

PERFECTION: UNITED GOAL OR DIVISIVE MYTH?
A LOOK INTO THE CONCEPT OF POSTHUMANISM AND ITS THEORETICAL
OUTCOMES IN SCIENCE FICTION

by

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MAJOR PROFESSOR: Dr. Robert Fox

As science races to keep up with science fiction, many scientists are beginning to believe that the next step in human evolution will be a combination of human and machine and look a lot like something out of *Star Trek*. The constant pursuit of perfection is a part of the human condition, but if we begin to stretch beyond the natural human form can we still consider ourselves human? Transhumanism and posthumanism are only theories for now, but they are theories that threaten to permanently displace the human race, possibly pushing it into extinction. This thesis will look at the theories of transhumanism and posthumanism through the lens of science fiction and ask the question of whether or not technology holds the key to humanities next evolutionary step or its demise.

DEDICATION

This thesis is dedicated to Dr. Michael E. Schnur. You walked into my Starbucks for a caramel macchiato and completely changed the course of my life. Without your constant support and encouragement I would have missed out on so many wonderful adventures. Thank you from the bottom of my heart; words cannot express my gratitude. I can only hope that I will be able to pass on all the kindness and support you shared.

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CHAPTER 1

INTRODUCTION

What is perfection, and is it within the power of the human race to become perfect? Is perfection a religious concept or a scientific one? Can perfection be found in nature or is nature evolving in a continual pursuit of perfection which remains always on the horizon? What does it mean to be a perfect human, and are we perfect humans now, or merely human 1.0, a prototype before the global upgrade? Would it surprise you to know that there are people out there who believe that we are due for the global upgrade to homo sapien 1.0, and that they are willing to go to great means to achieve the next step towards perfection? While scientists actively attempt to push the world into their concept of the next step in human evolution, science fiction writers predict a much darker outcome if the human race is restricted to the posthuman trajectory. While the pursuit of perfection is an ancient and noble goal, the concept does not have a single global definition. One scientist's ideal future does not match another's; moreover, a cyberneticist's view of perfection will not combine with a naturalist's view of perfection, or a theologian's view of perfection. To race forward in transhuman and posthuman technology without first contemplating how the technology might negatively affect society, by creating more division, could potentially end in disaster. This may seem pessimistic; however, belief in perfection, or a single definition of perfect, has in the past been a cause of religious war and genocide. Dystopic science fiction is the attempt not to predict the future so much as to ask the world to think about potential repercussions rather than to be locked into a single concept of the perfect future for all

mankind. In other words, to place the story in a dystopic futuristic setting is not to say the pursuit of transhumanism and posthumanism is inherently ethical or unethical, but instead to posit that the belief that it is the sole means through which to advance and unify the human race is to neglect and ignore not just other belief systems but the entire history of human nature, namely, the divisive nature of the human race exhibited in past human conflict and explored in science fiction.

In his book *Perfection* Professor Michael J. Hyde explores perfection in its various forms from the religious belief that only a deity is perfect and the traits and behaviors that deity displays are the perfect examples of how to live, to the scientific view of perfection as not a destination but a continuing journey of evolutionary steps and adaptations. Hyde points out how “Western science... feels compelled to associate perfection... with our species’ biological and evolutionary drive for survival” (Hyde, 15). That is to say that it is the scientific belief that evolution is the biological pursuit of an unattainable perfection, adapting to survive in better and cleverer ways. It is this very argument that has driven scientists like Ray Kurzweil, Aubrey de Grey, Peter Diamondis, and Kevin Warwick to actively experiment with the combination of technology with the human body to create the first cyborg; human 2.0. Kurzweil, Warwick, de Grey and Diamondis all believe that this is without a doubt the next step in human evolution, the next step towards perfection. Kurzweil, a renowned inventor and author, is very public with his vision of perfection, which involves transferring human consciousness into a machine so as to live forever, better known as posthumanism. However, is this vision of the future everyone’s concept of what it means to pursue perfection? Does this unify the human race, or divide it even more? This is where the

human ability to project beyond the present can shine in the form of science fiction. Authors like Vernor Vinge, who is a scientist himself; Neal Stephenson, Charles Stross, Robert J. Sawyer and even Philip K. Dick, use fiction as a vehicle to project logical future outcomes and explore the potential ramifications of the human pursuit of perfection. Their stories are far more dystopic than utopic as each author tries to troubleshoot what will happen if posthumanism becomes a reality and collides with the long history of division and conflict within the human race.

Science fiction and technological advances have always gone hand in hand. *Star Trek* inspired the automatic sliding door, *Star Wars* was the muse for the ion propulsion system that currently keeps a few satellites in orbit, and Charles Stross' *Accelerando* looks like the inspiration for Google's prototype for smart eyewear that could replace the smart phone. What science fiction writers can dream, technological engineers want to build, but if science fiction is self-fulfilled prophecy, what else does it predict aside from useful gadgets? With great advances in technology science fiction authors present only two possible outcomes, the utopic future or the dystopic. It is difficult to name a single science fiction story that is devoid of all conflict, presenting nothing but a utopic vision of the future. Old episodes of *Star Trek* present a clean, happy futuristic human world where money has been done away with, where humans have gotten over their differences and have joined together to go forth and explore the universe; conflict only enters the scene when humanity encounters an alien enemy. It is much easier to name the dystopic science fiction stories, the far more fearful vision of the future in books and movies like *Terminator*, *The Matrix*, and *Accelerando*, where the theoretical singularity happens and machines advance beyond human control,

eventually deciding that they are the next step in evolution and therefore attempt to wipe out mankind for good, or where we discover that if the human race becomes simply a piece of data we are sacrificing our humanity. Each example offers up the potential consequence of creating a new species through the combination of man and machine or creating machines that surpass human intelligence, namely cyborgs and androids. Even more interesting, as time progresses and technology becomes more entrenched in the day to day workings of human existence, the attitude towards transhumanism and even posthumanism seems to change. Early views of cyborgs and androids are that of fear towards the other, the unknown; however, more current concepts, like the Will Smith movie adaptation of *I Robot*, seem far more accepting of the idea. There are even groups out there promoting better life through transhumanism, suggesting we explore the possibilities of a cyborg future for the human race. These sites suggest that this is the next step in evolution, the better chance of survival and perfecting the human condition. This new demand for better life through the joining of body and machine should then raise a few very important questions, namely, is this concept of perfection going to create unity or cause division; does it create hardships for those whose beliefs do not include upgrading to cyborg status; and if given greater abilities, will the human race choose peace or more efficient warfare? If the concept of the singularity is correct, is the human race simply creating the new species that will lead to human extinction? While it may seem that these are questions for a distant future, if Moore's law is to be believed and technology really is advancing at such an exponential rate, then now is the time to take a more serious look at the futures being predicted in science fiction.

The second chapter of this thesis will take a closer look at the conflicting or faulty definitions of perfection presented in Philip K. Dick's *Do Androids Dream of Electric Sheep?* and his representation of androids compared to the subtle perspective shift in the later movie production of the same story. Dick explores the religious concept of perfection as desired but unattainable behaviors or attributes often related with a perfect deity through the perspective of Mercerism; he also explores the scientific or humanistic concept of perfection as the ever receding horizon of evolutionary progression by giving the cybernetic lens through the embodiment of the android. Through the conflict in the novel Dick explores the moral and ethical complications of taking a narrow-minded view of perfection. While Dick represents androids as genius sociopaths, he also only writes the story from a human perspective with the single religious view of unattainable perfection - ability to emulate Mercer through expressing empathy. This could imply one of two things; that the narrator is untrustworthy or that the androids really were a threat to human survival. The androids are unable to express empathy, though they can mimic most other emotions, and in the novel it is through empathy testing that the human characters are able to discover whether or not the figure before them is an android. Dick's argument that androids would be devoid of emotion is currently accurate according to today's computing abilities; however, he doesn't write the androids as totally devoid of emotion, implying instead that his narrator is prejudiced.

The androids in the novel exhibit negative emotions, which is how many writers represent androids and cyborgs as villains and highlights a key problem when trying to write about machines; writers anthropomorphize their mechanical characters. The

inability to write outside of a human lens means that more often than not, in order to make an android or cyborg a villain the writer instills that character with negative emotions so that the reader will side against it. The same holds true with the movie representations of Dick's androids, only this time the characters now possess positive human emotion as well. The androids in the movie seem very human, inspiring empathy and turning the machines into representations of new life or artificial intelligence. In either case the representations should be questioned since it would seem that the author has placed too much of a human lens on what would in the real world be a machine, a perspective that would be completely alien to a human writer. This also draws into question whether or not posthumanism as the next evolutionary step towards perfection is even an achievable conception for humans since there is no way we can fathom an existence beyond what is human. In other words, are we able to even conceive what perfection is when it is something no one has ever seen or experienced? A writer could possibly imagine what it would be like to be a cyborg because a cyborg, depending on the severity of flesh to machine ratio, could still retain his or her humanity. However, an android was never human, which places this perspective completely outside of the range of human experience and raises the question of whether or not a writer, trapped in his or her own humanity, could imagine a life outside of the human condition. This may seem like an argument reserved solely for the philosopher; however, with the great advancements already achieved in technology it is actually a far more current debate to be considered.

Chapter three will talk about the technological advances made because of science fiction. Much of what can be seen or read in science fiction may seem

impossible; however, it is surprising to see how much of it is being attempted. Some scientists believe that transhumanism or posthumanism are the next evolutionary steps and are actively working to achieve their beliefs in perfection, much like a religious individual pursues a belief in the expectations of a deity. Some scientists, like Raymond Kurzweil, believe posthumanism is what will lead to perfecting mankind and peace around the world, whereas some, like Kevin Warwick, believe that becoming transhuman is the only way to survive the inevitable singularity and the rise of machines. Vernor Vinge, a scientist and science fiction author, often writes about the singularity and the potential extinction it poses to the human race. Some of our current conveniences, like iPads and Google Glass, started out on the pages of science fiction novels. The ability of the creative mind to project into the future and dream up technology that can later be made a reality is a skill that shouldn't be ignored. While the science fiction author doesn't predict the future, he or she has the ability to track the trajectory of human achievement and ask important philosophical questions about the ramifications of the pursuit of perfection. Much like H. G. Wells' *The Time Machine* was a commentary on his present time and the widening gap between the upper and lower class, modern science fiction takes a close look at what science is attempting and the future ramifications, not just in technology but in society as a whole.

The fourth chapter takes a deeper look at the dystopic futures predicted in modern science fiction. Wells made his best guess based on the way society at the time stratified the poor from the wealthy; modern science fiction writers look not only at societal trends but also at the effects of advancing technology on society and the divisions it can cause as well as whether or not parts of humanity are being lost. While

science is trying to progress humanity, it could in reality be speeding up the extinction of the human race. Some predictions, like Charles Stross' *Accelerando*, take place in the alien landscape of a virtual plane, humanity still lives on, but at what cost? Other predictions are not filled with possibility, instead predicting more dystopic futures and asking the question of whether or not we are still human if we start advancing beyond the confines of an organic frame. This chapter asks the question of what we will lose if we push ahead and strive for transhumanism as our next evolutionary step.

The fifth chapter takes into account an entirely different concept of what perfection could be by bringing in Katherine Dunn's novel *Geek Love*. Although her work is not typically considered science fiction, Dunn's characters are still trying to control the mutation of the human body to represent a much different perspective of what perfection means, namely designing a body that is perfect for a traveling freak show. The character of Artie takes this concept one step further by establishing a disability cult around himself, lifting his disabled form up as the pinnacle of perfection and demanding that his members amputate their working limbs in order to become closer to his image, placing himself in the position of a god or the religious definition of unattainable perfection. While this is not a futuristic setting it does raise important questions about the lengths taken to step closer to perfection. Much like *Brave New World*, genetic manipulation takes place to create a body fit for an intended task; although, in the case of Dunn's novel, no one would agree with what was done to the characters in the book. Instead, *Geek Love* gives perspective to the attempts at transhumanism because from a place removed we are able to see that creating random mutations through the application of unknown drugs during pregnancy is dangerous and

unproductive to human advancement and, in turn, couldn't it be said that the application of technology to the human body, or the attempt at uploading human consciousness into a machine, is just as dangerous and counterintuitive to human advancement? We have to stop and ask are we going to look back at these attempts a hundred years from now and cringe at our own simplistic thinking. The suggestion that in order to evolve into a better survivor the human race must disfigure or even destroy the human body runs parallel to what Dunn's characters are doing to make the perfect body for a freak show. The novel also exemplifies how perfection is not a unified concept and how claiming transhumanism or posthumanism as the only road towards perfection is to not only ignore other beliefs but to also imply that individuals with disabilities are even more imperfect and must be repaired.

The scientific study of transhumanism and posthumanism does not remain purely in the scientific realm but is found in several areas of human life, from economic class to religious segregation. The drive to become perfect can be dangerous because perfection becomes an unreachable horizon and diversity ends up being ignored or persecuted in the race to be the first to achieve a higher level of humanity. If evolution is a step towards perfection, and if humans are indeed an evolved organism, the only organism to possess reason, it would be logical to say that the application of logic, reason, and forethought to predict potential outcomes and repercussions on society from rapidly advancing technology, before pursuing that technology, would indeed be the perfect, or more perfect solution to charging ahead without considering the consequences.

CHAPTER 2

DO ANDROIDS DREAM OF ELECTRIC SHEEP: THE “HUMAN” ANDROID

To begin discussing perfection and the representation of the android in Philip K. Dick's *Do Androids Dream of Electric Sheep*, one must first talk about the role of science fiction as a philosophical reflection on society and the application of predictable outcomes if technology and human nature remain on the same course. Science fiction contemplates the possible ramifications of modern issues by trying to follow possible logical future conclusions. Just as it is hard to see the hurricane while in the eye of the storm it can be hard to interpret modern events while they are taking place. By projecting the story into the future, the science fiction writer is able to turn the mirror on society and provide interesting, logically thought out commentary. No one would argue against the suggestion that Isaac Asimov's robots explore what it means to be human. It is difficult to examine a current situation while trapped inside the circle of events, which is why science fiction focuses on key elements and views them from a place removed, be it an alternate reality or the future, to try and gain perspective. Literature has long been the outlet for the exploration of the human condition. Authors like Philip K. Dick and Isaac Asimov try to explore humanity through what is not human. *Do Android Dream of Electric Sheep* uses empathy as a key human emotion. Religion sets up an unattainable definition of perfection in the incarnation of a deity or pantheon that possesses qualities which are examples of how the imperfect human should live a good life. Dick's invention of Mercerism as a religion highlights empathy as the desired godlike attribute or perfect ability and therefore something to aspire to possess. Androids are supposed to lack empathy and therefore be imperfect while humans are

supposed to possess it or at least touch on perfection; yet, throughout the novel there are several examples of humans who lack empathy and androids that have it. While trying to write about entities devoid of human nature, many science fiction authors end up anthropomorphizing their androids, making them more of a reflection than a foil of human nature; Dick reveals his humanist leanings by vilifying the posthuman android while he also exemplifies how it is impossible to think beyond our human perspective.

