

Transhumanism: Resistance is Futile

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Abstract

This piece looks at the ethical issues surrounding transhumanism by analysing examples within science fiction writing, both novel, film and television. It looks at issues surrounding consent, class and how integrating technology with the human brain can lead to loss of humanity or self as well as how a transhuman can identify themselves. It focuses on utilitarianism and virtue ethics to show how both biological and technological transhumanism can be seen to be morally good and are the next step in human evolution. It also shows where ethical issues arise and how regulating certain areas of human modification could work to prevent damage and problems with morality in a transhumanist future.

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Introduction

The purpose of this piece is to analyse the ethics of transhumanism, to do so I will be looking at examples of augmented humans from a variety of different works of science fiction. I will be using examples from fiction as there are no real world examples, as the technology we currently have is not yet at the level where such advanced augmentations are possible.

Though before I get into whether we should augment humans it would be best to define what Transhumanism is, according to the Encyclopædia Britannica transhumanism is the ‘social and philosophical movement devoted to promoting the research and development of robust human-enhancement technologies. Such technologies would augment or increase human sensory reception, emotive ability, or cognitive capacity as well as radically improve human health and extend human life spans. Such modifications resulting from the addition of biological or physical technologies would be more or less permanent and integrated into the human body.’ (Britannica, 2019) This basically means that Transhumanism aims to see the progression of humanity through the use of science, both biological advancements and technological ones. As both biological and technological upgrades can be used to create an augmented human, transhumanism splits into two paths and both come with their own ethical pros and cons. As such, I will be looking at each path individually before seeing how they connect. For the biological path I will be looking at *Brave New World* by Aldous Huxley as well as a few choice examples from other science fiction such as *Star Trek*. For the technological path I will be using examples from a variety of sources including, once again, *Star Trek*, *Ghost in the Shell* and the Cyberpunk genre as a whole.

The point of using examples from science fiction media is, of course, because there are no true real world examples of advanced human augmentation, but also because fictional worlds do a good job of creating scenarios in which characters respond to examples in ways we could easily imagine real life humans would, this is due to writers taking inspiration from similar situations that do exist and then changing it to predict real world outcomes. Science fiction is particularly good at this as it looks at what science is capable of now and makes logical leaps to predict where

we will be in, say 100 years' time, Brave New World is an excellent example of this as it successfully predicted invitro fertilisation 46 years before it became reality.

What is Transhumanism

As defined before, Transhumanism is the 'social and philosophical movement devoted to promoting the research and development of robust human-enhancement technologies. Such technologies would augment or increase human sensory reception, emotive ability, or cognitive capacity as well as radically improve human health and extend human life spans. Such modifications resulting from the addition of biological or physical technologies would be more or less permanent and integrated into the human body' (Britannica, 2019). This definition is all well and good but what does it mean for this piece? Well, transhumanism will broadly refer to the advancement of the human being through science to create something greater.

Transhumanism is not only a theory but also a vision, it looks to the future to create the present, which is exactly why science fiction media is a perfect portal through which to examine this future. Julian Huxley had this to say about the matter 'the fullest realisation of man's possibilities, whether by the individual, the community, or by the species in its processional adventure along the corridors of time' (Huxley, 1957) he believed that the job of evolution had fallen into the hands of humanity, a belief that I do agree with and will cover a little more later, of course for humanity to take over the job of evolution they must work with science, to allow for such modifications that can create a human that is thoroughly improved.

Though the idea of an improved human does rather raise a few questions, if a human is improved does make them more human as they are adapted to be better, or less human as they have diverted from the original. Is it possible to even call the humans of today the original? We have changed so much from the first *Homo sapiens* to the point where we are technically now *Homo sapiens sapiens* as we are technically just a subspecies of *Homo sapiens*. Going on from here, could we call these improved humans something new perhaps *Homo sapiens technologicus* as suggestion

that has been passed around a few times, 'there's a strong view that we shouldn't call humans *homo sapiens*, or "man-the-wise," but rather *homo technologicus*, or "man-the-user-of-technology"' (Lienhard, 1988-2018) this view posits that the humans of today should be seen as *Homo technologicus*, whereas I rather suggest that the comes next should adopt that name or, more accurately, should be *Homo sapiens technologicus* as a scientifically advanced subspecies, using technology but also knowledge to evolve themselves.

Another question that comes to mind is one of consent, this is a question I will certainly come back to when looking at genetic engineering, but a brief look at it is still warranted. When it comes to forcing evolution, there will of course be those that oppose the idea and further still, when it comes to genetic engineering, it is not the ones conducting the adaption that will see its benefits or suffer the consequences in come cases. When answering the question later on I will use Mill's Harm Argument to explain how I believe human adaptation should be treated.

The final question that puts some what of a spanner in the works is a simple one that scientists have faced many times and will undoubtedly face again, it is the idea that just because something can be done, does not mean it should be. A good example of this is the creation, and later use, of nuclear warheads, splitting the atom was a very big deal and so of course it was later used to create weapons, 'Nuclear weapons are, in effect, incendiary explosive weapons of great power. They are also radiological weapons because of the ionizing radiation released by the nuclear explosion, both immediately, and subsequently in the form of radioactive "fallout". The dominant casualty effects are those of blast, thermal radiation and ionizing radiation' (Geneva, 1973) this explanation is from the Geneva Convention document of the weapons that have since been banned, due to the harm they cause and who they cause it too.

So, just because something can be done, does not mean it should be, it could be argued that just because it may become possible to make biological and technological adaptations to human beings, it does not mean that making them a reality is a good plan, this could also link back into idea of losing one's humanity due to these adaptations. I would argue against this idea though, fear should not stand in the way of progress, especially when it comes to progressing humankind

to the next level, and the way technology evolves would mean this progress would be steady, it would be over night but instead something that future generations would look back to see just how far they have come because a group of people dared to try.

