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SURPASSING OUR GENES

The subversive post-human message of *Gattaca*

Emily Klein and Leah Ceccarelli

The movie *Gattaca* is often referenced in public debates about the societal dangers of human gene editing. In the public imaginary, its message is clear: the dystopian future it portrays stands as a warning against the societal acceptance of genetic perfectionism and genetic discrimination. This article argues that such a reading misses a deeper message of this cinematic text. Rather than offer a bioethics lesson against the use of genetics to make better human babies, in our opinion, the film actually argues that such genetic tampering is unlikely to succeed, but that the genetic engineering of a superior post-human individual is both possible and desirable.

Keywords: bioethics, genetics, rhetoric, film criticism, science fiction.

In a recent biography of Jennifer Doudna, the Nobel-prize winning scientist who created the cutting edge CRISPR-Cas9 gene-editing technology, a distinctly old-fashioned subject repeatedly crops up: the science fiction cult classic *Gattaca*, some elements of which, we are told, «have already come true» (Isaacson, 2021, p. xv). This reference reminds us that even today, over twenty years after its release, *Gattaca* (Niccol, 1997) works in the public imaginary as a warning about human genetic enhancement. We think another interpretation of the movie is worth considering, revealing a message that, whether intentionally or not, indicates the futility of trying to perfect the human form and elevates the social desirability of engineering the post-human. We seek not to endorse that message, but to expose it.

In public discourse, *Gattaca* serves as a rhetorical shorthand to articulate fears about the social impact of genetic engineering, foreshadowing a dystopian future that awaits us at the bottom of «the slippery slope of the gene editing debate» (Evans, 2018). Biomedical

ethicist Ronald Michael Green reports that *Gattaca* «lives on in bioethics classrooms around the country as the epitome of what is bad about human gene interventions», and to him, the message of the movie is clear: «*Gattaca* is meant to be a warning. Genetic manipulation leads to a nightmarish society obsessed with genetic perfection and disfigured by genetic discrimination» (Green, 2007, pp. 5–6).

While it is unclear in the movie precisely what technology is being used by its geneticists, there are indicators that some form of genetic engineering is at play, supported by an ad campaign to promote the film that promised «it is now possible to engineer your offspring»

(Isaacson, 2021, p. 275). Whether scholars who reference *Gattaca* disagree with its «conservative» argument against genetic engineering (Agar, 2005, p. 90) or praise its message as one of the few «critical» challenges to human genetic manipulation (Elshtain, 2004, p. 159), all agree that the movie tells the story of the danger a society faces when the technology

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for perfecting babies becomes readily available and culturally accepted. Like *Brave new world* before it, *Gattaca* has become a rhetorical resource for public debates about biotechnological futures (Lynch, 2019, p. 34; Von Burg, 2010, p. 4), with allusions to it frequently deployed as a commonplace for the unethical consequences of human genetic manipulation.

But what if this is wrong? What if the message of *Gattaca* is not that human genetic engineering is a dangerous development for society, but that biotechnologically-mediated human perfectionism is impossible, and further, that post-human transformation through genetic science is both achievable and desirable? If people misread the movie because they assume it tells a simple story, then the more subtle message beneath its didactic veneer might be working its way into the collective unconscious undetected. We believe that to be the case here. Re-envisioning *Gattaca* as speaking to the promise of post-humanism, we offer a corrective to the more shallow interpretation of its message that underwrites so many references to it in public discourse about bioethics.

■ RE-READING GATTACA

Admittedly, the plot of *Gattaca* encourages a simplistic interpretation of its moral structure. The film presents a world in the «not-too-distant future» (Niccol, 1997, 4:12) where human genetic engineering is not only accepted but expected. It follows Vincent, a man who is naturally conceived, as he attempts to navigate a society where this makes him a second-class citizen. He dreams of becoming an astronaut but is rejected because of his genetic status, so with the help of Eugene, a Valid (that is, someone with superior genes, conceived with the assistance of science), Vincent obtains blood, urine, and other bodily samples to fool genetic tests and pass as a Valid. He successfully acquires a job at the Gattaca Corporation, a company that conducts space exploration, but days before his launch into space, the Mission Director is murdered. The subsequent investigation finds an eyelash of Vincent's and sets off to discover the *In-Valid* who surely must be responsible. With the help of a few unlikely allies, Vincent must evade detection until the mission launch so he can fulfill his lifelong aspiration of travelling to space.

