

PROTECTING PIGOONS, RAISING RAKUNKS, AND CREATING CRAKERS:
ETHICAL RESPONSIBILITY, SCIENTIFIC EXPLORATION, AND
ARTISTIC CREATION IN MARGARET ATWOOD'S *ORYX*
AND CRAKE AND THE YEAR OF THE FLOOD

THESIS

Presented to the Graduate Council of
Texas State University-San Marcos
in Partial Fulfillment
of the Requirements

for the Degree

Master of ARTS

by

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San Marcos, Texas
August 2011

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2011

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DEDICATION

For Tracy and Kristin Lytle.

ACKNOWLEDGEMENTS

I would like to thank my thesis director Dr. Audrey McKinney for her encouragement, guidance, and friendship throughout the writing process. I would also like to thank Dr. Craig Hanks and Dr. Teya Rosenberg for their cooperation and support during my project. I would like to acknowledge Dr. Graeme Wend-Walker; his friendship over the past few years is much appreciated.

To my family, without your constant encouragement and love I would not have such a solid sense of self or understand the importance of watching a dream come to fruition. Thank you for your love and support!

I would like to thank my beagle Rowdy for his constant tail wagging, puppy kisses, and turn-of-the-head confused looks. He provides me with laughter and serenity during the most stressful times.

This manuscript was submitted on July 12, 2011.

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INTRODUCTION

In applied philosophy, the philosopher asks questions about some aspect of contemporary life, often in relation to concerns about the nature of human flourishing, the nature and direction of society, or how the subject of concern furthers individual or social wellbeing. In the field of literature, speculative fiction does much the same; authors of speculative fiction create hypothetical futures (or histories) that illustrate the impact of new technologies, sciences, and social and cultural movements. Speculative fiction is often dystopian, focusing upon ethical problems in and the downfall of society. In Margaret Atwood's MaddAddam series, an unfinished trilogy that currently consists of *Oryx and Crake* (2003) and *The Year of the Flood* (2009), scientific corporations drive the economy, and the corporations' innovations raise ethical concerns about what our own future might hold. Atwood incorporates a number of movements contemporary philosophers are interested in—animal rights, xenotransplantation, stem cell research, bioethics, neuroscience, bioart, transgenics—while raising many ontological questions about human nature, as well as about the relationship between humans, science, technology, and art. Atwood's novels are often associated with the biopunk movement of speculative fiction, which is a subgenre of cyberpunk fiction. Cyberpunk fiction focuses on a post-industrial futuristic society in conflict because corporations use computer-based technologies (artificial intelligence, computer programming, hacking) in ways their creators did not intend. Biopunk adopts the same trope of corporations using technology

in unethical ways, but focuses instead on a biotechnological revolution where corporations misuse biotechnologies (genetic manipulation, human experimentation, eugenics, pharmaceuticals) for profit and social control. Atwood offers her readers disturbed characters who exist in a world where genetic engineering and biotechnology replace the information technology systems so prevalent in cyberpunk fiction.

Our postmodern culture relies heavily on biotechnologies, causing the lines between real and artificial to become hazy, which “threatens the difference between ‘true’ and ‘false’, between ‘real’ and ‘imaginary’ by undermining the foundations of referential reality” (Baudrillard 4). For the postmodernist, a rejection of objective truths for a more relative reality causes our society to move from the empirical scientific thought so prevalent during the modernist period to focus more on ontological questions. In rejecting an overarching universal epistemology, the postmodern age allows individuals to consider the plurality of their existence, highlighting differences and cultural relativism. With globalization and late capitalism, ontological questioning and ethical consideration are imperative for us to move toward a fair and just society rather than a dystopian one. Atwood’s *MaddAddam* series illustrates the need for such postmodern considerations.

In Atwood’s fictional futuristic society, the alienation of individuals from both society and Heidegger’s “being-in-the world” illuminates the tension between genetic materialism (where genetic material has become an instrumental good associated with economic and/or social value) and ethical responsibility, as desire replaces necessity and innovative curiosity precedes and forgoes ethical responsibility. Using biotechnology, rather than information technology, to inform and construct a dystopian fiction creates a

new set of ontological questions about what it means to be human in a time where transhumanist philosophers are arguing that we are all already cyborgs. Whether our modifications are restorative or a form of enhancement,¹ we all rely on science to generate solutions to our biological, dietary, physical, psychological, and behavioral problems. We also ask scientists to inform us of such problems, which becomes problematic in a dystopian futuristic society where medicine has become corporate and scientists are more concerned with profit than with human wellbeing, promoting dubious conditions in need of treatment or eradication. Also, the emphasis on biotechnologies provokes questions about what limitations should be in place for scientists, bioartists, and corporations, as well as ontological questions such as “Is there a central core of human nature that should be protected against destruction or erosion? Should some genes have preservation orders?” (Glover 83). Asking such questions highlights the dangerous nature of taking extreme measures to either restrict or promote genetic research, which is a central concern in Atwood’s novels.

Two seminal movements in philosophy—Kantian deontology and Mill’s utilitarianism—serve as frameworks for illustrating the complexity of making ethical choices within the fictional world Atwood creates in her MaddAddam series. Immanuel Kant’s theory of ethics is considered deontological because he argues that in order for people to act morally they must act from duty, not basing the rightness or wrongness of their actions on the consequences; he bases the ethicality of an action on a person’s motives for acting. Kant believes that in order to act from duty, one must be able to decipher between actions that possess intrinsic good and actions that possess instrumental

¹ See Donna Haraway’s *A Cyborg Manifesto. Science, Technology and Socialist-Feminism in the Late Twentieth Century* (1991).

good. Intrinsic good is when something is good-in-itself; whereas, instrumental goods can be used to achieve positive or negative ends. Kant deems the good will an intrinsic good and argues that an individual who possesses the good will is motivated by the desire to do good rather than motivated to produce good consequences. Kant believes that good consequences could occur accidentally, whereas actions done by someone with a good will allow a person to act according to his or her duty and with respect to the moral law. The goodness of an action depends on the rightness of such an action; Kant offers a method for understanding how to act properly in accordance with the universal moral law with his explanation of the Categorical Imperative.

In *Groundwork on the Metaphysics of Morals*, Kant presents a universal moral code for all rational beings. He includes a discussion of six formulations of the Categorical Imperative—all intended to yield the same ethical result; two will be drawn upon in this discussion of Atwood's novels. The first is concerned with universalizing actions, whereas the second is concerned with respecting and protecting autonomy. The first formulation of the Categorical Imperative states, "*Act only in accordance with that maxim through which you can at the same time wills that it become a universal law*" (Kant 31). When trying to universalize an action the agent must be impartial and cannot consider the connection or emotions the agent possesses toward the others involved in the situation. Also, the agent must subscribe to the idea of moral equity, in which a person's talents, age, race, gender, and other factors cannot be considered when creating a maxim. Kant's Categorical Imperative does not allow individuals to take into account the emotional connections they have with others. One reason the emotions are not considered is because Kant believed that reason and rationality were necessary for an individual to

possess autonomy, for it is our reasoning capabilities that underlie our ability to utilize our free will in the decision-making process. Autonomy is basically the idea of self-government; we are able to reason about and weigh the factors that would produce the best maxim to put through the Categorical Imperative.

Another notable formulation of the Categorical Imperative is called The Principle of Humanity, which states that we must “*act so that you use humanity, whether in your own person or that of any other, always at the same time as an end, never merely as a means*” (39). Basically, Kant is stating that we should never use persons someone to get the results we want because we are not recognizing them as autonomous beings. Kant believes it is inappropriate to treat individuals as if they are disposable things (merely means), rather than rational creatures that are autonomous (ends-in-themselves). In order for a maxim to be moral, it must be universalizable and respect human autonomy and dignity. However, in some instances, we can use the second form of the Categorical Imperative to consider individuals in relation to their rights as autonomous beings. If we try to formulate a maxim that advocates the killing of an innocent individual, it would not pass the first formulation of the Categorical Imperative because of the idea of reciprocity; we do not want to universalize an action that we would not want done back to us. Universalizing actions focuses more on the relation between the agent and the moral community. Yet, when we put it through the second formulation of the Categorical Imperative, it focuses more on the idea of individuality, in the sense that if we kill a person we take away the person’s autonomy.

If we do use the Categorical Imperative to find a moral maxim, we uncover universal moral duties because these duties are simply the right thing to do (a product of

the good will). One such example is Kant's belief that we must never tell a lie. For Kant, it is our duty to be honest because it both fits through the Categorical Imperative and is a value that is intrinsically good as truth telling also highlights the importance of human beings exercising our rationalizing capabilities. Kant believes that when we act irrationally we are acting immorally because irrational actions could never become duties, as they are void of morality. Lying is an irrational action, for when we lie, we logically contradict the truth; thus, if we tell the truth we are acting rationally and morally. Kant's belief that what is rational is moral and irrational is immoral is embedded in the Categorical Imperative because he holds autonomy at high-esteem and we would not be able to universalize irrational actions.

John Stuart Mill proposed a consequentialist theory that focused on the production and maximization of happiness and good consequences. Mill promotes that only wellbeing and happiness are intrinsically valuable; therefore, we consider acts morally right because they maximize overall wellbeing and happiness for the moral community. Mill's Pleasure Principle is the central aim of his theory; upon making a decision, the agent must try to create the greatest amount of wellbeing or happiness for the greatest amount of affected individuals. Within this, the agent must consider both the quantity of people the act is affecting, as well as how much happiness the act is going to bring those involved. Mill believes that we must maximize both the quantity and quality of our pleasures, and in order for us to select the act that will maximize both quantity and quality we must use cost-benefit analysis. First, the agent must add up all of the benefits an act produces and then consider all of the possible harm an act might cause. After doing so, the individual must then determine the balance of the potential harms and benefits.

One must do this for each possible course of action, until the agent finally find the best possible action that has a balance of pleasure greater than any other available action.

The aim of this thesis is to explore the relationship between ethics, biotechnology, and ethics. Throughout my thesis, I will use utilitarian and deontological lenses to examine Atwood's novels. Both the strengths and weaknesses of Mill and Kant's theories will be discussed in relation to the (im)moral choices characters make throughout the novels.