Humanity as a Sliding Scale

Before we can decide whether adaptations, be they technological or biological, make someone more or less human, we must first define what a human is.

According to the Encyclopædia Britannica a human being is ‘a culture-bearing primate classified in the genus *Homo*, especially the species *H. sapiens*. Human beings are anatomically similar and related to the great apes but are distinguished by a more highly developed brain and a resultant capacity for articulate speech and abstract reasoning. In addition, human beings display a marked erectness of body carriage that frees the hands for use as manipulative members.’ (Britannica, 2019)

This does give us some freedom to play around with but says nothing of the cognitive nature of human beings, something that philosophy of the mind has looked into with no singular answer. Particularly when looking at the Mind/Body Problem, which attempts to explain how mind and body connect, especially as they are seemingly made of different materials, as Descartes called them *Res Cogitans* for the mind and *Res Extensa* for everything that is physical. These two materials should not be able to mix, and as such the mind as it is imagined within dualism, namely substance/ Cartesian, can not exist. Physicalism attempts to get past this, as for physicalist on *Res Extensa* exists so there should be no problem, unfortunately there still is as it fails to account for why it still appears that the mind is separate. This is all a long and complicated discussion for another piece, so for now this basic overview of that singular problem will suffice.

Though, by Britannica’s definition, any adaptations would not affect the individual’s nature of being human, and yet, though the idea of replacing an arm or and organ or an improved one

doesn't seem too bad, it is when you start to make alterations to the brain that the question arises again.

Is a genetically modified person less human due to being deliberately created to be more intelligent than normal? Would an implant that allowed a person to see in ultra violet light, something that humans can not normally do, make the individual less human?

These questions have no true answers, but I would argue that, if anything, they make people more human. They are examples of what the human can become when we take the un-adapted human as a base model, a blank canvas to mould into something greater. And considering that it is possible humanity has stopped evolving biologically, 'there's been no biological change in humans in 40,000 or 50,000 years. Everything we call culture and civilization we've built with the same body and brain' (Gould, 2000) this is still a disputed fact but an interesting one, evolution works to make a species fit its environment better, sure adapting ourselves would allow for this, especially where technology is concerned. Of course, as evolution does bring about new species, as well as improve upon old ones, we could consider transhumans to be a new species, though I would argue they are more of a sub-species, as I have stated with the *Homo sapiens technologicus* point previously.

Transhumanism or evolution by artificial means would surely be the next step, a person that could interface with a computer would be better suited to a technology-based environment than one that could not, a human adapted to zero-gravity would be better suited to work and travel in space, the examples go on and on.

Going back to the question, I cannot help but wonder whether we can even answer it, by which I mean can humanity be seen as a sliding scale, or can the question of someone's humanity be answered with a simple yes or no. Yes, they are human or no they are not. When we truly stop to consider the question this seems to be the answer, even if we take an example of someone who has had a portion of their brain removed, we would still consider them human, yes there is less of

hem in the physical, like also the mental sense, but they still remain, at the core, in their genetic structure, a human being, *Homo Sapiens Sapiens*.

Ethics of Adaption

The idea of adapting the human form and mind does not come without ethical considerations, losing an arm or leg and replacing them with a fulling integrated cybernetic one doesn't seem too bad, but it is when you start to play around with the brain, and by extension mind that it gets more complicated.

When removing parts of the brain, especially the frontal lobe, it can have a drastic effect of the individual's personality, due to the frontal lobe being home to what makes a person themselves. Even if regions of the brain are not removed it is reasonable to assume that any kind of adaptation that involves the brain comes with several risks involving personality and how the individual will experience reality. Due to these risks, it is likely that many of the first adaptation in this area will have negative side effects, knowing this is it ethical to even start experimenting in this area as before the adaptations can truly improve a person's abilities they will go through several stages of development where the negative may very well out-weigh the positives.

If we were to take Mill's Harm Principle into account it can easily be argued that development of all adaptations, even if they have negative side effects, so long as the individual that will be receiving them has consented to it. This is because Mill's principle states that an individual can do what they wish to themselves as they are the only one that will be harmed, or more accurately he states the only time an individual's liberty can be restricted is to prevent harm to others, 'it is never permissible to regulate purely self-regarding conduct and always permissible to regulate other-regarding conflict' (Brink, 2018) as Brink explains to regulate the conduct of an individual in a purely self-interested matter goes against the ideas of liberty and cannot be allowed.

This application of the harm principle allows for scientific development even under what may be seen as ethically questionable circumstances, so long as the individuals being potentially harmed

are consenting and taking an active part in the actions themselves. A key point of transhumanism, in this piece, is that it refers to the adaption of the human self and not a forceful evolution of humankind all at once, consent must be at its centre so that a positive view of the evolution can come about.

How Far is Too Far?

The final idea that needs to be covered in this section is the concept of what would be considered a step too far. This concept will reappear later in this piece but for now let me explain how an adaptation, or group of adaptation can be considered a step too far.

To start it should be made clear that not all adaptations that impede or impair are necessarily bad, for example take a cybernetic implant that is designed to block all negative or unpleasant sensations, also we should assume that individuals in this example have consented to have this implant and are aware of its effects, removing the individual's ability to feel negative or unpleasant sensations effectively simulates Nozick's Experience Machine, a thought experiment in which an individual chooses to live the rest of their life in a simulated world where only positive emotions can be experienced, it also removes all memory of life before the machine but this part is irrelevant here, and it is quite well agreed that this leaves the individual involved lacking in some way. But the implant and the outcomes are not necessarily bad, there may be situations where this implant would be very useful, expeditions that call for isolation for example, by preventing the negative effects of isolation the individual will benefit in the long run.

