

Transhumanism, Truth and Equality: Does the Transhumanist Vision Make Sense?

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Transhumanism maintains that technology will allow humans to develop beyond all known limits. This essay maintains that this entails both an epistemology and an anthropology that are inherently inconsistent. As an allegedly experience based ideology employing concepts traditionally reserved for the divine and the metaphysical, transhumanism therefore does not make sense.

Key words: Transhumanism, philosophy of science, epistemology, anthropology

The Problem of Transhumanism

Modern technology has been very important – and quite successful – in giving us longer and healthier lives. Does this development have any limit? Should modern biotechnology aim at curing human illness to the extent that illness and disease become things of the past, or should the goals be set at a more modest level? Is there a point where the losses outweigh the gains, and if there is, where is that point?

Defending the view that this development neither has nor should have any limit is the ideology which by its own adherents is called transhumanism. Transhumanists maintain that science and technology will enable humans to develop beyond all limits presently known, possibly to the extent that we will see the immortal human with intellectual and emotional capacities that vastly overshadow what is known today. According to

this way of thinking, we will therefore in the foreseeable future see the development of the human being, version 2.0. On what is this claim built, and can it be developed and maintained in a way that is consistent and free from internal contradictions? According to transhumanism, science is supposed to build a new entity that in all respect surpasses what today is considered typically human. But how do we actually evaluate the goodness and desirability of this process when the alteration of the point of reference, the human subject, is the very point of what is going on? How can concepts like "improvement" and "betterment" make sense when there is no stable point of reference? And how is the goal of improving the human subject related to the idea of human equality? Is awareness of these problems a part of the transhumanist ideology, and if it is, do transhumanists offer us a viable solution? These are the

questions that will be addressed in this essay.

The Transhumanist Ideology

As an organised movement transhumanism does not have a long history.¹ In 1998, representatives from the relevant sciences formed the World Transhumanist Association, which has evolved into what today is called Humanity+ and describes itself as "dedicated to elevating the human condition".² According to its adherents, however, the roots of the movement are to be found in the development of modern science. In particular, one emphasizes the significance of Francis Bacon and his *Novum Organum* from 1620, where he defines "the achievement of mastery over nature in order to improve the condition of human beings" as the goal of "scientific methodology based on empirical investigation".³ Transhumanism thus understands all proper science as empirical science and presents itself as a movement for promoting the fulfilment of its inherent goals.

The word "transhumanism" seems to have been coined by Julian Huxley in 1957; he was thinking along the lines of a future projection of evolutionary development more or less in the same way as Teilhard de Chardin.⁴ Present-day transhumanists are, however, more intent on using recent technological developments actively in enhancing the human predicament. The goal of this development is referred to as the posthuman, which is defined in the following way: Posthumans will

reach intellectual heights as far above any current human genius as humans are above other primates, ... be resistant to disease and impervious to aging, ... have unlimited youth and vigor, ... exercise control over their own desires, moods, and

mental states, ... be able to avoid feeling tired, hateful, or irritated about petty things, ... have an increased capacity for pleasure, love, artistic appreciation, and serenity, ... [and] experience novel states of consciousness that current human brains cannot access.⁵

Transhumanists maintain that this goal will be achieved through "completely synthetic artificial intelligences," through "enhanced uploads", which is defined as the transfer of "an intellect from a biological brain to a computer" or it "could be the result of making many smaller but cumulatively profound augmentations to a biological human."⁶ Any way, this will according to many transhumanists eventually lead to what they refer to as the singularity, which is the moment when humanity will pass from the transhumanist hope to the reality of the posthuman future.⁷ What by many transhumanists is considered as the ultimate goal of science, the restructuring of the universe as one connected network of information processing, will then be close at hand.⁸ After the singularity, we will have a situation where "the rate of technological development becomes so rapid that the progress-curve becomes nearly vertical"; this will transcend the world with which we are familiar to the extent that it may be "impossible ... for us to predict what comes after the singularity."⁹

Not all transhumanists believe in the singularity. Common for all transhumanists is, however, the insistence that humans should develop by overcoming their biological limitations.¹⁰ A central element in the transhumanist ideology is therefore the understanding of embodiment as an impediment to the development of the future human. Embodied categories like sex and gender are therefore aspects of the human nature that will be left behind.¹¹