Atwood's MaddAddam series lends itself particularly well to this discussion, as her characters bear witness to a dystopian futuristic world where art and the development of moral beings are less important than furthering biotechnologies for financial gain. Atwood's futuristic society is eerily close to our own postmodern world, which allows these novels to aid us in our own philosophical and ethical thinking about the relationship between art, biotechnology, and ethics. Her characters illuminate the complex nature of making ethical choices in a postmodern world where a strict adherence to any one universal moral code such as deontology or utilitarianism proves difficult because the theories are not widely known and followed; such theories prove to be inadequate and flawed from a post-modern perspective. Snowman's worlds (both past and present) are dystopian because of the lack of concern for ethical thinking; using philosophical theories to inform an analysis of Atwood's novels allows one to consider the problematic nature of ethical thinking and how easily our own society could become one like Atwood's dystopian future.

CHAPTER 1

UNREGULATED EXPERIMENTATION AND ETHICS

Margaret Atwood's *Oryx and Crake* begins with a lonely man named Snowman wearing an "authentic-replica Red Sox baseball cap," recalling some long ago advice from a book and enjoying a mango (*O&C* 4). In this less-than-three page chapter, Atwood raises the question, "What's happened to humanity?" and leads the reader to fear what truths the rest of her novel might hold. Snowman recalls his life before the JUVE disease and ponders whether or not he should have seen the destruction of the human race coming. In Snowman's past life he was once Jimmy. As children, Jimmy and his best friend Crake exist in a society run by capitalist compounds consisting of scientists and geneographers who create chimerical animals, medical 'miracles', and transgenic species. Many of the species the biotech companies create have no practical application, for instance the rakunk, a gene-splice between raccoon and skunk that "had begun as an after-hours hobby on the part of one of the OrganInc biolab hotshots" (51). Jimmy receives a rakunk named Killer as a pet from his father, a technobiologist for OrganInc Farms, Killer is a trendy companion inside the OrganInc Compound because rakunks were cute and "hadn't come from the outside world—the world outside the Compound—so they had no foreign microbes..." and therefore, could not contaminate other creatures within the compound's walls (51). Although a cute and cuddly rakunk might sound like an adorable creation, the compound's scientists were often experimenting with animal

genes, sometimes not recognizing or predicting the possible outcomes of their creations. For instance, while describing Jimmy's beloved rakunk, Atwood includes a description of other creations that did not come out so cute and cuddly:

A number of experiments were destroyed because they were too dangerous to have around – who needed a cane toad with a prehensile tail like a chameleon's that might climb in through the bathroom window and blind you while you were brushing your teeth? Then there was the snat, an unfortunate blend of snake and rat: they'd had to get rid of those. (51)

The creation of creatures that cause more harm than good does not stop with the aforementioned animals. From a utilitarian perspective, predicting the consequences of creating such creatures is necessary; however, if the scientists did use a cost-benefit analysis before experimenting, there is still the problem of unpredictable results. Atwood implies that the scientists were creating new species for their own entertainment. The men and women working in the compound laboratories become obsessed with creating new species: "There'd been a lot of fooling around in those days: create-an-animal was so much fun, said the guys doing it. It made you feel like a God" (51). Snowman recalls a series of experiments that yield negative results; because the geneographers are incapable of predicting the consequences of their creations, the chain of correcting past mistakes was furthered when the bobkittens "soon got out of control in their turn. Small dogs went missing from back-yards, babies from prams; short joggers were mauled. Not in the Compounds, of course, and rarely in the Modules, but there'd been a lot of grousing from the pleeblanders" (164). Then, wolvogs were used to diminish the bobkitten population, and they too caused problems. Snowman's experiences with all of these creatures in the

post-apocalyptic world highlights how imbalanced the natural ecosystem can become when new species are created and introduced.

Atwood recognizes this dilemma is one we currently face when non-native species are introduced into communities and problems arise; the cross-species manipulations occurring in her novel illustrate basic predator-prey relationships. From an anthropocentric perspective, we might consider the manipulations more ethically problematic than predator-prey relationships in the natural world because some of the creatures designed to aid humans instead become predatory. The wolvogs were originally created to be guard animals for compounds. The scientists made them aesthetically pleasing to humans crafting them to “look like dogs, still behave like dogs, pricking up their ears, making playful leaps and bounces, wagging their tails” (108). However, “[t]hey’ll sucker you in, then go for you. It hasn’t taken much to reverse fifty thousand years of man-canid interaction” (108). From Snowman’s perspective, such a reversal did more harm than good, as he is now constantly being hunted by wolvogs. He also misses the animal from which they were created, domesticated dogs, “they never stood a chance: the wolvogs have simply killed and eaten all those who’d shown signs of vestigial domesticated status” (108). The wolvogs and pigeons, animals created to grow organs for humans, are examples of creations made to aid human beings that instead becoming threatening to the few humans left on the planet after the JUVÉ disease spreads. From a utilitarian perspective, the scientists should have taken into account the possibility that the creation of such species could result in new species that, even from an anthropocentric perspective, cause more harm than good.

The danger of unregulated and unpredictable experimentation with life forms is noted by Jimmy's mother, a former scientist for OrganInc Farms, before she divorces Jimmy's father, and is later recognized by Jimmy as his emotional sensibilities about Crake's line of work cause him to see the negative consequences of projects such as Crake's Paradise, which will be discussed later in the thesis. As a child, Jimmy witnesses the tension between his parents caused by his mother questioning the morality of the pigoon project that Jimmy's father is participating in. Jimmy's father is a prominent geneographer whose success came from experimenting with immortality. The 'real work' done at the compounds are projects designed to aid humankind. The central anthropocentric experiment, the pigoons, are created through the use of xenotransplantation, which is the procedure of transplanting organs or tissues between members of different species by Jimmy's father:

The goal of the pigoon project was to grow an assortment of foolproof human-tissue organs in a transgenic knockout pig host – organs that would transplant smoothly and avoid rejection, but would also be able to fend off attacks by opportunistic microbes and viruses, of which there were more strands every year. A rapid maturity gene was spliced in so the pigoon kidneys and livers and hearts would be ready sooner, and now they were perfecting a pigoon that could grow five or six kidneys at a time. Such a host animal could be reaped of its extra kidneys; then, rather than being destroyed, it could keep on living and grow more organs, much as a lobster could grow another claw to replace a missing one. That would be less wasteful, as it took a lot of food and care to grow a pigoon. A great deal of investment money had gone into OrganInc Farms. (23)

By creating the pigeons, OrganInc is offering a service to individuals that will extend their lives; unfortunately, the service comes at a high cost. When Jimmy's mother worked at OrganInc Farms, she was "a microbiologist: it had been her job to study the proteins of the bioforms unhealthy to pigeons, and to modify their receptors in such a way that they could not bond with receptors on pigeon cells, or else to develop drugs that would act as blockers" (29). Looking back, Snowman is uncertain when his mother quit working for OrganInc Farms, but he remembers the fights his mother and father had about the ethicality of creating services that allow humans (in particular, ones with money) to re-write human history by tampering with the DNA and genes of the human and animal world. While fighting with Jimmy's father about the ethical implications of his line of work, Jimmy's mother targets HelthWyzer, the company that hires Jimmy's father after OrganInc, as a company that has suspicious and immoral aims: "You and your smart partners. Your colleagues. It's wrong, the whole organization is wrong, it's a moral cesspool and you know it" (56). Jimmy's mother holds an ethical position that combines both Kantian thinking and Mill's criteria for considering consequences. She argues that humans should not be used as a means-to-an-end and furthers her argument by highlighting the negative consequences organizations like HelthWyzer might cause because of greed: "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" (57). Jimmy's mother points out the economic disparity that exists in the society Jimmy and Crake grow up in. There are members who live in the compounds, which are nice living quarters where children receive a good education because their parents work for one of the biotech companies. Both Jimmy and Crake grow up in this

environment, rather than in the Pleeblands, which is where the poorer communities reside and the community that Atwood explores in her sequel to *Oryx and Crake*, *The Year of the Flood*.

In *The Year of the Flood*, Atwood illustrates that Pleeblanders do not have access to medication and health services like the people living in Compounds. The Pleeblanders are also often the population that serves as ‘test subjects’ when pharmaceutical and biotechnological companies want to try out new medications and practices. Jimmy’s mother highlights how unethical Jimmy’s father has become because he works for a company that values capitalism over human rights: “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. You used to be so...you had ideals, then” (57). Jimmy’s mother not only insists that HelthWyzer is simultaneously exploiting and neglecting the Pleeblanders, she also argues that the NooSkins Pigoon Project Jimmy’s father is heading up is unethical: “What you’re doing – this pig brain thing. You’re interfering with the building blocks of life. It’s immoral. It’s...sacrilegious” (57). Jimmy’s mother illustrates a scientist who begins to foresee the possible negative consequences of scientists ‘playing God’ by recognizing that blending the boundaries between human and animal life is placing too much power in the hands of scientists with unethical reasons and aims. The fact that she was once working with Jimmy’s father on such projects and chose to leave the company because she felt it was performing unethical acts causes her to assume the role of moral authority in Jimmy’s home. However, one can also speculate as to whether or not Jimmy’s mother left the company because of its aims and instead left because of her husband having a romantic relationship with another colleague. The ambiguity of

Jimmy's mother's motivation does not make her a moral authority within the novel, and for the reader, considering her a moral authority—for instance, thinking of her as a martyr because of her allegiance with God's Gardeners becomes disrupted in *The Year of the Flood*—as the God's Gardeners do not seem to take her coming to them very seriously. However, Jimmy's mother's accusations against HelthWyzer illuminate the type of resistance such companies should face when performing unethical experiments and taking advantage of poorer communities. Companies focused on corporate gain and greed, rather than aiding humans, will have neither utilitarian nor deontological justification. From a utilitarian perspective, such companies should try to create the greatest amount of good for the individuals affected, not just for the company. Jimmy's father illustrates a selfish attitude when Jimmy's mother accuses him of no longer having ideals and only wanting to aid people with money. He replies to her "I still got them [moral ideals]. I just can't afford them" (57). Jimmy's father's response to his wife illustrates how selfish capitalist action does not promote the good of the whole and leaves other individuals to suffer. For Kant, HelthWyzer uses individuals as a means-to-an-end in order to make a profit and such selfish actions would not go through the Categorical Imperative. Atwood herself claims, "Science is a tool, like a hammer. You can use it for good or ill, to build a house or to murder your neighbor. Some of the biotechnology in the book is quite handy. It's not science you have to look at but the human beings who use it" (Arifa). Atwood's focus on the choices human beings make, rather than science as an evil force, emphasizes both deontological and utilitarian considerations. She believes that it is important for scientists to have good motives for acting and that it is important for

scientists to have an ethical bases in order for science to produce positive, rather than negative results.