So, now that we have established that not all adaptations with outwardly negative effects are themselves negative, we can move on to establish what would be a negative adaptation and thus, a step too far. The first sign that an adaptation has gone too far is that the individual concerned has not given their consent, for example if they are too young or perhaps the individual has had it forced upon them, much like with The Borg. Another way that a form of transhumanism could be seen as a step too far is that it removes free will or causes the individual to lose their sense of self.

The final sign is that the negative effects it causes out-weigh the positive, for the implant example, if the implant blocked all extreme sensation, both positive and negative the individual would be trapped in a dull middle ground and this would likely also negatively affect their mental health, after all it would be effectively simulating depression.

I will go into more detail on the consent and loss of self issues later, so for now I will only look at negative effects of implants and what this means for a transhumanist future. Transhumanism, both in the biological and technological sense, can bring about a lot of good and I would argue is the next step for humanity, but adaptations and modifications that ultimately cause negative effects on the individual with them can lead down a dark path. By this I mean that, should a modification with a few negative effects be made permissible, then it could lead to more and more modifications with questionable side effects also being allowed. For example, knock offs are an issue with technology now, so imagine would could happen if knock off or cheaper versions of integrated technology were an accepted part of a society, having dangerous technology being used by a large number of people purely because they cannot afford the safe version. Though this isn't as drastic as an entire population losing their free will or being forced into receiving modifications, it can still be regarded as a step in the wrong direction, that could potentially lead to more drastic outcomes.

The cyberpunk genre does a good job of showing how cheap and nasty technology can affect people, with corrupted cerebral chips and such being a common theme throughout the genre. The cyberpunk genre is a great example of what a transhumanist world could look like, most people have some form of modification and it shows both high end modifications and cheap, backstreet ones. As far as being a step too far, within the cyberpunk genre there are plenty of examples of how a corrupted piece of technology, that is connected to the brain, can cause an individual to fall to madness or lose their grip on reality, this comes from the idea of easily accessible modifications and a lack of regulation around them, as well as from people hacking into the minds of others, either for information or to control them. In *Ghost in the Shell* we see a man whose reality has been altered, leading him to believe he had a wife and child, this was all a lie and when confronted

with the truth the man is unsurprisingly distressed, 'The hack must have created a vacuum. Kuze's wiped his memory...and somehow installed a new reality.' (Ghost in the Shell, 2017) The concept of the human mind being hacked and manipulated is a rather disturbing one, and one that may suggest that any attempt to modify the brain is a step too far, due to the risks to free will and sense of self and reality from hacking. Though, as technology evolves we can hope that fears of brain hacking won't become a reality as firewalls and other protection can be built into these brain modifications, so I won't write them off entirely, after all Ghost in the Shell also does a great job of showing how useful they can be to the police, with the idea that a team can communicate through thought, a prospect that has many positive uses.

Biological Transhumanism

To start with it would be best to explain what biology-based transhumanism is and what forms it can take. The biological side of transhumanism mostly comes in the form of genetic engineering, this can either be before birth or during early development, it also covers gene splicing, which is the process of taking genes from one creature and adding them into another. This side of transhumanism could potentially include the 3D printing of new organs or biosynthetic limbs, but in this piece, I will focus on the genetic elements as they have more of an impact on advancing the individual, rather than just replacing something that was damaged or lost.

For this piece, genetic engineering will cover any modification made to an individual's genes, this can be for either positive or negative reasons, in the example of Brave New World everyone within the society has been genetically modified to fit a caste system, with Alphas at the top and Epsilons at the bottom. To fit into this system, those at the top have been genetically engineered to be taller, more attractive and more intelligent, while the Epsilons are much shorter and have stunted brain development, all of this is done in large factories where the embryos are separated off with the Alpha embryos being given the correct amount of nutrients and altered to also for

what the society deems appealing characteristics, while other embryos, especially Epsilons are deliberately tampered with, preventing them from developing normally.

For the Star Trek example, it is a little different and tends to throw more of a positive view on genetic engineering. There is one character in particular that I will be focusing on, Julian Bashir a human that underwent genetic engineering at a young age, this was entirely his parent's decision, this caused him to be stronger, more intelligent and have better reflexes than the average human, basically he was improved in all areas. For Julian there were no negative side effects to this procedure, it should however be noted that, unlike the universe of Brave New World, genetic engineering is illegal in the Star Trek universe. It is also seen that if the procedure of genetic engineering goes wrong in some way the individuals involved end up being locked away in a secure facility, this is seen to be for their safety but also creates an outcast class of intellectuals whose behavioural conditions hold them back.

As a brief extra example, I will look at how splicing could work, for the world of Bioshock, specifically within the city of Rapture, splicing is practiced readily to grant people unbelievable powers, also to increase strength and specific skills. The way this works is that an individual will inject themselves with a plasmid which adds the DNA for this skill or power to their own genetic code. Within this world, plasmids give people advantages over each other, for example, a bartender that can teleport to each customer, light their cigarette or add ice to their drink with the click of a finger has a significant job advantage over someone that has chosen not to splice. I will look more into the possible negative implications of splicing later on, but to put it simply, adding foreign DNA to your own has the possibility to cause long term brain damage.

Genetic Engineering

The ethics of genetic engineering are rather complicated, for a lot of people there seems to be something instinctually wrong about genetically modifying something or someone, hence why

many people are so strongly against GM crops. But this raises the question of what it is they are against, and is it just a fear response to something new but not necessarily bad?

