

Genetic Coming of Age: Genomics, Enhancement, and Identity in Film

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I

MIDWAY THROUGH THE 1996 FILM version of *The Island of Dr. Moreau* the muumuu-clad Dr. Moreau stumbles upon a renegade band of genetically engineered Beast-People beating on the grand piano in his study. After Moreau delivers a short lecture on Schoenberg and Gershwin, the group's leader, Hyena-Swine, kneels next to his "father" and asks him, "What am I?" Moreau's answer, "You are my children," is unsatisfactory. Hyena-Swine is confused about this answer, not just because he does not look like his father, but also because he is unable to live up to Moreau's expectations for his genetically modified children. Moreau believes that because he engineered their genomes in a specific way, the Beast-People should be able to conform to his "laws" of behavior. In fact, Hyena-Swine's inability to live up to Moreau's expectations brings forth this confrontation. When a fellow Beast-Person is killed for failing to live up to these expectations, Hyena-Swine questions *why* he, or any of the Beast-People, must live up to these expectations. Hyena-Swine struggles to find his authentic self, but the fact that another person has constructed his genome adds to his confusion during this search.

Hyena-Swine's sense of self is confused not only by the expectations imposed by his genomic construction, but also by the inherent inequality set up between Moreau and his "children." Moreau assumes that his position as creator places him at a higher social status, while the Beast-People are disadvantaged by their position as "creations." Hyena-Swine questions this inequality: "We call you Father, yet we are not like you." If they are all "men," then why is it that Moreau chooses the laws and controls the distribution of "pain"? Is he below Moreau as his creation, or is he above Moreau because the scientist endowed him with a genome that Moreau himself selected as superior? Is he even a part of the same species as Moreau? Ultimately, Hyena-Swine determines that while Moreau is a man, Hyena-Swine is a god. Therefore, he kills Moreau to show that he, not Moreau, should determine what is the law.

New Line Cinema chose the release date of their 1996 film adaptation of H. G. Wells's novel to correspond with the 100th anniversary of the novel's publication. Wells's novel about a scientist who attempts to improve humanity through scientific means provided filmmakers the perfect narrative for addressing current issues related to human genomics and the genetic engineering of humans. Like his literary model, the 1996 *Moreau* has the eugenic goal of scientifically removing the "mark of the beast" from humanity in order to create a "new and improved" human species.¹ Rather than using vivisection, the 1996 *Moreau* manipulates DNA in order to create a new humanity, a genetically pure human race without the "destructive elements" embedded in the genomics of current humans. The biotechnological revolution over the last thirty years has raised many questions among bioethicists about the consequences of the liberal use of human gene-altering technologies. The film touches upon many of these questions: What represents a superior genome and who decides? What is the cost of losing human genetic diversity? Does genomic modification significantly impact behavioral traits? The confrontational piano scene in *The Island of Dr. Moreau*, however, captures perfectly an ethical issue that pertains to our most fundamental beliefs about human nature. This issue is the dominant theme in recent films about human genome-altering technologies: what impact does the manipulation of one's genome by other humans have on the nature of self-identity?

Like any contemporary person, Hyena-Swine is searching for his identity. Who am I? What is my place in the world? What should I do with my life? Unlike Hyena-Swine, however, most humans are the product of a random fusion of gametes. We know that our genomes are a truly arbitrary mix of genes from our parents. While this knowledge comes into play as we struggle to determine our sense of self, an understanding of our genetic origins usually plays less of a role than other factors such as familial relationships, social status, or education level. For those who are genetically engineered, like Hyena-Swine, the search for identity takes on a whole new meaning as they come to grips with the fact that other humans *chose* to create their specific genome without their consent. Engineered people must contend with the imposition of their creators' expectations. In addition, as with Hyena-Swine, those engineered before birth are put in the position of being "creations" whose equality with their "creators" is called into question. Also like Hyena-Swine, an engineered person may decide that an inequality does exist, but that the engineered person's superior genome demands that he or she inhabits a privileged status in society. In fact, engineered people must contend with the possibility that their genomic changes may render them as separate from the human species.

In addition to *The Island of Dr. Moreau*, several recent fictional films, including *Spider-Man* (2002) and *Spider-Man 2* (2004), *Hulk* (2003), *The Nutty Professor* (1996) and *Nutty Professor II* (2000), *Blade* (1998) and *Blade II* (2002), *Soldier* (1998), *Gattaca* (1997), and *Judge Dredd* (1995), play out the logical extension of our increased ability to manipulate the human genome.² Molecular biologist Lee Silver sees the confluence of genomics, genetic engineering, and reproductive biology as leading to a new category of technologies that he refers to as “reprogenetics,” including preimplantation genetic diagnosis (PGD) and germline gene therapy.³ PGD, in particular, has become a common technique employed in conjunction with the widespread practice of in vitro fertilization. Reproductive technicians use PGD to create embryos from parental gametes, which they screen for known genetic defects, such as cystic fibrosis and sickle-cell anemia, before implantation in the womb. Critics of genomic manipulation fear that this same technology will someday be used not just to cure serious illnesses, but to enhance children by choosing genomes for embryos based on non-health-related genetic traits.