The link between sex and reproduction has to be severed and the production of future intelligent beings will be entrusted to technology for the sake of maintaining the necessary quality control. The pleasure of sexual experience should therefore be completely free from any association with reproduction and the idea of a biological sexual identity. Technologically induced sex reassignment and the experience of upload or virtual sex are therefore considered as undisputed goods, and while we wait for the ultimate freedom from sexual reproduction, health authorities should promote the use of "contraception, abortion, and genetic therapies so that parents can make free and informed reproductive decisions that result in fewer disabilities in the next generation." Transhumanists therefore think that society has an obligation "to subsidize the birth of healthy children."¹²

The development of the cyborg, i.e., the man-machine hybrid, which supposedly will lack any kind of gendered structure, is therefore considered as an important step in the right direction, paving the way for freedom from all kinds of oppression associated with nature and embodiment;¹³ it will give us the definite liberation from all kinds of so-called Enlightenment gender essentialism.¹⁴ We are not there yet, but transhumanists see the use of "prostheses, plastic surgery, intensive use of telecommunications, ... androgyny, mediated reproduction (such as in vitro fertilization), absence of religious beliefs, and a rejection of traditional family values" as signs that we are on the right track.¹⁵

Transhumanists are aware that such rather invasive applications of technology raises questions of its possible misuse, and may refer to the famous 1932 novel of Julian Huxley's brother Aldous, *Brave*

New World, as an example of what might happen if technology is used to "diminish the scope of human nature rather than enhance it".¹⁶ For this reason, they do not support all the efforts of their predecessors. In the first half of the 20th century, the idea of a scientific enhancement of the human nature was a central element in the ideology of the so-called eugenics movement.¹⁷ Transhumanists are critical to the way eugenics was applied in the service of Nazi and Communist¹⁸ totalitarianisms, but not necessarily to eugenics in itself as long as the decision of its application is left to the individual. Transhumanists therefore maintain a suspicion "of collectively orchestrated change" and a preference for "the right of the individuals to redesign themselves and their own descendants."¹⁹ What is wrong when decided by the state might thus be right as the outcome of individual choice.

In this way, transhumanists try to strike the right balance between the kind of liberalism on which scientific innovation depends and the kind of collectivism large scale scientific cooperation presupposes. It does not seem to be a central question, though, and they may to some extent disagree among themselves on how the right balance is to be found.²⁰ One thus gets the impression that the problematic aspects of these issues tend to be overshadowed by a general optimism concerning the possibility of science itself to solve even the problem of the possible misuse of science. Issues concerning the possible impact of technology on society is therefore hardly addressed beyond a general agreement that one at least should avoid outright coercion, and the closely related question of how enhanced technology may affect the relation between rich and poor is usually not even asked.²¹

Transhumanism is "defined by its

commitment to shaping fundamentally better futures.”¹ The ultimate goal belongs, however, to a kind of reality that is unknowable to humans as living today; we may have an idea of the direction where we want to go and the means that will bring us there, but we don’t know either when we will arrive or what to expect when we – or our enhanced descendants or clones – arrive apart from the fact that it is supposed to be better than anything experienced by humans so far. This belief in scientific progress is quite strong, so strong in fact that the possibly problematic aspects of a development along these lines may not always be taken quite seriously.

Does Transhumanism Make Sense?

The basic ideological commitments of transhumanism are fairly clear even from a short overview like this. The movement is, as already indicated by its name, clearly anthropocentric and committed to the betterment of the human predicament. Transhumanism is thus not particularly worried about ecological concerns, but sees even these as problems that eventually and necessarily will be solved by technological improvements to the satisfaction of all humans.

Not all parts of human nature as known today are equally interesting, though. Transhumanism is committed to the improvement of the human experience of the world, and this commitment is developed according to a world-view that seems to be strictly dualist. Physical nature seems to be interesting mainly as a tool for the enhancement of human experience. It thus seems to lack an inherent value beyond its usability as raw material for technological manipulation supposedly improving the human predicament, which then again is defined with exclusive refer-

ence to the cognitive and emotional aspects of the human being. The dualism thus extends to transhumanist anthropology; even the human body is dispensable as long as the possibility of pleasure and knowledge is maintained. The only phenomenon which has any value on its own seems to be human consciousness.

