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Guiding Transhumanism: The Necessity of an Ethical Approach to Transhumanism

The genre of science fiction boldly goes where no man has gone before: into the future. Science fiction is commonly used to explore the future and the technological advances that accompany it. That is why science fiction books are the perfect medium for exploring transhumanism (the improvement of humans through biotechnology) and its social and ethical implications. Both Margaret Atwood's Oryx and Crake and Neal Asher's The Skinner explore transhumanism and the influence society has on its application. Oryx and Crake and The Skinner were published only a year apart, so both authors were working with the contemporary technological and scientific background, and comparing the texts is thus instructive.

Atwood's 2003 Oryx and Crake is set in a futuristic world that is controlled by powerful, unethical companies that produce many transhumanistic, biotechnological products. Class distinctions are apparent: the wealthy and intelligent live in company compounds and the rest live in poor, unprotected conditions in the cities. The remarkable increases in technology coupled with what most would view as a morally and ethically bereft society are what make Oryx and Crake an excellent novel for exploring transhumanism.

In contrast, Asher's 2002 The Skinner is set on the planet Spatterjay in a future universe with multiple, inhabited planets and a variety of intelligent species. Spatterjay is

home to a virus (the aptly named Spatterjay virus) caused and proliferated by native leeches, which causes any affected organism to have an increased life span and regenerative abilities (Asher, 9). The first people to find Spatterjay and discover the effects of the virus were a gang of criminals who used the virus to help facilitate their crimes. Contemporary Spatterjay citizens, named “Hoopers,” are thought to be discriminated against by the Polity, an AI that governs a large part of the universe (Asher, 408). The use of the Spatterjay virus, a biological construct rather than a technological advance, increases human capabilities and can be viewed as transhumanist. The different reactions to and uses of the virus in The Skinner make it a superb novel for exploring transhumanism and how ethics influence the actions and treatment of the Spatterjay virus carriers.

In this thesis, I argue that both Oryx and Crake and The Skinner contend that the pursuit, application, and treatment of transhumanist philosophy and technology will be flawed without an ethical society or set of guidelines to direct transhumanism’s path. Science does not operate in a vacuum and cannot solve all of humanity’s problems by itself. Science is a tool that society uses, which is why technologies that support transhumanism, despite its positive focus on individual improvement, can be abused when there is no ethically based society or set of guidelines to provide support and direction. In the sections that follow, I explore why transhumanism ethically fails in each book. First, I define the terms “posthumanism” and “transhumanism.” Then, I examine four elements of each text’s plot that reveal transhumanism’s ethical weakness: capitalism, classism, progress at the expense of animals and marginalized humans, and authoritarianism.

Definition of the Terms “Posthumanism” and “Transhumanism”

Carey Wolfe (2009) describes “posthumanism” as “the decentering of the human in relation to either evolutionary, ecological, or technological coordinates” (xvi).

Posthumanism removes humans from a position of privilege; put another way, posthumanism does not privilege humanity or the human perspective. Posthumanism examines the human as part of a planetary and ecological network or system, rather than the center of it. In systems thinking, a system self-regulates its own environment; changes are relayed back into the system itself, in a feedback loop, so that the network can use this data to adapt to new conditions (Ratelle, 2010). Rather than being the clockmakers, this places humans as another cog in the machine or the system. Also, this paradigm replaces traditional binary oppositions, such as “human versus animal,” with concepts of equality among system components.

This different way of thinking warrants a reevaluation of humanity’s connections and ethical responsibilities to the environment, cosmic system, and other species. Posthumanism challenges both anthropocentrism and speciesism, and it raises the issue of what rights should be given to non-human subjects and other species (Gomel, 2011). AIs, for example, may deserve similar rights as other sentient beings. If they are perfect replicas or exceed the original, it could be argued that they should be afforded similar rights. Posthumanism challenges traditional Western humanistic philosophies that state that the human being is different from, and superior to, other living beings.

“Transhumanism,” however, is more relevant than posthumanism to the discussion of Oryx and Crake and The Skinner. Transhumanism is the philosophy that humans should increase their capabilities to their fullest potential through science and technology.

Transhumanism aims to use biotechnology to improve human capabilities. It celebrates human individuality and rational thought but sees room for improvement. The ultimate aim is to improve the human physically and mentally to realize its full potential.

Improvements could be physical and/or psychological and include an increase in intelligence and life span. With scientific and technological advances, many new methods for improving the human could arise. Current fields being explored range from genetic engineering to stem cells tissue regeneration to nanotechnology.¹

The terms “transhumanism” and “posthumanism” are sometimes used interchangeably; this may be because they are both reactions to humanism as a philosophy. However, transhumanism and posthumanism are based on opposing tenets. Transhumanism builds on rational humanism and as such is still focused on the human, while posthumanism moves away from humanistic thought and emphasizes a system in which humans are only a small part (Wolfe, 2009). Part of the confusion between the two terms may stem from how some transhumanists write that transhumanism is the first step on a pathway to becoming “posthuman” (humanityplus.org). When they refer to posthumanism, however, they are referring to becoming a different species rather than to a philosophy that fundamentally challenges Western humanism. Transhumanism could potentially lead to becoming “more than human” or posthuman because the technologies that attempt to increase intelligence, human capabilities, and life span could result in a new humanoid that is no longer comparable to contemporary humans. This could even occur from just extending life, for humans may mentally and physically change over time from accumulating experience (humanityplus.org).