These films articulate an overriding concern as to what impact widespread use of this technology will have on an engineered individual's sense of self-identity and on our identity as a species. These films speak to Jürgen Habermas's writings on the impact of genetic modifications on the human condition, such as the expectations imposed by parental choices, the relationship to those who are not engineered, and human objectification.⁴ As Nicolas Pethes contends, fictional texts are able to work through ethical issues surrounding emerging technologies because fiction holds “a place *between* the theoretical knowledge of the life sciences and its realization as an actual technique.”⁵

Our ability to determine our own authenticity as autonomous beings is at stake when we allow for the wholesale manipulation of human embryos. “Will we still be able to come to a self-understanding as persons who are the undivided authors of their own lives, and approach others, without exceptions, as persons of equal birth?” asks Habermas (72). The undermining of our self-understanding as individuals, in turn, has serious consequences for our self-understanding as a species. One person designing another person's genome creates a divergence that transforms our status as a single species. As Habermas states, “By depriving the fusion of two sets of chromosomes its contingency, the intergenerational relations lose the naturalness which so far has been a part of the taken-for-granted background of our self-understanding as a species” (72). In the films discussed in this essay, we will show how, as Habermas describes, genetically modified characters struggle with their identity.

II

Identity formation issues and the search for authenticity form the basis of films featuring genetically modified humans. Rather than being portrayed as soulless monsters, these films depict genetically modified humans as unfortunate characters whose genetic alterations have confused their self-identity formation. According to Habermas the ethical issues associated with genetic engineering “are wedded to questions of identity. . . . how should we understand ourselves, who we are and want to be” (2–3). Genetic alterations hinder an engineered person’s search for identity because the engineered person is no longer the sole author of his or her life. For Habermas, “informed consent” is one of the central issues surrounding genetic enhancement. To differentiate between correcting genetic defects and enhancement, he adopts the concept of “anticipated consent,” by which he means that when intervening with human embryos we must be able to assume that when they are able to decide for themselves, they would retroactively consent to what has been done to them. According to Habermas, anticipated consent can never be assumed for genetic enhancement, and without consenting to genomic enhancements one becomes an object rather than a potential person. In genomic modification films, parental figures impose genomic changes upon individuals without their consent. Modifications of characters are not undertaken for medical reasons and can hardly be said to meet Habermas’s criterion of “anticipated consent.” Having no choice in their genetic alterations provides the central identity crises for several characters.

In *Blade*, Blade’s DNA is altered while in his mother’s womb after she is bitten by a vampire. The fact that another individual imposed these genomic changes upon him is a major motivating factor for his character. Blade’s sidekick, Whistler, explains to hematologist Karen Jenson that while Blade survived the vampire attack “he’d undergone certain genetic changes” as a fetus. Many of these changes are advantageous, and the vampires consider Blade’s genome to be superior because “he can stand garlic, silver, even sunlight, and he’s got [the vampires’] strength.” While the fetal genetic alterations gave him these assets, they also burdened him with a characteristic that he finds undesirable. As Whistler reveals, Blade unfortunately “also inherited their thirst.” While vampires consider their desire for human blood a positive feature that elevates them above humans as a species, Blade considers this an unwanted characteristic a “genetic defect.”

Unlike the villain Deacon Frost, who chose to be turned into a vampire as an adult, Blade did not have a choice about his genomic modification. In fact, Blade’s mission to seek out and destroy vampires

stems from his anger that a vampire changed his genetic foundation before he was born. At several points during the film, Blade rejects the idea that he should be delighted with these supposedly beneficial characteristics. For example, when Frost reminds him that he “has all of our strengths and none of our weaknesses,” Blade’s response is, “Maybe I don’t see it that way.” In addition, Blade’s genomic changes confuse his sense of authenticity. Frost tells Blade that he “can’t keep denying what you are,” but Blade does not know who or what he is. Is Blade a human with a unique genetic makeup? Is he a vampire with human tendencies built into his DNA? Is the “thirst” part of the authentic Blade or is it a trait others imposed on him that is separate from his true self? If, like Frost, he had had a choice in his genomic transformation, he would be able to take that choice into account when defining his sense of identity. As it stands, the fact that another individual imposed these genetic changes on him prevents him from coming to a true self-understanding in the film.

III

Habermas believes that genetic modification becomes disruptive “as soon as it commits that person concerned to a specific life-project or, in any case, puts specific restrictions on his freedom to choose a life of his own” (61). This is certainly true in Blade’s case. For Habermas, a genetically engineered person’s inability to come to a self-understanding arises primarily from the expectations that parents and society have for their enhanced genome. This means that by choosing a child’s genome, the parents are not only projecting the life they want for that child, but also encoding these expectations within the child’s biological foundation. According to Habermas, “The parent’s choice of a genetic program for their child is associated with intentions which later take the form of expectations addressed to the child, without, however, providing the addressee with an opportunity to take a revisionist stand” (51). To deprive future generations of their capacities for self-actualization and autonomy is, in Habermas’s view, the domination of the past over the future. Bill McKibben, also, believes that genetic enhancement threatens an individual’s choice. In *Enough: Staying Human in an Engineered Age*, he argues that human freedom depends crucially on the knowledge that our genomic foundation is the result of random inheritance and individual agency and not the result of another person’s preferences.⁶

Several scholars and activists, particularly libertarians, reject Habermas’s and McKibben’s contentions that genetic modification hinders identity formation. Ronald Bailey, the science correspondent for the libertarian

Reason Magazine, disagrees with the notion that genetic enhancement impacts on engineered people's freedom to choose their own life paths. He argues that nobody has a choice in their genetic makeup, noting, "None of us gave our consent to be born with the specific complement of genes that we bear."⁷ He also claims that genetic enhancements are no different from socially endowed advantages, such as private school education. Moreover, he claims that parents already place expectations on children that have nothing to do with genomic makeup. Habermas, McKibben, and others respond to these objections by pointing out that there is a substantial difference between inheriting a random complement of genes and knowing that another person created your genome with specific outcomes in mind. Most importantly, genetically unmodified individuals can contest their parents' expectations given them through their socialization. Genomic alteration permanently encodes parental or societal expectations beyond the reach of critical reassessment and entails a prejudgment of specific life projects. McKibben makes this point clear in his response to Bailey's comments:

It is true, as Bailey suggests, that we already try to influence our kids. We pick our mates, and we raise our kids by our particular values. But of course that degree of genetic control is far from perfect, and in our society growing up means that kids can eventually react against that upbringing—that is the story of coming to age. By contrast, no one can rebel against the proteins their cells produce. That's why, in the words of Princeton geneticist Lee Silver, this technology offers parents "complete control" over their child's destiny. In the deepest sense, this technology is about power.⁸

Habermas, also, believes that parental and societal expectations, which are external, differ from genetically imposed expectations, which are internal. The unmodified can have the illusion of a sole authorship of life, while engineered people, if they are conscious that they are modified, can never have that illusion. While external contingencies might *constrain* the scope of an individual's actions, the programming of a person's genome constitutes a "co-determinant" of his or her actions. What engineered individuals should experience as being their inviolable selves is instead the result of an instrumentalization of their nature. Modified people will confront in their being what Habermas calls "the programmers' sedimented intentions" (51).

The 2002 sequel to *Blade* features an unmodified character who attains self-understanding in a way that the genomically altered Blade cannot. As part of the plot, Blade must work with a specialized vampire unit that includes the overlord's daughter Nyssa. In one scene, Nyssa stumbles upon Blade administering shots that suppress his "thirst." Nyssa does not understand Blade's attempts to deny what is clearly a part

of his true self. She wants to know why he doesn't accept the fact that his genes makes him one of them, asking, "Why do you hate us so much?" Blade's answer—"It's fate. It's in my blood"—reveals that his unwanted genomic changes fuel his hatred of vampires. That answer doesn't satisfy Nyssa, who responds, "Well, it's in mine too. I'm a pure blood. I was born a vampire." Nyssa has come to an understanding of who she is and tells Blade, "The only difference between us is that I made peace with what I am a long time ago." She is wrong, however, in concluding that her acknowledgment of her authentic nature is the only difference between her and Blade. The major difference between them is that her vampiric condition is the result of a natural birth, while his status is due to genomic tampering. This is why Blade is unable to come to terms with his sense of identity and she has the capacity to "be herself." Blade realizes it was another individual, not himself, who sealed his "fate" in his "blood."

Perhaps more so than any other film, the 1997 science fiction drama *Gattaca* portrays a world in which genomic alterations take the form of unyielding expectations. In fact, *Gattaca's* society has so much confidence in the predictive power of genomics that their culture revolves around these expectations. In *Gattaca's* world, no one is free to pursue a life of his or her own choosing. All people, modified and unmodified, suffer under the burden of expectations based on their genomes.⁹ Vincent, the primary character, should have the opportunity to determine his own life's path. However, society expects that the only suitable career for an unmodified genome is janitorial. As a "faith birth," Vincent's genome is randomly determined and consists of genetic sequences that geneticists would have selected to leave out of a modified person. These sequences indicate a probability that Vincent will develop certain medical problems over the course of his life. However, in *Gattaca's* society genetic probability has become certainty, and people consider Vincent sick from the day he is born.

In a voiceover Vincent explains that societal expectations of his genome determined his initial sense of identity, "From an early age I came to think of myself as others thought of me, chronically ill." As he gets older, however, Vincent decides to challenge these expectations. Vincent's desire to become an astronaut leads to this exchange with his parents:

MARIE. Be realistic, with a heart condition like yours.

VINCENT. Mom, there's a chance there's nothing even wrong with my heart.

ANTONIO. One chance in a hundred.

VINCENT. Well, I'll take it, alright?

Instead of considering the possibility that he will not develop a heart problem, his parents assume that he is already sick. In this environment, Vincent will be unable to come to a self-understanding that is separate from his genes. Rather than being free to find his own identity, his parents believe society's interpretation of his genome will determine his life's path.

The only way for Vincent to determine his own identity is to purchase another person's "superior" genetic identity. He chooses that of another character, Jerome Eugene Morrow, and publicly assumes the name Jerome. Society sets a bar that the unmodified cannot rise above, even if they have the ability. The only way for an unmodified person to raise that bar is to pass off a modified person's DNA as his or her own. As Vincent indicates, in *Gattaca's* society "genetic identity becomes a valued commodity." Although he is the same person before and after he "borrows" Eugene's DNA, Vincent is only able to realize his goal because people believe that Eugene's DNA is his own. Before we learn that Vincent is not Eugene he explains in a voiceover that his rise through the Gattaca Corporation is not surprising because society expected such a life path for Eugene. Nobody in the company is shocked that Jerome lands the "highly prestigious assignment" of a flight to Titan because he has "a genetic quotient second to none" and is "blessed with all the gifts required for such an undertaking." Vincent finishes his account of Eugene's qualifications to be an astronaut by saying, "There is truly nothing remarkable about the progress of Jerome Morrow, except that I am not Jerome Morrow." Vincent is able to produce what society expects of someone with Eugene's genomics.

Ultimately, there exists a disconnect between Vincent's self-identity and his public identity. Eugene reminds Vincent of this disconnect after Vincent learns that he, the unmodified Vincent, is a murder suspect because someone found his eyelash near a murder scene. Worried that the police will discover his unmodified identity he tells Eugene, "They'll recognize me." Given that Vincent's own brother, a police officer, does not recognize him, Eugene's reply, "I don't recognize you," rings true. Eugene understands that society could not believe that such a successful person has an unaltered genome, saying, "When they look at you, they don't see you any more. They see me." Society does not see Vincent anymore because he has far exceeded the expectations placed upon him. He has actually lived up to the enormous expectations imposed on the genetically enhanced Eugene. Most importantly, Vincent was able to come to an unconstrained sense of self-identity.