As Jimmy's mother predicts, the pigeons do advance: Snowman thinks "Some of them may even have human neocortex tissue growing in their crafty, wicked heads," and in *The Year of the Flood*, Toby, a former member and beekeeper of the God's Gardner's environmental movement who survives the JUVE disease, recognizes the pigeons' ability to plan attacks against the building she is hiding in (235). Jimmy's mother recognizes that the geneographers might have too much unmonitored power that they often do not use responsibly; both OrganInc and HelthWyzer do not take safety precautions and lack a valid system for monitoring experiments. Scientists like Jimmy's father are valued over artists, as they are capable of creating organisms that will yield a high profit. Whether the geneographers and Jimmy's father are modifying creatures for pleasure or for money, their lack of caution and disregard for the possible negative consequences of their work paves the way for Crake to assume the role of geneticist-artist and create the Crakers.

The society in which Jimmy and Crake grow up is one in which even children recognize the value of science over art. From a young age, Jimmy sees that there is a significant difference between the type of people he and Crake are. As children, Crake and Jimmy cultivate different interests, however both boys enjoy a variety of computer games, the most important being Extinctathon "an interactive biofreak masterlore game" monitored by MaddAddam, which becomes a gateway for Crake to hire workers when he begins the Paradise project later in life. Crake's enjoyment of games like Extinctathon illustrates a primary difference between him and Jimmy (80). Jimmy is a 'word man;' whereas Crake has transgenics down to a science (excuse the pun). In Atwood's fictive

world, socially, there is a division between the science-oriented brainiacs whose endeavors yield money and the ‘neurotypical’ starving artists who are literally starving in the Pleeblands. As the two boys grow older, they are separated into different academies, which further illustrates the divide. Jimmy attends Martha-Graham, where he receives an art-based education from an academy that has some “retro-feminist shit” outdated goddess as its mascot and is surrounded by a reminder of the wonderful future that is to come after graduation—poverty stricken living in the Pleeblands with a lack of security and limited appreciation for having a way with words (186). Jimmy identifies his university as one with “utilitarian aims,” because it offered contemporary courses that would allow artists to become marketable as advertisers, so they could find a job where “money could still be made” (188). Crake attends the oh-so-exclusive Watson-Crick Academy, which is symbolized by innovativeness using a spoot/gider as a mascot,² and is surrounded by CorpSeCorps security and the promise of a luxurious future; the students there are often offered large sums of money for the research they are doing. In order for scientists to continue with the life of luxury and wealth, they must create the ‘new,’ which often causes the young scientists to push new boundaries and develop new species that non-scientists like Jimmy might find troubling, but end up advertising in order to make money. Neither science, nor art seems to be the nobler endeavor in Atwood’s novels as corporate greed is what dictates education and one’s professional life. However, Jimmy shows more hesitation about the possible negative consequences of the unregulated experimentation occurring at Watson-Crick when he visits Crake.

² This is a creation that has already been created in real-life; “Atwood’s spoot/gider is based on actual ‘transgenic goat technology’ innovated in January 2002’ by [a company called] Nexia Biotechnologies.” Glover, Jayne. “Human/Nature: Ecological Philosophy in Margaret Atwood’s *Oryx and Crake*.” *English Studies in Africa: A Journal of the Humanities* 52.2 (2009): 50-62 MLA International Bibliography. EBSCO. Web. 1 July 2011.

As Crake shows Jimmy the campus, Jimmy becomes uncomfortable with some of the experiments occurring at Watson-Crick. He asks Crake what would happen if the wolvogs escaped and began to breed, and upon seeing growing chicken parts, headless ChickieNobs that are not sentient and blur the boundaries between real and artificial animals—or meat for that matter, Jimmy asks himself, “Why is it he feels some line has been crossed, some boundary transgressed? How much is too much, how far is too far?” (206). From a Kantian perspective, this question is an important one to consider if the scientists are tampering with who or what might be considered a member of the moral community. For instance, the pigeons’ intelligence advances because of the human xenotransplant the scientists perform. If the pigeons could be considered rational creatures by Kant’s standards, then using them to aid humans becomes ethically problematic, and it would threaten a Kantian understanding of humans as the only rational and autonomous beings that deserve moral consideration. For Jimmy, the exposure to such experiments and knowledge is quite the shock, especially when Crake informs him that the company his father works for, HelthWyzer, is creating diseases and then marketing the cures to yield a higher profit. As Jimmy continues to spend time with Crake during his visit at Watson-Crick, he recognizes that Crake has unlimited resources to test his ingenuity and peers to reaffirm that Crake does not need to believe in God with a capital G or Nature with a Capital N either (206).

The divide between science and art within Atwood’s fictive society is seemingly clear-cut when focusing on the Compounds/Pleeblands and Watson-Crick/Martha-Graham divide; however, as the novel progresses, it seems that an overlap between art and science exists. This is most explicitly seen in the relationship Jimmy and Crake have

later in life. Jimmy is a lost college student, studying applied rhetoric and sleeping with women, while Crake is excelling at Watson-Crick and organizing a team of scientists to aid him in his BlyssPluss project once he graduates. Yet, upon graduation, Crake contacts Jimmy; he needs a man who is masterful with words, and Jimmy has been working on advertising campaigns for AnooYoo spa:

Cosmetic creams, workout equipment, Joltbars to build your muscle-scape into breathtaking marvel of sculpted granite. Pills to make you fatter, thinner, hairier, balder, whiter, browner, blacker, yellower, sexier, and happier. It was his task to describe and extol, to present the vision of what – oh so easily! – could come to be. Hope and fear, desire and revulsion, these were his stocks-in-trade, on these he rang his changes. Once in a while he'd make up a word – *tensicity*, *fibracinous*, *pheromonimal* –but he never once got caught out. His proprietors liked those kinds of words in the small print on packages because they sounded scientific and had a convincing effect. (249)

Jimmy simply becomes a pawn, using his skill with words to advertise for corporations with unethical aims that focus only on monetary gain. From a Kantian perspective, it is unethical to lie, which is essentially what Jimmy is doing in his advertisements. Kant also asks that we never use a person as a mere means-to-an-end, which is precisely what AnooYoo Spa is doing by creating products that are cosmetic and unnecessary and advertising them as essential in order to generate increased profits. When working for Crake's campaign, Jimmy continues to participate in unethical business by advertising pills that spread diseases, which are later cured by more pills that Crake's company creates. However, Crake's BlyssPluss campaign does not possess such a focus; instead,

Crake hopes to eliminate the human population in order to replace humankind with his creation, the Crakers. Crake believes that “All it takes...is the elimination of one generation. One generation of anything. Beetles, trees, microbes, scientists, speakers of French, whatever. Break the link in time between one generation and the next, and it’s game over forever” (223). Unbeknownst to Jimmy, his friend Crake intends to bring about the apocalypse; however, Snowman begins to remember signs that cause him to question “Had he been a lunatic,” Jimmy asks himself, “or an intellectually honourable man who’d thought things through to their logical conclusion?” (343). Snowman’s question about Crake is an important one to consider in relation to Crake, as it offers us two possible methods for viewing Crake: a mad scientist or a man fueled by rationality and logic. The tension between emotion and rationality relates to Kant’s belief that rational considerations take precedence over emotional reactions, which is an important consideration when unpacking whether or not Crake’s motives were ethical. Both of these interpretations—mad scientist or logical scientist—are important to consider because even Jimmy has trouble identifying what Crake’s aim is when he creates the Crakers and spreads the JUVE disease using the BlyssPluss pill.

CHAPTER 2

ART IN THE AGE OF BIOTECHNOLOGICAL REPRODUCIBILITY

Margaret Atwood is an author who keeps up with current events, especially new movements and discoveries in neuroscience, transgenics, biotechnologies, and bioart. Atwood often incorporates her knowledge of such movements and cases into her fiction, especially in the instances of both *Oryx and Crake* and *The Year of the Flood*. Because of her research in the sciences, Atwood considers her fiction speculative fiction, instead of science fiction. As a work of speculative fiction, Atwood's novel is concerned with exploring how modern technologies might be employed or extended in the future. In "*The Handmaid's Tale* and *Oryx and Crake* in Context," Atwood explains why she considers *Oryx and Crake* a work of speculative fiction, rather than science fiction by offering the following definitions: "a distinction between science fiction proper...denotes books with things in them we can't yet do or begin to do, talking beings we can never meet, and places we can't go—and speculative fiction...employs the means already more or less at hand, and takes place on Planet Earth" (513). Thus, the main difference between the two according to Atwood, is that "Science fiction has monsters and spaceships; speculative fiction could really happen" (513). It is important to highlight Atwood's distinction between the two genres because she emphasizes that speculative fiction considers and attempts to illustrate a possible direction for future of humanity. In Coral Anne Howell's

comprehensive critical book titled *Margaret Atwood*, she recognizes Atwood's ability to morph real-time concerns into a fictional future:

Atwood keys into widespread anxieties at the beginning of the twenty-first century, many of which are mutant forms of the fears of the 1980s now magnified on a global scale, where the news carries daily threats of apocalypses, with 'more plagues, more famines, more floods, more insect or microbe or small-mammal outbreaks, more droughts, more chicken-shit boy soldier wars in distant countries' (p. 298) That catalogue of fears and phobias has increased with the advancement of science and attendant popular anxieties about climate change and global warming, genetic engineering and bioterrorism. Atwood's nightmare scenario is a remarkable blend of fact and fiction as she imagines a world which has become "one vast uncontrolled experiment" (p. 267). (Howell 173)

If we consider Atwood's definition of speculative fiction, then this genre of literature seeks to predict how biotechnologies could be used in the present or future, and asks one to question the ethical implications of how and why we might use certain technologies. Dystopian speculative fiction illustrates and explains what negative consequences might occur if we use technological advances without considering the moral nature of our tampering with genetics.