Human emotion plays a major role in Dick's novel *Do Androids Dream*, as emotion is an aspect of human nature whereas machines or androids are supposed to be devoid of emotion. The story begins with Rick Deckard dialing a device called the Penfield mood organ so that he can feel wide awake (Dick Kindle loc. 96-103). It is implied that the mood organ has an almost endless amount of emotional settings and can be used to control everything from basic emotions like happiness to desires like the setting "888... the desire to watch TV, no matter what's on it" (Dick loc. 143-52). It is ironic that the human, for whom emotion should be second nature, needs to use an emotionless machine to regulate what emotion they desire to feel. The need for such a machine is hinted at when Deckard's wife talks about the empty apartments. She turned off the television, an act that was implied to almost never happen, and she could hear the emptiness (Dick loc. 120-28). The mood she had been on was "382... So although I heard the emptiness intellectually, I didn't feel it" (Dick loc. 128-35). This is the first example of a human who exhibits a lack of empathy or emotion. Cold intellect is a theme throughout the book and linked directly with the androids or "andys" Deckard is paid to hunt down and destroy. Iran's reaction to her state of unfeeling is concern. "...I realized how unhealthy it was, sensing the absence of life... and not reacting.... But

that used to be considered a sign of mental illness; they called it ‘absence of appropriate affect’” (Dick loc. 128-35). Dick is establishing early on not only the importance of emotion throughout the story but the complexity of human emotion; he begins here to create one definition of perfection. To be without emotion is negative or imperfect, while to have emotions is better and to have the right emotion is to strive for perfection. Emotions can be controlled through an outside stimulus like the mood organ, much like modern day medication, because humans don’t always have the ability to control emotions without machines, therefore aid of the machine helps the characters reach towards perfection, or as Michael J. Hyde phrased it in *Perfection*, become “more perfect” depending on varying views of what perfection is (Hyde 20). The total lack of emotion is considered a mental illness, so while Deckard and Iran are using an electrical device to manipulate their emotions, a state which could be considered synthetic or false emotions, to still possess the ability to correct those emotions is what makes them perfect and therefore sets them apart from the androids who, being totally devoid of emotion, are simply sick or downright inhuman.

Neil Scheurich, in his article “Evolution, Human Enhancement, and the Narrative Self” talks about the odd shift of thought from the concept that humans should be able to take control of their own evolution and state of mind to the belief that humans can perfect themselves through outside influences to control their emotions. He uses Dick’s novel as an example, talking specifically about the Penfield mood organ, saying “Appearing in the heyday of Valium, but twenty years before Prozac, Dick’s vision neatly presents the prevailing concern that allegedly mood-enhancing substances or devices will in fact sever important links between our emotions and the world” (Scheurich 8). He

believes, “Our affective responses, whether transient or lasting, help us navigate among possible values and decisions and promote a narrative identity that is sensitive but not servile with respect to the world” (Scheurich 8). Again, Scheurich is claiming that the concept of the lack of emotion, or even the presence of too much emotion, or the wrong emotion, is a sign of mental illness, which makes the role of emotion more important in society at large. Emotion, according to Scheurich, is part of how we create ourselves in relation to the world, and to hinder or control that response to be something more than natural changes the concept of identity. Scheurich’s argument implies a more natural view of perfection, or development towards perfection. He indicates that to hinder natural development can affect identity. He also makes note of the fact that while the Penfield device worked at first, the moment Deckard started arguing with his wife, who doesn’t like to use the machine, Deckard’s chosen mood wore off, replaced by his natural response or mood, that of frustration. This importance of true emotional reactions is stressed throughout the novel, even though, as Scheurich ends his observations, the mood organ only makes a few brief appearances.

The real role of emotion in the novel is exhibited through the “Voigt-Kampff Empathy Test” (Dick loc. 450-57), the device Deckard uses to discover and destroy escaped androids. The androids are built so well that an intelligence test no longer works for identifying whether or not the entity in question is a human or an android. Since androids are considered slaves or even tools, and are not allowed on Earth, this distinction is important. This distinction of androids as servants or tools is a great example of Leilani Nishime’s argument in her article “The Mulatto Cyborg: Imagining a Multiracial Future”. Nishime argues that, “By applying the literature of mixed-race criticism and

'passing' to cyborg cinema, the political nature of the representations of cyborgs becomes visible" (Nishime 34). Now, Nishime is writing about cyborgs; however, she does reference the movie *Blade Runner*, the film adaptation of Dick's novel. "Later, the 'skin jobs' of *Blade Runner* (Ridley Scott, 1982), who try to pass as human, darkly mirrored concerns about reading the multiracial body" (Nishime 36). In this context the androids begin to represent the societal "other" who is placed in the category of subhuman and used much like slaves to help make human labor easier. This point is made even more complex if you consider that Kurzweil is doing his best to essentially become a human mind in an android body. This takes the argument a step deeper in that the androids are not just being discriminated against because they are physically different, but because their concept of perfection is different than the dominant concept of perfection. In other words, the majority believe that the representation of perfection is the deity Mercer and his ability to empathize, an ability only humans possess and which can therefore be taken to mean being human; whereas, the minority belief of perfection is to exist beyond the imperfect human body, or again, to be an android. The two concepts of perfection take on a religious aspect, which also excludes any other belief or definition, which sets humans against androids and androids against humans because neither belief makes room for the other. Through Nishime's reading of the text, Deckard is no longer destroying threats to human existence but instead persecuting runaway slaves or persecuting members of a minority religious belief. Since the androids are considered only tools, Deckard doesn't think twice about putting them down, his only concern would be the accurate reading of the empathy machine to

determine they are definitely not human. If his equipment fails, then Deckard could end up killing a human, the thought of which does bother him.

The empathy test means the difference between life and death to Deckard, both literally and figuratively. The machine tests whether or not the subjects feel empathy towards living things, the supposition of which is that androids are machines and therefore not alive. Deckard asks various questions about how the tester would feel about the death of a variety of living things; if the tester has the ability to empathize, then they are human and can live. If, however, the tester cannot empathize, then the tester is an android and already not alive, or dead, and can be deactivated permanently. Intelligence is not an accurate test, since machines have the infinite ability to process information, which means the next logical step is to move on to emotion. “An android, no matter how gifted as to pure intellectual capacity, could make no sense out of the fusion which took place routinely among the followers of Mercerism” (Dick 450-57). Mercerism is the dominant religion in the novel and built around the concept of empathy as the perfect emotion, which means it plays a part in human identity.

The “fusion” talked about is enabled through a machine called the empathy box, a device with handles that allows the user holding it to join or share emotions with all the other users around the world (Dick loc. 341-48). This is the ultimate representation of the human ability to empathize with others. Dick takes the concept of empathy, and then imagines a device that acts almost like the internet, in that it offers the user the ability to link directly with other humans across the globe and share in their emotions. This sharing is different than simply hearing a stranger’s story and feeling for them, in

Dick's world the emotions are directly transmitted into the user. While the androids can fake emotion to a certain extent they are unable to experience real emotion and therefore unable to use the empathy box.

Mercerism is the religious view of perfection in the novel. The empathy box allows all humans to share in the stoning of a messiah-like figure known as Mercer. This ability to empathize with another human being is the pinnacle of what it means to be human. Hyde claims that "Perfection is a 'god term', an ultimate standard meant to define states of completeness that can be used to direct us toward the good, the just, and the true" (Hyde 7). That is to say that perfection can be viewed as an unattainable goal, a god-like state, which one strives for but never reaches. In this we create an idea of perfection that we will never be able to achieve. Mercerism appeals to this god-like form of perfection in that it was developed to fill humanity's void of empathy. Since the story takes place on a post-apocalyptic earth it would make sense to structure a new theology around empathy in order to avoid another war that could wipe out the human race. While this is not physical evolution, it is an emotional or theological evolution in that the characters learned what was needed to preserve the species. Dick describes Mercerism like this, "everyone ascended together or, when the cycle had come to an end, fell together into a trough of the tomb world... it resembled a sort of biological insurance, but double-edged sword" in that if one species survived but another fell, then everything falls. Again this links back to a learned behavior that developed due to some catastrophe or disregard for life previously. The humans learned the importance of empathy and grew, or became "more perfect", never reaching perfect but trying to take

steps towards perfection, whereas the androids cannot understand empathy and are therefore less perfect than imperfect humanity.

The Voigt-Kampff Empathy Test is able to detect true emotional response down to parts of a second, and Deckard is trained to spot fake emotions; ironic when viewed in light of the Penfield mood organ, although the false moods never last long for Deckard throughout the novel. Deckard notes “Empathy, evidently, existed only within the human community.... For one thing, the empathetic faculty probably required an unimpaired group instinct; a solitary organism... would have no use for it” (Dick loc. 450-57, 63). This leads back to the importance of the Mercerism religion with its joint experiences as well as the fear and depression felt by the characters during moments of silence when they can feel the emptiness of the abandoned Earth. Scheurich notes that “It is ever more apparent that a host of features crucial to personal identity— social proclivities, temperament, intelligence, and even religiosity—may be under significant genetic and evolutionary control” (Scheurich 2). So Dick’s stress on his created religion Mercerism and how it distinguishes human from android could actually be reflected in scientific study. Mercerism would be a distinctly human feature, which is why the religion is attacked in the novel by the television presence of Buster Friendly, a television host who is secretly an android and trying to debunk Mercerism. Mercerism stresses empathy, the emotion androids can’t seem to fake, especially towards the animals who are dying out due to the harsh conditions of the post-apocalyptic Earth.

The setting plays a major role as well when it comes to the idea of empathy. Dick sets his story on Earth after “World War Terminus” (Dick 169-76). The war is glossed over quickly, “...no one today remembered why the war had come about or

who, if anyone, had won. The dust which had contaminated most of the planet's surface had originated in no country and no one, even the wartime enemy, had planned on it" (Dick 269-75). The radioactive dust killed off all of the owls along with most of the animal population. This simplicity about the history of a war that changed the Earth permanently is the perfect way to highlight the senselessness behind it. The motives don't matter, only the outcome remains, and now it is too late to save all of the animals. This is one example Dick gives of how even humans can have their non-empathetic moments. Had the consideration for animal life been taken into account before WWI, then the irreparable loss would have been avoided. Most of humanity migrated to Mars for fear of being negatively affected by the dust and labeled by the government as a "special," which is a class that is considered to be sub-human since they exhibit a degenerated mental state due to over-exposure to radiation. A special was considered less than human:

Loitering on Earth potentially meant finding oneself abruptly classed as biologically unacceptable, a menace to the pristine heredity of the race. Once pegged as a special, a citizen, even if accepting of sterilization, dropped out of history. (Dick loc. 275-82).

Here is a good example of humans exhibiting complete lack of sympathy, much less empathy, turning their backs on members of their own race. While andys are used as slaves on Mars, the specials aren't even allowed to leave Earth, placing them almost under andys on the social ladder since andys are at least considered useful. This is an example of the human race falling short of the god-like perfection they claim to be seeking. The remaining humans believe Specials are most certainly beneath animals,

since every human is expected to show that they are caring for what little animal populations are left. So, even while it became illegal after the war to not own and care for an animal, the human race was still lacking empathy for other humans who suffered from the after effects of a terrible war.

Dick is very good at showing this duality of human nature by setting up such binary opposites as caring for a robotic sheep and yet ignoring an ailing human. The religion of Mercerism accepts even the specials under the belief that all living things are connected. This belief is expressed in an almost Derridian concept of the trace. "As long as some creature experienced joy, then the condition for all other creatures included a fragment of joy. However, if any living being suffered, then for all the rest the shadow could not be entirely cast off" (Dick loc. 462-69). While Mercerism is apparently practiced around the world, there is still the prevailing idea that "chickheads" or the humans labeled as "special" are not quite human and don't count. Also, the suffering of the andys, while brought up privately by individuals, is greatly ignored by society as a whole. Both Deckard and his wife experience empathy towards the androids Deckard kills for a living, Deckard going so far as to letting an android go because he can't bring himself to kill her even after she has placed him in danger. Even the abbreviation for android, andys, almost puts a human name to the inhuman objects. This is how Dick shows the human inability to perceive anything beyond the human lens.

As humans we are only able to relate to the world as humans, and never fully devoid of the human experience. Dick's human characters anthropomorphize the andys because that is what we do, allow for even inhuman objects to take on human

characteristics because we cannot think beyond our own experiences. Regardless of this fact that he points out himself, Dick still tries to paint the androids as devoid of empathy in a very emotional moment when one of the androids slowly and methodically snips four legs off of a spider.

Animals, though not really characters, play a huge part in the novel as vessels or objects of human empathy. At the beginning of the novel it is revealed that the sheep Deckard and his wife are caring for is really a fake. The original sheep died of tetanus and the Deckards couldn't afford the exorbitant cost of buying a new animal (Dick loc. 228-36). The sheep not only dying but dying of tetanus is poignant in that tetanus is usually contracted through cuts or punctures by rusted metal. This is an interesting metaphor to what defunct industry is doing to nature. It is the sheep's exposure to technology, no matter how primitive, that leads to its demise. Another example of the importance of animals in the text would be the Voigt-Kampff Empathy Test. The statements used in the test are all centered around animals, such as "You are given a calf-skin wallet on your birthday" or "You have a little boy and he shows you his butterfly collection, including his killing jar" (Dick 689-97). In his article "The Animal Question," Michael Lundblad talks about the concept of animal rights, a consideration that didn't seem to arise in Dick's world until after the war. Lundblad references Ursula K. Heise and how she spun Dick's novel to make "the general argument that cyborg creatures can teach us about 'real' animals" (Lundblad 1132). He goes on to say that this opens the question of "acknowledging that all animals could be seen as 'cyborg' in a sense, particularly if we recognize that our contact with and representation of them is constructed through human language and discursive power structures" (Lundblad

1132). Namely, society treats animals in much the same way as they would treat an independently functioning machine, like a cyborg or android. While Lundblad's argument is focused mainly on animal rights or the view of animals in America, he touches on an interesting observation that connects to Dick's focus on animals in his text. Animals were non-represented entities before the war and it wasn't until after the Earth had been nearly destroyed and animals nearly annihilated that humans began to show any concern. So while in the novel there literally is an electric sheep, Dick is showing that it took near extinction before humanity stopped treating animals like non-living androids. Suddenly this empathy test focuses only on the treatment of animals. In this dystopian world where animals are precious the questions or statements are supposed to inspire empathy. That is to say, before the war Dick implies that humans only cared about themselves, the most evolved or closest organism to perfection. It wasn't until they realized that animals and nature play in large role in human survival that they changed their definition of perfection to incorporate sympathy for animals. It is interesting that Dick focuses on everyday objects like leather wallets, or swatting bugs, situations that in reality most humans wouldn't think twice about until everything has been destroyed. The new perspective gives more meaning to even the smallest bug and makes an everyday concept like killing an ant appear barbaric.

Early in the story it was mentioned that directly after WWI it was legally required to care for an animal. "You know how people are about not taking care of an animal; they consider it immoral and anti-empathetic. ... it's not a crime like it was right after W.W.T, but the feeling's still there" (Dick loc. 243-51). This concept of not caring for nature as immoral raises an interesting point about modern society and what is taken

for granted. It could be argued that, for some, nature is an aspect of perfection, and the destruction or manipulation of nature therefore imperfect. It brings us back to the point that there are multiple views of perfection. In the novel a new emphasis has been placed on nature since there is so little of it left. Human emotion is also considered perfection because the andys pose as an alternative to humanity and therefore an evolutionary rival. The divisive side of human nature is then exposed. While they are still segregated between those who live on Mars and those who stayed on Earth, and even between those unaffected by radiation and the “chickenheads”, there is still a common enemy identified through Mercerism and that is the android.