While Vincent is the only character to come to true self-understanding, he is not the only character whose genetic makeup limits his life path. Although Irene is a modified individual, she still has some genetic

defects that give her an “unacceptable likelihood of heart failure.” As with Vincent, *Gattaca*’s society views this possibility not as a likelihood, but as a certainty. Society’s expectation that she will develop heart problems has clearly limited Irene’s freedom to choose her own life history and relegated her to second-class status among the modified. Vincent understands the harm that comes from developing expectations for people based solely on their genomes. He tells Irene, “They’ve got you looking so hard for any flaw that after a while that’s all you see.” The film, therefore, raises an issue about genome modification that bioethicists and philosophers have yet to address: that individuals with unaltered genomes also lack the freedom to choose their own life paths because of lower societal and parental expectations of their genetic capabilities.

While the film explores the impact of genetic engineering on the unmodified, we also see in the character of Eugene Morrow the ideal embodiment of Habermas’s and McKibben’s concerns about enhanced people’s ability to freely develop self-identities. Failure is not an option for genetically enhanced people, because society and parents assume that success has been biologically engineered. As Vincent explains in one of the film’s many voiceovers, Eugene’s burden was different from his: “He suffered from the burden of perfection.” Eugene assumed, like everyone else, that based on his superior genome he was guaranteed to become a swimming champion. Eugene’s failure to live up to his “perfect” genome results in an unsuccessful suicide attempt. Eugene remarks on this irony to Vincent, saying that despite his perfect genetics he “couldn’t even get that right.”

The scene in which Eugene explains his Olympic failure is central to the film in explicating the “burden of perfection” placed upon the genomically enhanced. It opens with Vincent practicing Eugene’s signature, saying, “Jerome Morrow. That’s a nice name.” Eugene, obviously annoyed with the idea of Vincent using his name, replies, “That’s my name.” Vincent responds, “Well, I can’t be you without it.” Eugene angrily retorts, “What makes you think you can be me at all?” Eugene is wondering how the genetically unmodified Vincent could live up to his genomic identity when even Eugene could not and he had the genetic gifts to do it. He shows Vincent his silver medal from the Olympics.

EUGENE. Look at this.

VINCENT. I’m impressed. Is it real?

EUGENE. Are you color-blind as well, Vincent? It’s silver.

VINCENT. So?

EUGENE. Jerome Morrow was never meant to be one step down on the podium. With all I had going for me, I was still second best. Me. So how do you expect to pull this off?

Eugene is essentially pointing out the no-win situation he faces as a genetically enhanced individual. If he wins the gold medal it is because of his genome and expected. Coming in second, then, makes him a complete failure as a person because his genomic makeup meant that he was "never meant to be one step down." Near the end of the film Vincent telephones Eugene and tells him, "I need you to be yourself for the day." Eugene's reply sums up his struggle for identity: "I was never very good at that, remember."

Eugene is not the only genetically enhanced character whose sense of identity is constrained by expectations for an enhanced genome. Vincent's genetically engineered brother, Anton, suffers the same identity crises as Eugene after he fails to live up to his parents' expectations for his genetic attributes. As Vincent points out, Anton has the additional burden of "being a son worthy of my father's name." Like his parents, Anton assumes that his genome by default makes him superior to the unmodified Vincent. Anton's confidence in his inherent superiority is shattered when Vincent not only defeats him in a swimming contest but also has to save Anton from drowning. For Vincent this significant event transforms his identity: "It was the one moment in our lives that my brother was not as strong as he believed and I was not as weak." Anton, however, never comes to grips with the fact that he might be inferior to his unmodified brother. Anton cannot believe that Vincent has infiltrated the Gattaca Corporation because surely Vincent "would not have the mental faculty or physical stamina" to keep up the deception. After learning that Vincent is indeed working for the prestigious company he challenges Vincent to another swimming contest and again Vincent must rescue him.

Gattaca does not deny the importance of genes, nor does it fault gene-altering technology itself; rather the film warns that identity issues will arise if we believe that humans are no more than their genomes.¹⁰ If a parent believes that selecting a child's genome endows that child with certain abilities, then the child will grow up believing this as well. Ironically, the charge of falling prey to a hard-line genetic determinism is a criticism often leveled at McKibben and others who feel that genetic engineering hinders a person's freedom to choose a life path. Bailey, for example, argues, "McKibben's deepest misunderstanding arises from the fact that he has accepted a notion of hard genetic determinism that is simply not warranted in biology."¹¹ It is Bailey, however, who misunderstands McKibben's point. As *Gattaca* shows, identity problems do not arise because genetic determinism is true, but because the person responsible for the decision to engineer a child *believes* that genetic determinism is true.

For Habermas, it is an altered child's knowledge of parental intentions for genomic changes that hinders the development of personal

identity. Habermas claims that whether or not genomic changes lead to enhancements in ability, the “knowledge of this circumstance may intervene in the self-relation of the person, the relation to her bodily or mental existence” (53). Why would parents engineer a child if they did not believe these changes to have a significant impact? Habermas feels that genomically altering a child “puts specific restrictions on his freedom to choose a life of his own” (61). For example, if one engineers a child to enhance his or her “musicality,” a trait some believe has a significant genetic component, one would expect this child to become a musician or at least have musical talent.¹² There is a scene in *Gattaca* that clearly illustrates this point. After a piano concert Vincent catches the pianist’s glove and realizes that it has six fingers. Later in the film a poster reveals that the pianist has been genetically designed to possess twelve fingers. This undoubtedly puts some restrictions on this person’s freedom to choose a life path of his own. With twelve fingers, what else is this guy going to do with his life but play the piano?