If we use utilitarianism we can argue that GM crops can be seen as good by the amount of happiness they can create, for example take a strain of wheat that has been genetically modified to resist a specific disease or harsh weather, the people that grow this wheat will have better crop yields, even in harsh weather and so they get a greater profit, the people that that now have a stable food supply will see this crop as a good thing also, and so overall the GM wheat would be good.

The same principles can be applied to human based genetic engineering as well, take the example of Julian Bashir, his abilities were improved in all areas, he then used his intelligence to become a highly skilled doctor, in this position he was able to use his genetic modifications to save lives, this brings happiness to not only the patient but their families and friends too. So, the total amount of happiness brought about because Julian was genetically modified would out-weigh any negatives and so for this case we can reason that genetic engineering is morally justifiable.

Of course, utilitarianism has a few flaws that could throw somewhat of a spanner in the works, the first being that the measure of happiness can be a little too subjective in places, and so it is possible to say that genetic engineering may in fact not be as morally justifiable as it first appears to be. Brave New World works well for this, for many people in the society the way it functions, due directly to genetic engineering, is seen as good and they are happy, but there are others that disagree, those outside the society but some within it and many from the lower castes. There are both arguments here for genetic engineering being morally good and morally bad, it really depends on who you ask.

This subjective nature means that utilitarianism can't be a completely reliable measure of whether something is ethical or not. This is especially obvious with the hedonic calculus, which aims to rank everything by the happiness it produces but even the smallest of things are incredibly subjective, one person may thoroughly enjoy sour sweets but another may absolutely abhor them,

so to calculate where sour sweets would rank is next to impossible. Of course, something like sweet preference is already a very subjective matter, there are some ethical issues that could be calculated relatively easily, such as rape, anyone would be hard pressed to say that they truly get any happiness from it and as so we can give it an exceptionally low ranking. So, the hedonic calculus is a tricky one, it works for a small number of examples well but doesn't work for most everything else.

Consent

Consent is a major issue for genetic engineering because it is rare that the person requesting the procedure is the one that will feel the effects of it. This is the potential downfall of biological transhumanism, unless it was to be a fully accepted and widely available part of a society, so as to have consent be less required in conventional sense, changing it to be seen in the same sense as being born. By this I mean that no one can give consent to existing, even I they feel that it is something they do not want, the same can be said of genetic engineering, the idea that consent cannot be given and as such won't be required.

For the example of Brave New World being born and being genetically engineered have become so intrinsically linked that you cannot have one without the other, everyone born is born modified and so they can neither consent to the procedures or consent to their birth. This must be how it is as in this world there is no concept of parents, this means that the common practice of parents giving consent for children cannot happen.

The parental consent concept does come into play with the Julian Bashir example, 'Commonly there is a belief that adults, and in particular parents, know what is best for their children and therefore give consent on their behalf' (Chadwick and Tadd, 1992) and this consent is seen for all other genetically engineered individuals seen in this world, the idea that a parent or guardian knows best for the child. This itself comes with a few issues though, what the parents deem to be beneficial for the child may not be in the long run, for Julian this is arguably true, though having

enhanced intellect and physical abilities is overall useful to his career and everyday life, the social side of being genetically engineered has negative effects on him personally. Throughout the series it becomes clear that hiding who he is as well as trying to fit in troubles him, to the point that when met with others like himself, he fully realises how different he is and so do those around him.

Parental consent does have its benefits, it allows for procedures to take place without having to explain to a child the intricate details and so leading to positive outcomes for the individual later in life, but as parents cannot predict how their child will respond to the decision it can also cause issues later in life. Taking the consent away from someone completely may not be the best course of action, and in fact 'This could be seen as not in the child's interest and increasingly there is evidence to suggest that in later life this could lead to difficulties' (Miers,1999) as with the Julian Bashir example it is possible that being consulted about the procedures beforehand may have alleviated some of the stress caused to him as he would also have been a part of the decision, and though it would ultimately have been his parents decision, he would have still given consent for it.

Within the episode Statistical Probabilities of Star Trek: Deep Space Nine Julian Bashir points out the issue with parental consent and how it can cause troubles for the child 'Giving them a chance to contribute doesn't necessarily mean sanctioning what was done to them. They didn't ask to have their DNA tampered with. They were only children. And why should they be excluded just because their parents broke the law?' (Star Trek: Deep Space Nine, 1997) within the context of this world, genetically modified individuals are banned from joining Starfleet, so the consent of the parents restricts what the child can do, and so by someone else's consent an individual is caused harm and must suffer for their whole life. This example shows how problematic parental consent can be, especially when extremely young children are involved that wouldn't be able to understand what was to be done to them, in this sense they could never give consent, in much the same way we consider a drunk person unable to consent as they are not fully aware of the situation.

A final point that I find interesting is the idea that consent is not required, which is a sure sign that transhumanism, or the people causing it, have taken a step too far. The example I am using here looks at the technological side a little more but is relevant to both sides, in *Ghost in the Shell* they play around with the idea of consent and how it relates to the data within an individual's mind. Near the beginning of the film the main character, Major Mary Killian, has her data scanned after a mission, there are glitches within her data which need to be deleted, for this to happen she must give her consent say 'My name is Major Mary Killian. I give my consent to delete this data.' (*Ghost in the Shell*, 2017) so this suggests that consent is important here, for not only receiving a modification but also for any fixes that may be required. Interestingly, later in the film it is revealed that this was all just a formality as another character points out 'We never needed your consent. Yours or anyone's.' (*Ghost in the Shell*, 2017) the idea that consent isn't needed when someone else holds the power can be seen in both the *Brave New World* and *Star Trek* examples, with it being rare that the individual gives consent, particularly for genetic engineering. This trend in transhumanist media could be seen as worrying, as it seems to suggest that when transhumanism increases consent may decrease, making transhumanism morally grey.