A transhuman state can be reached gradually through technology by continuous, incremental change. This process is similar to evolution in that each step creates a transhuman that differs in degree rather than kind from its predecessors (Ingold, 2004). Evolution, like science and transhuman transformation, happens through gradual changes rather than radical breakthroughs. For example, the Human Genome Project happened very quickly for science and was regarded as a significant breakthrough. However, the Human Genome Project started in 1990 and was not completed until 2003. While this is still quite fast for such an ambitious project, the project did not skip straight from no genome to the whole human genome. There were a series of steps that helped develop the techniques and methods to sequence the human genome. In the process, several model organisms' sequences were completed in order of progressing difficulty, paving the way for the completion of the human genome. Further, even after the human genome was completely sequenced, science did not change overnight. There are still more steps to be taken to fully apply this knowledge (unlockinglifescode.org). This shows how even the most exciting and efficient research is supported by a series of, often unseen, steps.

The Skinner and Oryx and Crake both posit worlds in which most people exist in varying degrees of transhuman transformation. In The Skinner, however, there are more sophisticated ways of becoming transhuman, as the technology is more advanced than it is in Oryx and Crake, likely because The Skinner is set much further into the future. Transhumanism in Oryx and Crake is an extreme extension of humanism at the expense of other species and certain human social classes. Transhumanism in The Skinner, on the other hand, is used to perpetuate crimes and as a reason for discrimination.

Oryx and Crake

Oryx and Crake is set in a futuristic America in which the political, scientific, environmental, and cultural situations have drastically changed from those of contemporary America. Companies control the country, and the government is either non-existent or incredibly weak. An elite class based on intelligence is being created through these companies, many of which sell biotechnology products. Scientific advancements have allowed for changes in food production, reproduction, lifestyle, creation of new animals, and much more. Environmentally, sea levels have risen and some cities are underwater. Atwood drives home the ethical degeneracy of this society by showing what people consider appropriate entertainment and business practices. Execution shows, animal torture programs, assisted-suicide shows, and kiddy porn are popular, accepted television programs (Atwood, 82-90). Companies don't just extort adults and mistreat animals; some also target children. Tobacco companies hand out samples to kids, and many children who live in the cities are addicts by the time they become teenagers (Atwood, 57). Atwood has crafted the world in Oryx and Crake as an amplification and extension of all the negative traits of current-day America.

Oryx and Crake is told from the perspective of Jimmy, also known as Snowman. He is the son of two scientists, but he is a "words person," meaning that his best subjects are literature and communication. Since he grows up in a family and environment that values scientific knowledge, his being a "words person" is a disappointment and limits his career path. Jimmy meets the titular character Crake when Crake's parents transfer to the same company in which Jimmy's parents work. Crake, as opposed to Jimmy, is very scientifically gifted and becomes a scientist with his own team and laboratory at a highly regarded

company. Crake and Jimmy become close friends and first become aware of Oryx while watching her in a child porn video. Later in life, Crake recruits both Oryx and Jimmy to work for him in his laboratory. Both Jimmy and Crake end up having a relationship with Oryx at the same time, though it is uncertain if Crake knows this.

While this is happening, Crake is working on two projects in his laboratory: the Crakers and the BlyssPluss Pill. The Crakers are humanoid creatures with traits from other species that Crake created through interspecies gene splicing (Atwood, 303-4). They are immortal in that they have no fear or foreknowledge that they will instantaneously die at 30; they are not conscious of their temporality (Atwood, 304). Crake has also altered their brains to get rid of the human characteristics that result in conflict, such as racism, symbolism, and sexual tension (Atwood, 305). Oryx teaches the Crakers botany and zoology and helps market the BlyssPluss Pill (Atwood, 309-313). The BlyssPluss Pill was designed to prevent STDs, increase sexual libido, prolong youth, and act as a one-time-does-it-all birth control pill (though the population was not informed of the birth control effect) (Atwood, 294). Jimmy creates the marketing campaign for the pills (Atwood, 296).

However, Crake put a virus in the pills, causing the virus to spread across the whole world and kill the majority of the human race (Atwood, 346). Before spreading the virus, he secretly gave himself, Oryx, and Jimmy the antidote. When Jimmy hears about the virus on television, he makes sure to keep the Crakers and himself in Crake's airtight, virus-proof laboratory until Crake appears one day. Jimmy lets Crake inside the laboratory and Crake tells Jimmy that he knew that the virus was going to happen and that he had made Jimmy immune to it. Crake then tells Jimmy that he is counting on him to take care of the Crakers, and he kills Oryx. Jimmy, in turn, shoots Crake (Atwood, 328-9).

Jimmy changes his name to Snowman when introducing himself to the Crakers. Snowman is a new identity for Jimmy, who wants to forget his past. He then leads the Crakers out of the laboratory to a place where they can set up their village. Snowman creates a makeshift mythology to explain the world to the Crakers, with Crake and Oryx as proto-deity figures (Atwood, 348-54). At the end, Snowman leaves the Crakers to find a group of survivors, though how he decides to approach them and what happens is not shown (Atwood, 374).