Atwood establishes that *Oryx and Crake* is a cautionary tale by including an epigraph from Jonathon Swift's *Gulliver's Travels*: "I could perhaps like others have astonished you with strange improbable tales; but rather I chose to relate plain matter of fact in the simplest manner and style; because my principal design was to inform you,

and not to amuse you.” In selecting this Swift quote, Atwood proposes that Snowman’s life is what might occur when science does begin to imitate art; the creation of chimerical animals and transgenic species or organs without regulation or consideration for the problematic nature of tampering with genes could cause a dystopian futuristic society. Dystopian fiction often employs cautionary elements in order to illustrate that fiction can both “speak of what is past and passing, but especially of what’s to come” (“In Context” 514). Dystopian fiction naturally has consequentialist considerations, as it attempts to illustrate a possible future that is sparked by an earlier society’s lack of consideration for their actions, which in turn produces negative consequences that lead to a dystopian future. Atwood claims that one thing speculative fiction offers its readers and viewers is the ability to “[e]xplore the consequences of new and proposed technologies in graphic ways, by showing them fully up and running” (514). In his interview with her, Robert Potts of *The Guardian* asserts that Atwood’s

work is always researched: *Oryx and Crake*, a novel blending a biological apocalypse with a genetically engineered genesis, acknowledges a number of personal debts in terms of research and background, but also scrupulously offers a list of documentary sources at a web address. “We have a big box, called The Brown Box... it’s a brown cardboard box - in which all the research clippings are filed: so there’s nothing I can’t back up,” says Atwood. (Potts)

The extent of Atwood’s research is seen throughout the MaddAddam series; one example is scientists using pigs as a means of aiding humans in organ transplants and donations. Atwood uses current real-world technologies to envision pigoons in *Oryx and Crake*. For

example, “Transgenic pigs are not a product of Atwood’s imagination, but are one of the creations of current genetic engineering; on 2 January 2002, PPL-Therapeutics (a biotech factory known for taking part in the Dolly Project) reported the birth of five transgenic piglets created with the aims similar to those described by Jimmy. The purpose of the biopharmaceutical giant was to use the pigs for human transplants” (Volkman 245). A number of examples could be used to illustrate Atwood’s scientific research coming to fruition in her novel; however, one example that is particularly of interest is the work of bioartist Eduardo Kac (pronounced Katz). Kac is well-known in the field of bioart, as he is both a professor at the School of the Art Institute of Chicago and the recipient of numerous awards. Many of his works appear at world-renowned museums, such as the MOMA in New York and the MOMA in Rio de Janeiro (“Biographical Note”).

Kac began his career as a bioartist and digital media artist, specializing in telepresence in the 1990s. His first transgenic work, *Genesis*, occurred in 1999; in this piece Kac explored “the intricate relationship between biology, belief systems, information technology, dialogical interaction, ethics, and the Internet” (“Genesis”). Kac created what he deemed an “artist’s gene,” by using a synthetic gene to translate a biblical sentence from Genesis—“Let man have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moves upon the earth”—into Morse code. He then developed the Morse code into DNA base pairs, allowing participants to change the biblical sentence in the bacteria by turning on an ultraviolet light in the gallery containing the bacteria via the web. Once the show was over, Kac translated the DNA back into Morse code and then into English to illustrate that a mutation had occurred. He then posted the mutated sentence on his website to illustrate

that our ability to change the sentence is symbolic of humankind's desire to change that which we inherit. Kac selected the quote from Genesis because of "what it implies about the dubious notion—divinely sanctioned—of humanity's supremacy over nature" ("Genesis"). This piece of bioart illustrates our desire to manipulate, create, and change the world around us at the linguistic and biological level, and that as we do new meanings will emerge as we change it ("Genesis").

This example of transgenic art illustrates Kac's dedication to discussion about biology, art, science, and media. With *Genesis*, Kac hoped to illustrate the flexibility of language and illuminate the aesthetic value of linguistics and the dialogues we have about linguistic systems and linking together the virtual and the physical (something Kac has also done in his installation *Time Capsule*). So, in 2000, Kac hoped to reveal Alba, a florescent rabbit whose eyes and body glowed green in certain lights at a digital art exhibit in Avignon in June 2000 (Dickey). However, one should be careful about saying that Kac himself created the bunny as he commissioned the INRA (French National Institute for Agricultural Research) to produce said bunny, which caused quite the controversy. The INRA refused to allow Kac to take Alba because she was considered part of their property, and is a bunny that Louis-Marie Houdebine, the head of the INRA, considers a research resource, not an art piece. Interestingly, Houdebine is affiliated with Bio-Protein Technologies, a company that uses rabbits (even of the transgenic persuasion) to do research on human diseases. Kac's inability to retrieve Alba is a prime example of how agreements and laws can be undermined and broken by biotechnological corporations. In an interview conducted by *WIRED* magazine, Christopher Dickey writes, "Rabbits are exquisitely sensitive to cholesterol, just as we are" he [Houdebine] said. To

confuse this picture of rabbits as profitable pharmaceutical producers with a frivolous image of green fluorescent bunnies are objets d'art might alienate BioProtein's financial backers in Holland and France. So Houdebine had an incentive the play down Kac's inspiration for Alba's creation, and his own role in the project" (Dickey). Unfortunately for Kac and little Alba—"She's an experimental animal... If we need her, we'll use her"—transgenic art for art's sake was unimportant to the INRA (Dickey). For Kac, the transgenic rabbit art piece is just the beginning. He hopes to create pieces with dogs (specifically hairless chihuahuas, so they will glow more effectively) and refuses to work with humans: "If I would do something with a human being, then I would be the father. And I do not believe it's all the same. It's an issue of difference," which harkens back to the message of his *Genesis* piece (Dickey). From a Kantian perspective, if humans are the only rational creatures that make up the moral community, then animals like Alba can be used for anthropocentric aims, which trump Kac's desire to include Alba as a member of his household. Kac does possess the Kantian belief that human life should not be tampered with because we are rational creatures. Kac's philosophical essays titled "Transgenic Art" and "GFP Bunny" both offer definitions of what transgenic art means to Kac and how bioartists and scientists should proceed when creating works.

Kac defines transgenic art as "a new art form based on the use of genetic engineering to transfer natural or synthetic genes to an organism, to create unique living beings" ("GFP Bunny"). Hence, Alba serves as a good example, as she was injected with a Green Fluorescent Protein (GFP), isolated from Pacific Northwest jellyfish that give off a green light ("Transgenic Art"). Furthermore, transgenic art also "offers a concept of aesthetics that emphasizes the social rather than the formal aspects of life and

biodiversity that challenges the notions of genetic purity, that incorporates precise work at the genomic level, and that reveals the fluidity of the concept of species in an ever increasingly social context” (“GFP Bunny”). Kac’s opinion of transgenic art is the inverse of how the fictional society that Atwood creates in her MaddAddam series is organized. He argues that the artistic and social spheres of life illuminate and challenge formal thinking. Such thinking seems idealistic compared to both Atwood’s fictional society and our own, as her illumination of the link between scientific study and corporate business is already prominent in the postmodern world. For Kac, a social awareness of the creation of such animals validates transgenic art because according to Kac, it encourages society to have “respect for the spiritual (mental) life of the transgenic animal” (“GFP Bunny”). When compared to Atwood’s works, Kac seems overoptimistic about the motives of the individuals creating transgenic creatures. Like the INRA, in *Oryx and Crake*, the biologists who are creating new species in the compounds do not have respect for the life of the transgenic animals they have created, with the one exception of Jimmy’s father giving him a rakunk as a pet. The men and women working for the compounds are not aiming to create a new creature with aesthetic value, rather they are working as geneographers and aligning their identity with the practice of science, not art. When Crake shows Jimmy that the MaddAddam website is actually an e-bulletin for experiments gone wrong, another slew of negative examples arise many of which are animals or plants that have escaped the confines of the compounds: “A miniature rodent containing elements of both porcupine and beaver had appeared in the northwest, creeping under the hoods of parked vehicles and devastating their fan belts and transmission systems” (*O&C* 21). However, the pigeons and ChickieNobs are both

interesting cases, as their sentience is taken into account during the production and creation of the species in order to minimize the pain each feels. In some regards, OrganInc (pigeons) and Watson-Crick (ChickieNobs) respect the mental and physical life of the animal; nevertheless, arguably, such respect depends on who is in charge within the laboratory or possibly it depends on what company is funding the experimentation.

However, Kac also claims that in order to be a good transgenic artist, the creation of a new species must “be done with great care, with acknowledgement of the complex issues thus raised, and above all, with a commitment to respect, nurture, and love the life thus created,” which Kac has not been able to uphold since the INRA will not allow him to bring Alba home (“Transgenic Art”). Thus, Kac’s own practice of being a good transgenic artist is questionable by his own definition. In “Transgenic Art”, Kac emphasizes the importance of the relationship between the artist and transgenic animal. He first argues that molecular genetics has allowed artists to create new life forms and that the artists must have a relationship with their art. He believes that it is important for the artists who engineer plants and animals to explore the relationship between public, artist, and their new transgenic creation, and that the creation should be raised by the artist. Secondly, Kac believes that transgenic artists can contribute to biodiversity by creating new organisms, especially since we are losing many endangered species. However, the transgenic artist must recognize the importance of being ethically responsible when undertaking such projects and should possess a “firm commitment to and responsibility for the new life form” (“Transgenic Art”). Kac’s ethical considerations blend a utilitarian and deontological framework; he is focused on positive results and consequences by emphasizing that a relationship between the bioartist, the new life form,

and the public must occur; and he borrows the idea of universalizing ethical practices from Kant's Categorical Imperative. He also considers the new life form one that deserves to be protected by the artist, which promotes that the new life form should not be used as a means-to-an-end; however, like Kant, he does not include it in the moral community as a rational and autonomous creature. Thus, Kac points to a revised Kantian theory in which non-rational creatures are included in the moral community.

By Kac's definition Crake could not be considered a bioartist, as his aims are not to inform the public, rather to decimate the human population and replace it with Crakers. Artists need a human audience to view their creations. Furthermore, Crake allocates the task of raising the Crakers first to Oryx, the third protagonist in the novel who is both Jimmy's love and hired by Crake as his prostitute, and later to Jimmy before he dies. Crake technically is contributing to the biodiversity by inventing the Crakers; however, he tries to ensure that the Crakers will not come into contact with other species by instilling certain preventative methods, such as urine that wards off predators. If transgenic art does call for a "dialogical relationship between the artist, creature/artwork, and those who come in contact with it," Crake fails to ensure this will happen ("Transgenic Art"). His only method of security is entrusting Jimmy with the role of Craker caretaker; it is Snowman who creates a relationship between the three (artist—creature/artwork—those who come in contact with it) in his dialogues with the Crakers by creating a mythical past that invokes Crake and Oryx and deities. Furthermore, Snowman will also have to explain the Crakers to the surviving God's Gardeners, an environmentalist group affiliated with MaddAddam, a task that has not occurred yet in the MaddAddam series, but could in the final novel.