Biological transhumanism is the less ethical of the two forms looked at in this piece, with consent being rarely given by the individual in question due to the nature of how genetic engineering works, as well as it running the risk of it bringing about class issues. I mentioned before that splicing is another way that biological transhumanism could work, and this does solve the consent problems as the individual can be of an age where they can consent for themselves to this process. The best example of this process is within the game *Bioshock*, where individuals inject themselves with a plasmid to change their DNA, within the game the plasmids give the character powers but the concept can be translated over to slightly more realistic effects, such as providing resistance to radiation or potentially allowing the individual to breath underwater. This concept does not completely redeem biological transhumanism, but it does provide hope that it could be implemented more safely in the future and should not be ruled out.

Genetic Class System

Another issue that can arise from genetic engineering, and transhumanism in general, is the creation of a genetic upper class, as is seen in Brave New World, though that is more of a case system, which leads to issues of how people should be treated when they are designed to be more efficient.

When people can be engineered to be more intelligent or more attractive, this can lead to these people ending up in a higher social position than those with no genetic alterations. From here these individuals can start to shape a society which would maintain their position on top. An example of how this may turn out is Brave New World, where the whole society and people's places within it are dictated by their genetic make-up and what was done to it during development. So those on top, referred to as Alphas are selected by their embryos being superior, as such these embryos are treated extremely well and in such a way as to promote the development of increased intelligence, and attractiveness especially height. Meanwhile, the lowest position in the society is taken by the Epsilons, who are stunted in both cognitive development and in physical appearance, they are short and have mental disabilities which are designed to make them stay in their caste, with no way of understanding how bad their situation is.

Ethically, this class/ caste system creation cannot be comfortably justified, even by looking at how much happiness this system generates, which outwardly seems to be quite a lot, though that isn't necessarily the genetic engineering that causes this, but the conditioning and soma pills that go along with it.

If we look at the class system alone, without the re-enforcement strategies, the negative would outweigh the positives. For the Alphas, the system would create a lot of happiness, as they exist at the top of it, they only receive good modifications and so have no negative side effects, as we go down the class system more negative effects can be seen. For Betas, Gammas and Deltas there is an element of resentment towards the classes above them, they also suffer from the effects of being mentally and physically stunted, and so there is very little happiness here. Finally if we look

at the bottom of the class system, we have a class that can know any other way and so is content in their lives, but even this such stunted mental capacities there would still be desires, even if it is as simple as wanting to go out into the sunlight, 'The warm glory of afternoon sunlight made him start and blink his eyes. "Oh, roof!" he repeated in a voice of rapture. He was as though suddenly and joyfully awakened from a dark annihilating stupor. "Roof!" He smiled up with a kind of doggily expectant adoration into the faces of his passengers. Talking and laughing together, they stepped out into the light. The liftman looked after them. "Roof?" he said once more, questioningly' (Huxley, p.40, 1932).

The total happiness created by a system like this would be vastly outweighed by the negative effects of the people outside of the top class, something that is not too dissimilar from how the class system works in the world now.

Another class issue can be raised by genetic engineering, the creation of an outcast class, much like the one seen in the Star Trek universe. This comes about when genetic engineering is made illegal, it leaves those that have undergone a procedure of this type forced to hide the truth from society, causing them to internally see themselves as other. It also means that you have a distinct, and often negative, attitude towards genetic engineering, it creates an air of hostility, much like how an attitude of racism within a society causes friction.

Looking at this attitude from a utilitarian perspective it can be said to be an improvement on an entire class system overhaul, as well as having less of an impact of the populous as a whole. That being said, by treating the genetically engineered individuals as outcasts, they will suffer from being treated as less.

From the view of Aristotelian virtue ethics by forcing people into a position of being an outcast you would be acting not on a virtue but a vice. Actively causing harm to a group of people is not only selfish, as in most cases it is done by an individual to better their position, it is also destructive for a society as it spreads mistrust and prejudice. These actions are not in the best interest of the individual as it shows they are not working towards being a good person and eudemonia, but also

works to prevent others from reaching eudemonia by making it hard for them to succeed in the society. Outcasts will be treated poorly by people within the society leading to many people acting on the vice of cowardice, I see it as cowardice to treat someone in a lower class position than you poorly because a lot of the people doing it will know better but fear becoming outcasts themselves and so won't do anything to stop it. In the episode Statistical Probabilities, when the non-modified characters are talking, we see an example of this thinking, not outwardly hateful but prejudice nonetheless 'If people like them are allowed to compete freely, then parents would feel pressured to have their children enhanced so that they could keep up.' (Star Trek: Deep Space Nine, 1997) the phrase 'people like them' is significant as it shows otherness and relays the character's belief that they are not on the same level as them. By treating transhumans as different they are made to be different, the same can be said about any group in this position, and to treat people in this way can never be morally good.

Technological Transhumanism

The technological side of transhumanism is perhaps a little easier to explain, it is the stereotype of transhumanism, the fusion of human with technology. This section covers all external and internal augments, this can include replacement limbs so long as they are fully integrated with the individual and can not be easily removed after they have been fitted. The examples for this section look at different aspects of transhumanism in practice, the first is The Borg from Star Trek and the second is the cyberpunk world of Ghost in the Shell.