To this is added a strongly emphasized epistemological optimism. According to transhumanism, the world is essentially knowable. Combined with the understanding of the material aspects of the world as essentially dispensable, this leads to what may be described as a kind of spiritual reductionism: All there is, is reducible to ideal or mathematical structures, the ultimate knowledge of which is, or will be, accessible to human consciousness. The goal and, at least according to some versions of transhumanism, the necessary outcome of scientific progress is the ability to manipulate these structures to the extent that the human experience of happiness and satisfaction is, or will be, endlessly improvable. Provided that the opposition from what the transhumanists call the bioconservatives, or, on a more polemical note, the luddites²³, is a problem that can be solved – and why shouldn’t this be a technologically solvable problem if all others are? – this will be the consummation of the development of the human.

Strictly anthropocentric, strictly dualist in the sense that the material is merely instrumental,²⁴ and committed to unbridled epistemological optimism; this, then, seem to be the main characteristics of the transhumanist world view. As such, it is not without philosophical antecedents; it still differs from these, though, in ways that lets one wonder whether transhumanism is, in fact, consistent on its own terms. The mathematical reductio-

nism suggests that transhumanism could be considered as kind of Platonic idealism. Platonism is, however, as a historical movement neither one-sidedly anthropocentric nor epistemologically optimistic, but considers the ultimate realities of the world to be beyond the realm of human creativity and for that reason essentially unknown.²⁵ Closer to the emphases of transhumanism are therefore the philosophical reflections on the mathematical reductionism of modern science, i.e., the philosophies of Descartes and Kant.²⁶ And both are indeed both anthropocentric, dualist and epistemologically optimistic in ways that seem to anticipate these central tenets of transhumanism.²⁷ In particular, the Cartesian "cogito, ergo sum" with its inherent dualism between the thinkable and the merely material seems to anticipate a typically transhumanist emphasis, intent as it is to make the entire universe into an instrument of human intelligence.

However, neither Descartes nor Kant combines anthropocentrism and epistemological optimism the way the transhumanists do; on the contrary, both find that one-sided anthropocentrism entails epistemological solipsism and thus scepticism. To maintain the idea of truth as a universal category – and without it, even transhumanism cannot be true in any meaningful sense of the word – human communication must therefore be thought to move within a structure beyond the merely human. Descartes tries to solve this problem by adding to the undisputable fact of his own consciousness the existence of God as the guarantor of the correspondence between his own intelligence and the non-thinking world,²⁸ while Kant's attempt implies the non-knowability of the world apart from the structures imposed on it through the common features of human rationality.²⁹

Neither solution works for transhumanism, though. Obviously, God is not an observable entity according to the transhumanist understanding of "scientific methodology based on empirical investigation"; Descartes's appeal to theology for the tenability of his epistemological optimism therefore has no traction with transhumanism. Kant's solution may fare somewhat better, and the Transhumanist FAQ refers to him as a predecessor. However, transhumanist epistemological optimism still seems to presuppose some kind of direct epistemological access to the world; if the world in itself remains essentially unknown as Kant maintains, the idea that it can be endlessly manipulated to the satisfaction of the human seems to lack a sufficiently stable foundation.

To this is added the complication the core doctrine of transhumanism, the malleability of the human subject, adds to Kantian epistemology. If the goal of the scientific endeavour is a new human being that in all aspects of its being vastly transcends the human as known today, how can we be sure that the modes of perception and categories of understanding as known today still apply? Is it even thinkable that they should? And if they don't, Kant's argument for epistemological reliability is lost, and the belief in science is reduced to an unfounded contention.

The problem highlighted by this discussion is that epistemological optimism, i.e., the belief that our understanding of the world is essentially reliable, presupposes an understanding of truth and rationality that can hardly be defined by reference to human experience alone. Both Plato (though not an epistemological optimist in the sense defined here), Descartes, Kant and transhumanism presuppose the universality of truth, i.e., they

think that if something is true, it is true in all cases where the relevant conditions apply. Which means that the concept of truth, without which epistemological optimism hardly makes sense, is a metaphysical concept that according to Descartes (and arguably even according to Plato) presupposes a theology or according to Kant an understanding of human rationality as a universal and timeless phenomenon. But universal and timeless phenomena do not sit well with transhumanism; such a phenomenon is arguably incompatible both with transhumanist empiricism and its insistence of the development of the epistemological subject, i.e., the human, beyond any limits known to us today.