In opposition to transgenic bioartists like Kac, Jeremy Rifkin has voiced his abhorrence for genetically modified organisms. As a philosopher, Rifkin is acknowledged as one of the first major critics of biotechnological practices, especially in relation to stem cell research and cloning. Rifkin argues that new biotechnologies threaten human existence and pose new dangers, an idea explored in the previous chapter about the unpredictability of new creations in *Oryx and Crake*. He often writes from a Kantian political perspective, arguing that the poorer class of people will not be able to obtain these new technologies; therefore they will suffer from a political and socio-economic injustice (“Office of Rifkin”). Not only may these people not be able to afford new technologies, they may also be the population that is experimented upon, as is evident in *Oryx and Crake*. Obviously, Rifkin is travelling down a slippery slope, as these negative consequences might not occur; however, speculating about the negative outcomes should be a duty scientists have before unleashing their creations—think Dr. Frankenstein. Raising these possibilities is a positive practice from a utilitarian standpoint, as the negative consequences must be measured against positive consequences when performing a cost-benefit analysis. Although he is simply raising possibilities and not illustrating the likelihood such outcomes will actually occur, considering the consequences is an admirable practice that should be adopted by scientists, so they will be more ethically responsible.

Upon going to work for Crake on the Paradise project in the RejoovenEsense compound, Jimmy questions Crake as to where the test subjects for the BlyssPlus pill come from. Crake replies, “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” (*O&C* 296). And this is not only true of Atwood’s speculative fiction; consider real-life situations like the Tuskegee Syphilis experiment.³ According to Kantian ethics, using human subjects as a means-to-an-end in drug testing and experimentation is unethical, as it deprives them of knowledge necessary to make autonomous decisions about their own life.

Experimentation that exploits individuals would not pass through the Categorical Imperative, as it is neither respects the autonomy of individuals, nor could such experimentation be made universal. From a utilitarian perspective, using humans as a means-to-an-end—especially in the case of Crake’s BlyssPluss pill—often has the ability to yield negative or unpredictable results, which is why utilitarians often opt for choices that minimize the use of human beings to yield positive results.

In the article, “Dazzled By the Science: Biologists who Dress Up Hi-Tech Eugenics as a New Art Form are Dangerously Deluded,” Rifkin argues that bioartists and much of the population, already feel that “their very corporeal being” is a work of art during the age of “cosmetic surgery, psychotropic mood-enhancement drugs and personal therapies of all kinds are a reflection of the new sense of self as an unfinished work of art.” Rifkin contends that the mental shift of moving from a biologist to a creative artist⁴ is a negative one because the art for art’s sake argument could allow questionable ethical practices to occur. He argues, “The new biotech artists say that such exhibits will help the public wrestle with the scientific, ethical, and legal issues surrounding the new genomic

³ See Reverby, Susan M. *Tuskegee's Truths: Rethinking the Tuskegee Syphilis Study*. Chapel Hill : University of North Carolina Press, 2000).

⁴ In the WIRED article, “I Love My Glow Bunny”, Christopher Dickey interviews an influential figure in the scientific community named Jacques Arnold who believes, “I think the researchers of the INRA are afraid that they wouldn’t be loved anymore. There’s a need to be loved, a fear of not being loved. We think of that as natural with an artist, but it’s the same with a scientist.” Perhaps, the need to be loved is a common thread driving both the artists and scientists experimenting with genetic manipulation.

science...But it's far more likely that the real consequence of such art exhibits will be to legitimize the idea of a new "artful" eugenics movement" ("Dazzled"). Here, Rifkin is attempting to make a universal judgment against bioart; however, he is merely arguing that some ways of engaging in bioart might be ethically problematic, which does not establish that all would be. His predictions do not express the likelihood that such a movement will in fact happen, rather he is performing a task similar to that of a writer of speculative fiction by pushing the discussion of bioart into a negative and considerably dystopian direction. From a utilitarian standpoint, Rifkin also needs to consider the positive uses of bioart, rather than simply focusing on the potential negative results. A good utilitarian's cost-benefit analysis highlights both.

Rifkin's fear is fictionalized in *Oryx and Crake* with Crake's creation of the Crakers. Rifkin also argues that allowing bioartists to create GMOs causes them to 'play God' as they experience the "ultimate enlargement of human power" and create the "ultimate consumer playground" ("Dazzled"). Rifkin employs utilitarian thinking when he argues that humans 'playing God' is a negative endeavor because he believes we run the risk of making choices that will devastate the future of human civilization. His main argument is that genetic experimentation will raise questions about what it means to be a human being. He worries that if we allow scientists to 'play God' genetics will become an area of production, rather than creation. He argues that the beings scientists are creating and modifying are no longer unique creations, but reproductions of what the "God" wants to create and will become customizable products like things on an assembly line. Here, he possesses Kantian considerations because he worries about humans losing their autonomy and being used as a means-to-an-end: "Customised human cloning offers

the spectre of a new kind of immortality. Each generation of a particular genotype can become the ultimate artist, continually customizing and upgrading new genetic traits into the model with the goal of both perfecting and perpetuating the genotype forever” (“Shopping”). Rifkin’s disdain for the customization also reflects utilitarian thinking, as he highlights the negative damage that may be done to the human genotype in the future.

Rifkin often makes slippery slope arguments where science becomes commercial and (for Rifkin) the God-given sanctity of human life is lost. He also often points to the ‘yuck factor’ argument when discussing society’s aversion to stem cell research and cloning, citing that we have been assured that clones will be different from the original. He argues that we feel the gift of life will no longer be a gift and that natural childbirth will become eradicated and marginalized (“Shopping”). The creation of a bioindustrial marketplace could very well turn out to be a positive endeavor—in a democratic society, it could create a free market that encourages healthy competition between scientific corporations to discover cures, which would be made available to the public—but Rifkin only sees extreme negative outcomes, like future generations losing their ability to empathize with one another because they do not feel vulnerable, since they have all been modified to be super humans.

Oryx and Crake provides an example of Rifkin’s concerns about the creation of a bioindustrial marketplace when Crake explains to Jimmy the current marketing ploy of RejoovenEsense before the release of the BlyssPluss pill:

RejoovenEsense hoped to hit the market with the various blends of offer. They’d be able to create totally chosen babies that would incorporate any feature,

physical or mental, or spiritual, that the buyer might want to select. The present methods on offer were very hit-or-miss said Crake: certain hereditary diseases could be screened out, but apart from that there was a lot of spoilage, a lot of waste. The customers never knew whether they'd get exactly what they'd paid for; in addition to which, there were too many unintended consequences...But with the Paradise method, there would be ninety-nine percent accuracy. Whole populations could be created that would have pre-selected characteristics. Beauty, of course; that would be in high demand...(304)

For Rifkin, the service Crake has created is ethically problematic because it allows the scientist to 'play God', which, even Crake admits can have unintended consequences. However, unintended consequences are not always necessarily negative nor does making a choice that yields negative consequences mean that choice is inherently bad. For instance, from a Kantian perspective, as long as autonomy is respected and one's motives can be made universal, then an action that yields negative consequences is not a bad choice. Rifkin's line of argument often presupposes that choices that have the potential to yield negative consequences are bad. For instance, Rifkin also argues that the variation in the gene pool will diminish causing eugenics to take precedence, which does not allow humankind to flourish naturally because individuals feel they must be genetically modified in order to assimilate into society. Here, Rifkin presupposes that any use of eugenics is automatically wrong, which is problematic from both a Kantian and utilitarian perspective. Kant would never want rational beings to be treated as a mere means-to-an-end; more than likely eugenic practices would be not recognize individuals as ends in

themselves, which would cause a loss of autonomy. If there is some possibility of implementing eugenics where rational beings are not being used as mere means, Kant would not disagree with the practice. Mill would argue that the practice of eugenics has the potential to be a positive one and (depending on the circumstances) one that could create the greatest amount of wellbeing for the greatest amount of people.

Thus far, the ethical concerns about the relationship between art and biology have been described. Eduardo Kac believes that bioartists must have a relationship with their creations, make society aware of such projects, and be ethically responsible for their art (especially when considering living organisms). Rifkin argues that bioart as a movement is dangerous, as it contains its own set of goals and allows artists to have unregulated flexibility when creating their art. Bioart might also be less limited than creations made by biologists, which can make for a slippery slope when considering eugenics. Kac would argue against Rifkin's claims asserting that true bioartists should have respect for their creations and create responsibly and ethically. The tension between Rifkin and Kac's perspectives is notable because both are attempting to articulate ethical guidelines for technocrafters and bioartists, yet such guidelines might not be followed universally. Even with laws in place, artists will find a way to create, so Kac's suggestions are especially helpful because they are coming from a bioartist within the bioart community. Atwood's *MaddAddam* series illustrates the tension between Rifkin and Kac's perspectives, and establishes that guidelines often are not followed (or even put in place) when biotechnologies are produced for capital gain, instead of as art pieces.

Martin Heidegger provides a useful framework for analyzing the ontological concerns a reliance on biotechnology creates.

CHAPTER 3

HEIDEGGER'S HOPE FOR HUMANITY

Martin Heidegger questions the aims of technology and art and examines how both reflect or influence humankind's ontological condition. Heidegger searches for the essence of technology and art in his essays, "The Question Concerning Technology" and "The Origin of the Work of Art" in which he explains how art and technology affect the ontological condition of human beings. Heidegger's emphasis on ontological considerations relates to ethical decision-making practices and aims to produce an ideal form of being.