The Borg example looks at how merging with technology could risk the loss of individuality, it also looks at how technology can create a hivemind. For The Borg, technology has allowed them to become extremely efficient as everyone communicates via the hivemind, every drone is able to interface with the technology and they all have various implants that improve aspects of them. Implants in this case also allow the drones to be specialised, some are designed for repair work others for assimilation. The Borg work as a perfect example of how technology can be integrated

with humanity, both visibly and invisibly, to create a transhuman subspecies. They also work to show what could be considered too far, an entire society that works in perfect harmony but at the cost of individuality, it begs the question of how much can be sacrificed for what may be considered a positive end goal. The Borg once again bring up problems of consent, but as these have been covered in regard to Brave New World I will not delve further into the subject here.

With Ghost in the Shell it shows a society where most people have some sort of augment and works as a good example of the cyberpunk genre in general. The cyberpunk genre is often described as high-tech low-life, which basically means that the technology is highly advanced, but the rest of the society is rather grim, it is most likely the most similar to if our society now had far more advanced technology. There are also a lot of capitalist undertones with this, for Ghost in the Shell, the richer you are the better the implants you can afford, this creates another class problem for transhumanism, though it could be said that this is not a problem with transhumanism, so much as it is a problem with society as a whole. When looking specifically at the main character of Major, we come across consent issue again, as she was forcefully upgraded, becoming a human brain in a completely cybernetic body, there is a more positive feel with this example compared with The Borg or Brave New World as the individual still has free will, and so is able to make her own choices in regard to her modifications.

With other cyberpunk worlds, the gap between the haves and have nots is always very clear, technology helps to make this gap more obvious and could be seen as troubling, giving those that can afford it effective immortality, with Altered Carbon we see that the rich can transfer their consciousness into a new body upon death, while those that cannot afford this procedure are not only mortal but have their bodies used after their death by said rich people, it gives the idea that they own nothing while the rich own everything, and everyone.

Cyborgs

Though I'm sure most are aware what a cyborg is, or at least have some basic idea, I will define what a cyborg is and how that fit into transhumanism.

Once again looking to the Encyclopædia Britannica for our definition they describe a cyborg as 'a human being whose physiological functions are aided or enhanced by artificial means such as biochemical or electronic modifications to the body' (Britannica, 2019), so a cyborg is anyone with a modification to their physiology, unlike with genetic engineering this would be done after development. Also, consent is often less of an issue with cyborgs as the modifications tend to be at the behest of the individual or for medical reasons where consent is ignored in an effort to preserve the life of the individual.

Though, there can be class issue with technological transhumanism, they typically stem from a capitalist system where the best modifications are only available to the rich elite. This leads to the rich having extremely high tech modifications, let's use the example of a cybernetic arm, a rich individual would be able to have a high functioning and adaptive arm, potentially with increased strength and other additions, where as a lower class individual would likely end up with a functional arm, but not necessarily one that was up to the standards that the technology of the time is able to reach. The more modifications a person has the more obvious the monetary divide would be, with a rich individual being able to reach heights far beyond that of your average human, or even transhuman, while the poorer individual may suffer from malfunctioning implants or even just from their implants not being as impressive as those that other can afford.

Another key theme with cyborgs is identity, and the act of being something that isn't only human. This theme is particularly important when the process of becoming transhuman has had an effect on the individual's memory, such as with both Seven of Nine in Star Trek: Voyager, a woman who was given back her free will after being part of The Borg Collective, and with Major Mary Killian in Ghost in the Shell. Though even with all your memories intact it is possible to question your identity when discovering what you are, as was seen with Julian Bashir in Star Trek: Deep

Space Nine. Memory is however a key part of identity, with some philosophers, such as Locke, believing that 'identity is contingent on memory' (N. Strohming & S. Nichols, 2015) and I would agree, considering that it is our experiences that change us over time, without the memory of these experiences we would be a different person. This is something that was looked at with Seven of Nine in the episode Unimatrix Zero Part 1, when she is confronted with a place, she no longer has any memory of say 'I've been told I spent a great deal of time there. But since I don't remember Unimatrix Zero any more than I remember Earth, it's irrelevant.' (Star Trek: Voyager, 2000) the idea that having no memory of a place removes any connection the individual had to it implies that their personality has changed. As both Major and Seven have no memory of their past they both develop new personalities, while at the same time discovering who they are and what they are. Becoming transhuman is undoubtedly something that will change a person, but it can be for the better, by choosing to improve aspects of oneself it can be seen as working towards reaching eudaimonia, and for some this could mean developing a new identity.

Medical Vs Cosmetic

Another potential issue raised by the creation of cyborgs is the discussion between medical and cosmetic, though to be clear, by cosmetic I essentially mean any modifications that are not necessarily needed, ones that the individual wants to improve themselves, these could include replacement body parts, but the main difference between medical and cosmetic is that a cosmetic one was not needed to start with, even if it would cause impairment after removal.

The distinction between medical and cosmetic is interesting, particularly when looking at the development of technology that will lead to transhumanism. Most of the modifications will initially be due to a medical need for them, for example prosthetic limbs. One of the main advancements required for cyborg limbs is the ability to create limbs that can meld seamlessly with the skin, essentially having metal join to skin, bone and muscle without leaving a gap where infection can enter. Once this technology has been developed it will undoubtedly transfer over to

the cosmetic market, for such modifications as lights on the skin, or just below it, this is a modification that doesn't need to be done but would have an effect similar to a tattoo.

An interesting aspect to this argument is to look at whether purely cosmetic modifications can be seen as just as acceptable as medical ones, it's something that can be seen today when looking at plastic surgery. Take breast related plastic surgery, there are both cosmetic and more medical reasons for this type of surgery, one for an individual that wants larger breasts for vanity-based reasons, larger breasts are, to a point, considered to be more attractive, while another individual may require surgery to reconstruct a breast after a mastectomy. Both surgeries have essentially the same end goal, to change the appearance of an individual's breasts, but they feel as though they should be considered differently, possibly on a moral level.