In Atwood's novel, there have been many advances in biotechnology, including psychological pills and organ replacement techniques. These advances, for a price, allow the populace to become transhuman by altering themselves psychologically and/or physically. They are also able to extend an individual's life span. A wide range of scientific techniques is available, meaning that there is no one specific route to become transhuman. Society as a whole is not, however, close to becoming perfect, for humans still have biological and psychological human flaws. A change occurs in Oryx and Crake when Crake deliberately kills the majority of humanity with a virus and releases the Crakers, the humanoid creatures he designed, to replace humanity. The Crakers are truly posthuman because they are based on human genetics but differ radically in their biological and psychological attributes.

The majority of people in the novel want to achieve the goals of transhumanism: expansion of human capabilities and life span. This is evidenced by their demand for products that promote transhumanism. However, Crake does not value transhumanism; while he had the potential to perfect humanity due to both his intelligence and position of authority, he instead opts to destroy all humanity. J. Brooks Bouson describes Crake's

indifference to human life: “Filled with scientific hubris, Crake, who does not believe in God or Nature, also does not believe in the value of human life” (146). Rather than work to improve current humans, he creates what he considers to be a better version, a new species. He values different human capabilities and takes an unusual approach to immortality by choosing to eliminate fear of death rather than prolonging life when creating the Crakers (Atwood, 304). Crake decenters humans when creating the Crakers by incorporating qualities and genetic traits from other species and deliberately shunning many “harmful” human qualities, such as when he makes the Crakers more attuned to their environment and deletes their desire to lead or rule (Atwood, 305). With these modifications, Crakers do not view themselves as above other species, nor do they have problems with either anthropocentrism or speciesism. This means that the Crakers think in a posthumanist manner.

Yet transhumanism fails *ethically* in Oryx and Crake for several reasons: its coupling to capitalism, classism, progress at the expense of animals and marginalized humans, and the authoritarianism of companies and Crake. Transhumanism is wedded to capitalism in Oryx and Crake and this makes it ethically problematic. The demand for transhumanism comes from the populace’s desire for life extension and personal improvement. Various, competing biotechnology companies who vie for the most intelligent, most gifted scientists fill this demand. Not only do these companies fulfill the public’s demands, they actively create and market newer and better treatments. With enough money, one can buy almost anything, with a few exceptions. The downside, however, is that the degree of transhumanism a person can achieve is reflective of their wealth and privilege. Not only can some not afford life-saving treatments or important augmentations, but also some are

even hurt by cheaper, poorly designed products that are unethically marketed. Jimmy describes his girlfriend's opinion of a company that promotes such gimmicky products:

...AnooYoo was a collection of cesspool denizens who existed for no other reason than to prey on the phobias and void the bank accounts of the anxious and the gullible. It seemed that Amanda, until recently, had had a friend who'd signed up for an AnooYoo five-month plan, touted as being able to cure depression, wrinkles, and insomnia all at the same time, and who'd pushed herself over the edge—actually, over the windowsill of her ten-storey-up apartment—on some kind of South American tree bark. (Atwood, 247)

This irresponsible advertising and its representations of ineffective products can have serious consequences, such as the suicide Amanda's friend. Clients trust that the product will address their problem and hence do not seek other, more expensive and legitimate, treatments. These companies are intentionally selling faulty products because they know that their lower-class clients cannot afford legitimate treatments to address their problems.

Classism is also prevalent in Oryx and Crake's society. The rich and intelligent live in corporate-owned and protected compounds, while the rest live in the chaotic cities with little to no protection. The compounds protect against many threats, including bioweapons and viruses. The intelligent are recruited by the best schools and are then hired by the best companies. People with scientific intelligence are favored, while other abilities such as visual acuity, literary expertise, and humanistic knowledge are underappreciated. These factors create a blatantly classist society centered on scientific ability and the subsequent wealth that accompanies it. Michael Spiegel elaborates on the class division caused by the companies: "So, whether by assassinating a whistle-blower, commodifying art,

disempowering the masses, or exacerbating class division, the transnational corporations that drive global integration bear significant responsibility for the social, cultural, political, and economic fragmentation in the world of *Oryx and Crake*” (125). Spiegel (2010) calls attention to how the companies disempower the public and increase the class gap.

This classism and social stratification contributes to the ethical failure of transhumanism by placing it firmly out of reach for many people. While it would be naïve to assume that everyone must have equal access to all transhumanistic products in order for transhumanism to be ethical, the more that can use the products, the better. This is especially relevant with regard to products that extend lifespan, for withholding life-saving treatments from people *is* unethical. Many First-World countries consider medical treatment a fundamental right and have national health care plans. Transhumanistic products would need to be reasonably within reach for the majority of people to avoid aggravating and widening the class gap. In the novel, despite science’s improved methods of life extension, such as being able to grow multiple replacement organs at once, most people still cannot afford these products (Atwood, 22). In addition to making these products unaffordable, some companies swindle clients out of their money by offering faulty treatments or piecing out treatments in parts to people whom the companies know cannot afford the whole treatment, resulting in the company’s cutting the client off halfway through the treatment. Jimmy’s mom summarizes these immoral business practices: “You hype your wares and take all their money and then they run out of cash, and it’s no more treatments for them. They can rot as far as you and your pals are concerned. Don’t you remember the way we used to talk, everything we wanted to do? Making life better for people—not just people with money” (Atwood, 56-7). This statement shows the crux of the

problem that classism creates for the pursuit of transhumanism. The companies' actions keep the majority of people from accessing transhumanistic products. While there is some elitism in the idea of becoming transhuman, one would assume that the more people that can become transhuman, the better. By actively limiting this number, the companies fail to support the spread of transhumanism.