It is humanity's lack of empathy for each other that destroyed the Earth, and this can be placed on the divisiveness of human emotion. Scheurich makes the point in his article that human nature can be viewed negatively: “evolutionary psychology arguably tends toward a view of human nature that is potentially both tragic and lenient: evil, in its various guises, is a predictable result of human beings subjected to *unmodified* natural selection” (Scheurich 2-3). With the ability to feel comes the ability to feel wrongly, or to an exaggerated extent. Scheurich is implying that sometimes, if left on its own, human evolution can really be de-evolution. He hits on the concept of negative emotions, which is something Dick is exploring. This dualism of human nature is echoed throughout the novel as Deckard struggles with his own empathy towards the andys as well as the anger the andys exhibit towards humans; anger being one of Scheurich's negative emotions. Andys lack empathy, but because Dick is unable to write beyond his own human experience he can't help but leave anger within their grasp.

The androids' anger is best exemplified through the director Ridley Scott's film adaptation *Blade Runner* (1982, *Final Cut* release in 2007) rather than the novel. While in the novel much of the dialogue could be taken as anger, it is really the human performances that bring that anger to life. It is the film that best shows the difficulty of trying to understand an emotionless entity due to the human inability to view the world removed from our own perceptions. Bryant, the chief of police character, explains to Deckard, played by Harrison Ford, that it was speculated that the andys might develop their own emotions over time, "Hate, love, fear, anger, envy" (Scott 1982). It is interesting that most of the emotions listed are negative emotions. Love is the only positive emotion suggested for the andys, and yet it is an emotion that can lead to negative emotions like jealousy and anger. This early explanation is what allows Scott's Nexus 6 androids to show emotion throughout the rest of the film, yet it also blurs the line between human and machine and begins to ask the question about evolution and perfection. Dick was very careful to try and draw this line in his novel, so that when he showed his human characters acting without emotion it drew an instant connection to the android. Scott instead wants to ask the question of whether or not the humans and the andys are all that different. If not, does the andy represent the next step in evolution, towards perfection, or is it de-evolving by negative human emotions?

Dick occasionally mentions emotions when he writes about the andys, however it could simply be the perspective through which he is writing. For example, when Isidore meets Pris the scene is written from his perspective, so when Dick writes, "Fear made her seem ill" it may not be because Pris is actually afraid but that she appears to be afraid to Isidore (Dick Kindle loc. 892-99). This is a very different Pris to Scott's Nexus

6, played by Darrell Hannah, who does seem very much afraid when she first meets J. F. Sebastian, Scott's much more intelligent equivalent to Isidore played by William Sanderson. Because Scott allowed for the Nexus 6 to develop emotions of their own he opened up the opportunity for his actors to display those emotions. However, in the novel Dick's andys still have emotional displays that may even be beyond just acting for the sake of Isidore.

To make conversation Isidore comments about Buster Friendly, a popular TV personality whose show was playing at Pris's place when he came to visit. Pris begins to ask who he is talking about but "she broke off; she bit her lip as if savagely angry. Evidently at herself" (Dick Kindle loc. 899-908). Pris didn't want to let on that she didn't know who Buster Friendly was because she had just escaped to Earth, however this anger that she displays also wouldn't be an act for Isidore's sake since it revealed her mistake. That isn't the last time Pris displays anger. When Roy and Irmgard, two other andys who escaped with Pris, show up at her door, Pris begs Isidore to answer just in case it is Deckard. Isidore hesitates, and, "With anger, Pris scratched out: SEE IF IT'S REALLY THEM" (Dick Kindle loc. 2120-30). Anger isn't the only emotion Dick has his androids display. In that same scene Pris, Irmgard and Roy all display joy at seeing one another. Irmgard at one point even displays compassion after Pris calls Isidore a chickenhead. "Don't call him that, Pris," Irmgard said; she gave Isidore a look of compassion. 'Think what he could call you.'" (Dick Kindle loc. 2197-2205). So, while Dick's androids are supposed to be devoid of emotion, they still display fear and anger and even joy and compassion in the novel, all emotions they are supposed to lack. Whether it is on purpose to show that Dick's human narrators are untrustworthy and

particularly biased, or an involuntary act due to Dick's inability to write beyond the human experience is unclear.

Still, the androids' total lack of empathy is explored in several different ways, the most alarming being the moment Pris, who the "special" J. R. Isidore harbored, snips off the legs of a spider Isidore found outside. The spider is precious and Isidore had taken it in to care for it; however Pris questions the use a spider has for all eight legs. Pris carries the spider into the kitchen and when Isidore pleads with her not to "mutilate it," Pris asks, "Is it worth something?" (Dick loc. 2856-65). The juxtaposition of Isidore's care in collecting the spider – "Instantly he dropped the suitcase; he whipped out a plastic medicine bottle, which, like everyone else, he carried for just this.... Shakily he eased it into the bottle and snapped the cap - perforated by means of a needle - shut tight" (Dick loc 2846-56) – compared to Pris's heartlessness as she snips the legs – "Pris clipped off another leg, restraining the spider with the edge of her hand. She was smiling" (Dick loc. 2865-74) – is jarring. Laurence A. Rickels explores this to some extent in his article "Half-Life". According to Rickels:

The mutilation of the spider conducted as [the androids] own investigative report might count as child's play if, in young adults, it didn't merit consideration as psychopathy. But more precisely, what the androids automatically improvise is a session of animal testing, which belongs to the reversed or disowned prehistory of the new world order's founding test of empathy. (Rickels 108)

Rickels makes the point that the behavior of the androids mimics that of the psychopath, a symptom of which is the lack of empathy toward animals. The andys,

lacking the basic human nature Scheurich writes about, would be nothing more than intelligent psychopaths. Rickels also draws the connection between the android experiment and animal testing, a practice which still goes on today. Karyn Ball in her article “Primal Revenge and Other Anthropomorphic Projections for Literary History” suggests that humans aren’t even capable of sympathizing with animals. “Can humans genuinely mourn extinction or does species solipsism impel us to grieve only for ourselves” (Ball 542). She goes on to say, “This solipsism inscribes the baneful fate of other species through the devastation of ‘our’ environment” (Ball 542). Ball brings up Dick’s representation of animals and asks the question of whether or not humans would honestly be feeling empathy towards the animals or regret for themselves and the symbol of human extinction the animals represent. Again we are reminded that while we feel empathetic towards animals, or even inanimate objects, that could stem not from concern for the animal itself but again from concern for the human condition. We can never shed the human lens through which we see the world. While Dick doesn’t directly say that humanity has been inhumane to animals, by using questions about current everyday objects like leather wallets, he is implying it.

While humans may only be able to empathize with other humans, Deckard notes that the androids not only lack empathy for animals but for other androids as well. “An android... doesn’t care what happens to another android. That’s one of the indications we look for” (Dick 1401-11). Even Roy, an android, claims “ ‘If [Isidore] was an android... he’d turn us in about ten tomorrow morning. He’d take off for his job and that would be it,’ ” inferring that androids lack empathy even for their own kind and that Isidore would turn in his friends for the money (Dick Kindle loc. 2283-92). So an android

being totally devoid of emotion can separate itself from even identifying with one of its own kind. Knowing this, the character of Deckard still can't resist the human impulse to feel empathy toward the android Rachel.

The Rachel android played with Deckard's emotions when she offered to help him capture the other androids. "'I love you,'" Rachel said, "If I entered a room and found a sofa covered with your hide I'd score very high on the Voigt-Kampff test'" (Dick 2699-2707). Rachel had offered to help Deckard find the remaining three androids, implying that her help was out of concern for his welfare. Even after it is revealed to Deckard that Rachel was in league with the other androids, because of the emotional attachment Deckard had towards Rachel, he couldn't "retire" her (Dick 2772-80). Here, Deckard's "perfect" human emotions, specifically his empathy, are revealed to be his weakness. So while Mercerism, empathy, is a concept of perfection or at least an excuse for why humans are better than androids, Dick shows that even empathy has its flaws. This compassion isn't shared by all bounty hunters.

The character of Phil Resch serves as a foil for Deckard. Resch coldly killed an android in front of Deckard, an act that in Deckard's mind could only have been done by another android. Deckard insists on testing Resch, to which he replies, "If I test out android... you'll undergo a renewed faith in the human race. But, since it's not going to work out that way, I suggest you begin framing an ideology which will account for [me]" (Dick 1946-54). That is to say that if Resch is human then Deckard needs to redefine his own definition of what it means to be human, maybe even examine his faith in Mercerism. Resch does test human, just unsympathetic towards androids. Deckard, on the other hand, tests high in empathy for the android they just killed. This raises the

question of whether or not a human should have empathy for a machine. Resch asks, "You realize... what this would do. If we included androids in our range of empathetic identification, as we do animals" (Dick 1962-71). The statement is never answered; although there are implications that it would redefine how to construct human identity. Scheurich points out that "only in the twentieth century did the self's potential for detachment from its biological and social roots seem to grow so dramatically" (Scheurich 5). He continues by talking about the potential future of such thought. "The recognition of the utter contingency of biological and social selves is taken by some to enable a third 'kind' of self, the reflective self, to stand apart and above and to achieve absolute freedom" (Scheurich 5). Scheurich connects this concept of the third self to the writings of Foucault and the growing popularity in the belief of transhumanism, which is a movement towards humans taking control over their own biological enhancement or evolution. Scheurich claims that such thought eventually leads to "visions of human beings profoundly altering their own natures... The utterly self-sufficient and self-reflexive entity that results from such accounts is a kind of unmoved mover, a God, in effect" (Scheurich 5). Scheurich, while suggesting that humans can direct their own journeys towards perfection, still cannot escape relating that perfection to the concept of God. Deckard's belief in Mercer may have been shaken by the evidence in the human ability to turn off empathy in regards to androids; Resch was still human and empathetic to living things, unlike Pris toward the spider.

Very different from Dick's androids, Scott's androids do feel empathy for one another. As Brian Locke points out in his article "White and 'Black' versus Yellow: Metaphor and Blade Runner's Racial Politics," Roy, as played by Rutger Hauer, is

deeply affected by the loss of Pris. “When Deckard kills Pris, Roy’s replicant love interest, Roy observes an impromptu funeral by ritualistically painting his face... with her blood, expressing his sorrow with a long and plaintive howl in the night” (Locke 118). Scott sets up this pivotal scene in a crumbling apartment building. It is pouring outside and the water is flowing freely through the once upper class apartment, further destroying the facade of wealth and luxury. To have Roy pursue Deckard through crumbling facades adds visualization to what is happening in the scene. Deckard, who struggles throughout the film with the question of whether or not the Nexus 6 androids should be so coldly hunted and “retired,” finds himself to be the one hunted. Not only have the roles reversed, but he is being pursued because he killed the android Roy loved, and Roy is literally howling with grief like a lone wolf without his pack. So as the symbol of human wealth and power crumbles, so too does Deckard’s belief in human superiority. Deckard climbs up, ascending instead of descending to street level to avoid Roy. Deckard’s perspective on life is changing, and much like one would climb up in order to see the big picture, Deckard climbs up and eventually reaches understanding. He leaps to a nearby rooftop to avoid Roy, but misses and discovers himself dangling several stories above the street. It is Roy who pulls Deckard to safety, but not before pointing out that it isn’t easy to live in fear, and such is the life of a slave.

Roy’s act of kindness is his moment of redemption, if there can indeed be redemption for a machine. This moment, when the “imperfect” android shows a positive emotion, compassion, is what finally seems to solidify Deckard’s new world view, that he isn’t different from Roy. Roy had picked up a white dove during the pursuit, and when he dies, from preprogrammed old age, the dove is released and flies

away into a patch of open blue between the clouds. Earlier Pris had quoted Descartes's "I think, therefore I am," his argument for the soul and human superiority over animals, our supposed advance step in perfection. The dove, a widely recognized religious symbol, acts as a representation of Roy's ascending soul. Here Scott reveals his intention of humanizing the android and erasing the line between human and machine. Scott, much more than Dick, heavily shows his connection to his human perspective in his reinterpretation of the human machine.

So what are the implications of Dick's futuristic novel? Dick's perspective seems to still heavily support the humanist side of the human or transhuman argument. He seems to be aware of the future implications of the drive to push towards efficiency and intellect over nature and empathy, so while he clearly still adds human characteristics to his androids, they are still the villains in the end, the vehicle to Deckard's crisis of faith in the human experience. He explores the dualistic qualities of human nature from a perspective of a world that regrets not taking empathy into account sooner. The androids in the novel are more of a representation of humanity without consideration for the natural world or each other. A war large enough to cover the Earth in radioactive dust that wipes out most of the animal kingdom is the grand example of how inhumane society can be towards one another. The treatment of the human population dubbed "special" is an example of the hypocrisy of which society is capable. What Dick is doing with his invention of Mercerism is much more complex. The human characters in the story rely heavily on Mercerism, even after the androids prove that the empathy box is a fake and that Wilbur Mercer really isn't a god but an actor, the human characters retain their faith (Dick 2995-3001). This element of faith is made purely human in the novel,

the androids are unable to grasp why it is that Isidore insists on believing in Mercerism even after it is proven false. This is an example of the human need to have the image of perfection, the idea of a God who is able to forgive even the nuking of our planet. Dick has this faith manifest itself in a vision for Deckard which warns him of an android that is about to attack him from behind; a truth that saves Deckard's life. What Dick is doing with this faith is complex since in the dynamics of the story it is allowed to mysteriously save Deckard. To simply graze the surface of the implications, it could be said that Dick is showing how religion is a key part of the human experience. Hyde explains that while faith in a perfect God can lead to fear of doing wrong, it also leads to hope and, "we still feel the strength of the Lord's "loving-kindness" in our souls, then we might admit that, despite the heartbreak for a moment, it all happened for the best..." (Hyde 25). If God is the image of perfection, and Deckard's God is watching out for him, then Deckard must be forgiven for past deeds and on the path to perfection. The human reaction to still believe in Mercerism when confronted with the "scientific proof" that Mercer isn't a god, suggests that Dick is implying that the ability to have faith is part of what makes us human. The belief in the ability to become more than what we are is an aspect of perfection, and one that transcends beyond scientific agendas into philosophical and theological arenas. To stand up and proclaim that the only path in human evolution is to work towards a future beyond the human body, beyond the human experience of impaction and hope for redemption, is to ignore much of what makes us human, or, in the works of some authors, to create the potential extinction of all mankind.

CHAPTER 3

WHICH CAME FIRST, THE FICTION OR THE TECHNOLOGY?

What is this technology that threatens the freedom of modern society as we know it? Why is rapid advancement in technology so bad and how can it threaten the human identity? What is so wrong with wanting a 3D food printer? The advance of technology is what allowed double amputee Oscar Pistorius to compete in the 2012 Summer Olympics and take second place in the 400 meter race on running blades. Technology allowed for Leroy Hayes to survive heart failure by replacing his human heart with a completely artificial one (Schiffman, Huffingtonpost.com). Advancements in technology are the reason we can check facts from our phones, borrow books from the library without leaving the house, design our own pizzas and pay for delivery online, and take courses without quitting full-time jobs. There is nothing inherently wrong with technology and the pursuit of improving the quality of human life is admirable; it is only when that pursuit interferes with social equality, human enrichment, and in extreme cases the concept of human identity that it is important for society to ask the tough questions about whether the technology improves human life or creates newer, more difficult conflicts.

According to current authors like Robert J. Sawyer, Alastair Reynolds, Charles Stross, and most of all Ray Kurzweil, we are heading into an age of posthumanism where we are going to be able to upload the human mind onto computers. The reasons and means of upload vary, from inserting the human consciousness into reinforced cyborg bodies to creating a collective consciousness that exists solely in cyberspace.