Ultimately, the only character in *Gattaca* who can claim sole authorship of his life, who is literally the only “free man” in the film, is the genetically unmodified Vincent Freeman. While Vincent must deceive the public, this is only in the service of remaining true to his authentic self. When Irene finds out that Vincent is a “borrowed ladder” she tells him, “I don’t even know who you are.” She may not feel she knows who he is, but *he* knows who he is. In fact, Vincent is the only character comfortable with his self-identity. He replies, “I’m the same person I was yesterday.”¹³ Habermas would argue that Vincent is able to arrive at an unconstrained self-identity because his birth was natural. Unlike the modified, whose expectations are engineered into their DNA, he is able to challenge societal and parental expectations. Mary Rorty summarizes why genetically altered individuals’ identities are tied to their genomes in a way that the unmodified’s identities are not: “A person who becomes aware of his programmed nature will feel less free and less authentic. Instead of being able to distinguish between what I am given and what I make of it, even what I make of it is to some extent given.”¹⁴ While Eugene must contend with the knowledge that his genome was “given,” the unmodified Vincent is able to be authentic because his birth was natural.

IV

Genetic engineering does more than biologically impose societal or parental expectations on an altered individual. Films featuring human genetic modification illuminate the objectification of the enhanced person. Habermas argues that as a genetically engineered individual you

struggle with the discovery of self and the objectification of self—you are a designed product. The understanding that a programmed individual has been tailored to someone else's designs, is a creation in a sense, will then affect that person's subjective self-perception. In addition to having to consider oneself a product, genetic enhancement may impact self-identity by creating an unequal relationship between the engineered person and the designer. For McKibben this power relationship is unprecedented: "Never before has one individual tried to exercise such power over another human being."¹⁵ This external power has an enormous impact on the modified person's sense of identity.

In *Hulk*, for example, scientist David Banner treats his son, Bruce Banner, as a laboratory experiment with commercializing potential, believing his experiments have given Bruce a strength that, "now unleashed, I can finally harvest." In the extended opening credits, various visuals, including David Banner's lab notebook, illustrate that his goal is to create superhuman soldiers by recombining the human genome with specialized genes from various nonhuman organisms. After he injects himself with an experimental serum he finds "hints of genetic modification" but is unable to modify his genome. When he witnesses his baby turning green, he realizes that there has been "genetic transmission" and wonders, "What has been passed on?" Like Blade's, Bruce Banner's identity crisis stems from the knowledge that another person modified his genome without his consent. Unlike Blade, his genome has been passed from parent to child, as with normal offspring. Also unlike Blade, Bruce struggles with the additional burden of knowing that his father treats him not as a son but as an experimental object. In one confrontation, Bruce wants to know what genomic manipulations were passed on to him. Part of his father's answer indicates that he feels he has bestowed a genetic gift: Bruce has inherited "an amazing strength." However, Bruce, like Blade, considers the genetically imposed traits a curse. In fact, David Banner's initial reaction to this genetic tinkering is negative, as he believes Bruce inherited a genetic deformity. As his father tells Bruce's colleague Betty Ross, "I could tell from the beginning he was not my son, maybe a monster." David tries to kill young Bruce as an unsuccessful experimental object, a repressed memory hinted at throughout the film. In fact, the film indicates that Bruce's inability to come to a true self-understanding is entirely the result of learning that his father considered him so inhuman as to have been willing to destroy him.

Many bioethicists are concerned that we are already using reprogenetic technologies in ways that treat the resulting child as an object rather than an end in itself. In several cases, reproductive technicians use PGD to select embryos that do not contain known genetic defects, such as

leukemia or *fanconi anemia*, so that the resulting children can be used as tissue donors for siblings who suffer from such genetic disorders.¹⁶ Bioethicists worry that a child's knowledge that his or her genome was selected for the benefit of another places an undue burden on the child's sense of self.¹⁷ Marcy Darnovsky, associate director of the Center for Genetics and Society, believes that such uses of reprogenetic technologies create "an over-arching concern about commercializing your relationship to your future children."¹⁸ This commodification scenario clearly plays out in some films, especially films featuring genetically enhanced soldiers. The plot of *Soldier*, for example, revolves around the replacement of specially trained elite soldiers with genetically enhanced super soldiers. When an enhanced soldier's eye is hurt, the designer calls attention to this "cost" as of a product: "Look at you? Do you know how much it costs to breed you? You big moron! To train you, feed you? What good is this man now? He has no depth perception! All he can do is walk the point and take the first hit." Clearly the soldier is viewed as more akin to a robot than a person.

Although *Soldier* illustrates a public fear about the potential commodification of genetically enhanced individuals, it does not elaborate on identity issues. In *Judge Dredd*, however, identity becomes a central theme as Dredd struggles with the understanding not only that he is genetically modified but that the government created him as a law enforcement tool. In an editorial response to Bailey's dismissal of McKibben's arguments, Cathy Young articulates a hypothetical scenario that concisely illustrates the self-identity problem facing a genetically engineered person: "Suppose your career and your marriage had been influenced by several chance events that steered you in certain directions. And suppose you suddenly found out that these seemingly chance events had been engineered by your parents. Even if you were happy with your life, wouldn't it make you feel like a puppet?"¹⁹

This is precisely the situation Judge Dredd faces when he learns that his successful career was not the result of personal choices but that he was designed to be the "perfect judge." Dredd learns of his status as object when he confronts the dying Chief Justice Fargo, his creator, mentor, and original genomic source. Fargo feels that Dredd should know the truth about his origins, telling him, "We created you." Dredd cannot believe this is the case, replying, "You didn't create me, sir. I have a family." "No," responds Fargo. Dredd's identity crisis is compounded by the knowledge that, in order to further control the direction of Dredd's life, the council manufactured his background identity. Critics of human genetic engineering fear that Dredd's response to the knowledge of his manufactured status, that his "whole life is a lie," will be the typical response of an engineered person when confronting his or her status as a creation.

