianism to guide his actions: act utilitarianism. Act utilitarianism differs from rule utilitarianism in that each individual act is judged based on applying the principle of utility solely to that one action. As such, Magneto willingly sacrifices human and mutant alike to rid the world of the cure. He simply chooses the most advantageous choice for himself at each given moment. Magneto is motivated by his idea that mutants are examples of perfection in nature. His notion of perfection is a human type of static perfection, as the mutants all have individual, unique powers. Magneto sees evolutionary perfection as a characteristic of all the mutants.

Charles Xavier promotes a balanced approach to the situation. He and other sympathetic mutants see themselves and humans as normal, imperfect creations of nature. They advocate appreciation and tolerance of these imperfections, primarily through promoting an ethics of virtue. Charles is the primary advocate for utilizing the power of virtues to discuss and mediate the conflict. He challenges Magneto and all the other mutants to show the humans how they want to be treated. Charles is confident that being diplomatic and reasonable will lead others to see the right course of action. While Magneto's impatience leads him to a darker path, Charles is steadfast and consistent in his approach.

These three different viewpoints in the X-Men film showcase how different concepts of perfection can lead to substantial conflict. The humans legitimately believe they are helping, while Magneto believes that he is protecting a superior group of people. In this type of scenario, it becomes difficult to ascertain blameworthiness, and even harder to reach a peaceful resolution, as Charles would attest to. If anything, the film serves as a reminder that perfection can have serious social and legal implications when it is the driving force behind policy and decision-making on a large-scale. The film parallels modern concerns that public health institutions continue to focus solely on improving health outcomes and thus they disregard important social and cultural considerations. This pursuit of a singular goal at the expense of balance may prove costly, as it did in the film.

Another film that ties in with the concepts of perfection is Gattaca. In the world of Gattaca, the entirety of society is focused on a certain type of perfection – genetic perfection. With individuals separated into 'valids' and 'in-valids' it can be seen that

perfection has a significant impact on the way of life of each individual. The film follows an ‘in-valid’, Vincent, as he attempts to achieve pursuits that are normally limited only to ‘valids’. He assumes the life of Jerome, a ‘valid’, who was genetically selected to be the perfect combination of his parent’s DNA. When Jerome ends up finishing second in a swim race, he proceeds to throw himself in front of a car and becomes paralyzed. As the film follows the success of Vincent and the disappointment of Jerome it reveals the interesting dichotomy between static perfection and the pursuit of perfection. On the one hand, Jerome, who is slated to live a short life, will stop at nothing to achieve his dream of going into space. He is very much a consequentialist in that he sacrifices much to achieve his goal. In the end, Vincent achieves everything he wanted, while Jerome commits a peaceful suicide, content to have played the number-two role.

The film presents a powerful look at a deeply segregated society solely based on the idea of genetic perfection. Parents are pressured to have genetically engineered children who can hold their own in a world focused on achieving this form static perfection. Meanwhile, ‘in-valids’ are given a life expectancy prediction at birth and allowed to take only menial jobs. The rise of Vincent in the premiere space agency of Gattaca highlights the imperfection of perfection. He is more than capable of performing at the required level, despite the fact that he is likely to have a shortened life span. Meanwhile, Jerome’s life crisis leads a perfected individual to attempt to take his own life. Here we see Vincent taking charge of his pursuit of perfection, while Jerome suffers because of his static perfection. Vincent, the ‘in-valid’, uses his goals to motivate him to ascend above his ‘limitations’. On the other hand, Jerome fails to find balance with himself and his perfection results in nothing for him. If anything, the film shows how

perfection may not be the only good worth pursuing. In addition, it echoes the sentiments expressed in X-Men that perfection differs for many people. It becomes dangerous when social and legal frameworks are built on certain interpretations of it.