This plot fosters the common interpretation of the movie as a warning against genetic determinism. As *Gattaca*'s promotional material puts it, «there is no

gene for the human spirit» (Agar, 2005, p. 90). Despite Vincent's genetic «flaws» and society's discrimination against him, he still manages to succeed, apparently due to sheer force of will. The movie also seems to argue against genetic perfectionism. As film critic Janet Maslin (1997, p. E18) put it, *Gattaca* «envision[s] a culture of unapologetic discrimination, with Valid individuals spared defects like baldness, alcoholism, and attention deficit disorder and given great privilege» while others are pushed to the margins of society. This reading of the film as unambiguously opposed to human genetic engineering has propelled *Gattaca* into a strange sort of immortality, endlessly revived to catalyze public discussion about ethics every time we see a new advancement in genetics.

However, a closer look suggests that something else is going on beneath the surface. Two scenes



Columbia Pictures

Gattaca follows Vincent, a man who is naturally conceived, as he attempts to navigate a society where this makes him a second-class citizen.

«An alternative reading questions the assumption that the geneticists of *Gattaca* can engineer a more perfect human»

Columbia Pictures



in particular hint at *Gattaca*'s hidden message about human genetic manipulation and post-human futures. At the end of the movie, the murderer has been found, and Vincent is heading to the spaceship for launch

– so close to the realization of a lifelong dream – when he realizes there will be one last surprise genetic test. He does not have a sample from Eugene and so resolves himself to his inevitable discovery and expulsion from the Gattaca Corp., telling Dr. Lamar, the lab technician, «Just remember that I was as good as any and better than most» (1:38:35). Wrapped up in his own downfall, he is not listening to what Dr. Lamar is saying. «Unfortunately, my son's not all that they promised» (1:38:46). The results come in, declaring Vincent as the In-Valid he has been all along, but Dr. Lamar reveals he has known that since the beginning. He changes the test results to mark Vincent as Valid and lets him board the spaceship. It

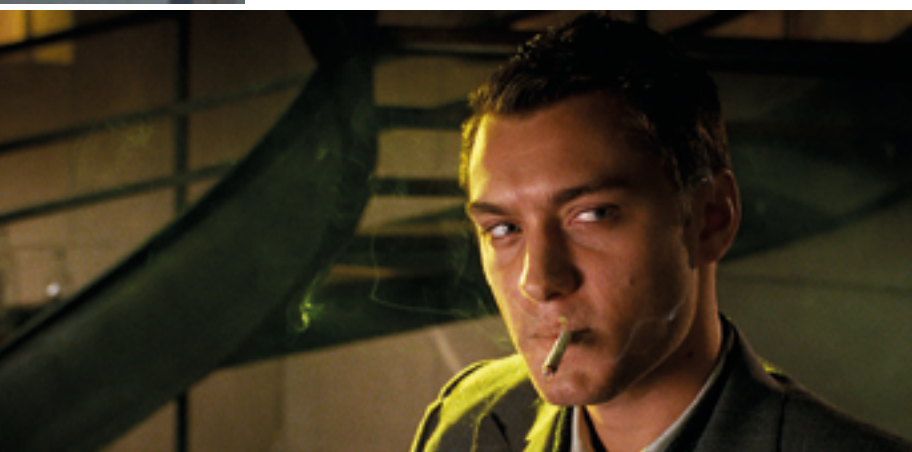
is the apparent insufficiency of Dr. Lamar's son that prompts Dr. Lamar to turn a blind eye to Vincent's In-Valid status and lets him fulfill his dream. But why would the technician's son not be «all they promised»? This denouement at the end of the film suggests that the scientists who promised the birth of more perfect humans through the application of genetic technologies never had the power they claimed.

A second scene gives those scientists a different kind of power. The clearest success of genetic engineering in the movie comes not in the form of a perfected human, but rather, in a better-than-perfect post-human individual. Vincent and his love interest, Irene, go on a date to a piano concert, where the virtuoso ends his performance by throwing his gloves to the adoring crowd. Vincent catches one and hands it to Irene, who, after slipping it on, shows Vincent that the glove has an extra finger – the pianist has six fingers on each hand. As they leave, she asks Vincent, «You didn't know?» (59:14). He responds with a certain defensiveness: «Twelve fingers or one, it's how you play» (59:21). She stares at him for a moment before replying, «That piece can only be played with twelve» (59:27).

Vincent is left speechless, unable to offer a rebuttal to this statement of fact about the superiority of the post-human musician. In a movie where the effects of genetic manipulation are the mostly-invisible



In the movie, Dr. Lamar changes the test results to mark Vincent as Valid. It is the apparent insufficiency of Dr. Lamar's son that prompts Dr. Lamar to turn a blind eye to Vincent's In-Valid status and lets him fulfill his dream. But why would the technician's son not be «all they promised»? This denouement at the end of the film suggests that the scientists who promised the birth of more perfect humans through the application of genetic technologies never had the power they claimed.