Either way these authors use fiction, and in Kurzweil's case fact, to try to work through the various problems that could arise if scientists discover a way to cheat death and send the world into a posthuman existence. For some like Kurzweil, this is a bright future for homo sapiens as we advance in the next step of evolution, while for many others like Stross and Sawyer, there are more philosophical questions we need to answer before we unleash this kind of technology on human kind.

On NASA's website there is a quiz called "Science Fiction or Science Fact?" where visitors can test their knowledge of space travel. Listed there are ten questions that have the potential to exist in science fiction or be a fact of space travel. The answers are surprising. Question seven mentions the "Imperial TIE Fighters" from the famous *Star Wars* trilogies. "TIE stands for Twin Ion Engine" (www.nasa.gov). Sounds like science fiction; however, "Launched in 1998, fifteen years ago, Deep Space 1 rendezvoused with a distant asteroid and then with a comet, proving that ion propulsion could be used for interplanetary travel" (www.nasa.gov). While *Star Wars* fanboys around the world rejoice, this example shows that what can be dreamed up in fiction can also someday become fact. If that was fifteen years ago that means that technology has advanced exponentially since, meaning the age of science fiction really is upon us, and advances are happening fast. What scientists like Kurzweil and Kevin Warwick are working towards now is transhumanism or even posthumanism. What is transhumanism? There are plenty of websites willing to explain. The website longevity meme.org defines transhumanism "as a cultural movement which is closely tied to an enthusiasm for ethical, responsible, and rapid technological progress. Progress in science and technology brings greater choice to individuals and adds new

options for improving the human condition” (www.longevitymeme.org). While this may sound like the brochure from the company in a dystopic cyborg movie like *Surrogates*, the creators are very serious.

Transhumanism is the idea that by combining technology with the human body it might be possible to enhance and even extend human life. Since the process would go beyond natural progression the result would be more than human, or transhuman. Posthumanism goes further than transhumanism in that with posthumanism the idea is to go completely beyond the natural body instead of enhancing what is already there. Much like the difference between an android and a cyborg; a cyborg is the combination of organic material and technology whereas an android is a robot that resembles a human. A transhuman would be a cyborg and a posthuman would either be a human mind in a completely robotic body or simply not human at all.

Another definition of transhumanism comes from Nick Bostrom, the director of the Future of Humanity Institute at Oxford University. Bostrom explains transhumanism as:

[A] loosely defined movement that has developed gradually over the past two decades, and can be viewed as an outgrowth of secular humanism and the Enlightenment. It holds that current human nature is improvable through the use of applied science and other rational methods, which may make it possible to increase human health-span, extend our intellectual and physical capacities, and give us increased control over our own mental states and moods.[1] Technologies of concern include not only current ones, like genetic engineering and information technology, but

also anticipated future developments such as fully immersive virtual reality, machine-phase nanotechnology, and artificial intelligence.

(Bostrom)

Bostrom in his paper also talks about the popular fears generated by transhumanism or posthumanism, which are “that the state of being posthuman might in itself be degrading, so that by becoming posthuman we might be harming ourselves,” and two, “that posthumans might pose a threat to ‘ordinary’ humans” (Bostrom). These fears often play a huge part in science fiction; films like the movie *Gattaca* would be a good example of the potential fear generated by the concept of creating the options of designer humans. It is the belief of posthumanists, like Kurzweil or the creators of the longevity meme website, that the next step in human evolution is to meld humans with machines and even eventually becoming all machine. This is one concept of the climb towards perfection. Hyde quotes Kurzweil as saying it this way, “If you wonder what will remain unequivocally human in such a [posthuman] world, it’s simply this quality: ours is the species that inherently seeks to extend its physical and mental reach beyond current limitations” (Hyde 235). It is not technology in general, but the possibility that humanity might overreach its bounds that has science fiction authors concerned and raising questions.

One such author who questions the validity of transhumanism is Jaron Lanier, the computer scientist who helped to pioneer virtual reality (VR), internet 2, the VR game *Second Life*, and the Kinects for Xbox 360. Lanier has been writing about misconceptions of technology and the almost religious belief in the singularity for years, and several of his articles originally written for *Wired Magazine* were collected,

expanded, and placed in a manifesto entitled *You Are Not a Gadget*. Lanier opens his book by saying “This book is not antitechnology in any sense. It is prohuman” (Lanier, Kindle Edition). He goes on to say that some technological concepts, not the totality of technology, can “degrade the ways in which each of us exists as an individual” (Lanier, Kindle Edition). He stresses that technological advances, as they are now, threaten the middle class, “[deemphasize] personhood”, and create a “digital serfdom” which can be disastrous for the economy and society at large (Lanier, Kindle Edition). Lanier’s manifesto is not a work of fiction but the attempts of a computer scientist who has seen the trajectory of technology and the effects it has already had on society and individuals. His concerns are also reflected by writers of science fiction. One example would be Robert J. Sawyer’s novel *Mindscan*.

The story follows the complications that arise after the main character, Jacob “Jake” Sullivan, places a copy of his mind, his memories and data acquired throughout his life, into the body of an android. Sawyer starts his story with a brief prolog when Jake is seventeen and his father dies from an arteriovenous malformation, or AVM, which according to Sawyer is “a tangle of arteries and veins with no interposing capillaries” (Sawyer, Kindle edition). Sawyer goes on to say that Jake’s father’s variation of AVM is “called Katerinsky’s syndrome – the vessels can rupture in a cascade sequence, going off like a fire hose” (Sawyer, Kindle edition). Jake gets an MRI and it is discovered that he has this very same birth defect for which there is no cure yet. The setting is the year 2045, forty years from when the novel was written in 2005, and only twenty-seven years after the prolog, making Jake 44 years old. A company named “Immortex” has discovered how to essentially copy a human brain,

consciousness and all, and place that copy into a convincing enough android body (Sawyer Kindle edition Loc 109-14). Because Jake is plagued with a biological ticking time bomb in his brain, he leaps at the thought of this new technology where he will be given not only a second chance at life but a chance to potentially live forever.

This technology is exactly what Kurzweil is dreaming of, and the scientist is even mentioned in the novel as the forerunner to “Immortex” designs (Sawyer Kindle Loc). Much of the sales pitch for the “mindscan” transfer process, presented at the beginning of the novel, parallels what Ray Kurzweil is trying to accomplish; bodies that never suffer the effects of age (Sawyer Kindle edition). As Sawyer explains it, “We can’t put the digital copy back into the original biological brain - but we can transfer it into an artificial brain, which is precisely what our process does” (Sawyer, Kindle edition location 129). In the novel the creators of Immortex won the Loebner Prize, a real prize named after the philanthropist Hugh Loebner who agreed to “underwrite a contest designed to implement the Turing Test. Dr. Loebner pledged a Grand Prize of \$100,000 and a Gold Medal... for the first computer whose responses were indistinguishable from a human's” (www.loebner.net). The Immortex inventors won because they were able to copy and implant the consciousness of Sampson Wainwright into a robot (Sawyer, Kindle edition location 124). Only instead of a robot, the company advances to very convincing androids that from a distance could be mistaken for real humans. The pitch ends with the speaker telling the audience, “there is one catch” (Sawyer Kindle edition loc. 168-70).

The catch in the novel is that the company doesn’t really transfer consciousness so much as makes a copy of your consciousness, resulting in there being two beings

with the same memories and personalities; the original organic human and the new android copy (Sawyer Kindle location 170-76). This is where Sawyer creates the real conflict in the story and where he explores the “big” questions of what makes up identity, is it just our memories or is it attached to the physical body? He also plays with the concept of perfection. Is this new body that never ages really perfect, or is it a copy of something more valuable and complex, the organic body that can’t be recreated? The original Jake is transported to a special retirement home on the moon so that his copy can take over his life on Earth. When a cure is found for Jake’s AVM, and he realizes that he could live a long and full life, he tries to fight for his identity back, creating a bizarre court story that debates questions of identity.

The story is told from Jake’s point of view, both points of view, and while Sawyer raises questions he never answers them directly. It could be argued that Sawyer sides with the developing technology since in the physical struggle between organic and inorganic Jake, Sawyer allows the copy to kill the original. The story then finishes solely through the first person narrative of android Jake as he talks about his bright future with other “uploads” or mindscanned copies who have escaped social persecution by moving to Mars (Sawyer Kindle edition). Depending on the perspective of “perfection,” this is either a happy ending or a terrifying *Twilight Zone* ending where the imposter or the next step in evolution is allowed to take over human identity from the organics to start a superior species.

Sawyer’s theories in *Mindscan* are certainly on the right track. Scientists are trying to combine AI research and cognitive theory; more often than not they are trying to model artificial intelligence after the human mind. A recent article by *Science Daily*

talks about the new system scientists are using to try and perfect logical reasoning in AIs. The new system or computer language is called Church and it is modeled after “the way humans learn new concepts and revise old ones,” so that now “Programs that use probabilistic inference seem to be able to model a wider range of human cognitive capacities than traditional cognitive models can” (www.sciencedaily.com). Scientists may not be scanning and copying brains yet, but Sawyer does build his story off existing theories which means his novel presents at the very least a probable theory, which adds more weight to the struggles in the novel since it could be a very real debate in the future.

Sawyer’s questions may be fictional, but Nick Bostrom talks about his very real fears associated with transhumanism, one of which is the possible tools that could be used in advancing the human condition, such as AIs or nanotechnology. While AIs were the subject for writers such as Isaac Asimov, nanotechnology appears to be the newest fascination in recent speculative fiction. Sawyer goes so far as to speculate that building artificial intelligence will fail. “The complete failure of strong AI had taken a lot of people by surprise... Instead of *replicating* consciousness - which would require understanding exactly how it worked - the Immortex scientists simply *copied* consciousness” (Sawyer, Kindle edition location 331). Sawyer believes that scientists will fail in their attempts to build intelligence from scratch, but that the physical robotic shell could be used to house a copied human consciousness; at least that is the plot of his novel.

What do we really know about consciousness? Much of what Sawyer’s novel, and Kurzweil’s theories, are based on is the belief that somehow data or information is

conscious. Lanier opens one of his chapters by saying, “Information wants to be free” (Lanier, Kindle Edition). Many of the theories that involve uploading human consciousness into machines talk about data or information as if it is an animate thing, but Lanier asks, “what if information is inanimate? What if it is even less than inanimate, a mere artifact of human thought?” (Lanier, Kindle Edition). If this is the case, and data has nothing to do with consciousness, then turning humans into data like in *Mindscan*, is essentially just killing humans. It is for this very reason, this leap of faith that somehow data is conscious, that Lanier claims that the belief in transhumanism and posthumanism is a new religion:

But if you want to make the transition from the old religion, where you hope God will give you an afterlife, to the new religion, where you hope to become immortal by getting uploaded into a computer, then you have to believe information is real and alive. (Lanier, Kindle Edition)

Lanier talks about how the singularity for scientists is much like the Rapture for fundamentalist Christians, the prophesized immortality and perfected existence for all mankind, to live as god. What is worse, Lanier goes on to tell the computer scientists and transhumanists of the world, is that, “You demand that the rest of us live in your new conception of a state religion. You need us to deify information to reinforce your faith” (Lanier, Kindle Edition).

At the end of his novel Sawyer proclaims, “Consciousness is back, baby!” (Sawyer, Kindle edition location 3494). His excitement is justified since, according to John Johnston, a professor at Emory University, cognitive science has been lacking in artificial intelligence studies until recently:

[P]ointing to a failure in the initial joint venture of cognitive science and Artificial Intelligence to consider “technics” and the role of technical objects in human cognition... What must be acknowledged, therefore, is the necessary role of “technics,” even in so-called natural human intelligence. But this is precisely what has been missing since the more or less simultaneous birth of AI and cognitive science in 1956.

(Johnston 476)

What Johnston is saying is that while at the beginning of artificial intelligence studies cognitive science was considered, it ultimately failed due to the lack of consideration that there is a technical aspect to the human mind. Basically, cognitive science had been set aside in AI studies because scientists at first believed that there was little comparison between the technical machine and the organic human mind. Now, however, it would seem that scientists are returning to cognitive science. As Sawyer explains, “Whereas twenty years ago, you’d be hard-pressed to find any academic talking seriously about consciousness, these days quantum physicists, evolutionary psychologists, neuroscientists, artificial-intelligence researchers, philosophers... are engaged in the debate” (Sawyer, Kindle edition location 3500).

Oddly enough, the closest technology to autonomous artificial intelligence available today would be Autonomous Nanotechnology Swarm, or ANTS, the nanotechnology Bostrom feared. According to NASA’s Goddard Space Flight Center webpage, ANTS are “miniaturized, autonomous, self-similar, reconfigurable, addressable components forming structures” (Curtis). ANTS are microscopic computers designed to have individual specializations that when working in

collaboration can result in a more complex artificial intelligence. According to the website:

The ANTS architecture is inspired by the success of social insect colonies, a success based on the division of labor within the colony in two key ways: First, within their specialties, individual specialists generally outperform generalists. Second, with sufficiently efficient social interaction and coordination, the group of specialists generally outperforms the group of generalists. Thus systems designed as ANTS are built from potentially very large numbers of highly autonomous, yet socially interactive, elements. (Curtis)

NASA researchers are developing a potential approach to autonomous AIs, “a software construct called a neural basis function (NBF) to bridge the divide between lower and higher level functions and create bi-level intelligence capable of ‘truly’ autonomous behavior” (Curtis). Nanotechnology is the direction Charles Stross and Alastair Reynolds take in their speculative novels about transhumanism and posthumanism.

Charles Stross’ novel *Accelerando* begins in an age where glasses, much like Google Glass, are the norm and continues until technology allows for humans to upload their consciousness into a computer simulation or download it into a nanobot constructed body. While posthumanism is still firmly within the realm of fiction, transhumanism could potentially become a reality. Reynolds’ novel, *Revelation Space*, is focused more on the mystery of the plot than the speculation of the evolution of human and machine; however, the details he adds about his characters and their

history give a glimpse of his theory of posthumanism and the involvement of nanotechnology. A good example of this is how Reynolds' writes about the plague. Reynolds' plague is able to affect both the buildings in Chasm City and humans (Reynolds 26, 40); this is presumably due to the use of nanotechnology in advanced bio-engineering. One of the main characters, Dan Sylveste, is introduced as looking much younger than he is due to longevity treatments (Reynolds 10). His eyes are also synthetic, made by his father, due to impairment as a child (Reynolds 6). These examples seem to imply that bio-engineering becomes a run of the mill medical practice, especially when the "chimeric" posthuman race is introduced (Reynolds 70-71). There is an autonomous AI in the story; however it was developed by alien, not human, technology.

While Reynolds goes into detail about the complications of the advanced technology in his future universe he doesn't explain in much detail the steps taken to develop it; whereas Charles Stross begins his novel, *Accelerando*, in the not too distant future and then quickly launches the story great leaps ahead to probable outcomes. The book is actually a collection of related short stories all following the progression of a family throughout three generations leading up to a post Singularity society. The Singularity is based on the theory that if technology keeps progressing at an ever expanding rate, eventually it will reach a point where machines will start to build technology beyond human understanding. As the Singularity Institute for Artificial Intelligence, which later changed its name to Machine Intelligence Research Institute, explains on its website, "The Singularity is the technological creation of smarter-than-

human intelligence” (www.singinst.org). This means that Stross deals with both advancement in bio-engineering and artificial intelligence.