In "The Question Concerning Technology," Heidegger argues that the essence of technology changes the way that humans understand their own existence/essence and often causes humans to overlook other modes of production, namely art. If we rely on technology to understand being, technology becomes dangerous because it does not allow humans to understand the essence of their being, rather it serves as one particular mode of thinking that limits the individual. We do not recognize our essence because we adopt an ontological condition where technology not only limits what might be known or thought, it shapes what is. On this account, not only do we think of ourselves in technological ways, we become technological creatures. Technology becomes a mode of existence that creates an attitude that causes humans to desire more efficient and effective ways of existing. If a technological perspective becomes our epistemological position, then

humans are at a loss because everyone and everything that surrounds us becomes an instrumental piece of technology that is just waiting to be used –a “standing reserve.” “Standing reserve” is when an entity becomes instrumental; this is done by technology because of the instrumental nature of things in relation to technology. For instance, technology does not allow a good to be intrinsic (good in-an-of itself), rather things are only instrumental (good for something). Heidegger writes,

Thus when man, investigating, observing, pursues nature as an area of his own conceiving, he has already been claimed by a way of revealing that challenges him to approach nature as an object of research, until even the object disappears into the objectlessness of standing-reserve. Modern technology, as a revealing which orders, is thus no mere human doing. Therefore we must take that challenging, which sets upon man to order the real as standing-reserve, in accordance with the way it shows itself. That challenging gathers man into ordering. This gathering concentrates man upon ordering the real as standing-reserve.” (Heidegger 324)

The process of causing everything to become an object of standing-reserve that is awaiting use is called enframing. Heidegger believes that enframing limits nature and places it into an artificial “frame” that is simply going to be used as a tool or resource. For Heidegger, technology was best during ancient Greece when technology was considered a craft or type of art form; however, over history, technology has been

corrupted by humans because we have created two attitudes toward technology: the “ready-to-hand” and the “present-at-hand”.⁵

The “present-at-hand” is a scientific attitude, where a person theorizes about the usefulness of objects through observation and gathering empirical evidence. The “present-at-hand” values the utility of objects and uses them to conquer the world around them. The “ready-to-hand” is primal; it is the most basic ability to create and utilize tools, allowing them to become extensions of our body. The “ready-to-hand” is a quality we even recognize in other species—consider a gorilla that uses a stick to measure the depth of the water in front of her before wading across the pool or an otter that uses a rock as hammer to open up urchins, mollusks, and clams. For Heidegger, when we interact with the world in this way, we are experiencing an authentic way of “being-in-the-world” because we respect nature in this mode. Heidegger claims, “Man is not the lord of beings. Man is the shepherd of Being;” therefore, if we care for nature it will provide us with the tools that are authentic and natural to humankind (Heidegger 234).

In *The Year of the Flood*, Atwood’s God’s Gardeners strive to be at harmony with Nature, illustrating a “ready-to-hand” attitude about the tools they use to survive in a world where Nature with a capital N has been lost among cityscapes, genetic experimentation, and is especially hard to encounter within the Pleeblands. The God’s Gardeners’ way of life values the organic and natural; unlike Jimmy and Crake, the children grow up learning the importance of preserving natural ecosystems. One way the children are taught is through song and memorization of poetry, songs, and rhymes. The children take classes like choir, fabric recycling, culinary arts, sewing, mental arithmetic,

⁵ These terms are introduced in Heidegger’s philosophical work *Being and Time*.

beekeeping, mycology, holistic healing, wild and garden botanicals, meditation, predator-prey relationships, animal camouflage, emergency medical, and human reproductive systems (*YOTF* 61). Each of these courses promotes the use of “ready-to-hand” tools and promotes a respect for nature, especially when required to use it as a tool. During these courses, the children “wrote on slates, and they all had to be wiped off at the end of each day because the Gardeners said you couldn’t leave words lying around where our enemies might find them. Anyway, paper was sinful because it was made from the flesh of trees” (60). Such teachings prove to have a lasting effect; for instance, after the JUVE disease spreads, Ren, a former God’s Gardener turned stripper, is isolated. While alone she remembers, “They told us to depend on memory, because nothing written down could be relied on. The Spirit travels from mouth to mouth, not from thing to thing: books could be burnt, paper crumble away, computers could be destroyed. Only the Spirit lives forever, and the Spirit isn’t a thing” (60). This emphasis on moving the Spirit through a natural medium illuminates Heidegger’s notion of “being-in-the-world” as the Gardeners emphasize using a tool that is “ready-at-hand,” valuing humankind’s ability to memorize and recite oral histories in order to convey a phenomenological message. The God’s Gardeners also rely on rhymes to recall their history. The children are taught how the Gardeners began through this simple exercise:

Year One, Garden just begun; Year Two, still new; Year
 Three, Pilar started bees; Year Four, Burt came in the
 door; Year Five, Toby snatched alive; Year Six, Katuro
 in the mix; Year Seven, Zeb came to our heaven. (60)

By memorizing their history in an oral manner, the God's Gardeners are able to preserve their history using an authentic and natural tool.⁶ Such types of learning also promote the children to make up rhymes of their own, and although many of them are scandalous and immature, the technique of memorizing and reciting information important to their culture has been instilled in the children.

The children also have to be very innovative during play because “[t]he Gardeners were skimpy on toys—*Nature is our playground*—and the only toys they approved of were sewed out of leftover fabric or knitted with saved-up string, or they’d be wrinkly old-person figures with heads fashioned from dried crabapples. But they allowed dominoes, because they carved the sets themselves” (64-5). The emphasis on only having toys that are made from natural materials and created by members of the God's Gardeners re-enforces the importance of “being-in-the-world” with items that are entirely “ready-to-hand.” The Gardener children experience a sharp contrast between their existence and that of the pleebrats, children who live in the pleeblands. As a child, Ren admires the gadgets and gizmos the pleebrats possess and longs to have something shiny and new. There is juxtaposition between a pleebtrat wearing shiny and shimmering clothing and a God's Gardner child fully-covered by a dirty brown sack-like garment. The God's Gardeners expect the children to scavenge for things that have been thrown away: “Our Young Bioneer work was supposed to teach us some useful lessons. For instance: Nothing should be carelessly thrown away, not even wine from sinful places. There was no such thing as garbage, trash, or dirt, only matter that hadn't been put to proper use. And most importantly, everyone, including children, had to contribute to the

⁶ This is not to say that Heidegger would be against the written word, but that the spoken word is one of many natural tools humans possess.

life of the community” (69). However, certain objects, such as cell-phones are off limits for children of the Gardeners. Ren desires to have things “like the TV camera phones, pink and purple and silver that flashed in and out of their hands like magician’s cards, or the Sea/H/Ear Candies they stuck into their ears to hear music” (66). Upon finding one on the sidewalk, she takes it home only to hear “Don’t you know any better?...Such a thing can hurt you! It can burn your brain! Don’t even look at it: if you can see it, it can see you” (67).

In many instances, the Gardener children’s foraging skills causes them to encounter objects and situations the Gardeners do not approve of, such as strip clubs, alcohol, marijuana (at least not for children), and even pleebrats like Amanda, a homeless young rogue that befriends Ren and becomes a member of the God’s Gardeners. The Gardeners also do not believe in using modern devices and appliances, nor do they support overusing limited resources. For instance, the “Gardeners didn’t believe in wasting water and soap on too much washing,” so they did not allow daily showers, nor do the Gardeners use inventions like dryers to do laundry because “God made the sun for a reason” (64).

The leader of the God’s Gardeners is a mysterious man called Adam One, who gives sermons and recites poetry with his followers that promote the importance of the preservation and restoration of the Natural way of life, such as living in God’s Garden. In his poem titled “The Garden” Adam One discusses the destruction of such beauty and how the Gardeners must work to restore it. “Who is it tends the Garden,/ The Garden oh so green?/ ’Twas once the finest Garden/ That had ever been seen./ And in it God’s dear Creatures/ Did swim and fly and play;/But then came greedy Spoilers/And killed them all

away... Oh Garden, oh my Garden,/ I'll mourn forevermore/ Until the Gardeners arise,/ And you to Life restore" (*YOTF*). The poems Adam One selects to recite before or after each sermon often symbolize and prophesize about the current and upcoming problems in the world surrounding the Gardeners. Adam One claims that a waterless flood will destroy the human population; therefore, the Gardeners should not eat meat, partly because much of it is genetically modified and possibly harmful, but also because the animals are part of God's Garden and deserve respect. From a Kantian position, non-rational animals are not considered creatures with moral status; however, we should treat animals with respect because when we harm animals it illustrates a negative quality possessed by humankind. Kant argues "he who is cruel to animals becomes hard also in his dealings with men;" therefore, as rational creatures we should be kind to sentient creatures ("Lectures on Ethics"). The God's Gardeners revise Kant's views of animals by extending the moral community to include them. The God's Gardeners believe that harming or eating animals is ethically problematic because like humans, animals should not be used as a means-to-an-end.

Adam One also creates a number of symbols and Saints that are worshipped different days to teach the children and Gardeners certain virtues and lessons that meld science and religion and promote the preservation of plant and animal life. Adam One often speaks of being-with-the-Earth, as it provides humans and animals with sustenance that is both material and spiritual. The ideology that Adam One has created within the God's Gardener's re-affirms Heidegger's notion that "Man is not the lord of beings. Man is the shepherd of beings," in his sermons, poems, and his way of life. Adam One values, "The Earth and the music thereof, the Universe and the harmony therein – these are

God's works of Creativity, of which Man's creativity is but a poor shadow" (90). Adam One's description of the Universe at harmony with humankind is similar to Heidegger's conception of being. His insistence that the other member of the Gardeners should strive to achieve "being-in-the-world" by harmonizing with Nature promotes Heidegger's thought that technology should not serve as an ideological framework that informs us how to live, rather, technology is merely a tool that allows us to better understand the essence of our being and our connectedness to the Earth (and possibly, for Adam One, to God). The meditation practiced by God's Gardeners and Adam One is also a method of understanding the essence of Being. For Heidegger, it is essential that we understand being is everywhere and nowhere at the same time, so we must use tools that are "ready-to-hand" to understand the essence of our being.