Some of the traits that have been allegedly «eradicated» among valids are premature baldness, myopia, alcoholism, and addictive susceptibility. However, Eugene smokes cigarettes in numerous scenes and always has a bottle of alcohol near at hand.



superiorities of the best people, this scene shows not perfection of the human form but transcendence of it – a singular post-human celebrity who stands above even the Valides in the world of *Gattaca*.

To the casual observer, these two scenes might not indicate any controversy. On the surface, the twelve-fingered pianist is just another success of genetic engineering, and the anomaly of Dr. Lamar's son gives him sympathy to see the individual that Vincent is underneath his genetic status. But upon reflection, they change the whole tenor of the movie. To the characters living in the world of *Gattaca*, science is all-powerful, which is a necessity if the film is a cautionary tale about the dangers of genetic perfectionism; the moxie of the unmodified hero must prevail over the best that science has to offer. However, if science is not as effective at perfecting the human form as the scientists in the movie claim, then Vincent's genetically unmodified success carries less punch. If, on top of that, science *is* shown to be successful at constructing someone who transcends the human form, someone whom the all-too-human Vincent can never match, then we end up leaving the theater thinking we are getting a message about the dangers of genetic perfectionism and not even noticing that we have soaked up a message about the promise of genetic engineering for post-human transcendence.

■ THE POWER OF SCIENCE

Gattaca undermines its own presumed message against genetic determinism because it fails to tell the story of a perfect class of genetically engineered human beings who are bested by an unmodified man, even while it celebrates the achievement of an engineered post-human who cannot be bested. The gap between what scientists in the movie claim and what they deliver, in conjunction with their startling success at surpassing the human body plan in the creation of a post-human, twists the meaning of the movie from a cautionary tale against geneticism to a promotion of it. This new interpretation of the movie is significant because it subverts our understanding of one of the most persistent cultural metaphors of the past two and a half decades, turning our previous uses of the movie on their head.

To understand how this reading of the movie could have been sublimated for so long, let us take a closer look at the movie's complicated treatment of the power of science. The character identified



Columbia Pictures



Columbia Pictures

The clearest success of genetic engineering in the film has nothing to do with perfecting the human being, but with a more-than-perfect post-human individual: the twelve-fingered pianist.

«What if the message of *Gattaca* is not that human genetic engineering is dangerous, but that biotechnologically-mediated human perfectionism is impossible, and post-human transformation through genetic science is both achievable and desirable?»



in the script as the *Geneticist* is a prime avatar of scientific authority in the movie, dressed in a white lab coat and seen from the perspective of the other characters as all-powerful, with the ability to shape a child's future. In a voiceover early in the movie, as Vincent reflects on the birth of his younger brother, he says his parents «were determined that their next child would be brought into the world in what has become the *natural way* [emphasis added]» (11:13), that is, with the help of science. When the Geneticist is asked by the parents-to-be if it might be better to «leave some things to chance», he replies: «We want to give your child the best possible start [...] your child doesn't need any additional burdens» (12:16). Despite briefly questioning the social desirability of leaving nothing up to chance, the parents never doubt his scientific authority. They do not question if he can actually achieve what he promises; the dominant question of the scene is «should», not «can».

While Vincent does challenge science, he challenges its diagnosis of him, not its effectiveness. He never questions whether scientists can genetically engineer individuals, but rather contests the assumption that In-Valids cannot do as much as Valids. The idea that individuals are being genetically engineered is not only implicit in the attitudes of the characters in the movie, but inherent in the audience's approach to the film, allowing film critics such as Maslin to characterize the movie as they do. The capability of the scientist is firmly established and well-defended from scrutiny.

So what happens when we begin to scrutinize these uncontested claims? In the aforementioned scene at the Geneticist's office, the Geneticist lists traits he has «taken the liberty of eradicating [...] premature baldness, myopia, alcoholism and addictive susceptibility, propensity for violence, obesity, etcetera» (12:02). This list contains the very measuring sticks we require to test his claims, as we find many of these conditions are visible in the supposedly-perfected Valids.

As Vincent mixes, mingles, and works with the genetically elite, in the background are several men with clearly balding hairlines (4:17, 4:26, 4:33, 39:14, 39:51, 54:49, 1:09:09, 1:10:23). Eugene is balding a touch around the temples, and Dr. Lamar has a similar problem. Alcoholism and addictive susceptibility are

manifestly present. Eugene always has a bottle of alcohol near at hand. In response to good news, he states, deadpan, «We must get drunk immediately» (37:04). He smokes cigarettes in numerous scenes, further suggesting an addictive susceptibility. One night, he becomes so drunk he throws up (41:22). His alcoholism is even a plot point; at the beginning of the movie, Vincent, about to interview at Gattaca, has to throw out several biological samples from Eugene because they are all contaminated with alcohol (30:04).