The companies' moral failings are further extended by the extortion of their clients to boost their own profits. Jimmy's mom, seeing the companies' abuse of power and authority, defects from the company to protest and fight against ideas she views as unjust. And she is not the only person who wants change. Many other marginalized people are fighting against the companies' control and unethical decisions (Atwood, 181). Even if Crake did not wipe out humanity, it would not be unreasonable to think that an uprising is likely to occur if the class gap continues to widen between the wealthy, small, elitist, intellectual group and the masses. There was already a global resistance movement over a company that made genetically modified coffee beans that put small coffee growers and their laborers out of business and into poverty (Atwood, 179).

This coffee problem is an example of how transhuman progress happens at the expense of some humans. New technology replaces older technology, resulting in the loss or reduction of a certain jobs; this is common even in real life. (For example, bowling alley pinsetters were rendered obsolete over time due to technology). In addition to the coffee growers and laborers, almost all dentists went out of business overnight because a mouthwash that replaces plaque bacteria with friendly ones was invented (Atwood, 210). The difference in Oryx and Crake is that the rate of change is faster and there is a lack of concern over what these changes are causing. People are losing their jobs too quickly due

to technology, which makes them poorer, less able to buy the products they need to biologically advance, and further widens the class gap in both economic and transhuman terms. Technology, while having the potential for great good, can be used to foster a classist environment that supports an increasingly small elite group, while creating a growing lower class that lives in poverty.

Classism is more viciously portrayed in the novel when it entails killing the underclass outright (often for capitalist reasons). Besides the elimination of certain jobs, companies create products that should be helping people to evolve, yet a health company produces vitamins to increase the health of people but puts viruses in these vitamins every once in a while to create a new market demand. They let the virus spread, and then sell their victims the antidote (Atwood, 211-3). This transhumanistic product is being perverted by the companies into something that shortens life rather than prolongs it.

Another example is the use of lower-class people as test subjects. Crake describes where he gets his test subjects, saying, "From the poorer countries. Pay them a few dollars, they don't even know what they're taking. Sex clinics, of course—they're happy to help. Whorehouses. Prisons. And from the ranks of the desperate, as usual" (Atwood, 296). The phrase "as usual" shows the commonplaceness of this extortion of humans. Even if it were ethical to perform these studies on humans, this still would not make up for the lack of informed consent and proper compensation of the test subjects. This also ties into the problem of classism. Transhumanism obtained through these means cannot be ethically sound according to anything other than consequentialism. This decision to treat humans so crassly and cruelly is not something that the companies and scientist have a right to choose. These are decisions society should make together in order to form an ethical set of

guidelines and expectations of what is acceptable for the sake of the improvement of humans, especially the elite. In real life, for example, the Council for International Organizations of Medical Sciences has published International Ethical Guidelines for Biomedical Research Involving Human Subjects, which outlines national guidelines on the ethics of biomedical research involving human subjects (2002).

Not only are humans being treated horribly in the name of science and transhumanistic advancement; animals are also being mistreated. In Oryx and Crake, scientists manipulate animals with no regard to the ethics of their actions. For example, ChickieNobs are chickens with no eyes, beaks, and brain functions except for the ones related to digestion and growth. They are alive, sedentary tubes that grow chicken parts, though the researchers say that they feel no pain and do not think (Atwood, 202-3). This could be considered ethically acceptable if it was needed to feed the masses. The issue, though, is that the scientists were not concerned about determining if the potential benefit outweighed the drawbacks of creating a creature with no brain whose only purpose is to be food. They were only concerned with undercutting the competition and only mentioned that the ChickieNobs could not feel pain because they did not want animal right activists to protest (Atwood, 203).

Additionally, many scientists liked to create new animals by combining existing ones as a hobby because it allowed them to play God (Atwood, 51). For instance, the wolvogs are creatures that look like dogs but are incredibly vicious and dangerous. They are just one of the many new species created through genetic splicing and recombination (Atwood, 205). However, the scientists do not consider the ethics of creating new animals like this, nor the potential side effects such as the effect the animals would have on other

humans and the environment if they escaped and became feral. Gina Wisker (2012) extrapolates on this lack of consideration: "The major human fault which links the culpable evils which Atwood takes to their logical conclusion is a failure to connect actions with their effects, a moral vacuum..." (154). This is just another example of how technology and science need to have ethical guidelines to prevent abuses in and potential dangers to the world. Jimmy is concerned about this animal manipulation: "... he was worrying about the ChickieNobs and the wolvogs. Why is it he feels some line has been crossed, some boundary transgressed? How much is too much, how far is too far?" (Atwood, 2006). This question of how much is too much can be seen in today's debate over animal research guidelines and regulations. When do the benefits outweigh the costs for using animals in research? However, while we do currently allow animals to be used for research purposes, the United States does have guidelines in place like the Public Health Service Policy on Humane Care and Use of Laboratory Animals (nih.org).

In addition, the powerful companies, and later Crake, operate in an authoritarian manner. They often make decisions for the populace and act without the populace's consent or knowledge. Their security forces execute "traitors" or people who question the companies' policies. The people who work for the top companies, while an elite class, are also monitored and controlled to make sure there is no dissension. The city dwellers are more likely to be controlled through indirect methods such as poverty, lack of security, graphic television, drugs, and viruses. Viruses especially keep them reliant on the companies who have the ability to manufacture cures. Overall, the top companies decide what type of life people should live and enforce this through advertising and power.