The last film that incorporates perfection is that of Eternal Sunshine of the Spotless Mind. As we have seen, this film tackles the world of neurological manipulation. The main characters, Joel and Clementine, find themselves in a struggle to retain memories of one another after they individually decided to have the other removed from their mind. The perfection that appears in this film is that of pursuing perfection. In the society of the film, neurological manipulations such as this are commonplace. Whereas before, humans had to learn to live with people who caused them grief or pain, the world of the film lets them remove unwanted material from their minds. Joel and Clementine are clear examples in the film of the dangers of pursuing perfection too far. Grief, heartbreak, and loss are powerfully constructive emotions, and the main characters attempt to remove them. Yet despite their attempts, Joel and Clementine come back together. Perhaps there is more to our connections than we fully understand; the reason why we are drawn to certain people. The story of Joel and Clementine is applicable to humans everywhere. It is our search for who we are and where we belong.

Conclusion

Film is a communication tool, like oral history and writing, which helps us pass knowledge from one person to the next. In addition to being entertaining, films allow us to visualize and experience a perspective that is not our own. They offer interesting case studies into what might be, especially with respect to transhumanism. The ideas of transhumanism are constantly shaping the world through science, medicine, and other

fields. While the core ideas, like personhood and perfection, are nothing new, future advances in transhumanist technology will push us to re-evaluate our beliefs. Progress is a defining theme in human history and there is no reason to see it stopping now. Films, like other communication tools, help us to prepare ourselves for what is to come. The characters and stories that entertain us also encourage us to consider our positions.

Each of the selected films highlights issues that arise as a result of a number of transhumanist technologies. Technologies like artificial intelligence, genetic engineering, and neurological manipulation, these technologies have benefits and harms associated with them. While the films often look at the darker side of such technology, they offer their perspectives into the minds of very real-seeming characters, who invoke ethical frameworks to defend their beliefs that are recognizable to us. Both the issues and moral frameworks that are presented in the films are timeless. Questions of personhood, moral status, and the pursuit of perfection have occupied, and will continue to occupy the minds of humans for generations. Attempting to understand and define these deeply moral concepts is an age-old task.

Films can act as conduit for discussing our shared moral quandaries. They challenge us to think about how we live our lives. Our perception of what it means to be a person and have moral status evolves with our understanding. The consequences of pursuing perfection at the expense of balance in our personal lives is applicable to us all. Transhumanism in film highlights questions we have about who and what we really, as well what our place is in the moral community. These cosmic questions are a joint endeavor of all moral agents as week seek to understand more and more, building upon those who have come before us.

The takeaway from these films is that despite the futuristic appearance of transhumanist technology, the ideas and issues behind them are not new. We as a society must decide how we go about tackling these issues. Personhood issues are relevant in both abortion cases and artificial intelligence ones. The pursuit of perfection can lead us to desire the perfect artistic masterpiece or genetic perfection. When these ideas are applied to new, impactful technologies, justice issues bring them to the attention of society. Films can help us consider, knowingly and unknowingly, the consequences of our actions and beliefs. They can be more than simply entertainment – they can challenge us.

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X-Men: The Last Stand. Dir. Brett Ratner. Perf. Hugh Jackman, Halle Berry, Ian McKellen, Patrick Stewart. 20th Century Fox, 2006.

APPENDIX

Additional Films

Avatar (2009) – Directed by James Cameron, 20th Century Fox.

Dr. Jekyll and Mr. Hyde (1931) – Directed by Rouben Mamoulian, Paramount Pictures.

Elysium (2013) – Directed by Neill Blomkamp, TriStar Pictures.

Ender's Game (2013) – Directed by Gavin Hood, Lionsgate.

Iron Man (2008) – Directed by Jon Favreau, Paramount Pictures.

Limitless (2011) – Directed by Neil Burger, Relativity Media.

Lucy (2014) – Directed by Luc Besson, Universal Pictures.

The Island (2005) – Directed by Michael Bay, DreamWorks.

The Matrix (1999) – Directed by The Wachowski Brothers, Warner Bros. Pictures.

Prometheus (2012) – Directed by Ridley Scott, 20th Century Fox.

Robocop (1987) – Directed by Paul Verhoeven, Orion Pictures.

Star Trek Franchise

Star Wars Franchise

Transcendence (2014) – Directed by Wally Pfister, Warner Bros. Pictures.