Stross’ future starts out in a time just a little more advanced than the present, where instead of using smart phones to keep in touch with the rest of the world on the internet, Manfred uses a set of glasses in which all of his instant messages, chats, new alerts etc. are displayed (Stross, Kindle edition location 76). Considering what Google is doing with *Google Glass*, a prototype for exactly what Stross is describing, this future is not as distant as it may seem. With each new chapter Stross leaps forward several years, going from glasses that simply display information to glasses that actually begin to store aspects of their user. “Mind uploading may not be a practical technology yet, but Manfred has made an end run on it already. In a very real sense the glasses are Manfred, regardless of the identity of the soft machine with its eyeballs behind the lenses” (Stross, Kindle edition location 1599). So now the glasses not only access information but they allow you to send out bits of your own mind to hunt out information while the rest of your mind is focused on a separate task. Towards the final three short stories Stross’ technology has reached the point where Manfred’s daughter Amber is able to upload part of her consciousness, along with the consciousness of her crew, onto a space ship the size of a coke can and then explore farther into space than any non-computerized human ever could (Stross, Kindle edition location 4483-4491). This means that while the “meat body” Amber lives and dies on Jupiter, another, digital Amber is able to go out into space, return, and then upload herself into a new body built completely out of nanotechnology (Stross, Kindle edition location 5956-6000). While this is a far leap from where nanotechnology is now, it does lead to the more

philosophical questions raised by Sawyer, such as whether or not a copy of the original human is still human, and the legal questions asked by both Sawyer and Stross: is the copy still responsible for any litigation held against the original and does it hold all of the same property rights?

If a copy has all of your memories, is it still you, or are the two of you now more like identical twins? Since the characters in Sawyer's novel are uploading into artificial bodies in order to beat death, this question becomes essential to their decisions. By allowing the process to copy without destroying the original human brain Sawyer channels his narrative to directly confront these concepts. The argument presented by the salesman character asks, does the order in which the two bodies appear give way to deciding which is the real you? (Sawyer, Kindle edition location 172). Eventually he convinces audiences to accept the mindscan process by comparing the human mind to computer software. "[T]he human mind is nothing but software running on the hardware we call the brain. ...when your old computer hardware wears out, you don't think twice about junking it, buying a new machine, and reloading all your old software" (Sawyer, Kindle edition location 177). Here again is the question of evolution as the pursuit of perfection. If the first version of you is flawed or will be flawed through time and deterioration, then isn't the logical next step to upgrade to the newest software or hardware, to make yourself "more perfect"?

This is also the argument that Stross' Manfred has with himself before he decides to first get the implants for his glasses that allow him to back up his memories, and then later to become fully digital. "I was someone else. Someone too slow to keep up. ...I've been afraid of losing my biological plasticity, of being trapped in an obsolete

chunk of skullware while everything moves on - but how much of me lives outside of my own head these days” (Stross, Kindle edition location 2263). Manfred continues forward, first with implants and eventually to uploading without question.

Although Manfred never seems to face the esoteric question of whether or not he is the real deal, Sawyer’s Jake Sullivan has to deal with knowledge that his original human body is still alive and exiled to a retirement resort on the Moon. This is where Sawyer’s novel, unlike those of Stross or Reynolds, really confronts the difficult questions of whether or not a person really beats death if they become posthuman. Sullivan, unlike the other characters who upload, is still relatively young. He is uploading early because of his medical condition. Since it was likely he would never live past the age of forty, Sullivan decided to upload along with a handful of retirees. Sawyer then shows the real struggle for the organic Sullivan after he wakes up from his mind scan. “I’m doomed. Don’t you get it? ... You just scanned my consciousness, making a duplicate of my mind, right? ... And since I’m aware of things after you finished the scanning, that means I - this version - isn’t that copy” (Sawyer, Kindle edition location 458). Sullivan realizes that while some aspect of his memories and personality will live on, all that his human version will experience is a prolonged MRI and then retirement and death on the Moon. Not an ideal situation, but one that is much more believable with current technology. Sawyer makes the situation even more complicated when one of the retirees, Karen Besserian, dies on the Moon and her son tries to collect his inheritance from Karen’s upload on Earth (Sawyer, Kindle edition location 1572).

While Sawyer goes into great detail about how Karen's son Tyler doesn't accept the upload as his mother, Stross almost glosses over a similar situation with Amber's son and her digital consciousness once it is downloaded into a new nano-created body. Because Amber and her son's father Sadeq, separated from their copies long before the two were married and had Sirhan, the digital versions had no memories of their son. In this way Stross is able to avoid all philosophical discussion on whether or not digital Amber and Sadeq are the original individuals because he blatantly shows that they are not.

Sirhan can feel his head spinning, because although Sadeq looks like a younger version of his father, there's something wrong - some essential disconnect: the politely solicitous expression, the complete lack of engagement, the absence of paternal involvement. This Sadeq has never held the infant Sirhan in the control core of the Ring's axial cylinder, never pointed out the spiral storm raking vast Jupiter's face and told him stories of djinni and marvels to make a boy's hair stand on end.

(Stross, Kindle edition location 6250-6259)

Stross focused more on the technology, whereas Sawyer's novel raises the very human question of legal protocol. Most of the plot is devoted to the court battle between Karen and Tyler as the lawyers try to prove why copy Karen should be allowed all of the rights allotted to the organic Karen. Since Sawyer's future involves technology that could conceivably be within reasonable human grasp, this legal quandary seems valid, and yet according to N. Katherine Hayles in her book *How We Became*

Posthuman, the literary critic asks the philosophical question of how anyone could imagine consciousness separate from the body.

To Hayles, posthumanism as a possible future is a “nightmare” (Hayles, Kindle edition location 188). “How... was it possible for someone... to believe that mind could be separated from body? Even assuming such a separation was possible, how could anyone think that consciousness in an entirely different medium would remain unchanged?” (Hayles, Kindle edition location 194). Hayles suggests that so much of human identity is bound up in what physically represents the individual that it is ridiculous to believe the two can be separated. It is Sawyer’s suggestion that the mind is nothing more than software that Hayles finds so offensive. “Because information had lost its body, this construction implied that embodiment is not essential to human being. Embodiment has been systematically downplayed or erased in the cybernetic construction of the posthuman...” (Hayles, Kindle edition location 259). What Hayles means by information losing its body is the thought that the information, be it ideas or human consciousness, cannot exist without material form. Her example is that of anorexia:

[T]he relation between humanism and anorexia, shows that the anorectic’s struggle to “decrement” the body is possibly precisely because the body is understood as an object for control and mastery rather than as an intrinsic part of the self... In taking the self-possession implied by liberal humanism to the extreme, the anorectic creates a physical image that, in its skeletal emaciation, serves as material testimony that the locus

of the liberal humanist subject lies in the mind, not the body.

(Hayles, Kindle edition location 265)

Basically the concept of mind over matter, when taken to the extreme, could lead to the assumption that the mind can ultimately exist separate from the body. For Hayles the idea of perfection has to include the combination of mind and body to create the self. To suggest that perfection lies beyond our known physical form would be a fallacy according to Hayles' concept of identity. By considering the mind as software and the body simply hardware Hayles feels that at least in thought if nothing else we have already shifted from humanism into posthumanism; a gross fallacy.

Both Stross and Sawyer imply that the information, or consciousness, is separate from the material or "meat body" as Stross often refers to the human form. They both give a nod to the need for human consciousness to perceive itself in some form. Sawyer mentions how the first mindscan was not given a body and went insane. "No, vision can't exist without a body. 'The mind's eye' is a metaphor, nothing more. You can't have a disembodied intellect - at least, not a human one. Our brains are parts of our bodies, not something separate" (Sawyer, Kindle edition location 933). Sawyer acknowledges the need for a physical body, but he does not seem to agree with Hayles that the flesh and blood body is intrinsic to the individual. Stross, on the other hand, implies that the body doesn't have to be physical, just that the mind needs to perceive a physical form.

Take a map of the brain and put it in a map of a bottle - or of a body - and feed signals to it that mimic its neurological inputs. Read its outputs and route them to a model body in a model universe with a model of physical

laws, closing the loop... Formerly physical humans, their neural software... transferred into a virtual machine... where the universe they experience is merely a dream within a dream.

(Stross, Kindle edition location 3437)

Stross claims that as long as the human consciousness feels like it is in some physical form the consciousness will remain just as it was when it existed in the flesh. Hayles' argument is that the human mind is not software and that we were misled by a handful of scientists who leapt to conclusions (Hayles, Kindle edition 2829). Hayles claims that, "Coincident with cybernetic developments that stripped information of its body were discursive analysis within the humanities, especially the archaeology of knowledge pioneered by Michel Foucault that saw the body as a play of discourse systems" (Hayles, Kindle edition location 4076).

Hayles argues that a "certain kind of subjectivity has emerged... constituted by the crossing of the materiality of informatics with the immateriality of information" (Hayles, Kindle edition location 4090). She points out early on that while information may seem immaterial, it had to have taken some material form in order for it to be passed on, either through a book, computer, or another person (Hayles, Kindle edition location 220-235). Sawyer said, "Our brains are part of our bodies, not something separate" and yet his novel still suggests that consciousness can be uploaded and downloaded like software. Hayles points out that critics already speak as if the mind and body are two separate things when there is little evidence to support that theory.

Whether or not Hayles' warning is taken into consideration, science continues to progress towards the cyborg. NASA has discovered a way to recharge nanodevices

through minor temperature changes (www.nasa.gov), which means in the future they may be able to both implant nanotechnology beneath the skin and keep it running through natural change in body temperature. The theory behind the Singularity suggests that technological advancement has sped up drastically as time goes on and will continue to speed up (www.singinst.org). If this theory holds true, with the evidence that science fiction can become science fact, this question about the future form of posthumanism could become a real world issue. Some science fiction novels are produced by authors like Alastair Reynolds, and Vernor Vinge, who are also scientists, placing the genre in a unique position since the authors can build upon current technology and make educated guesses as to the future trajectory of that technology. As Hayles pointed out, our thinking is already focused on a future beyond our human form.

Stephen Dougherty, in his article “Culture in the Disk Drive: Computationalism, Memetics, and the Rise of Posthumanism,” highlights some interesting points regarding the newest theories on the human thought process and the act of cognition as computation rather than the inner musings of an ethereal soul. Dougherty steals boldly from N. Katherine Hayles’ theoretical book *How We Became Post Human: Virtual Bodies in Cybernetics, Literature, and Informatics*, when he claims that the very act of believing human consciousness to be compatible with and uploadable to a computer places the thinker beyond humanism into posthumanism. While this claim is immensely interesting, especially when more artfully executed by Hayles herself, Dougherty loses the credibility he gained through his similarities to Hayles when he attempts to connect the theory of posthumanism to the theory of memetics. Memetics is a theory that

assumes abstract ideas have some form of agency, thereby personifying thoughts which would place the theory of memetics in the humanist vein of thought with the concepts of the spirit instead of the world of robotic computation which is how posthumanism views human thought.

The theory of posthumanism is pretty much what it sounds like, a theory that goes beyond the theory of humanism. Posthumanists reject the idea of the human spirit or the soul and instead view the human body as more of an organic machine. Posthumanism in literature can be mostly seen in the works of fiction and is presented either as transhumanism, which is a blending of the organic with machinery much like the Borg in *Star Trek*, or complete posthumanism, which would go along the lines of uploading human consciousness into a robotic body, like an android, eliminating the organic material altogether. While the concept of becoming posthuman has yet to be realized by anyone outside of science fiction authors, Dougherty makes the point that in thought, academic society has already begun to move beyond the belief of humanism or the duality of body and spirit, into posthumanism or the belief that there is no spirit, just the physical body which is more of a natural machine. According to Dougherty, "Ever since Descartes argued that there are striking similarities between a man and a clock, humanism has been in a state of crisis" (Dougherty 85). That is to say that Dougherty believes the moment society took focus off of a god and placed it on man, the concept of a spirit or soul, or even spirituality in general existing in the world, began to fade. He turns quickly to Hayles' theories about how the outlook of scientists has changed. He quotes Hayles as saying, "computation rather than possessive individualism is taken as the ground of being" (Dougherty 86). This is where the theory

begins to unfold. More and more of the mysteries of human thought and the mind have been found to have explanations within science. As more information becomes available, the way scientists view cognition has gradually shifted from Descartes' ethereal ghost in the machine to simple computation, like the processor in a computer; hence Dougherty's Descartes reference, only the human mind is no longer a clock but a super computer. This shift removes academic focus of the humanist concept of the spirit into the posthumanist concept that life can continue after death in the form of an uploaded consciousness into the body of an android.

There has been plenty of fictional speculation, but it is interesting to examine why anyone would believe that the human mind is even compatible with a machine. Hayles takes her study in just that direction, looking at the history of cognitive studies and the rhetoric scientists use that strip away our humanity. Dougherty, however, breaks away from Hayles here and decides to try to link the theory to memetics, which in the long run seems to be incompatible.

Memetics links the development of shared ideas to the Darwinian concept of the development of the gene. According to Dougherty, "a meme is a self-replicating unit of data that materializes itself as an instruction for the human mind that gets passed on whenever one human imitates another" (Dougherty 88). The term meme can be found throughout the internet and is used most often with visual humor and funny cat videos shared repeatedly; however, the term itself is far more complex than the vernacular use. The original definition of a meme was a self-replicating idea with the intention of spreading beyond the original thinker. The concept of a self-replicating idea possessing the intention to spread itself gives the meme agency. To believe that ideas, fads or

thoughts have their own agency and are intentionally multiplying themselves in the hope of spreading among the general populace goes beyond the mechanical posthumanist view and back into the more spiritual humanist concept of the world. The meme then becomes just another representation of some unseen spiritual entity that is dictated by its own will beyond the physical world. To link the evolution of a meme, or an idea, to the Darwinian evolution of a gene is to imply that somehow the idea is being perfected with each new incarnation; the fight to survive, which in this case would be the fight to be remembered. Again, this is what Lanier is talking about when he says that scientists are trying to force conscious behaviors onto what is ultimately just symbols of human thought.

Dougherty then goes on to say that the meme doesn't have to just be compared to DNA. "If it is data, then the meme might also be like software inserted into the hardwired brain that the computationalists envision" (Dougherty 90). So instead of an organic material that scientists can find and point to, a meme is much more like information on a CD that can be uploaded to the brain. This analogy is closer to the observable truth, as Dougherty points out; memes, unlike DNA, don't exist in the physical realm and therefore cannot be pointed to as evidence of their existence. However, this analogy is also where he loses the support of Hayles, since she is very much against taking a physical body away from information. Hayles says, "abstracting information from a material base is an imaginary act," after which she goes on to argue that "conceiving of information as a thing separate from the medium instantiating it is a prior imaginary act that constructs a holistic phenomenon as an information/matter duality" (Hayles Kindle location 445-53). As Hayles points out, to say that information

or ideas can ever be free of or work separately from a physical medium as it would have to in the act of self-replication sounds more like fantasy than actual science since information is always passed down and received through some sort of material medium. Even Dougherty's own ideas about memes had to be passed on through an article and not simply dispersed into the air like dandelion seeds.