The transhumanist understanding of true knowledge of the world as ultimately accessible through human experience in a way that eventually will lead to a profound alteration of that experience thus seems to build on incompatible anthropological and epistemological assumptions. The very ideas of "elevating the human condition" and "enhancing the human predicament" presuppose a stability of the human standards of measure that to the extent that the transhumanist project "succeeds" no longer apply. And transhumanist philosophy does not seem to have any argumentative strategy for solving this contradiction; on the contrary, it on the whole behaves as if it does not exist.

Also with regard to its spirit/matter-dualism, transhumanism is informed by essential aspects of modernity from which it draws seemingly inconsistent implications. The modern idea of ontological dualism originates in late medieval Scholasticism and became the dominating worldview of the Western world, at least as far as politics and science are concerned, through the Enlightenment.³⁰ Neither Platonism nor Christianity, the

main intellectual forces of the premodern Western world, are dualist in the late medieval and modern sense; both presuppose the presence of the eternal within the context of the material in ways that let the differentiation between the two remain an unsolvable riddle.³¹ Epistemological optimism is, however, essentially linked to the "divide et impera"-attitude of modernity's dualist reductionism; one declares one's ability to grasp the inner essence of the world by seeing either substance, the material or the spiritual, as the expression of the other. Ontological materialist reductionism is, however, arguably a contradiction, as it seems to imply the belief that there are no beliefs.³² This obviously differs from the transhumanist belief in the betterment of the human condition, and transhumanists are aware of the difference.³³ The manipulation of the material by means of intelligence that is presupposed in the transhumanist emphasis on artificial intelligence and the possibility of uploading of brain content to other media hardly makes sense on strictly materialist presuppositions.

Still, the question remains if the world in this way is reducible to the duality of disembodied consciousness and merely functionalist materiality without any essential aspect of it being lost. Is it possible to give an experience-based answer to that question when a world inhabited (or governed?) by intelligences whose material representation is purely accidental is something nobody has ever experienced? Can transhumanism's kind of spiritual reductionism be said to be based on empirical science when there are no empirical data whatsoever from a world where the link between intelligence and the body has been severed?

As counter-strategies to these objections transhumanists may want to adjust

their position to the extent that one no longer insists either on the dissolution of embodiment or on the ultimate knowability of the world. Transhumanism would then, however, be reduced to the hope of scientific progress for the sake of humans continuing to have longer and healthier lives, which hardly is a controversial point of view. Transhumanism as an organized movement with an agenda would then hardly make sense any more.

These reflections seem to warrant the conclusion that transhumanist epistemology cannot be upheld on close inspection. What, then, about its anthropology?

Transhumanism and the Problem of Human Equality

Transhumanists are in theory committed to the principle of human equality; according to the Transhumanist FAQ they even want to extend "formal legal equality and liberty into economic and cultural liberty and equality." Can this claim be maintained on transhumanist assumptions? Transhumanism is above all committed to the principle of experience-based scientific exploration. The understanding of cutting edge technology which is thereby achieved is, however, not something that is evenly distributed among humans. In an ideal world, they who know would use their knowledge for the benefit of those who don't, but this ideal world is definitely beyond the realm of experienced reality. We have no data to support the idea that knowledge of how to enhance the human predicament will equally benefit those who know and those who don't; all observable facts show that "what we call Man's power over Nature turns out to be a power exercised by some men over other men with Nature as its instrument".³⁴ Historically, the relation between scientific development and the

welfare of humanity has therefore been ambivalent at best; enhanced technologies have both improved life conditions and led to suffering through war, subjugation and slavery. And transhumanists have not given us any compelling reason to think this ambivalence will disappear just by technology becoming more ambitious and invasive.

This tendency for knowledge to deepen inequalities rather than conquering them is arguably exacerbated by transhumanism's tendency to extend its anthropocentrism even to its moral philosophy; according to transhumanist epistemology, there is no such thing as a moral norm which all humans are obliged to obey. For transhumanists, there exists nothing beyond the possibility of increased knowledge and the obligation to make that possibility into a reality.³⁵ If the outcome of this process is compatible with the idea of human equality, this compatibility must therefore, on transhumanist assumptions, be built into the scientifically explorable structures of the world. The idea of human equality can thus only be accepted to the extent that it manifests itself as a result of scientific development, the outcome of which, however, is completely unknown. The transhumanist commitment to the principle of human equality thus looks shaky at best; its relation to the basic epistemological commitments of the movement is neither explored nor explained.