The companies and their employees already form the upper class, but with the availability of transhumanistic products, their power rises. Living longer allows one to accumulate more wealth and stature. Being able to afford the best products allows one to solidify the upper class and discourages upward movement into the upper class. Finally, intelligence boosters make the already brilliant even more intelligent. These benefits from transhumanism give the scientists and company owners many skills and advantages that lower-class people cannot afford. Further, these extra abilities, especially with regard to increased intelligence and wealth, led them to feel like they have the right to decide for others and gives some of them a superiority complex. For example, Crake and the higher-ups in the company he works for decide to take it upon themselves to fix overpopulation. They choose to market a pill without telling the customers that it also acts as a one-time-does-it-all birth control pill. They make the public's reproductive choices for them without their knowledge or consent (Atwood, 304).

Yet, transhumanism cannot be supported by an authoritarianism that constantly degrades the majority of the population because transhumanism is about improvement of the human as a species. If a company is deciding everything for people and deliberately trying to promote an amoral lifestyle and attitude through drugs and violent, insensitive entertainment, then people do not have room to grow as humans. They can take the products and improve a bit, but they will never be allowed to reach the state and status of the company employees. The companies will limit their growth because they do not want the lower class to gain power. Transhumanism will fail because the greed of the elite group will keep the majority of the world from significant improvement. The unethical decisions of the companies will keep the average person from the final goal of transhumanism, which

is to become the best human possible. While it is perfectly reasonable for companies to want to make money, the public should not allow them free rein. At the very least, the public has a right to protect itself from harmful and unethical treatment.

Crake embodies this idea of having the right to decide for others and the superiority complex. Crake is a product of the companies, despite his distaste for them— they murdered his dad for trying to tell the populace about the viruses-in-vitamins scheme (Atwood, 212). Crake does exactly what his father was trying to stop and kills humanity through a created virus put in a pill. Crake's authoritarian decision to destroy humanity stopped or severely delayed the possibility of transhumanism. Crake felt that his intelligence entitled him to play God when creating the Crakers and destroying humanity. His ego, bred by the unethical environment and fostered by the authoritarian companies, leads to the failure of transhumanism. While Crake made a choice to destroy the world, he is also a "product of the capitalist machinery" (Ku, 119). Chung-Hao Ku (2006) emphasizes the effect of society on Crake's actions: "After all, Crake cannot destroy the world without the conspiracy between technocracy and capitalism" (119). He also calls attention to "the forces of capitalism lying behind the technocratic-scientific system" that allow Crake to destroy humanity (Ku, 119).

Transhumanism also literally fails because the majority of humanity is destroyed. The destruction of so many people will result in a loss of knowledge, as well as those with the potential to create it, and set back the human race for many years – one could almost compare it to the burning of the Library of Alexandria. The virus and destruction it sowed will make it impossible to improve mankind through scientific or technological means for a long time, assuming that the human race even survives.

Atwood implies that transhumanism needs certain ethical foundations upon which to build a better society. It cannot flourish when it is practiced only in the select few, as the widening distinction between the classes will result in violence between the two groups. It also cannot prosper when pursued at the expense of other humans and animals, as this goes against the tenets of transhumanism. Finally, the novel's authoritarianism takes away a person's ability to develop themselves through transhumanism. How far a person progresses is not based on his or her personal decisions and effort but, rather, on the decisions of the authoritarian oligarchy. The message of Oryx and Crake is that scientific and technological research needs guidelines in order to avoid being abused. Technology unchecked can bring destruction and despair to people's lives, rather than the promise of improvement. For humanity to reach the goals of transhumanism, we must be free to improve ourselves, while simultaneously not degrading our fellow humans in the process.

The Skinner

The Skinner is set on a planet called Spatterjay in a future universe with a multitude of inhabited planets and intelligent life forms. It is a world at the border of Polity's influence; Polity is an AI construct that governs part of the universe. Polity law only applies to a small, modernized portion of Spatterjay called the Dome (Asher, 13). Spatterjay has only recently become inhabited by humans (in comparison to Earth) and has a very dangerous and intense ecosystem. This ecosystem is deadly partially as a result of the Spatterjay virus, which is caused and spread by native leeches. This virus causes any affected organism to gain regenerative abilities and an increased life span so that the leeches can eat their prey without killing them and thereby maintain their food supply

(Asher, 9). So, while the creatures on Spatterjay are adapted for survival and recovery from horrible injuries, visitors without the virus can be in danger if not careful and alert.

There are four main plot lines in The Skinner that come together at the end. The main characters are Erlin Tazer, Janer, Sable Keech, Captain Ambel, and the Pradors. The first plot line focuses on Erlin and Janer. Erlin is a scientist who previously visited Spatterjay and studied the effects of the virus. She published her research on the virus, which caused a large influx of visitors who wanted to acquire “immortality” through the virus (Asher, 9). She has returned to talk to a Captain Ambel about immortality and how to survive the boredom resulting from a significantly extended life. Hoopers are the names of the inhabitants of Spatterjay, and the oldest ones are called Captains. The longer one has the virus, the stronger and more resilient one becomes; so the Captains wield the most power and authority, literally and politically. Also, due to increased technology, the demographics of death have changed: “Once, disease and accident had been the greatest killers of humankind; now the greatest killer was boredom, usually leading to the latter of the first two causes” (Asher, 10).