Because the meme is now computer data, Dougherty goes on to quote Balkin that culture is then just software. "Culture is software, and for the computer-literate portion of our mass-consumer society at least, the metaphor is likely to have an appealing tangibility" (Dougherty 90). This idea that culture is simply software or human programming is supposed to make the concept of culture more accessible. Dougherty quotes Pinker as saying, "computation has finally demystified mentalistic terms. Beliefs are inscriptions in memory, desires are goal inscriptions, thinking is computation, perceptions are inscriptions triggered by sensors" (Dougherty 91). While Dougherty might believe the computational explanation demystifies the world, Hayles points out that this is still nothing but analogy for a process that we still don't fully understand. Hayles claims, "When analogy is used to constitute agents in cybernetic discourse, it makes an end run around questions of essence, for objects are constructed through their relations to other objects" (Hayles Kindle location 2026-32). Just because the analogy of culture as software seems to help scientists wrap their minds around how culture works doesn't mean that culture really is software or that information can travel like memes without a material medium and a human will be behind that medium to pass it on.

Hayles is quick to point out that these analogies can lead to problematic assumptions. “If meaning is constituted through relations, then juxtaposing men and machines goes beyond bringing two preexisting objects into harmonious relation. Rather, the analogical process constitutes both terms...” (Hayles KL 2032-38). This is where, according to Hayles, the dangerous switch takes place between man and machine as separate entities into the idea that man and machine are interchangeable. According to Hayles it is analogies like “man is like a clock” or “culture is like software” that misleads society into thinking that posthumanism, in the science fiction definition of cyborgs and androids, is possible. Hayles claims, “Like all good magic tricks, the test relies on getting you to accept at an early stage assumptions that will determine how you interpret what you see later” (Hayles KL 176-82). By using the rhetoric of computation in connection to human thinking and interaction the road to the belief in posthumanism is already paved since it is easier to make such a leap once the assumptions are in place. So while memetics seems to still have one foot in humanism, if the analogy is changed from DNA to software, the rhetoric changes and sets up a way of thinking that assumes too much about the interrelatedness of man and machine. While this connection then successfully links memetics and posthumanism, it is not a connection made by Dougherty. Hayles, though she never talks about memetics by name, sets up the availability of linking memetics and posthumanism through the concept of posthuman rhetoric, a topic Dougherty doesn’t directly address. Instead, still following Hayles’ example, Dougherty tries to draw a literary connection for memetics.

Memetic theory is very similar to poststructuralist theory, according to Dougherty. He notes, “in certain respects [memetics] is similar to what poststructuralists and other cultural constructivists argue: we are constituted by culture; the integral ego, the ‘I,’ is an illusion; there is nothing but the text (or the meme), thus the primacy of discourse” (Dougherty 94). Dougherty compares memes to “Jacques Lacan's insistence on the materiality of the signifier” (Dougherty 94). Memes, then, are nothing more than the signals talked about by poststructuralists such as Lacan and Derrida. However, the key difference between memes and a poststructuralist's signifiers is that while a meme is totally separate from a person, a signifier for a poststructuralist is important because of its connection to human communication. The rhetoric used by theorists like Derrida doesn't dehumanize ideas but shows how communication can fall short. Still, Dougherty links onto Lacan's concept of the brain as a “dream machine” and tries to connect the concept of the meme to that of the poststructuralists' signifier as a means of legitimizing the theory.

Dougherty tries to connect memetic theory and computation to posthumanist thought to show, much in the vein of Hayles' book, that at least in thought academia has already become posthuman. Dougherty, however, made the mistake of believing his own theories instead of positioning himself as a skeptic like Hayles. Dougherty ignores the possibility that memes could fit into a very humanist perspective of the sentient invisible being and instead connects them only to posthumanist thought, but with no further goal than to simply inform. He neither agrees with nor confronts the idea, which leaves his point stranded in ambiguity. Since he referenced Hayles and his article is on a similar topic, he sets himself up for comparison, but is not up to the

challenge. Hayles' research into the history of cognitive theory and the rhetorical shift from humanist thought into man as machine puts Dougherty's observations to shame. Are we already posthuman in thought if not form? Yes, but not necessarily for the reasons Dougherty assigns. This rhetorical shift goes far beyond memetics, and is obviously far more complicated since it takes Hayles an entire critical work to explain. Much like the need to believe that perfection is attainable, Dougherty implies that maybe human thought is upgrading or perfecting itself as it is being replicated and shared; whereas Hayles seems to believe that we do not yet understand the human mind and body enough to make any claim that we are able, or will be able, to perfect it.

CHAPTER 4

ARE WE REALLY EVOLVING BEYOND HUMANISM, OR TAKING IT WITH US?

So, if we are not posthuman yet, will we ever be? Is becoming posthuman the next evolutionary step towards perfection or is Katherine Hayles right that human identity is tied to the bond of mind and body? Even if science fiction concepts have the potential of becoming science fact, if Katherine Hayles is correct it would be nearly impossible to create a cyborg, however, will our attempts to incorporate technology into every aspect of our lives destroy us anyway, without the help of a machine uprising like in *The Matrix*?

According Raymond Kurzweil, posthumanism is not only possible, but will be achieved by the year 2045. If Kurzweil is right, then it is possible that many living today will be alive to witness the world's first cyborg. This means that today's generation has the responsibility of asking the very same complicated questions posed by Sawyer, Stross, Hayles and Dougherty. Are cyborgs the next step in human perfection, or is it just another means of advancing humanity and all its flaws? While Kurzweil believes that the Singularity will turn the human race into godlike creatures, there are other scientists who predict war amongst differing ideologies and even a "Terminator Scenario" that could take place. If we are on the cusp of the Singularity, now is the time to take Michael Crichton's advice from *Jurassic Park* and to ask the question, just because it can be done, should it be done?

Raymond Kurzweil is referenced as an authority for good reason; he *is* an authority, if not the first authority, on the subject of the singularity and posthumanism.

Kurzweil is famous for many reasons that were highlighted in Robert Barry Ptolemy's documentary *The Transcendent Man*. At the age of 17 Kurzweil invented a computer that composed a piece of piano music and displayed it on the television show *What's My Secret*, holds over 30 patents on various inventions from the flatbed scanner to a digital reader for the blind, he accurately predicted the fall of the Soviet Union and the exact year a computer would be a world chess champion, and he also perfected and practically preaches Moore's law and the concept of the inevitable Singularity, the rise of machines that are smarter than humans (Ptolemy, 2009). Kurzweil holds 19 honorary doctorates and according to reporter Lev Grossman in his article "2045: The Year Man Becomes Immortal" at Time.com, Bill Gates said, "[He is] the best person I know at predicting the future of artificial intelligence" (Grossman, "2045"). All of which means, when Kurzweil claims the singularity will happen in 2045, the scientific community listens.

Ptolemy's documentary sounds like a science fiction novel as he films Kurzweil talking about the future he expects, and then interviews other scientists to capture both sides of the argument. Only a handful of scientists claim the singularity just won't happen; the rest completely believe, and simply can't agree on whether it will be the evolution of mankind, or our extinction. According to Grossman, Kurzweil started looking into Moore's law as a means of predicting the market so he could better time the release of his inventions "“Even at that time, technology was moving quickly enough that the world was going to be different by the time you finished a project,” [Kurzweil] says. "So it's like skeet shooting — you can't shoot at the target”" (Grossman, "2045"). In Ptolemy's film Kurzweil explains that in order to be a success you have to start

planning your product before the technology to complete it is available. By the time you are done inventing, technology would have caught up to your plans (Ptolemy 2009). Taking into account Moore's Law and Kurzweil's own figures for decreased cost over time and computing speed increase Kurzweil was able to show that, "Exponential curves start slowly, then rocket skyward toward infinity" (Grossman, "2045"), which is what led him to believe that according to the math, the singularity, the invention of a super computer that will invent an even more powerful computer beyond human understanding, is now close as 32 years away.

Using Kurzweil's own logic of planning before the technology has reached the required capability, it make sense to start asking the important philosophical questions of what risks will be created with the creation of a computer beyond human understanding. Ben Goertzel, author and researcher in the field of AI's, makes the point in Ptolemy's film that once an android is created that is beyond human intelligence, there is no guarantee that humans will be able to maintain control over that AI (Ptolemy, 2009). Professor Kevin Warwick, best known for his experiments of inserting microchips inside his own arm to help progress human and computer integration, was also interviewed in Ptolemy's film. Warwick claimed that much of his work is geared towards creating human cyborgs just in case a "Terminator Scenario" comes to pass; adapting is the best chance of human survival. Some scientists, like Hugo de Garis, go beyond even the scenarios played out in science fiction.

Hugo de Garis is a researcher in a sub-field of artificial intelligence known as evolvable hardware. Up until his retirement, de Garis ran China's Artificial Brain lab. De Garis is most known for his belief in what he named "The Artilect Wars". "Artilect"

stands for artificial intelligence, and de Garis outlined his concept in an article he wrote for *Forbes* magazine. In his article, “Are you a cosmist, a terran or a cyborgist?,” de Garis claims:

In the coming few decades, the rise of artificial intelligence will be a veritable goldmine for humankind. I predict that by the year 2030, one of the world's biggest industries will be "artificial brains," used to control home robots that will be genuinely intelligent and useful.

(de Garis, “Are you a cosmist...” 2009)

He goes on to explain that while androids are inevitable and potentially very useful for mankind, he does not believe that these advances will be peaceful; however, he is not talking about humans warring against androids, but instead, humans against humans.

I differ sharply with well-known futurist Ray Kurzweil on his over-optimistic prediction that the rise of the artelect this century will be a positive development for humanity. I think it will be a catastrophe. I see a war coming, the "Artelect War," not between the artelects and human beings, as in the movie *Terminator*, but between the Terrans, Cosmists and Cyborgists. (de Garis, “Are you a cosmist...” 2009.)

To break each divide down, the Cosmists, according to De Garis, would support building intelligent computers that go beyond human intelligence and would support those machines with an almost religious zeal since the machines cognitive abilities would appear “god-like” compared to our own. Cyborgists would be the individuals who would want to become cyborgs to keep up with or beat the machines and be god-like,

or “more perfect”, themselves. Finally the Terrans would be the people left over who believe that nature is better, or more perfect, than machines and would resist both the Cosmists and the Cyborgists. De Garis’ theory takes into account the divisiveness of human nature exhibited throughout history, and has projected it into possible future scenarios. This may sound like the plot of a science fiction novel, but this is what de Garis believes is in store for the future of humanity and developing technology. It is because of scientists like de Garis and Kurzweil that science fiction writers are able to so carefully craft their fictional futures and why sometimes those futures become realistic possibilities.

De Garis’ theory implies that if scientists succeed at creating cyborgs and super intelligent androids, or if all that happens is the continued trend of more and more reliance on computers, the crux of humanity doesn’t change. We have not yet, nor any time in the foreseeable future will we, overcome all the complexities, be it good or bad, that make up humanity. De Garis, perhaps without intention, implies that the flaw or imperfection in humanity is not with the physical body but the divisive thinking that leads to conflict. A good example of this would be M. T. Anderson’s young adult novel *Feed*.

Anderson is less ambitious than de Garis or Kurzweil; his novel doesn’t take place in a world with androids or superhuman cyborgs. Instead, Anderson creates a world where humans look like humans, only technology has advanced enough to allow personal computers to be linked directly to the human brain. This link, called “the feed”, is pretty much the equivalent to what smartphones are today. Upper class as well as middle class families are able to afford to install the feed into their child at birth, which is superior to getting a feed after a certain age. Children then grow up with the ability to

access the internet for everything. The problems that arise, because of this integration of technology, are eerily similar to some problems that are already taking place with the introduction of smartphones. Much like surfing the internet today, the feed also comes with a constant bombardment of consumerism. Pop-up ads, targeted advertising based on your past searches, constant offers of entertainment – the feed is a never-ending access literally into the minds of everyone who can afford to have a feed.

Anderson's story follows a group of young teenagers, specifically Titus who is the narrator, who meets a girl named Violet. Violet is the outsider because her family resisted the feed at first, which meant that she didn't get the computer implanted until she was older (Anderson, 170). This is one of the first introductions to the dichotomy of opinion formed around the concept of perfection. For Violet's father, an academic, knowledge is information learned and understood that the child, Violet, is able to contemplate and analyze on her own without the feed; however, the popular perspective on perfection would be not "wasting" time learning facts for yourself, but to instead download everything needed from the feed to save time. Violet's father believed in educating his daughter instead of letting her use the feed as her own personal artificial intelligence.

The scene that sets up this dichotomy is when Titus and his friends first meet Violet. To make friends she helps one of the girls to feel less embarrassed about her lesion, an epidemic in Anderson's world that is subtly linked as a possible side-effect of the feed. Violet convinced Quendy that her lesion helps to frame her face and Link, another of Titus' friends, asks about his lesion, "She smirked. "Oh, mm-hmm," she said. "You put the 'supper' back in 'suppuration.'" Link thought it was hilarious. Of course,

he didn't have any idea what the hell she was talking about either... the rest of us were still looking up 'suppuration' on the feed English-to-English wordbook" (Anderson 23). Throughout much of the book the teens who received the feed early are using it to look up words or topics brought up by Violet, who accesses her own memory or her own opinions. Their memories are not as extensive because they never had to use them. The feed was always right there to supplement their ignorance.

Surprisingly this is already taking place in higher education. In my own experience while teaching rhetoric and composition as a graduate assistant, I noticed that many students refused to take notes in class. Instead they would use their smartphones to take a photo of the board at the end of class and consider that enough. There were also several cases of students using smartphones to look up the answers to general questions I asked the class; answers that they should have known had they done the reading the night before. Constant access to the internet, with online dictionaries and Wikipedia, has already become a replacement for retaining knowledge; Anderson just took the trend to the next possible step.

Anderson really sums up this concept of the feed deteriorating the next generation in a line given by Violet. She is "chatting", the feed equivalent of texting, Titus about the rest of the population who don't have the feed:

No one with feeds thinks about it, she said. When you have the feed all your life, you're brought up to not think about things. Like them never telling you that it's a republic and not a democracy. It's something that makes me angry, what people don't know about these days. Because of

the feed, we're raising a nation of idiots. Ignorant, self-centered idiots.
(Anderson 113).

Anderson sets Violet aside as more informed and intelligent because she grew up not depending on the feed as her only source of information. Instead of perfecting herself with technology she perfected herself through education. There is also a social divide between Violet and Titus in that Violet's family is, if not lower class, most certainly lower middle class. This also goes back to highlight Lanier's concerns about what technology is doing to the middle class and the creation of the digital divide.

In Anderson's world the classes are literally divided by level, since those who could afford to, moved higher to get beyond the smog and pollution that has apparently taken over much of the earth. Violet lives on the ground level, which is implied that in the U.S. that could still be lower middle class. "Her neighborhood was down a long droptube. ... until I hit the bottom of the tube, where it was called Creville Heights... The streets were blue and cracked, and they were streets... like for when things were on the ground" (Anderson 134). While Violet was lower class her family wasn't poor. Between some of the chapters Anderson inserts pieces of "modern" songs, commercials, and propaganda to give a feel for where the world is socially and politically. Through some of the snippets of the President's speeches and one of Titus's dreams which was implied to maybe be a newsfeed, Anderson shows that not everyone is living well in this utopian technological age:

...clouds of gas drifted through them and the American flags they were burning started to spark big... I saw a sign with a picture of a head with a little devil sitting in the brain, inside the skull, with these like energy bolts

coming out of his mouth. I saw fields and fields of black... walls of concrete... long cables going through the sea. I saw girls sewing things... people praying over missiles... a kid looking at me, he was a kid from another culture, where they wore dresses, and there were all of these shadows over his face... and I realized they weren't shadows, they were bruises, and then the end of a gun, it's called the butt, it came down and hit him in the face... (Anderson 152-153)

Anderson is careful to keep his story about Titus and Violet, but he gives enough through pieces of glimpsed information to show that the world is still split between upper and lower classes. This implies that transhumanism, which would include concepts like the feed, is not the next evolutionary step towards unity and perfection but instead creates wider economic gaps and human division. This divide is obvious to Violet, but Titus is too privileged to know or notice.