The activities of the Director bring up another deviation from the promises of the scientist. When questioned about his possible motive for murdering the Mission Director, he states with an air of outrage, «Take another look at my profile, Detective. You won't find a violent bone in my body» (1:08:04). While this is a common figurative saying, it takes on a new meaning in light of the Geneticist's claim of being able to remove propensity for violence. Later, we discover that the Director *is* the murderer – an act he committed with great violence. When the Mission Director threatened to cancel the space launch, the Director brutally bashed in his head with a keyboard, and detectives found the Director's spit in the victim's eye, indicating that he was yelling during the attack – hardly congruous with someone whose genes should attest that he has no disposition for violence.

Science's perfecting power rings false in other areas as well. Irene has a mild version of Vincent's heart condition, although it is severe enough that she has to take medication. Dr. Lamar has a son who fails to meet the guarantees of the scientists. Eugene, designed to be a gold-winning swimmer, can only reach the second step of the podium. The pervasive and near-exhaustive presence of these details suggests an alternative reading to the assumption that the geneticists of *Gattaca* can engineer a more perfect human, a reading far more insidious in its implications on our understanding of the movie than one might think at first glance. When even the most advanced bodies in the country have premature baldness, propensity for violence, and alcoholism, and when even the next generation of Valids, such as Dr. Lamar's son, are flawed, *Gattaca* does not invite a reading of the social undesirability of human gene manipulation. Rather, the movie perversely invites a reading of its technical failure. Vincent did not succeed *despite* the superiority of the genetically engineered Valids around him but because their genetic perfection was a sham. The scientists of *Gattaca* never succeeded in genetically engineering the better humans they claimed to be bringing into the world.

There is one exception to this failure of science. The one character that Vincent is unable to equal, the one who leaves him speechless despite his indomitable human spirit is, of course, the twelve-fingered post-human pianist. The science of *Gattaca* might have failed to perfect the human form, but it succeeded at surpassing it. As the Geneticist says, «We have enough imperfection built in already» (12:27). Preparing better humans for Gattaca Corporation's space program did not work. But it takes little imagination to project the future of the program once it begins recruiting post-human astronauts who are able to thrive in the harsh environments of space travel that even the most perfect human bodies evolved for terrestrial life are unsuited to withstand.

■ CONCLUSION

What are the implications of learning that this movie subtly undercuts its own presumptive message? If the movie had designed a perfect, infallible society of antagonists and *still* showed Vincent overcoming his genetic limitations to match the Valides, then there would be a more effective sense that we, who would be In-Valides in *Gattaca*'s world, could defeat genetic determinism. However, by diminishing the perfection of the Valides, Niccol seems to leave the audience with the subconscious query: What if? What if scientists had achieved what they claimed to be able to achieve? What if Eugene had won gold; who would Vincent's donor have been? What if the Director hadn't killed the Mission Director; would the space launch have been cancelled? What if Dr. Lamar's son was all that science promised; would Dr. Lamar have been sympathetic to Vincent?

In this «what-if» world a few degrees of separation away from *Gattaca*'s, where the science is actually effective at perfecting the human form, the audience is left unsure whether Vincent could actually triumph. This speculative dismantling of *Gattaca*'s key events and premises proves that the implicit failure of science's perfecting power, as conveyed in the film, subtly but substantially undermines its alleged challenge to the social desirability of human genetic engineering.

Moreover, the movie goes further away from its assumed message when the twelve-fingered man catapults *Gattaca*'s story from opposing genetic engineering to affirming post-humanism. In this scene, the movie argues that when science truly achieves its

aims, the genetically engineered post-human can do things that both the unmodified *and* the supposedly perfected humans cannot.

This realization has critical implications for our societal and academic understanding of the movie. *Gattaca* continues to be used as a touchstone to contextualize our understanding of bioethics, but this use is grounded in a reading of *Gattaca*'s superficial message only. If *Gattaca* fails to establish that «the human spirit» can overcome genetic perfectionism and instead invites the reading that *successful* genetic engineering in the context of post-humanism should be celebrated as awesome and unanswerable, then evoking *Gattaca* as an argument against human

genetic engineering is misguided. Our reading illustrates the need for a reframing of *Gattaca*'s message in the public consciousness to envision it anew in conversations about the promises and challenges of post-humanism in our own not-too-distant future. ☺

«The twelve-fingered man catapults *Gattaca*'s story from opposing genetic engineering to affirming post-humanism»

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