Janer works for a specific hive mind of hornets (Asher, 19-20). It has been discovered that humans are not the only sentient race on Earth; hornets have hive minds and use the Internet to voice their agenda and opinions. Hornets’ intelligence rivals humans’, and as such, they have rights. Janer is traveling to Spatterjay on orders of the Hive, whose ultimate goal is to obtain sprine, a poison that can kill Hoopers. They want to incorporate sprine into their stingers and establish a nest on Spatterjay; this would provide a balance of power on Spatterjay, though they ultimately fail (Asher, 408). After meeting at

Spatterjay, Erlin and Janer go on Captain Ron's ship to find Captain Ambel. While traveling on Captain Ron's ship, Janer gets bitten by a leech and contracts the virus.

The second plot line revolves around Sable Keech, a reification who is an Earth Central Security monitor (Asher, 75). A reification is a dead person's body, which has been preserved and is operated using cyber technology. Mind recordings help supplement what is left of the brain, making reifications partially AIs. If no brain remains, they are fully AI (Asher, 16). Keech is partially AI. He came to Spatterjay to track down the remaining members of a gang of criminals lead by Jay Hoop. This gang was the first group of humans to find Spatterjay and discover the effects of the virus. They were thieves, slavers, and murderers who used Spatterjay as their base of operations and used the benefits of the virus to facilitate their crimes against humanity (Asher, 75). They cored many people—coring is a process that turns humans into mindless bodies— and sold them as slaves to the Pradors, aliens that resemble a mix between spiders and crabs. Prador adults control cored humans as a sign of prestige (Asher, 78). Keech visits a historian to learn that Jay Hoop is the only person thought to have survived out of his gang. He also learns that some think Jay Hoop has become the Skinner, a creature who skins Hoopers and leaves them in agony for months. While traveling, Keech gets bitten by a leech and contracts the virus. This causes Keech's systems to crash, forcing him to resort to a risky treatment that uses nanomachines to rebuild and restore his life (Asher, 140). After partially recovering, Keech reunites with Erlin and Janer, thus joining the first two plot lines together (Asher, 173).

The third plot line occurs on Captain Ambel's ship. In the past, Ambel and Erlin beheaded the Skinner who is Jay Hoop, and Ambel currently keeps the head trapped in a box on his ship to keep the Skinner from hurting more people (Asher, 76-7). The Skinner is

able to survive with its head separated from its body because the Spatterjay virus adapts its host to his or her environment to ensure survival. Since the Skinner has had the virus for so long, it is very efficient and ensures survival under almost any circumstances. Captain Ambel's ship and Captain Ron's ship eventually meet, joining the first, second, and third plot lines together (Asher, 229). At this point, conflict arises between characters. Keech recognizes Ambel as Gosk Balem, part of Jay Hoop's old crew, and tries to kill him (Asher, 231). Ambel, however, cannot remember being Gosk Balem because he was thrown in the sea and eaten alive for five years until his mind died due to the constant pain (Asher, 256). Around this time, the Skinner's head that was trapped in Ambel's chest escaped to reunite with its body (Asher, 241-2).

The fourth plot line involves the antagonists, the mastermind Prador politician and his political tool Rebecca Frisk, a member of Hoop's game who was presumed to be dead. The Prador sneaks them onto Spatterjay in order to kill all the Captains (Asher, 270). This Prador politician brought Frisk to Spatterjay because he wants the Captains, the oldest Hoopers, to assemble for a Convocation to discuss how to deal with her. By causing the Captains to all gather in one place, it will be easier to kill them in one attack. He wants to kill the Captains because they are eyewitnesses to the coring trade that the Prador took part in. His past involvement with coring is politically unfavorable, since the Prador Kingdom is developing ties with Polity; politicians who were connected to coring are becoming outcasts (Asher, 264-5).

All four of the plotlines converge when Ambel, Erlin, Janer, Keech, and Frisk's mercenaries arrive at Skinner's Island. Ambel, Erlin, and Janer are there to kill the Skinner before it reunites with its head. While searching for the Skinner, they encounter and kill

the mercenaries, and Keech arrives to incapacitate Rebecca Frisk (Asher, 386-96). They eventually kill the Skinner—despite its reattachment of its head to its body— with sprine, a rare poison that kills Hoopers quickly (Asher, 410). Sniper, an ancient war drone, destroys the Prador ship before it does significant damage (Asher, 405). Ambel kills the colonizing queen hornet before it can spread and build a nest (Asher, 421). The story ends with the Captains and Keech forgiving Ambel at the Convocation because they realize that Gosk Balem helped the Polity find the coring operation to rescue the slaves (Asher, 414-421).

The Skinner's universe offers many different ways to become transhuman. For example, one can join a hive mind, dramatically prolong life, and/or supplement intelligence with AI. The universe itself promotes a transhuman evolution for two reasons. First, humans need to adapt to the new conditions that come from living in an expanded universe. In addition, if everyone else is living longer and more intelligently, adaptation is needed to maintain economic viability: in evolutionary terms, it is an arms race. Most of the characters want to achieve the goals of transhumanism: expansion of human capabilities and life span.

As in Atwood's novel, in The Skinner capitalism, classism, progress at the expense of animals and marginalized humans, and authoritarianism affects transhumanist ethics. Additionally, there are two plot forces that contribute to transhumanism's failure. First, Jay Hoop and his crew use the abilities the virus Spatterjay confers to facilitate human rights violations. Second, the Polity is oppressing Hoopers and Spatterjay. These reactions to transhumanism seek to limit and exploit it rather than use it to create a better "humankind" or better living for all species.