Interestingly, a number of the characters in these films seek revenge on their designers. In *Blade II*, Blade explains that the genomically altered Nomack “wants revenge on those who created him.” While Nomack seeks revenge on all his creators, his screams of “Father!” make it clear whom he truly blames for his altered condition. In the end Nomack appreciates that the biological foundation of personal identity is something not to be interfered with. Nomack believes that the curse of being genomically modified against one’s will is a fate worse than death, telling his father, “I’ve spared you my fate. You will die.” In *The Island of Dr. Moreau* we see that Hyena-Swine clearly believes that nobody, not even his “father,” has the right to treat him as an object by manipulating his genetic inheritance. Revenge is not sweet, however. Hyena-Swine never understands why Moreau felt justified in exerting this power, screaming, “Father! Why? Why?” before ending his own life.²⁰ Perhaps most interestingly, we see that Blade’s desire for revenge against those who changed his genome actually becomes the basis for his self-identity. If it were not for his unwanted genomic modifications, Blade could never have achieved his status as humanity’s savior against the vampire nation. While genomic modifications may rob a person of the chance to explore a life path of his or her own choosing, he or she may provide a unique identity that would have been otherwise unattainable.

For Habermas, nothing less than the foundation of human morality is at stake when we begin to genetically enhance human beings. He considers the relationship between parent and child the foundation of our moral system, our “species ethic,” because it establishes separate generations as people of equal birth. This species ethic, the minimal understanding of ourselves as humans, presupposes that we are all individual authors of our own lives. We change this equality by asserting authority over another person’s biological foundations of personal identity through genetic alteration. Habermas believes that once we start enhancing our genome we may find ourselves in a preliberal society where we distinguish between “real” humans and the not-quite humans in the way we used to distinguish between enfranchised humans and, say, slaves or indentured servants. In fact, these films contribute to a long-standing concern found in science fiction, the question of what it means to be human.²¹ In *Hulk*, Glenn Talbot no longer considers Banner as a human being, calling him “something else,” and thus feels free to experiment upon him. In this film, Talbot and others clearly feel no moral qualms about their experiments because they no longer consider the genetically modified Banner an equal.

The bigger concern in these films, however, is not that genetically modified individuals will feel inferior, but that they will feel *superior* to those who modified them.²² The whole plot of *Gattaca*, in fact, is predicated upon the assumption that inequalities will develop in a

society that adopts the liberal use of genetic enhancement technologies. In several films the genetically modified consider themselves to be superhuman, asserting their dominion over the unmodified. Judge Dredd's twin brother, Rico, embraces his "difference." Unlike Dredd, Rico believes himself to be a ruler over his creators, not a law enforcement "puppet." As with Hyena-Swine, Rico believes that his modified genome places him, and Dredd, at a level above unmodified humans, chastising Dredd for being "guilty of being human when we could've been gods!" Habermas asks, "Why—if biotechnology is subtly undermining our identity as members of the species—should we *want* to be moral?" (73). This is exactly the question that modified characters, such as Rico, ask themselves: "If my modifications place me in a different category from the unmodified, why should I choose to treat the unmodified as equal moral agents?"

V

Genetic modification certainly hinders the characters' searches for identity. These films, however, are not just about modified individuals' inability to establish self-identities; they still have to come to grips with the question of *which* identities will actually represent their "authentic" selves. Specifically, characters grapple with the question of what part, if any, their modifications play in the authentic self. Philosopher Carl Elliott claims that the search for authenticity has become a "moral ideal" in contemporary society and that we have come to believe the notion that "authenticity is something we need to attain if we are to be true and full human beings."²³ Elliott argues that the increasing use of enhancement technologies, such as plastic surgery or antidepressants, follows from this pursuit of an authentic self. For Elliott this relentless pursuit of authenticity leads to the logical question: what constitutes the "authentic self"? McKibben articulates this point in his rebuttal of Bailey: "To understand the problem, consider one of the examples that Bailey uses. 'Prozac, for example, does not limit our choices, but gives depressed people the freedom to adjust their emotional state to one they prefer.' Fair enough—Prozac is a blessing. But as everyone knows, within months of its appearance many people were also questioning its effect on human meaning. 'Is this me, or is it the drug?' they asked in best-selling books and widely-read magazine articles; for many people, it nagged at their sense of identity, which in some sense is our most important possession."²⁴

For Elliott and McKibben, genetic enhancements become associated with the same difficulty where modified individuals must ask themselves, "Is this self the authentic me or is it a result of the modification?" For

example, after learning he is genetically modified Judge Dredd begins to question if his unemotional and rigid demeanor represents his authentic self or if it is the result of his design as the "perfect judge." He explains to a fellow judge that he believes the modifications determine his impersonal identity: "You said I had no feelings, no emotions. Now you know why." Her reply, "You did that to yourself," indicates that she believes it is what he does with his genome, not the genome itself, that determines his authentic self. Despite his modification, she believes he is still "human." In the end, Dredd finally realizes that it is up to him to choose how he lives his life, and that only he determines his authentic self.