However, much about the God's Gardeners is questionable. The God's Gardeners consists of Adams and Eves, men and women whose role is to serve as moral exemplars to the children and instruct them on various subjects. Many of the Adams and Eves are not moral exemplars, nor do they always teach their lessons as Adam One would want them to. For instance, "Burt the Knob explained how to relocate the slugs and snails in the Garden by heaving them over the railing into the traffic, where they were supposed to crawl off and find new home, though I knew they really got squashed" (83). Such a lesson clearly undermines Adam One's sermons about the importance of respecting members of the animal community and goes against the deontological argument for the humane treatment of non human animals:

Ours is a fall into greed: why do we think that everything on Earth belongs to us, while in reality we belong to Everything? We have betrayed the trust of the

Animals, and defiled our sacred task of stewardship. God's commandment to "replenish the Earth" did not mean we should fill it to overflowing with ourselves, thus wiping out everything else. How many other Species have we already annihilated? Insofar as you do it unto the least of God's Creatures, you do it unto Him. Please consider that, my Friends, the next time you crush a Worm underfoot or disparage a Beetle! (53)

The most obvious example of a defiant God's Gardener is that of Zeb, an eco-fighter who is Adam One's right-hand man, but often pushes the boundaries when it comes to how an Adam is supposed to act. Many are small actions, like taking a shower everyday when the God's Gardeners are supposed to conserve water, while others are more dangerous and violent, like fighting with Blanco and his street gang. Not only is Zeb a questionable influence, he is in constant contact with the outside world, including using a computer to communicate with others. One of his strongest allies and contacts is Crake, and Zeb's nickname with the kids is MaddAddam—the name he uses to organize an on-line message board, the very same one that Crake uses to recruit all of the biologists working on the Paradise project. Therefore, from the perspective of Adam One, the ideological framework of the God's Gardeners is an effort that Heidegger would applaud. However, the depth of involvement the God's Gardeners have in relation to Crake is still unclear at the end of *The Year of the Flood*.⁷

Unlike the "ready-to-hand," the "present-at-hand" does not allow us to experience the world authentically; we become tyrants of the world, conquering nature and creating

⁷ In a number of interviews, Atwood has expressed that the third novel of the MaddAddam series will explore the relationship between Zeb as the leader of the MaddAddam movement, which is imperative to consider in relation to how much the God Gardener's know about the JUVE disease (particularly Adam One) before it is released.

the artificial, instead of respecting the authentic or trying to be at one with nature. The utilization of techno-tools is not as much of a threat to our being as the fact that when we use such tools our mode of thinking/attitude toward being changes. “Present-at-hand” thinking causes us to adopt the essence of technology as our worldview and cancels out the essence of being, which Heidegger believes is the more authentic view. “Present-at-hand” technologies magnify our ability to control or lord over nature. For instance, geneographers and scientists create biotechnologies that drive the population away from authenticity. Members of the pleeblands and compounds are constantly relying on new technology to feed (Secret Burger), clothe (mo’hairs, NooSkins), cosmetically enhance (AnooYoo), fuel (Happicuppa), entertain (rakunks), cure (pigoons, BlyssPluss), and beautify (botanical transgenics and butterflies with pancake-sized wings at Watson-Crick). The God’s Gardeners pride themselves on using natural plant species that have not been contaminated by genetically modified plants: “the Gardener produce was the real thing. It stank of authenticity: the Gardeners might be fanatical and amusingly bizarre, but at least they were ethical” (141). The heavy use of pills and cosmetics in the compound and pleeblands also changes society’s way of thinking, for humans become beings that need to be altered and transformed by the “present-at-hand” rather than beings that co-exist and live authentically simply utilizing the “ready-at-hand.”

Nature then has instrumental value, and humankind expects nature to change in order to suit our needs because we challenge the authentic and create the artificial, causing nature to become objectified and distorted. All the good that lies in the natural becomes enframed and challenged by the human who believes a “present-at-hand” view of technology is the best position to have when operating in the world. The earth becomes

an area full of objects (including human beings) that are “standing-reserve” and simply things that we can use as a means-to-an-end because they are things awaiting quick and easy use. For Kant, this would be ethically problematic, as it allows humans to treat one another simply as mere means and not as an end.

In *Oryx and Crake* and *The Year of the Flood* the “ready-to-hand” has become the “present-at-hand,” causing living objects to become enframed and merely a part of the “standing-reserve” awaiting use and in the case of Atwood’s dystopian future, exploitation. New biotechnologies, geneographies, and nanotechnologies allow scientists and geneographers to become lords of creation and manipulators of the natural. While visiting Crake at Watson-Crick, Jimmy witnesses a world that values “present-at-hand” technology and is surrounded by scientists who view living organisms as “standing-reserve” waiting to be used. As previously discussed, Jimmy is most disturbed when Crake shows him ChickieNobs—a headless chicken consisting only of body parts (drumsticks or breasts) that have a small mouth in the center, so the scientists can pump nutrients into them. The ChickieNobs have no brain functions other than what is necessary for “digestion, assimilation, and growth” (203). Crake explains that the students who designed the ChickieNobs already have investors wanting to do business with them, which causes the ChickieNobs to become instrumental goods that simply have monetary value. Since ChickieNobs come from chickens, then this degrades the animals to objects that are merely a part of the “standing-reserve” waiting to be tweaked by scientists’ new biotechnological practices for profit. The students who designed the ChickieNobs take all of the interpretations of their new creation into account: “No need for added growth hormones...the high growth rate’s built in. You get chicken breasts in

two weeks – that’s a three week improvement on the most efficient low-light, high-density chicken farming operation so far devised. And the animal-welfare freaks won’t be able to say a word, because the thing feels no pain” (203). The ChickieNob is simply a chicken that has been reduced to a thing, since it is no longer sentient. Viewing chickens as the gateway to ChickieNobs illuminates Heidegger’s claim that individuals who live a lifestyle that values the “present-at-hand” become tyrants of the world that simply create and destroy as they please. Currently, we already modify chickens; they are often injected with hormones in order to produce larger breasts for human consumption. In Atwood’s dystopian future, the intensified value of science as a commercial venture has caused the world to slowly decompose because of humans not valuing and preserving the “ready-to-hand.” Their bio-engineering of humans and animals allows scientists to exercise authoritarian control over others. After Jimmy and Crake look at the ChickieNobs, Crake tells Jimmy that HelthWyzer has been creating diseases in order to turn a profit:

They put the hostile bioforms into their vitamin pills – their HelthWyzer over-the-counter premium brand, you know? They have a really elegant delivery system – they embed a virus inside a carrier bacterium, *E. coli* splice, doesn’t get digested, bursts in the pylorus, and bingo! Random insertion, of course, and they don’t have to keep on doing it – if they did they’d get caught, because even in the pleeblands they’ve got guys who could figure it out. But once you’ve got a hostile bioform started in the plebe population, the way people slosh around out there it more or less runs itself. Naturally they develop the antidotes at the same time as they’re customizing the bugs, but they hold those in reserve, they practice the economics of scarcity, so they’re guaranteed high profits. (211)

This type of bioterrorism illustrates how a person with a “present-at-hand” mentality cannot live authentically in the world, as his or her entire attitude toward the world changes. For the HelthWyzer scientists creating these disease-filled pills, human beings are viewed as dollars and cents, rather than autonomous beings. Therefore, the scientists who orchestrate these types of manipulative medicines have no respect for “being-in-the-world” because even humans become objectified. Individuals are seen as instrumental goods that can be used as a means-to-an-end in order to yield higher profits and maximize productivity, so the next batch of disease-filled pills can be released into the pleeblands.

Kant would argue that the scientists using human beings to increase profits is unethical because the scientists are not recognizing the pleeblanders as rational, autonomous creatures, nor could their money-making scheme be universalized. Even as a young man, Crake praises this type of bioterrorism from a businessman’s perspective, even though his father was murdered for recognizing how unethical HelthWyzer’s aims are: “The best diseases, from a business point of view...would be those that cause lingering illnesses. Ideally – that is, for maximum profit – the patient should either get well or die just before all of his or her money runs out. It’s a fine calculation” (211). Crake’s perspective is one that views other humans as “standing-reserve;” individuals that can be used as a means-to-an-end in order to benefit both his wallet and scientific research.

Obviously HelthWyzer’s evil pill-pushing ploy stuck with Crake, as he utilizes the same methods to advertise his BlyssPluss pill, so it will release the JUVE disease and

exterminate the majority of the human population, paving the way for the Crakers roam freely in what is left of the world. According to Crake, the BlyssPluss pill:

- a) would protect the user against all known sexually transmitted diseases, fatal, inconvenient, or merely unsightly
- b) would provide an unlimited supply of libido and sexual prowess, coupled with a generalized sense of energy and wellbeing, thus reducing the frustration and blocked testosterone that led to jealousy and violence, and eliminating feelings of low self-worth;
- c) would prolong youth. (294)

Crake tells Jimmy it will also act as a birth control, however, that will not be advertised, as the sterilization of the population is necessary due to the increasing lack of resources on Earth. Atwood never explains if the BlyssPluss pill initially did perform as Crake promised; however, before Crake murders Oryx, she tells Jimmy that the JUVE disease was within the BlyssPluss pills. Crake's advertising and distribution of the pills works; Atwood even gives us insight to how widespread and popular the pills are within the pleeblands and sex clubs in *The Year of the Flood*. While working at Scales and Tails, Ren is in solitary confinement when the BlyssPluss pill becomes popular:

We'd feed them drinks and pills, with a shovel if we could. There was something new they'd started using just after I went into the Sticky Zone—BlyssPluss it was called. Hassle-free sex, total satisfaction, blow you right out of your skin, plus 100 percent protection—that was the word on it. Scales girls weren't allowed to do drugs on the job—we weren't paid to enjoy ourselves, said Mordis—but this

was different, because if you took it you didn't need a Biofilm Bodyglove, and a lot of customers would pay extra that way. Scales was testing the BlyssPluss for the ReJoov Corp, so they weren't handing it out like candy—it was mostly for the top customers—but I could hardly wait to try it. (130)

Crake capitalizes on the “ready-to-hand” mentality of the general population. Finding funding for his Paradise project, which was said to be experimenting with both immortality and making modifications to improve the conditions and qualities of human beings, is no trouble for Crake. All he had to do was take some investors to Scales and Tails, get them liquored up and hire some high-end prostitutes, and then ask, “What would you pay for the design of a perfect human being?” and they would provide him with the funding he needed to continue his research (*O&C* 305). Although Crake possess a mentality that causes him to live inauthentically, he recognizes that others are living the same way as well. Crake's motivation for spreading the JUVE disease and creating the Crakers is his hatred of how the world operates paired with his desire to correct and perfect it.

Interestingly, the Crakers are more “ready-to-hand” than humans, and are a more ecologically friendly species. Crake shows Jimmy the Crakers and claims that they are “the art of the possible” (305). The Crakers are an interesting blend of human and animal. Their ability to adapt to their environment is enhanced, as they are vegans who can survive on vegetation and by eating their own feces. They are also capable of existing on the planet after temperatures have skyrocketed due to global warming since Crake designed them to have sunscreen built into their skin, and they are both immune to disease and not likely to catch any from insects because they also have bug-repelling skin

as well. The Crakers can heal one another by means of purring; however, it is unlikely that the Crakers will suffer harm from predators because they function as a pack whose urine has been programmed to ward off predators. In functioning as a pack, Crake tried to breed out a hierarchical formation (he does away with racial boundaries), but it is hinted that this may be inherent in humans and animals, as the Crakers' pack possesses a hierarchical structure, especially after interacting with Jimmy. There has not (yet) been any battle for leadership, and even so, it would be short-lived for the older generation of Crakers, as they are programmed to die at the age of thirty (which could also change as the Crakers evolve). Furthermore, there is no traditional lineage within their unit because the Crakers have animalistic sex practices and have "no family trees, no marriages, no divorces," which according to Crake allows for fewer hardships and for the unit to become more functional (305). The Crakers are not supposed to feel lust or love, which Crake ties to artistic expression.