Capitalism is part of the motivation for Hoop and his crew's human rights violations. Unlike in Oryx and Crake, capitalism here is not the reason for the governing force's decision. It is, rather, a tool used to control others. Since capitalism is not a main force in The Skinner and is rather a complement to authoritarianism, it will be explored as part of the authoritarianism section. Progress at the expense of sentient species and marginalized humans can also be seen in the classist and authoritarian control both Hoop and his crew and the Polity express—and though their methods of expression are very different, their end result is the same: the creation of the Hoopers as second-class and the limitation of their actions and transhuman path.

As did the corporations in Oryx and Crake, in The Skinner the Polity, a widespread governing force, deliberately maintains a classist environment that limits the transhumanist opportunities for Hoopers by denying them commonplace technology that is available to the majority of the universe. There are rumors that the Polity may be suppressing economic and technological growth and making it harder for Hoopers to leave Spatterjay because they are scared of the threat old Hoopers could pose. Hoopers grow stronger with age, so the older Hoopers could cause a significant amount of damage if they were so inclined. The low wages on Spatterjay make it difficult to earn enough money to leave Spatterjay; a Hooper would have to work for years to afford the trip. What visitors to Spatterjay consider small change, the Hoopers must work for a month or two to gain (Asher, 87-89). Janer compares the salaries of the Hoopers to those of an average worker: "...something your average autohandler tech could buy for ten New Carth shilling, maybe an hour's wages, would cost a Hooper three month's wage" (88-89). Though Erlin says it is more like two months rather than three, the vast disparity between wages remains. Not

only is Spatterjay poor, but it is also very low-tech (Asher, 87-9). This lack of technology coupled with a crippled economy limits the Hoopers' choices.

However, some people such as Erlin do not believe that the Polity is suppressing the Hoopers or that the Hoopers are trapped. She says, "They're poor, but seem happy enough," to which Janer nods and meditates, "on how that was always the blinkered view of the wealthy" (Asher, 88). It is hard to trust Erlin's opinion because she is from the privileged class and is not a native of Spatterjay. Captain Ambel, on the other hand, has been a citizen of Spatterjay for a very long time and has experienced the wage and technology disparity. As such, his opinion merits more weight than Erlin's; he believes that the Polity is scared of Hoopers and is repressing them (Asher, 408). When Janer asks him about Polity oppression and Erlin's opinion of it, Ambel replies, "Erlin likes to believe in goodness" and then "I prefer to believe in what's true" (Asher, 408). Regardless of the Hoopers' apparent "happiness," if the Polity is discriminating against them and repressing their world's development, they are limiting the Hoopers' opportunities. The rest of the "civilized" world has access to basic technology and ways to improve their standard of living, so it is unfair that the Hoopers should lack such technology. Some may be happy and content with their current lifestyle, but that does not mean that other Hoopers should not be able to decide what type of life they want. If all people were happy with the status quo, the quest for transhumanism would not exist and humanity would not progress.

This policy that favors the progress of Polity citizens at the expense of Hoopers also limits another sentient creature, the Windcatchers, on Spatterjay. While not human, Windcheater is a representative of the Windcatchers and desires more opportunities for his species. He bought himself an augmentation device to increase his intelligence and

provide access to the Internet. He realizes the need to gain power and money to protect and advance his people. He wants Polity involvement on Spatterjay so that there will be more opportunities for his kind; he plans to buy intelligent augmentations for all of his kind, so he needs more opportunities to earn money and access to technology (Asher, 417).

The Hive mind explains Windcheater's aspirations to Janer:

No, Windcheater wants humans and everyone in here. He wants the Polity in. He wants the Hive minds in. He would like the Prador here, if he could get them. He has augmented his innate intelligence and is absorbing knowledge at an astonishing rate. I well understand this, as he has been starved of these things for many thousands of years. (Asher, 417)

Thus, the Polity's suppression of the Hoopers not only negatively affects the Hoopers' options but also negatively affects the options of the Windcatchers on Spatterjay.

Windcheater wants both money and technology to improve the minds and lifestyles of his kind. The Hive mind further explains Windcheater's desires to Janer: "Quite simply money—with which he can buy augmentations for all of his kind. AI linkups, high-tech tooling... all the trappings of technology" (Asher, 417). Windcheater, in turn, explains his wish for a better lifestyle: "Spend a thousand years sitting on a rock having conversations that consist mainly of comments on how windy it is, and you'll have a true appreciation of library computers, walls, and solar heating" (Asher, 417).

Transhumanism is about improving the human as much as possible. While the Spatterjay virus is a good place to start, technology can also be used. This is why when the Polity suppresses technological growth on Spatterjay, they are forcing the Hoopers' transhumanistic journey to prematurely arrest. As the Hoopers are not citizens of Polity

and do not receive the rights that Polity citizens do, Polity's suppression of the Hoopers is ethically worse. This is because the Hoopers—with their low technology, poor economics, and lack of citizenship—have no feasible way to oppose this suppression. They do not even have the ability to concretely prove that the suppression is occurring. This control Polity has over Spatterjay and the fact that Hoopers cannot oppose it shows that the Polity is supporting classism through authoritarian methods.