Ultimately Anderson's argument is very similar to that of this thesis, which is to say that while technology may advance, humanity or human nature won't change. Anderson created a world in *Feed* where there is a huge gap between the haves and the have-nots. The feed may be considered a luxury item much like smartphones are today, but Anderson shows through Violet's father's experience that the feed is actually a necessity to succeed:

I was at a job interview. I was an excellent candidate. Two men were interviewing me. Talking about this and that. Then they were silent, just looking at me. I grew uncomfortable. Then they began looking at each other, and doing what I might call smirking. I realized that they had

chatted me, and that I had not responded. They found this funny. Risible. That a man would not have a feed. So they were chatting about me in my presence. Teasing me when I could not hear. Free to assess me as they would, right in front of me. I did not get the job. (Anderson 288)

Once technology becomes a necessary part of career success it is then the defining line between upper and lower class. Violet's father wanted more for her, so she was given the feed even though she was older than she should have been. Those who could afford the feed were always the ones who could afford to entertain themselves more often instead of working or educating themselves.

Anderson's novel is about much more than the possible pitfalls of technology. Through his narrative Anderson shows how human nature stays consistent even with the leaps and bounds of advancement made in technology. *Feed* is a wonderful companion to H. G Wells's novel *The Time Machine*. Wells leaps into the future and shows the end result of what could happen if the divide between the upper and lower class remains, and Anderson shows an intricate piece of the puzzle that lays out the possibility of how the Eloi could become so childlike and ignorant. It is interesting how Wells' concern for society back in 1895 could be so closely reflected in Anderson's novel published in 2002. Anderson's characters even reference Wells' novel. While Violet is dying from a malfunction in her low-quality feedware her father scolds Titus for being selfish and negligent of Violet. "It's almost time for foosball. It will be a gala. Go along, little child. Go back and hang with the eloi" (Anderson 291). The reference is totally lost on Titus because of course the teenager hasn't read the novel, he doesn't even know how to write. Still, Anderson ties together his concerns with that single

reference showing that no matter where humanity is in the developed world there the negative traits of humanity remain. Just because technology improves doesn't mean society has reached posthumanism, because humanity can never go beyond itself. This doesn't stop us from striving to meet perfection, no matter what incarnation perfection may take. Androids are only one vision of perfection, for some perfection may be much less Cybermen from *Doctor Who*, and more any abnormality in the human form.

CHAPTER 5

THE REFLECTION OF PERFECTION, A DIFFERENT POINT OF VIEW

To discuss perfection in the form of transhumanism is to explore the human condition and the drive to push beyond limitations. Part of that exploration involves asking questions: what makes us human, or if there is a way to design a better human. Aldous Huxley in *A Brave New World* asked the question of whether or not society should design humanity, shaping every individual for their specific station in life. Huxley had to travel into the future to ask these questions; whereas Katherine Dunn is able to raise transhumanist questions without pushing her story beyond 1989 when *Geek Love* was first published. No time period is ever presented in the novel, and though the story does spend most of its time in flashbacks Dunn gives the impression that the present story is being told in the year the novel was published. This would mean not only does Dunn avoid going into the future to deal with transhumanism, she often raises this question by dipping into her characters' pasts, highlighting how humanity's focus on perfection is nothing new. Dunn's postmodern story about designer freaks, disability cults, and mutilation of the body to reach a desired perfection, presents an interesting take on the transhumanist critique, disability critique, and the human body as a commodity or work of art.

Posthumanism and transhumanism critiques, unlike the scientific attempts, deal with narratives that try to push beyond the confines of the human body. Stories such as *Accelerando* or the popular film *The Matrix* try to look at possible futures for the human experience that may no longer involve humans. For Stross, humans evolve into data,

which Lanier has already warned may not be alive at all, whereas *The Matrix* speculates that machines may be the dominant sentient form of awareness, not life per se, in the future; either way, both ideas are already post-human, or are about the world moving beyond humanity. Huxley, on the other hand, still deals with humanity; however he brings up the possibility that humanity will try to control its own physical development, not through the addition of technology but through the manipulation of the body or genetic code, and in that way become more than human or transhuman. This body manipulation can be viewed one of two ways, either as evolution or as mutilation. Scientists working in genetic engineering are trying to accomplish the same goal as Kurzweil and his followers, namely, advancing humanity in the next evolutionary step. In both cases it could be argued that these scientists are not improving the human form, but mutilating it or destroying it altogether.

By writing characters who keep some aspect of humanity as the author explores what it means to be human or more than human is more realistic than trying to theorize a world without humanity. As Neil Badmington put it in his article "Theorizing Posthumanism": "it is remarkably difficult to cut off the human(ist) head through which we (continue to) 'behold all things'" (Badmington 10). As a human who experiences the world through the human body it would be difficult to write about a world without the human experience; however, even without traveling into the future this is a world where people are now able to shape and mold their bodies more than they ever could before. To move beyond what we were born with and upgrade or add to the human body now places society in a transhuman era, which makes the questions raised in novels like *A Brave New World* and *Geek Love* all the more poignant.

Nicholas Agar in his article “Where to Transhumanism? The literature reaches a critical mass” quotes the World Transhumanist Association website as saying, “posthumans are ‘no longer unambiguously human by our current standards’” (Agar 13). Because we can now manipulate the human body and have already started adding improvements where we can, transhumanists suggest that we are already becoming more than the original human 1.0, we are perfecting ourselves. Dunn touches on this concept when Aloysius Binewski tells his child how he came up with the idea of creating his “Rose Garden” (Dunn 9). “The roses started him thinking, how the oddity of them was beautiful and how that oddity was contrived to give them value... He realized that children could be designed” (Dunn 9-10). From the very beginning of the novel Dunn implies that Al designed his children for the specific purpose of using them in his fabulon. The roses he sees are genetically engineered to be unusual and therefore more valuable; while the Binewskis are unable to design their child with as much sophistication, since they are still linked in that sentence to the idea of gene splicing and genetic tampering it is implied that on a very primitive level the Binewskis’ genetically engineered their children according to their specific vision of perfection. The Binewskis ran a freak show, and they designed their children with bodies fit, or perfect, for such a career. Al engineered his children in a much cruder fashion, by addicting Lil to various drug cocktails during her pregnancies. In this sense, with the intention of designing children, *Geek Love* is connected with the concept of transhumanism.

Most stories that involve transhumanism depict the transformation as an intended improvement upon the original, attempts at evolution or reaching towards perfection. Typically the transhuman is better, stronger, faster, and smarter than a

regular human. Take for example the movie *Gattaca*; Jude Law's character was genetically engineered and was therefore without defects like nearsightedness or allergies. He would also live longer and remain healthier than Ethan Hawk's character who was born naturally (Niccol 1997). Agar also talks about transhumanist progression as being a step towards improvement. He mentions Simon Young's claims that this is just another step in evolution, "since evolution is taking humans toward posthumanity anyway, it can't hurt to give it a push" (Agar 13). This concept of giving human evolution a push is embraced by scientists like Kurzweil, who want to add technology to the human form to create his next evolutionary step, but rejected by scientists like Lanier, who insist that we take an honest look at evidence or lack of evidence that supports such pushes towards evolution.

For the Binewskis, these transhuman designer children are not meant to be the new "normal," or the next evolutionary step, but instead to be freaks for the stage; the freakier the better. Dunn completely reverses the traditional train of thought, making the deformed and disturbing figure the one to keep, by having the Binewskis almost abandon their fifth child, Chick, at a gas station because "he's just a regular... regular baby" (Dunn 64). The only reason the family keeps Chick is because it is discovered that he has telekinetic abilities (Dunn 71). Even after it is discovered that he is not normal, Chick is never put on stage because, while he is still a freak of nature, this abnormality is internal, not external; he is still considered a "norm kid" because his appearance is not deformed like the other children (Dunn 87). Dunn sets up a completely different concept of perfection that would stand in opposition with modern

theories of posthumanism, but is an example of the neglected opinions ignored by theorists like Kurzweil.

The Binewski children, due to their designed nature, are equated to works of art made by AI alone. AI not only tells his children about his inspiration for their creation but also subtly references the fact that he, much like God in the Old Testament, created the children. Ollie, the main speaker for this story, talks about her voice lessons with her father and how if she got something wrong he would say, “That’s a double-reed instrument! It is called a voice! ... I gave it to you from the love in my guts for your scrawny and unmarketable carcass...” (Dunn 45). In this dialog AI not only suggests that he created Ollie’s voice but he makes her into a commodity by calling her “unmarketable”. While the other children, the Siamese twins Elly and Iphy, and the limbless Arty are marketable freaks, Ollie was “just” a dwarf hunchback albino; which, according to her father, are all common abnormalities and therefore making Olly less perfect than her siblings.

The “failed” masterpieces, or abnormal children who did not survive, were literally put on display in jars filled with formaldehyde (Dunn 53). In this way AI truly does become the sculptor of the human body, placing a spotlight on his immobile sculptures. Even these children were marketable in their fashion. While Lil tells Ollie, “You must always remember that these are your brothers and sisters,” this display of the children’s cadavers does push the human body into the realm of consumerism, making the children almost less than human in the sense that they are also AI’s commodity to be displayed for money. Because of this regulation to masterpiece status the Binewski

children are forced to live their lives in public as attractions instead of growing up in private as children.

This concept of living publicly is talked about in Daniel Punday's article "Narrative Performance in the Contemporary Monster Story". Punday notes that "the story allows Dunn to investigate... the peculiar public position that such monstrosity creates for the Binewski family" (Punday 818). Not only does the Binewski family willfully display themselves in the Binewski Fabulon, but Punday also points out that the nature of monstrosity itself is cause for public notice. "Ollie realizes, however, later in her life that there is something inherently 'public' about monstrosity: "People talk easily to me. They think a bald albino hunchback dwarf can't hide anything. My worst is all out in the open"" (Punday 818). Throughout the novel the Binewski children are "out in the open" and openly noticed even off stage.

Early in the novel Ollie remembers fondly the time when they were all caught by a farmer up in an apple tree, and the farmer's reaction when they climbed down and he could see them clearly for the first time (Dunn 48). Such notice, however, wasn't always funny, as evidenced by the time the family was shot at by Vern Bogner while in the middle of the mundane act of going to the store (Dunn 57). Punday speculates that many believe physical deformity such as the Binewskis' would be "personal", he notes, "Dunn, however, insists that monstrosity places Ollie and her siblings in a permanently public role" (Punday 818). This very concept that monstrosity forces its figure into public notice is linked to the concept of extremes in Elisabeth Bronfen's article "Chuck Palahniuk and the Violence of Beauty."

Bronfen uses Palahniuk's novel *Invisible Monsters* as her example, specifically the character Shannon McFarland, who was a model with an addiction to public attention and who therefore shot herself in the face in order to disappear from the public eye (Bronfen 111). Bronfen writes, "Palahniuk thus also has recourse to the Barthean formula that places perfect beauty and monstrosity in the same generic class" (Bronfen 110). Basically Bronfen is pointing out that while Shannon was an object of public notice when she was beautiful, she remains public interest after her self-mutilation because of the disastrous effects it has on her face, turning her into a public monstrosity much like the Binewski children.

Shannon confesses her self-mutilation was due to the fact that her beauty acted as a prison and hindered her from becoming more than just a pretty face (Bronfen 109). This is a similar theme for Dunn as played out with the character of Mary T. Lick and the interest she takes in the lives of beautiful young women. Lick likes to "liberate women who are liable to be exploited by male hungers" (Dunn 161-162). She finds beautiful young women and offers them some kind of reward if they agree to go through some form of self-mutilation; their beauty is the cost of their potential futures.

This is yet another reversal in the concept of perfection. Beauty is usually set up as desirable and many men and women go through plastic surgery to improve or perfect their beauty, whereas Dunn's characters see beauty as an imperfection or a hindrance. For example Lick shows a video to Ollie of a young girl named Carina; this girl was beautiful, but Lick offered to pay for her entire college career if the girl agrees to allow a doctor to pour acid over her face (Dunn 160). Lick videotapes the entire process and she shows Ollie the before and after videos, including Carina's graduation;

Lick explains that Carina is now a translator for the UN (160-161). Lick calls the girls her “projects” and claims to have liberated several women, all of them in different ways, from burning with acid to thyroid treatments which make the women morbidly obese (Dunn 162). Just as the children are Al’s masterpieces, so too are these transformed women Lick’s works of art. She is crafting their bodies in the hopes that she will also craft their lives. Lick pushes these very physical women into a different category of public attention by turning them into her form of designer bodies. This is transhumanism in reverse; instead of plastic surgery to improve upon the human body Lick is performing surgery to detract from the body in the hopes that she will expand her projects’ minds. Lick attributes the inspiration for her endeavors back to Ollie’s older brother Arty and the Arturans, members of the disability cult he had started.

Punday talks about how Arty is the first to notice the real advantage to being an abnormality and constantly in the public eye (Punday 819). What he is referring to is the cult that Arty eventually starts and that follows the circus from town to town. Arty tells Ollie:

“We have this advantage, that the norms expect us to be wise. Even a rat's-ass dwarf jester got credit for terrible canniness disguised in his foolery. Freaks are like owls, mythed into blinking, bloodless objectivity. The norms figure our contact with their brand of life is shaky. They see us as cut off from temptation and pettiness. Even our hate is grand by their feeble lights. And the more deformed we are, the higher our supposed sanctity.”

(Dunn 114)

What Arty is referring to is the historical reaction society seems to have when confronted with extreme disfigurement. Leslie Fiedler in his article “The Tyranny of the Normal” explains that society has two reactions when confronted with human abnormalities.

On the one hand, we have throughout the course of history killed them... as befits divinely sent omens of disaster, portents of doom. On the other hand, we have sometimes worshipped them as if they were themselves divine, though never without over-tones of fear and repulsion.

(Fiedler 40)

Dunn already showed the attempt to kill the Binewski children with the Bogner shooting; she now deals with the worship aspect with the religion Arty starts. Arty, in an attempt to change his show, had started having dialogs with the audience; these dialogs grew from simple fortune cookie future predictions to Arty actually admonishing the audience for being “normal” (Dunn 177-178). One night when Arty asked an audience member what she wanted, the woman called out, “I want to be like *you* are!” (Dunn 178). Arty was that woman’s image or reflection of perfection. From there Arty developed what Punday explains as “a religion in which 'norms' gradually sacrifice their appendages in order to move closer and closer to the monstrous ideal represented by Arty himself” (Punday 818). Arty amasses a large group of followers, all of whom want to eventually become limbless and join the ranks of the disabled, the new form of religious or godlike perfection, in that Arty placed himself up as the image to aspire towards.