However, the Crakers are not all that Crake had planned. Ecologically, the Crakers are more environmentally friendly than humans; however, they do create a hierarchical society and with the help of Snowman begin to create a religion. At one point, the Crakers create an art piece, a religious shrine to Snowman; Crake tried to rid the Crakers of artistic expressions and warned Jimmy to "*Watch out for art...As soon as they start doing art we are in trouble*. Symbolic thinking of any kind would signal downfall, in Crake's view" (361) Jimmy recognizes art as necessary to human flourishing, "When any civilization is dust and ashes...art is all that's left over. Images, words, music. Imaginative structures. Meaning—human meaning, that is—is defined by them" (167). Crake feels that art is an unnecessary tool used for reproduction, "So that's

what art is, for the artist...A stab at getting laid” (168). Crake has biologically programmed the Crakers to mate without any need for art or ritualistic practice in hopes of removing the misery human beings felt from love—“Under the old dispensation, sexual competition had been relentless and cruel: for every pair of happy lovers there was a dejected onlooker, the one excluded. Love was its own transparent bubble-dome: you could see the two inside it, but you couldn’t get in there yourself” (165). Arguably, Crake’s motives for creating the Crakers are unlike the motives behind the creation of creatures like the pigoons. The earlier geneographers in the novel were gene-splicing and creating for anthropocentric reasons; however, there are two possible readings of Crake’s aims.

The first is that Crake is indeed a Hitler-esque Mad Scientist obsessed with eugenics whose aim is to succeed by creating a species that he believes is genetically superior to human beings. Atwood asserts that her novel “is not mad scientist stuff. It’s not Mary Shelley’s *Frankenstein*” (Akbar). However, it seems this is precisely what Crake is—a scientist who is not responsible for the creature(s) he created. By leaving the Crakers in the hands of Jimmy, Crake is not responsible for his creation and like Dr. Frankenstein he allows his creation to destroy the world as he knows it. Another possible reading allows for us to think of Crake as more of a hero figure, where we interpret Crake as an environmentally friendly scientist. In this interpretation, Crake has biocentric aims, where intrinsic value is given to all members of the biotic community. For a biocentric deep ecologist, human beings become equivalent to the non-human species; if a species does not promote ecological wellbeing, then deep ecology could be used to argue for a decrease in the human population because human beings are decreasing non-human

species' ability to flourish. Unlike Dr. Frankenstein, Crake considers how and why he should create the Crakers. Dr. Frankenstein's character is closer to that of the scientists who experiment with xenotransplantation in the compounds to create new species, whereas Crake carefully calculates and crafts the Crakers to be environmentally friendly.

CONCLUSION

CRAKE AS CREATOR

Atwood explores the tension between utopia and dystopia in relation to human agency through her character Crake. Crake's actions are central to the plot of both *Oryx and Crake* and *The Year of the Flood*, causing him to be a figure worth evaluating in relation to the philosophical theories discussed. Crake's Paradise Project begins with his desire to select and remove negative traits that he believes could be responsible for the dystopian state the world is in. He modifies the Crakers and removes what he considers negative features that cause destruction like "harmful symbolisms such as kingdoms, icons, gods, or money" (*O&C* 359). These symbolisms relate to Rifkin's concern about the elimination of characteristics natural to human being that cause us to be empathetic. Rifkin is concerned that if scientists breed out too many characteristics the core of human nature will change. Crake tries to eliminate pain from the Crakers' lives as much as possible by attempting to do away with some of the strongest human emotions like lust and love, which he believes are responsible for all of the negative actions that occur in the world such as war, rape, and racism. He programs the Crakers to be passive and not kill other species and also gives them the ability to heal one another, so if they are caused pain it is short-lived. Crake essentially is hoping to create a utopian world for the Crakers by first having Oryx educate them in his laboratory.

Kac would believe implementation of education for the Crakers is a positive and responsible act for a bioartist. He would argue that Crake is committed and acting responsibly in relation to his creation; however, one of the concerns that Kac has is the relationship between bioart and the public. Crake has not revealed the Crakers to the public as an art form, nor does he intend to since he exterminates the human public.

In contrast, Amanda, a former member of the God's Gardeners who grows up to be a bioartist, creates bioart that is performance art with the aim of making the public aware of environmental issues. She does a series called *The Living Word*, where words had been "written in all different materials, including fish guts and toxic-spill-killed birds and toilets from building demolition sites filled with used cooking oil and set on fire" (*YOTF* 57). One of her clever exercises is the word *kaputt*, which she says is meant to convey a message to the wealthier community about the state of the world. Kac would view Amanda's art as a clever illustration of simultaneous destruction and creation and applaud the publicity of it; Kac would reject viewing Crake as a responsible transgenic artist because of the lack of interaction between the Crakers and the public. From a Heideggerian perspective, the Crakers are literally 'enframed', waiting to be revealed. The final reveal of the Crakers literally becomes the moment when "the essence of all history is determined" (Heidegger 329). Crake asks Jimmy to take care of the Crakers once he is gone, which in turn changes history, especially the Crakers' conception of history because Jimmy creates a religion for the Crakers in which they worship Crake and Oryx as creators. Here Kac would critique Crake for leaving his creations in the hands of another, especially another individual who promotes the very ideologies—religion, art, the importance of value and complexity of language—Crake wanted to do away with.

Although Kac might not view Crake as a bioartist, considering the role of Crake as creator is necessary when considering the unethical nature of his actions. The fact that Crake is eliminating the human population in order to allow the Crakers to live immediately makes it an unethical choice from a traditional anthropocentric utilitarian perspective because the BlyssPluss pill, which is essentially mass genocide, creates great pain and suffering for the entire human population. Crake's actions also reject a Kantian framework, as the human population (including Crake) becomes instrumental. The reason Crake does not view humans as intrinsic goods, but merely as instrumental goods is never explained; however, one can infer that Atwood's fictional technoscientific community has long viewed humans and animals as expendable. For instance, Crake's scientist father was murdered when he discovered that HelthWyzer had unethical pill-producing aims. Despite his father's death, Crake praises and respects biocorporations that produce medicines that harm individuals for profit and claims] that HelthWyzer's system is "brilliant"⁸ because of its ability to yield a high profit. Crake then performs a similar act with the BlyssPluss pill, which illustrates his reluctance to view any living creature as a an end in itself (*O&C* 211). It seems that for Crake, a new morality exists; all that remains is the hope for biological evolution and experimentation to carry out his legacy with the unveiling of the Crakers. Crake adopts a consequentialist line of thinking by promoting the maximization of overall good for the ecosystem, but he rejects the traditional utilitarian belief that humans are central to moral decision-making. Let us consider then, how a biocentric holist might think—he would want to create the greatest amount of good from a perspective of the whole, where the most good comes from the biotic community's ability to flourish, a quality that human beings have trumped by

⁸ Atwood, *Oryx and Crake*, 211.

adopting an anthropocentric view and using the biotic community as a means-to-an-end in their scientific experiments.

As reluctant as I am to claim that Crake does the greater good by wiping out the human race, the eco-friendly qualities of the Crakers allow for such a reading. Again, the qualities exemplifying our “humanness” that Crake tries to breed out of the Crakers are some of the qualities that lead humans to perform the most evil acts. Crake’s act of ‘playing God’ or becoming Nature with a capital N attempts to alleviate classism, racism, and other hierarchical structures that limit a human’s ability to flourish. However, “it is impossible to impose an ecological ethic through unethical means” (J. Glover 59). In order to establish an ethic, one must determine a moral course of action; if one acts unethically to establish an ethic, then attempting to establish a normative ecological ethic is undermined by the unethical choices that led to its establishment. Even if we consider Crake an ecological hero, his method for implementing change is unethical. In order to make way for the Crakers, he eliminates the majority of the human population. Humans are instrumental to Crake; from a Kantian perspective his action is unethical as he does not value them as autonomous beings and uses humankind as a means-to-an-end to pave the way for his creation. Crake’s act of bioterrorism could not pass through Kant’s Categorical Imperative, nor would it be the optimal choice when performing Mill’s cost-benefit analysis. Therefore, even though Crake might initially have good intentions with his Paradise Project, his method of implementation is unethical, causing him to assume the role of environmentally-friendly scientist, but not the role of a hero figure according to deontological and utilitarian thinking.

If we are living in a postmodern society, perhaps it is unfair to label Crake either Mad Scientist or Eco-friendly. Rather, we should recognize the complexity of Crake's character because it illustrates the complexity of developing a moral character and the problematic nature of developing a universal moral theory. Examining the attitudes and actions of fictional characters illuminates the difficulty human beings have with decision-making. Often we tell ourselves we have an either/or choice—either Crake is a Mad Scientist or he is an Eco-Friendly scientist—yet, as postmodernist theorists, recognizing that we can be both good and bad shows us how ethical concerns are central to both the fictional choices characters make and the real ones we have to make ourselves. As members of a postmodern society, we should consider the limitations of either/or frameworks such as Kantian deontology and Millian utilitarianism; they are narrowly focused ideologies that are difficult apply universally. In a society like ours, we should reflect on the strengths and weaknesses of such ethical theories in order to develop our own moral understanding of the world around us.

If speculative fiction is trying to inform us of the possible future to come, then the problems contained in Atwood's novels—overpopulation, global warming, disease, exploitation of humans and animals for monetary gain—are problems that might occur in the near future. Is *Oryx and Crake* in fact a cautionary tale that is trying to inform us of the negative course humankind is taking, or is it reflective of our current dystopian state? It is. In a world where scientists make discoveries and artists illuminate the implications of such discoveries by creating narratives about them, we as members of society should try to understand why we adopt the narratives we do. Atwood is offering a post-modern dystopian future that illustrates the complexity of making ethical choices in a world

driven by corporate greed. Kant, Mill, Heidegger, and Rifkin are all philosophers attempting to give the public a moral framework for understanding and interpreting the ethical choices we make and how they reflect our ontological condition. By including a bioartist, Kac, and author, Atwood, in this discussion, the link between scientific exploration and art in our post-modern world shows how and why considering the merits and limitations of ethical systems is necessary. In analyzing Atwood's fictional future using a philosophical lens, one sees how her MaddAddam series was meant to inform and not simply amuse her readers.

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