For the breast example, with utilitarianism they would be the same, the end goal is so similar, and they likely have the same effect on the individual, and yet the intentions behind the surgeries are different, so can we really say they are the same and of equal moral value. For virtue ethics though, we do see some difference, the vanity based one can be seen as the individual falling to the vice of vanity, being far too focused on one's appearance. While the post mastectomy wouldn't necessarily be falling to this vice, though whether it can be said as working towards a virtue is also unlikely, still the difference in intention has more weight here than with utilitarianism.

Now, the moral value of breast surgery is not terribly high in itself but it does work as a good starting point for the moral value of cosmetic versus medical modifications in the transhuman sense. For example, let's now look at a cybernetic eye, our first individual needs a replacement eye as their original one was damaged and needs replacing, the other individual wants a cybernetic eye because it will work better than their current ones, there is nothing wrong with their eyes. For the first individual there seems to be no problem here, in the same way that giving a prosthetic leg to an amputee is perfectly acceptable. The idea of someone removing their eye for it to be replaced with a cybernetic one however, seems wrong, it would be the needless destruction of the self. This destruction for the purpose of improvement seems as though it would be the individual

acting on the vice of vanity, but it the intention of this destruction was for the individual to improve themselves, so there is a bit of grey area here.

There does seem to be some small difference with the cosmetic side though, some modifications can be said to be more functional than others, and so they could be classified separately. This difference also means that the moral value of cosmetic modifications can differ depending on how functional the modification is. More functional modifications would surely be more morally good or have greater moral value as they can help the individual to do more good, while more purely cosmetic modifications have less value as they don't do as much to help the individual. I say that they don't do as much, because they may still help the confidence of the individual in the same way tattoos do for some people, for example if it were to cover up a scar.

For virtue ethics the end goal is to reach eudaimonia, to be the best version of themselves, so it seems that what eudaimonia is can be seen as different for each person, if this is the case is it not then possible that destruction of certain elements of the self are needed for a specific individual to reach their own version of eudaimonia? I would argue yes, after all for other aspects of reaching eudaimonia, for example meeting the golden mean of bravery, would mean different actions for different people. So, if both medical and cosmetic applications of transhumanism can be seen as an individual working towards eudaimonia both must also be seen as morally permissible.

From here we can say that transhumanism in a technological sense is ethical, of course we do once again come to the issue of consent when looking at the examples, both with The Borg and with Major in Ghost in the Shell we see problems with forced upgrading. Though I have already covered the issue of consent, I will add that science fiction writing tends to look more at the issue of lost individuality when technology is introduced, and not on consent, this is understandable as it stands to reason that adding something completely alien to one's being does seem to suggest that something must be removed in its place, the loss of a biological eye for a cybernetic one, the loss of pain sensations when a cybernetic arm is introduced, for how can a metal arm feel anything?

Loss of Humanity or Self

The most concerning potential outcome of the blending of technology with humanity is the loss of self or individuality with The Borg being the perfect example of this, all individuality lost to the collective hive mind. But loss of self can also be seen on a smaller scale, where the adding the implants to the brain causes a disconnect within the individual so that they can no longer truly feel sensations or emotions, an example of this can be seen, once again, in Star Trek DS9 season 3 episode 13 where Vedek Bareil is injured and so part of his brain is replaced with a 'positronic matrix' so that he can live, but his perception of reality changes, making him act distant. Bareil describes it as follows 'It's hard to explain, but when you touch me, it doesn't seem real. It's more like the distant memory of a touch.' (Star Trek: Deep Space Nine, 1995) this loss of sensation causes Bareil to change, and that what makes Bareil himself has partially gone too.

So, why is losing oneself a problem for transhumanism? In some ways, it is possible to say that it is not, but only for examples such as The Borg or other hive minds, this is because of the order that it brings, from a consequentialist or utilitarian point of view the outcomes of an completely ordered populous lead to an end to wars and fighting, it can also solve resource problems and joint intelligence can lead to fast scientific discoveries, curing disease and advancing the race. For a utilitarian the net happiness created here would be enough to say that a loss of self within a hive mind is something that could be considered good, however if we look at virtue ethics instead, a different picture is painted.

For virtues ethics an act can be considered good if it leads the individual to reach eudaimonia, but if there is no individual to speak of no act can be considered good, even if the outcome itself appears good. The complete loss of self prevents an individual from undertaking any morally good actions due to them not being able to comprehend their own actions, also by not being connected to their surroundings the individuals cannot emote with any actively negative actions either, thereby leaving them existing in a completely morally grey area as far as their perception is concerned.

Virtue ethics opposes the view of utilitarianism by looking at the intentions of the individual's actions to work out their moral value, as there is no clear intention is the individual has no sense of self no action can be morally good. The happiness it brings could potentially be disregarded though, as if no one is interacting with the actions, in the sense that people do before the loss of self, then is the happiness ever generated? Surely if these lost self individuals cannot feel emotion, they cannot feel happiness and so actions that would ordinarily cause happiness no longer do.