The authoritarian methods the Polity employs inhibit the transhuman evolution of both Hoopers and Polity citizens. The suppression causes transhumanism to arrest in Hoopers, due to the lack of other transhumanistic technology on Spatterjay, and stalls the spread of the Spatterjay virus, which would help Polity citizens in their transhuman evolution. Additionally, Polity's reason for suppressing Spatterjay is based on the slight possibility that Hoopers may decide to damage the Polity, ignoring the last 700 years of peaceful coexistence. This risk of possible damage to the Polity is too small to warrant the significant ethical and practical cost of suppressing the Hoopers.

Hoop and his crew also set up an authoritarian control of Spatterjay in the past and perpetuated classism. This authoritarian control and classism are the reasons transhumanism fails for Hoop and his crew. Jay Hoop and his crew were thieves, slavers, and murderers who used the immortality gained from the Spatterjay virus to facilitate their crimes (Asher, 75). They exercised their transhumanism to repress and degrade other humans. They used the Spatterjay virus only to increase their abilities rather than to promote the development of a general population. As slavers they also committed mental murder by coring their victims, as coring removes the mind and leaves only mindless bodies for the alien Pradors to control. Hoop and his crew cored around ten million

humans until they were forcibly stopped (Asher, 368). The power that the Spatterjay virus conveyed to Hoop and his crew did not turn them into evil people but merely allowed them to further express their evil inclinations and desires. For Hoop and Rebecca Frisk, Hoop's lover, the abuses were about more than money; they were also about enjoyment. They both enjoyed torturing slaves and devising new ways to keep them in prolonged agony, such as removing a person's skin and keeping him or her alive (Asher, 128-9). Joel Garreau writes that transhumanism is about the enhancement of human capabilities and the elimination of unnecessary suffering, which is the opposite of torture (Wolfe, 2009).

Hoop and his crew were moral monsters, which is exemplified by how the Spatterjay virus eventually turns Hoop into the Skinner. The Skinner still maintains Hoop's love of skinning people alive and leaving them to suffer for an extended period. Additionally, the Skinner is a physically horrendous monster whose head and body can survive separated from each other (Asher, 309). In the end, despite physically surviving, Hoop is mentally reduced with "little of human thought left to it" and an inability to interpret memories and complex linguistics (Asher, 409). In this way, he has become similar to the people he cored. His individual attempt at transhumanism fails ethically, for he is no longer recognizable as human and has degraded rather than improved himself.

Similar to Oryx and Crake, a class rebellion would not have been an unlikely event had Hooper's crew maintained power. No human would want to be ruled by an elite, sadistic group. Additionally, neighboring governments do not want a hostile force that has superhuman strength, regenerative powers, and complete control over their citizens to exist, which is why Hoop and his crew are targeted and destroyed by the Polity. Jay Hoop and his crew's abuse of their transhuman properties resulted in their destruction by Polity.

Asher implies that transhumanism fails in The Skinner because of the ethics of the people using it and, more generally, because of the ethics of authority. Either way, the abuse of power, either by Hoop and his gang or the Polity, stemmed from a lack of ethics. For transhumanism to work, there must be ethical guidelines to keep the abilities gained through transhumanism from being abused. Additionally, ethical guidelines are needed to keep people with different types of transhumanism from being unfairly discriminated against. The abilities should be used to improve other humans, too, rather than destroy them. By pushing people down, one is going against the core tenets of transhumanism and will be punished by other humans for crimes against humanity. The Polity is ethically failing by keeping technology and opportunities away from a group of people based on their transhumanistic status. (They are also keeping opportunities away from the Windcatchers, a sentient non-human species, for no other reason than that the Hoopers and Windcatchers both inhabit Spatterjay). Visitors are allowed to come to Spatterjay and obtain the virus and then leave, so keeping the Hoopers confined to Spatterjay is hypocritical and harmful to the Hoopers' life histories. How transhumanism is obtained is not the focus; how one uses or responds to transhumanism is the question examined in The Skinner.

Conclusion

While Atwood and Asher emphasize different elements of transhumanism, they both examine how social practices and ethics can affect transhumanism's path. Of the social ills examined in these texts, capitalism, classism, progress at the expense of animals and marginalized humans, and authoritarianism stand out. Atwood and Asher both imply that

transhumanism requires certain ethical foundations to flourish. There needs to be an ethical scale to weigh the benefits of social practices' impact on transhumanism versus the costs that they demand. For example, transhumanism involves reducing unnecessary suffering, but science progresses through animal and human test subjects. Society today faces the problem of where to draw the line and what constitutes "unnecessary" pain for animal subjects. An ethical guideline for the pursuit of transhumanism that will allow it to progress without betraying its own core tenets is required. While the worlds of Oryx and Crake and The Skinner seem like a far stretch from today's world, the issues they address are contemporary, and the science and technology may not be as far removed as we think. Atwood and Asher create a call for action for their readers to consider the necessity of an ethical approach to transhumanism and what those guidelines would entail.

¹ See Mohan P. Arora's Genetic Engineering to learn more about the field of genetic engineering. See Federico Calegari and Claudia Waskow's Stem Cells: From Basic Research to Therapy, Volume 2: Tissue Homeostasis and Regeneration during Adulthood, Applications, Legislation and Ethics for more information about stem cells. See Mihail Roco's article, "The Long View of Nanotechnology Development: The National Nanotechnology Initiative at 10 Years" for more information about nanotechnology.

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