Tron (1982) – Directed by Steven Lisberger, Buena Vista Distribution.

CURRICULUM VITAE

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EDUCATION

WAKE FOREST UNIVERSITY – Winston-Salem, North Carolina August 2013 – Present

- M.A. Candidate in Bioethics

UNIVERSITY OF ARIZONA – Tucson, Arizona August 2009 – May 2013

- B.S. Molecular and Cellular Biology – Summa Cum Laude
- GPA: 4.0 out of 4.0 (Dean's List with Distinction – 2009-2013)
- Member of the University of Arizona Honors College
- Member of the National Society of Collegiate Scholars
- Member of the Golden Key International Honor Society
- Member of the BIO5 Ambassadors

WORK EXPERIENCE

UNIVERSITY OF ARIZONA – Tucson, Arizona January 2013 – May 2013

Bioethics Preceptor

- Assisting with lecture creation and preparation
- Providing feedback and grading for undergraduate group activities and individual research papers

UNIVERSITY OF ARIZONA – Tucson, Arizona August 2012 – December 2012

Introductory Biology Preceptor

- Tutoring introductory biology students during scheduled office hours
- Providing instruction to undergraduate introductory biology students in a classroom setting

UNIVERSITY OF ARIZONA BOSCO LABORATORY – Tucson, Arizona May 2012 – July 2012

University of Arizona Undergraduate Biology Research Program

- Research Focus: Determining the effects of over expression of CapH2 protein and mutated Lamin C protein on Drosophila cell nuclei in relation to Progeria Syndrome
- Preparing and maintaining genetic crosses of Drosophila Melanogaster stocks
- Dissecting of larvae, immunochemical staining of preparations, and data analysis of nuclei structures

UNIVERSITY OF ARIZONA – Tucson, Arizona August 2011 – May 2012

Bosco Lab – Student Researcher

- Research Focus: Supporting and carrying out a time trial studying the effects of various proteins of interest on the aging of Drosophila Melanogaster
- Assisting in the maintenance of Drosophila cultures
- Dissecting of Drosophila third instar larvae and immunochemical staining of preparations

BARROW NEUROLOGICAL INSTITUTE – Phoenix, Arizona June 2011 – August 2011

University of Arizona Undergraduate Biology Research Program

- Research Focus: Creating and testing nicotinic acetylcholine receptors via bacterial and frog cells for novel drug specific responses
- Acquiring familiarity with RNA and DNA molecular techniques, as well as with cell cultures

UNIVERSITY OF ARIZONA – Tucson, Arizona January 2011 – May 2011

Organic Chemistry Preceptor

- Tutoring organic chemistry students during scheduled office hours
- Providing instruction to undergraduate organic chemistry students in a classroom setting

UNIVERSITY OF ARIZONA – Tucson, Arizona August 2010 – May 2011

Enquist Lab – Student Researcher

- Supporting the creation of a plant trait database using information from test sites across the U.S., focusing on the effect of nitrogen fertilization and climate on specific leaf area, height and seed mass
- Assisting in the chemical preparation and subsequent photography of rare leaf samples

USDA ARID-LAND AGRICULTURAL RESEARCH CENTER – Maricopa, AZ May 2010 – August 2010

Summer Intern

- Research Focus: Predicting interactive effects of CO_2, temperature and other environmental factors on agricultural productivity
- Collected samples for the acquisition of specific leaf area data for various cotton varieties under different stress conditions

- Fabricated specimen-handling fixtures used to manage specimens while determining and recording moisture content data

EXTRACURRICULAR ACTIVITIES

AMERICAN CANCER SOCIETY RELAY FOR LIFE – Phoenix, Arizona April 2006, 2007, 2008 and 2009

- Participant in the Relay for Life event, raising money and awareness for cancer

EUROPEAN HISTORY TRIP – Various Countries June 2008

- Traveled to England, France, Switzerland, Lichtenstein, Austria, Germany and the Czech Republic to learn about European history
- Received college credit for the experience

SONIC BRASS – Mesa, Arizona September 2007 – May 2009

- Member of a community brass ensemble that performs at local events