Most modified characters eventually discover that no matter who altered their genomes they are still *their* genomes and, as such, represent their authentic selves. For Habermas a genetically altered person can have two alternative reactions to the external intrusion on their genome—fatalism or resentment (14). While several characters express their resentment by exacting revenge on their creators, almost all modified characters display a sense of fatalism by ultimately accepting their modified selves as their authentic selves. At the end of both *Blade* and *Blade II*, Blade finally gives in to the "thirst" and drinks blood in order to regain his strength. In the first film he also refuses the opportunity for corrective gene therapy, reflecting his understanding that, while another person genetically imposed the "thirst" and other vampiric traits on him, these characteristics are still a part of him and that his manipulated self actually represents his authentic self. Likewise, in *Hulk*, Bruce Banner's father reminds him that even though he may not like the consequences of his genetic alterations he cannot separate himself from his genome. In response to Bruce's statement that he would "isolate and remove" these genetic changes, his father asks him, "Would you really want to destroy a part of yourself?" Later in the film Bruce comes to accept that these altered genes are indeed a part of him. When Betty places blame on "nanomedes" for creating the Hulk, Bruce tells her that the nanomedes did not create the Hulk, but "unleashed what was already there." When she asks him what was there he replies, "Him. Me. It." He even accepts that the consequences of his genomic alterations are part of his authentic self, telling Betty that when he becomes the Hulk "and I lose control, I like it."

Perhaps Dredd's, Blade's, and Bruce Banner's ultimate acceptance of their modified genomes stems from the fact that these modifications occurred before they were born. Since they are unable to compare their modified genome, to their premodified genome, they have no choice but to accept their altered selves as authentic. Professor Klump, in *The Nutty Professor*, on the other hand, is able to experience his premodified

self. While most other characters struggle with their identities because of genomic changes, Klump actually uses genetic modification to uncover the range of his personality and a deeper understanding of himself. Like the people cataloged in Elliot's book, Klump embraces the "notion of authenticity as a moral ideal" (29). Klump does not feel that his current condition reflects his true self, and he seeks authenticity through enhancement technologies. In *The Nutty Professor*, Klump uses his DNA restructuring technology to transform his personality and physiology from bumbling and overweight into the suave and thin person whom he calls "Buddy Love." Of course, Klump realizes that his new self, the Buddy Love personality, is not his true self; he has not "been himself lately." In fact, both the original film and the sequel deliver the straightforward message that you should accept your genetic makeup because that is just the way "the good Lord made you," even if your genome predisposes you to being obese. After experiencing both his modified and premodified selves, Klump comes to believe that his premodified genome most represents his authentic self, that it is "who I am."

Even though Klump ultimately believes his authenticity is the outcome of his unaltered genome, he has to admit that the genomic modifications have also become a component of his authentic self. In the 2000 sequel, *Nutty Professor II*, Klump attempts to remove the Buddy Love gene he inserted into his genome during the first film. Although Klump feels that the gene is an "abnormal gene," his assistant, Jason, realizes that the gene, and the Buddy Love personality, has now become "a part of you." Having come to accept his original genome as authentic, Klump does not want to believe that the genomically inserted Buddy Love personality has also become a part of his true self, claiming, "Oh no he's not!" Klump feels that the Buddy Love personality is separate from him because he introduced it into his genome. After he removes the gene he loses other parts of his identity. He ultimately decides that the introduced gene is, in fact, part of his authentic self.

Peter Parker, like Klump, is another character to experience his premodified self. Also like Klump, he decides in the end that his authenticity resides in his modified genome. In *Spider-Man*, Parker is enhanced when a genetically altered spider bites him and inserts genes into his genome. While he struggles with this imposition on his identity in *Spider-Man*, it is in *Spider-Man 2* that he truly grapples with the question of which genome, the modified or the unmodified, represents his authentic self. After deciding that his modified self is not his authentic self he can no longer express his genetically altered characteristics and returns to the status of his unmodified self. Ultimately, he feels obligated and desires to accept his modified self with its genetic "gifts" as

his authentic self. This ability to choose between the expression of his modified self and his unmodified self is what separates Parker from the other characters, who have no way of removing their genomic modifications. For Habermas, Parker's choice represents a legitimate choice because it is made through "informed consent." Even though Blade appears to have a choice to change his genes, it is really a false choice. Unlike Parker, Blade was never able to experience his unaltered self and, therefore, he would not be making a choice about genomes with "informed consent."

An essentialist argument is depicted throughout most of these films: that authenticity is found only within your genome. Despite the identity confusion caused by their modifications and their anger with those who changed them, characters, in the end, come to the essentialist conclusion that they *are* their genomes. The relationship of these characters to their genomes corresponds with Dorothy Nelkin and M. Susan Lindee's research demonstrating popular culture's perception of the "gene as an essential entity that defines the individual."²⁵ Like the adoptees described by Nelkin and Lindee, who believe that their search for their genetic origins is a search for "personal identity" (69), the characters in these films come to accept that their true selves are bound by their DNA. Likewise, we see in the debate over gene therapy a strong opposition from many in the disabled community who believe that the foundation of their identity as unique individuals is in their "defective" genes.²⁶ For those with genetic disabilities the authentic self is the "defective" self. With the exception of *Gattaca*, characters in these films find their authentic selves within the parameters of their genome. *Gattaca* remains a unique text, arguing that the authentic self comes from a person's "spirit" as much as it does from his or her genome.