Though The Borg have one interesting feature that could mean that there is an individual within the hive mind, the Borg Queen, who it seems controls all the drones of the collective and so her intentions and individual will is executed through them. The Borg Queen defined herself as 'I am the beginning, the end, the one who is many. I am the Borg.' (Star Trek: First Contact, 1996) which suggests that she is indeed an individual within the collective and that the drones follow her will. If this is indeed the case then that means that it could be possible for some of the actions of a lost self individual, or drone, to have moral value if it either works towards the Borg Queen reaching eudaimonia or causes happiness that she is able to feel. Though this is a slim chance, it seems like a stretch to suggest that the actions of one person can bring about the moral intentions of another, this is because the individual will of the drone has been taken away. The removal of free will from the drone in itself is a morally bad act, as Mill's states with his harm principle, it is never permissible to regulate the actions of someone for anything other than the prevention of conflict. From this we can say that, though the loss of self can and likely will prevent further conflicts, it also prevents any individual choices that only affect the individual themselves, and this is not permissible for the harm principle.

To go back to the original example of Vedek Bareil, the changes seen in the character so his loss of self in the partial sense, he would still be able to make morally good actions and so this state could be seen as the limit of brain-machine blending. This concept is looked at further into the episode this time from the view of the doctor involved considering what would happen if the rest of Bareil's brain was to be replaced 'Nerys, if I remove the rest of his brain and replace it with a machine, he may look like Bareil, he may even talk like Bareil, but he won't be Bareil. The spark

of life will be gone.’ (Star Trek: Deep Space Nine, 1995) it is this idea that life comes from being an individual that is crucial, as it suggests that transhumanism that focuses on the brain cannot be morally good.

Conclusion

In conclusion, transhumanism is the next step in humanity’s evolution, though it will need regulating in the early stages to prevent it from going south and leading to a broken society, as was seen in Brave New World or with The Borg. Regulations would make sure consent is given, that the technology available to be implanted is safe and potentially that it is more evenly distributed and not kept by a ruling or higher class.

As far as the ethics of transhumanism are concerned, becoming transhuman can lead people to reaching eudaimonia, being enhanced physically and/ or mentally also for an individual to focus more on their actions and working on self-improvement. Julian Bashir is an example of this, having been enhanced mentally and physically allowing him to work towards becoming the best he can, but knowing of his advantage humbled him as he was aware of where his modifications could have left him saying, ‘My parents managed to find a decent doctor to perform the DNA resequencing on me. These four weren't so lucky. They all suffered unintended side effects.’ (Star Trek: Deep Space Nine, 1997) so being aware of their status as a transhuman can help an individual reach eudaimonia.

As well as this, transhumanism can be incredibly useful to the health care industry, by helping to develop advanced prosthetics and other integrated technology to help with long-term illnesses. The ethic benefits of this are plain to see, the person developing them is bringing happiness to a vast number of people as well as working towards eudaimonia by helping others, so it works for both virtue ethics and utilitarianism.

As previously stated, biological transhumanism is not as ethically permissible as technological transhumanism, with it comes issue of consent and the potential creation of a genetic class system,

so it would likely be best to focus on technological transhumanism as it is able to create a greater amount of good with fewer risks to individuals in the long run.

Finally, I will point out that, with the rate at which technology is evolving, with Moore's Law showing that 'overall processing power for computers will double every two years' (G. E. Moore, 1965), makes transhumanism inevitable and, as The Borg would say, 'Resistance is futile.' (Star Trek: The Next Generation, 1990).

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Bibliography

Brink, D. (2018). *Mill's Moral and Political Philosophy*. Available: <https://plato.stanford.edu/entries/mill-moral-political/#LibPriCatApp>. Last accessed 14th May 2019.

Chadwick R, Tadd W. (1992) *Ethics and Nursing Practice*; London: Macmillan.

Ghost in the Shell, film produced by A. Arad, M. Costigan, S. Paul, New Zealand, (distributed by Paramount Pictures, 2017), N/A, 106 minutes.

Gould SJ. *The spice of life*. *Leader to Leader*. 2000;15:14–19.

Hays, S.A. (2018). *Transhumanism*. Available: <https://www.britannica.com/topic/transhumanism>. Last accessed 6th May 2019.

Heckathorne, C. (2019). *Cyborg*. Available: <https://www.britannica.com/topic/cyborg>. Last accessed 6th May 2019.

Huxley, J. (1968) 'Transhumanism', *Journal of Humanistic Psychology*, 8(1), pp. 73–76.

International Committee of the Red Cross. (1973). *Weapons that may Cause Unnecessary Suffering or have Indiscriminate Effects*. N/A. Retrieved from https://www.loc.gov/rr/frd/Military_Law/pdf/RC-Weapons.pdf

Lienhard, J. (1988-2018). *No.16: Homo Technologicus*. Available: <http://uh.edu/engines/epi16.htm>. Last accessed 14th May 2019.

Miers M. (1999) *Power, knowledge and skills in child centred care*. In: Wilkinson G, Miers M. [Eds] *Power in Nursing Practice*. London: Macmillan.

Moore, G. E. (1965). *Moore's Law or How Overall Processing Power of Computers Will Double Every Two Years*. Available: <http://www.moorelaw.org/>. Last accessed 6th May 2019.

Star Trek: Deep Space Nine. (1995). Paramount Domestic Television, 30th January.

Star Trek: Deep Space Nine. (1997). Paramount Domestic Television, 24th November.

Star Trek: Voyager. (2000). Paramount Domestic Television, 24th May.

Star Trek: The Next Generation. (1990). Paramount Domestic Television, 18th June.

Star Trek: First Contact, film produced by R. Berman, United States, (distributed by Paramount Pictures, 1996), N/A, 111 minutes.

Strohming, N., & Nichols, S. (2015). Neurodegeneration and Identity. *Psychological Science*, 26(9), 1469–1479. <https://doi.org/10.1177/0956797615592381>

The Editors of Encyclopaedia Britannica. (2018). *Human Being*. Available: <https://www.britannica.com/topic/human-being>. Last accessed 6th May 2019.