This concept of “norms” or non-disabled individuals finding a fascination towards those who are disabled is nothing new. Richard Bruno in his article “Devotees, Pretenders and Wannabes: Two Cases of Factitious Disability Disorder” discusses real cases of devotees, pretenders, and wannabes; people who have an extreme fascination with the disabled body. Bruno explains the definitions of devotees, pretenders and wannabes:

Devotees are non-disabled people who are sexually attracted to people with disabilities, pretenders are non-disabled people who act as if they have a disability by using assistive devices, and wannabes actually want to become disabled, sometimes going to extraordinary lengths to have a limb amputated. (Bruno 243)

Arty’s followers would fit into both the devotee category as well as wannabe. While Bruno presents examples through two case studies, he can only speculate as to why this subculture exists. He quotes a scientist as suggesting that maybe during their youth the patients had come into contact with a disabled person and observed their parents’ sympathy towards this individual, therefore equating their parents’ love with disability (Bruno 251). He goes on to say the child “rationalizes that he would be loveable if only he were an amputee... the removal of a limb represents partial destruction of the body [which] would satisfy his own need for self-destruction” (Bruno 251). This concept of self-destruction or self-mutilation relates back to Lick’s projects and Palahniuk’s Shannon; it also links to the first member of Arty’s cult, Alma, a woman who was obese and who hated her own body (Dunn 178-179). Alma claims, “I can’t tell you what it means to me each time they clean a little more away, even a little toe.

Once it's gone I feel what a weight of rot it was for me" (Dunn 183). Alma considers the loss of her limbs as "cleaning" herself and refers to her body as "rot". Arty, like his father Al and Miss Lick, becomes the sculptor of the human body, creating his followers in his image. Arty tries to imply that he is more than a normal human, that somehow his abnormal body sets him apart; this is the great lie that Arty creates, that he is something more, that he has reached a level of transhumanism that should be desired by all. Much like Kurzweil's desire to believe that data is alive and that he can live forever in the body of a machine, a future that Lanier highly doubts and considers incredibly antihuman, Arty wants to believe that he isn't disabled but evolved.

In most cases, unless someone was a wannabe, the loss of all four limbs is not a desirable outcome. This typically wouldn't be considered transhuman in the sense that transhuman is the evolution and improvement of the human body; however Arty makes the state desirable through his description of what it means to be a "freak". Arty tells a journalist, "Consider the Mandarin maiden... even the Mexican welder sports one long polished nail on his smallest finger which declares to the world, 'My life allows superfluity...'" (Dunn 221). Arty sells abnormality as not being disabled but enabled to be happy and unique; removed from the laborious demands of a "normal" life. He makes his life look luxuriant, which his life is because he demands an expensive "dowry" from his followers before they can enter into his cult.

The image of the "Mandarin maiden", a reference to foot binding, is an allusion to living the life of the upper class where you have no need of mobility because there will be people to carry you. This is the idea of suffering for beauty; only in Dunn's reality beauty exists side by side with monstrosity. Arty, just like Lick, seems to suggest that

beauty is a prison and that it would be undesirable to be considered “normal”. Another quote the journalist Norval Sanderson takes from Arty expresses this fear of normalcy: “I get glimpses of the horror of normalcy. Each of these innocents on the street is engulfed by a terror of their own ordinariness. They would do anything to be unique” (Dunn 223). Arty pushes beyond those individuals who are obsessed with disabilities and is instead suggesting that everyone is suffering from insignificance. Dunn here takes the possible theories toward what may cause someone to become a devotee and stretches that theory to include everyone who is merely normal.

Dunn, by making disability the desirable state, presents a mirror image of previous representations of the disabled. Fiedler points out that in early history children born with birth defects were most often killed or abandoned outside of the city, essentially to die in the elements. Dunn turns that concept around when she has the Binewski family almost abandon the normal-looking Chick at a gas station. After the thorough examination of the baby, where Lil discovered that Chick is a healthy “normal” child, her reaction is that of shame and failure. She tells Al, “I did everything, Al... I did what you said, Al... What happened, Al? How could this happen?” (Dunn 64). This is the kind of reaction that is usually expected when an abnormality is found, but in Dunn’s case a normal baby is an unmarketable baby, imperfect by their standard and therefore unwanted. The Binewskis don’t want to kill the normal baby; he is more an object to be pitied because he was not born special, so instead they decide to leave him outside of a gas station to be found by a local, “Not white-collar, though. No insurance or real estate. I don’t want him brought up by an office worker” (Dunn 65). With the Binewski family Dunn reverses all expectation; to be raised by a white-collar family becomes

undesirable just as it is unfortunate to have a normal child, and the children tell stories about the “norms” to scare each other (Dunn 76). These reversals all tie in with how the children aren’t just children but also commodities for AI and Lil, works of art to be put on display.

Living art or the body as a canvas is a common concept as evidenced by the popularity of tattoos and body piercings. Plastic surgeons take this concept even further by literally crafting and reshaping the body upon request and sculpting the figure into the desired, perfected form. For AI and Lick the desired form is outside of societal norms for now, but that might not always be the case. Edwina Bartlem explores bio-art in her article “Emergence: New Flash and Life in New Media Art”. She gives an example of one artist who has had a “soft prosthetic” ear attached to his left arm (Bartlem 171). This ear is part of an art project he calls *Extra Ear: Ear on Arm*; this ear “will incorporate a Bluetooth transmitter that allows a... connection to the Internet and enables people... to listen in on what the ear is *hearing*” (Bartlem 171). This means that the ear is not only equipped to listen, but to transmit sounds to other people. Bartlem claims, “The architecture of the body will become technologically extended” (Bartlem 171). This, according to Agar, is the very definition of transhumanism; the extension of the body’s abilities through technology (Agar 13). The future of body art could do exactly what Arty claims needs to be done, which is to expand the human body beyond normality and push into the realm of the abnormal or “freak”. In the case of the ear artist, or the Binewski family, or even pre-accident Shannon the model, the use of the body as art pushes the human body past the ideas of the body as sacred and into the realm of commodity.

The concept of the human body as a commodity is the very thought that closed down the freak show. The fear of exploitation of the disabled, and the implications that are attached to the idea of selling or displaying the body for profit, is what made freak shows feel voyeuristic. Thomas Fahy in his book *Freak Shows and the Modern American Imagination: Constructing the Damaged Body from Willa Cather to Truman Capote* explores the time period when freak shows went from the wonder of the exotic to the distasteful. Fahy writes, "Within the context of a museum, freaks had more respectability; they were integrated into a whole and displayed under the guise of learning... But on the fairgrounds the freak show seemed dirtier" (Fahy 9-10). Fahy notes that this shift in context for the freak show, from curiosity to distasteful, forced artists to shift how they handled the representation of disability in their work. "Artists responded to this cultural shift by using the freakish body as a tool for exploring problematic social attitudes about race, disability, and sexual desire in American culture" (Fahy 13). This shift caused another issue which G. Thomas Couser addresses, which would be the over-representation and use of disabled characters who "may be assumed to have been traumatized and embittered, in the manner of Melville's Ahab" (Couser 19). Couser, in "Paradigms' Cost: Representing Vulnerable Subjects," also talks about the exploitation of the disabled through the literary representations of their disabilities.

Dunn's novel avoids both of these potential pitfalls when she has Arty take full control of his own act, and eventually the entire fabulon, and begin his cult. Arty, and even the twins, are more than just freaks on display, they are performers. The twins, like the historical Siamese twins Chang and Eng, play piano and sing songs (Fahy 8,

Dunn 51). Ollie even admits jealousy towards the twins because, “They were too charming” (Dunn 8). So unlike Fahy’s “distasteful” freak show where “freaks shows became known as ‘ten-in-ones’ because patrons could see ten exhibits for the price of one”, the twins were simply enhanced performers whose act sold as many tickets as their form (Fahy 9, Dunn 51). Later in the novel the twins do actually prostitute themselves for extra money, literally selling their shared body; although if this can be seen as exploitation it was the exploitation of Iphy by Elly because Iphy tells Ollie, “She just sold our cherry!... I was *saving* mine!” (Dunn 203). The twins were later “given” by Arty to the “bagman” who was Bogner (Dunn 258). Arty is the exploiter of the entire family. Arty himself, on the other hand, avoids exploitation by turning the tables on his audience and exploiting them. Arty didn’t just create “Arturism”, his cult of disability where the “admitted” had to eventually shed one limb at a time to move up the ranks; he also made sure that “all who came after [Alma] paid what [Alma] called a ‘dowry.’ Arty said... the scumbags were required to fork over everything they had in the world, and, if it wasn’t enough, they could go home...” (Dunn 185). Arty molded himself from a side show attraction to a beloved cult leader; turning his audiences’ wonder into fear and awe which he exploited to become rich. In a sense, while Iphy and Elly are the only characters who actually prostitute themselves, and everyone in the fabulon is selling their physical bodies for display, only Arty becomes the mastermind who is able to shape his followers into his own likeness, his image of perfection.

Ollie also tries to create her own masterpiece when she asks Chick’s help in acquiring Arty’s sperm so she can have a baby (Dunn 297). Ollie tells her daughter Miranda that, “My idea of you was as a gift to your father, a living love for Arturo” (Dunn

299). While Ollie calls her a “living love,” Miranda was still conceived as a “gift” to be given away. She goes on to explain, “the only reason for your existing was as a tribute to your uncle-father... I planned to teach you how to serve him... you would be his monument and his fortress against mortality” (Dunn 309). Ollie made Miranda, literally made or had made since there was no sexual act involved with the use of Chick’s telekinesis, to be nothing but a product, and moreover a chance for Arty to become immortal in the sense that his gene pool would continue. Ollie, when referencing the purpose for Miranda, only compares her to objects; objects that furthermore are created to represent something other than themselves. However, Dunn is careful to have Ollie realize “that you were worth far more than that” (Dunn 309). Ollie, after Miranda was born, realizes that Miranda is more than just an object to be constructed and given away; this realization takes Ollie beyond her parents’ awareness since they designed their children for display.

Still, Ollie is disappointed to discover that her daughter’s only abnormality, or family claim of “perfected” body, is a corkscrew tail. “Mama examined her amazing body and found only her ridiculous tail. My heart died. Arty would despise her” (Dunn 312). Ollie, just like her parents before her, was hoping to have a “unique” child, which means that the discovery that Miranda was fairly normal was a sign of imperfection. Arty insists on abandoning the normal Miranda and Ollie eventually gives the baby up to a convent school that took in unwanted children. Ollie did keep track of Miranda, eventually setting her up in an apartment complex that Ollie owned, where she could keep an eye on Miranda from a distance (Dunn 23). Ollie never tells Miranda that she is her daughter; instead that ends up being the purpose of the novel. When Miranda, a

technical art student with hopes of eventually drawing illustrations for medical texts, invites Ollie to sit and be the subject for one of her school projects, Miranda confides in Ollie that Ms. Lick has approached her about paying for school if Miranda has her tail surgically removed. It is this conversation that starts the entire plot in motion to the eventual end in Ollie murdering Ms. Lick in order to save Miranda's tail. An odd parallel can be drawn here between the murder of organic Jake Sullivan by inorganic Jake. It is customary for the new evolutionary step or species to wipe out what remains of the old form, much like Jake Sullivan's mindscan had to kill the human Jake on the moon. Ms. Lick was a "norm" and she threatened the next evolutionary step, the abnormality or mutation, of Ollie's child, and therefore Lick had to be destroyed.

Miranda's tail is the only physical feature that draws a connection between her and Ollie. It is also the only abnormality that protects Miranda from becoming the victim of normalcy. Ollie throughout the novel consistently describes Miranda as beautiful. "I get an instant glimpse of her long legs... Miranda is a popular girl, tall and well-shaped... My dove. My eyes hurt for her... Miranda with the Binewski cheekbones, the Mongol eyes. Wide-mouthed Miranda, the dancer on long legs" (Dunn 12,14-17). Miranda's beauty is what attracts Lick's attention and is why Lick wants to turn Miranda into one of her projects; to save her from "men's hungers." Only it is Miranda's one abnormality that Lick wants removed, and it is the removal of the tail that causes Ollie to plot Lick's demise. Miranda is a dancer at a club, "The Glass House," where as she explains it, "they weren't interested if you were just pretty... [they] wanted something spectacular" (Dunn 33). Miranda unknowingly follows in her family's footsteps by putting her tail on display. This club links into Arty's take on "freaks" in the sense that

they would not hire “just pretty” or “ordinary” girls but want what Miranda refers to as the “spectacular.” This, again, is a positive spin on the abnormal body, and since it is Miranda’s abnormality that is so attractive to the client and it is her tail that Lick decides will be Miranda’s downfall.

Ollie, unlike Lick, places a lot of value on Miranda’s tail. Ollie writes, “She soars and stomps and burns through her days with no notion of the causes that formed her. She imagines herself isolated and unique. She is unaware that she is part of, and the product of, forces assembled before she was born” (Dunn 40). It is interesting that Ollie places so much emphasis on how Miranda is not “unique” in the sense that she is “the only one”. To Ollie it is important that Miranda should discover that she isn’t the only one but is actually part of a design that started before she was ever born. Ollie wants her daughter to remain “unique” in the physical sense, but to become a part of the transhuman Binewski line instead of existing alone. Ollie goes on to say, “She can be flip about her tail. Or she can try. She is ignorant of its meaning and oblivious to its value” (Dunn 40). To Ollie, who grew up hearing the stories of her and her siblings’ creation, the disabilities they were born with were gifts from Al and Lil. Al designed his children for a purpose and Lil sums that up well by saying, “What greater gift could you offer your children than an inherent ability to earn a living just by being themselves?” (Dunn 7). It is evident that Ollie shares this thought since she goes to such extreme lengths to assure that not only does Miranda keep her tail but she also learns the complex history of her family and her own creation.

Dunn’s novel turns disability theory and transhumanist theory upside down by placing the narrative in the first person figure of Ollie the hunchback albino dwarf, and

by empowering the figure of Arty who fashions abnormality as the desirable perfect form and gathers a cult following of people who want to mold themselves into his image. In the world of *Geek Love* the normal human form is undesirable and pitied, and the greatest gift given to the Binewski children is the ability to display their bodies as works of art. Dunn has contributed a unique take on disability, transhumanism, as living art in the very postmodern fashion of twisting societal norms to gain a different perspective. Unlike the other authors, Dunn focuses on the body, and manipulating the “meat suit” instead of trying to escape the human form altogether. Much like Huxley, Dunn’s characters were designed or perfected for specific tasks or professions; unlike Huxley, Dunn’s characters wanted to try and force their image upon others, creating a religion around deformity, much like Kurzweil is creating religion around data or the singularity. Both theories; posthumanism and transhumanism through technology, or posthumanism and transhumanism through genetic engineering, end with the manipulation, mutilation, or destruction of the human form.

Katherine Hayles claims that at least in rhetoric we have already begun to reach into posthumanism. Raymond Kurzweil believes that we will physically be able to evolve into something that is more than human, and that this is the next step towards perfection. Perfection is a difficult, multifaceted concept that cannot be defined as a single, global trajectory. The contradicting views of what is perfection suggest the possibility of violent conflict in the future. De Garis predicts a war, Anderson predicts economic division, Sawyer predicts prejudice from the “norms” or individuals who choose to remain organic. Science fiction authors speculate that we should be very careful with how we venture forward and suggest that human logic and reason be used

before unleashing transhuman technology upon the world. Ultimately, because of the progression of technology it has been put upon the writer to ask the important questions: will we ever understand what it is that makes us human and is there reachable perfection? Kurzweil can hope for the singularity and a posthuman future, but for right now his plans are still true only on the page of science fiction novels, and for right now those novels are still mostly exploring human nature far more than anything beyond. It is important to explore the pitfalls of Kurzweil hopes and dreams, not in the theory or the technology itself, but in the ever present human element that humanity has yet to fully understand; to ask whether or not we want to venture into something posthuman, because it is a very human thing to worry about the future and the part we will play in it.

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