VI

It should not be surprising that most of these films are remakes or adaptations. With the emergence of genomics research and the very real possibility of genome enhancement within our lifetime, these stories have been reimagined, providing them relevance for our genetic age. As Pethes explains, fictional texts are not just entertaining stories but serve as a gauge of our concerns about science and technology: "Instead of claiming an aesthetic position outside society and science, popular literature gains a functional role by articulating the current cultural images of science" (169). The filmic texts discussed in this essay function as *Gedankenexperiments*—thought experiments—that visually explore and play out possible scenarios involving genetically modified humans. The

films visualize thought experiments using genetically modified humans as their variable, and the narrative results of these experiments demonstrate an overarching concern with identity formation. In addition to genetic engineering, though, these films touch on the universal question: how does any individual arrive at his or her own self-identity? In the context of critiquing genetic engineering these films reflect on our long-standing discussion of the elements involved in identity formation, self-determination, equality, and authenticity.

Ultimately, these films are about who has power to determine our identity. Does a person have the right to select what kind of life is worth living for another? All films present characters with a choice—allow your genome to establish your identity, or determine your own identity. Only *Spider-Man 2*, the most recent film text, suggests the significance of that personal choice. Being the most recent, perhaps it reflects a growing sophistication in our debates over genetic authenticity—a true genetic coming-of-age narrative. Peter Parker realizes that his new genome does not solely determine his identity, that he has *choices* as to what he can do with his modified genome. Spider-Man can choose not to use his powers, but instead he chooses to harness his superpowers for good. Just like every other person, he has to decide, regardless of his genome, whom he wants to be. The film suggests that genetic manipulation does not inherently establish a person's identity; rather, it is the choices a person makes that determine whether he or she is a Beast-Person, an angst-ridden vampire hybrid, or a superhero.

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NOTES

1 An analysis of the film versions of *The Island of Dr. Moreau* as eugenic parables can be found in David A. Kirby, "Are We Not Men?: The Horror of Eugenics in *The Island of Dr. Moreau*," *ParaDoxa* 17 (2002): 93–108.

2 It is important to note that the films we are discussing in this essay relate solely to the issue of genomic modification. Our discussion will not include the issue of human cloning, which has its own unique bioethical and societal concerns.

3 Lee Silver, *Remaking Eden* (New York: Harper Collins, 1998).

4 See Jürgen Habermas, *The Future of Human Nature* (Cambridge: Polity Press, 2003) (hereafter cited in text).

5 Nicolas Pethes, "Terminal Men: Biotechnological Experimentation and the Reshaping of 'the Human' in Medical Thrillers," *New Literary History*, this issue, 177.

6 Bill McKibben, *Enough: Staying Human in an Engineered Age* (New York: Times Books, 2003).

- 7 Ronald Bailey, "Random Genes vs. Designer Kids: Opposing Views from Bill McKibben and Ronald Bailey," *Reason Online*, May 16, 2003, <http://www.reason.com/rb/mckibben.shtml>.
- 8 McKibben, "Random Genes vs. Designer Kids."
- 9 While PGD, the technology used in *Gattaca*, does not involve the direct manipulation of the genome, as gene therapy does, the overall effect of the methodology is the same: an enhanced genome. Likewise, the characters in the film refer to other characters as genetically modified and enhanced.
- 10 For an analysis of *Gattaca* and genetic determinism, see David A. Kirby, "The New Eugenics in Cinema: Genetic Determinism and Gene Therapy in *Gattaca*," *Science Fiction Studies* 27, no. 2 (2000), 193–215. See also Aylish Wood's discussion of *Gattaca* in *Technoscience in Contemporary American Film* (Vancouver: University of British Columbia Press, 2002).
- 11 Bailey, "Is Freedom Just Another Word for Random Genes?" *Reason Online*, April 2, 2003, <http://www.reason.com/rb/rb040203.shtml>.
- 12 For example, see Dennis Drayna et al., "Genetic Correlates of Musical Pitch Recognition in Humans," *Science* 291 (2001): 1969–72.
- 13 As we demonstrate later in the essay, while most characters struggle with their identity, most characters ultimately accept their modified self as their authentic self.
- 14 Mary Rorty, review of *The Future of Human Nature* by Jürgen Habermas, *Notre Dame Philosophical Views* (2003), <http://ndpr.nd.edu/archives.cfm?date=2003>.
- 15 McKibben, "Random Genes vs. Designer Kids."
- 16 For example, see Jim Ritter, "Chicago lab helps couples create made-to-order babies," *Chicago Sun-Times*, May 5, 2004; and Peter Gorner, "Embryo is picked to try to save sister's life," *Chicago Tribune*, October 2, 2000.
- 17 For example, Leon Kass, chairman of the U.S. President's Council on Bioethics, notes that a council memo questions "Is it proper to assign to an unconceived child the burden of being a savior of a sibling?" Quoted in Delthia Ricks, "Embryo Screening," *Newsday*, May 5, 2004.
- 18 Beth Whitehouse, "Thinking Pink (or Blue)," *Newsday*, June 14, 2004.
- 19 Cathy Young, "Troubling issues in biotechnology," *Boston Globe*, July 21, 2003.
- 20 It is interesting to note that all of these creators are men. The films imply that somehow natural birth comes from the mother, while "engineering" comes from the father.
- 21 For example, see J. P. Telotte, *Replications* (Urbana: University of Illinois Press, 1995).
- 22 This is in fact the scenario Silver in *Remaking Eden* predicts will occur.
- 23 Carl Elliot, *Better Than Well* (New York: W. W. Norton, 2003), 30.
- 24 McKibben, "Random Genes vs. Designer Kids."
- 25 Dorothy Nelkin and M. Susan Lindee, *The DNA Mystique* (New York: W. H. Freeman and Co., 1995), 193.
- 26 For example, see Michelle La Fontaine, "Perfect? An Analysis of the Global Human Genetics Fix," *Women, Disability and Identity*, ed. Asha Hans and Annie Patri (Thousand Oaks, CA: Sage Publications, 2003).

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