Nazism is probably the most extreme example of an ideology that in the name of science explicitly dispensed with the idea of human equality. It is therefore hardly a coincidence that the critique of the possible implications of modern scientism in this respect has been particularly strong in Germany. Based on his research into what he saw as parallels between

ancient Gnosticism and the modern infatuation with technology, the German philosopher Hans Jonas in 1979 published a book where he defended what he called the imperative of responsibility. Gnosticism established a strict distinction between those who knew and those who did not, and found, in a way that according to Jonas parallels similar phenomena in modern Nazi and Communist totalitarian systems, that the latter existed for the benefit of the former. To avoid this danger, and since we never know where the scientific endeavour may take us, the only responsible option is according to Jonas to always think according to the worst possible implications of our actions.³⁶ He therefore suggests the following modification of Kant's categorical imperative: "Act so that the effects of your action are compatible with the permanence of genuine human life",³⁷ which for Jonas essentially is human life as known to us today. The very idea of a development of the essentially human is therefore in Jonas's view incompatible with the idea of human equality.

Essentially following in the footsteps of Jonas, but aiming his critique more specifically at the problem of artificial reproduction, is Jürgen Habermas.³⁸ For Habermas, artificial reproduction technology and the principle of human equality are incompatible notions. The idea of "liberal eugenics regulated by supply and demand"³⁹ he considers as a contradiction; as he sees it, one simply cannot mention eugenics and liberalism in the same context. For Habermas, liberalism is founded on the principle of equal opportunity and is therefore incompatible with making decisions on behalf of future generations as implied in genetic engineering.⁴⁰ Human dignity can only be upheld through the maintenance of reciprocity in

all morally relevant discussions;⁴¹ modern biotechnology thus threatens the idea of human equality as understood in classical liberal thought by nullifying the possibility of informed consent as far as the future generations is concerned.

In the works of Francis Fukuyama, a similar approach is broadened to a general and explicit critique of the transhumanist movement.⁴² In his well-known work *The End of History and the Last Man* (1992) he argues that liberal democracy and Western market economy represent the best possible models for human societies; with the end of the Cold War, the time of battles between competing ideologies is over. The problem that now confronts us is the problem of controlling technology. Transhumanism is therefore in his view the one outcome of the liberal democracy that may contain the seeds of its undoing. In his book *Our Posthuman Future: Consequences of the Biotechnology Revolution* from 2002 Fukuyama therefore argues that biotechnology endangers the liberal project by possibly introducing alterations of the human nature that entails new forms of inequality.⁴³ In the long run, the victory of liberal democracy is therefore according to Fukuyama dependent on the end of science and technology as known today. Far from supporting the transhumanist vision, both Jonas, Habermas and Fukuyama come to the opposite conclusion: There is probably nothing today that endangers the liberal idea of human dignity and equality in quite the same way as the transhumanist idea of technological human enhancement.

The transhumanists' rejection of Fukuyama's critique is explicitly founded on the view that there is no human essence; we are therefore free to go where technology takes us.⁴⁴ The problem is, however,

that technology ultimately make take us to where to human point of view hardly matters any more. If the human predicament is enhanced by disembodied intelligence, for whom is this future supposed to be better? For humans or for their presumably vastly more intelligent creations? And if superintelligent machines actually find humans to be an impediment for the realization of what they find most useful, and act on that conviction, in what sense are we still speaking of progress?⁴⁵ If that situation should ever occur, the critics of both scientism and transhumanism will finally and undisputably be proved right; the world and what we make of it are ultimately not controllable after all. There may, however, be none of the critics left to savour the victory.⁴⁶

Transhumanism as Inconsistent Religiosity

Transhumanism believes in a vision of the future human as endowed with characteristics that during most of the history of the human has been considered as predicates of the divine: Omniscience, perfect happiness, possibly even eternal life. It thus essentially presents itself as scientism with an eschatology. The attraction of transhumanism is presumably this promise of divinity from within the context of the merely immanent. The basic problem of transhumanism is the question whether it makes sense to establish predicates of the divine based on an empiricist epistemology.

The monotheist religions agree that the answer to this question is no. They therefore unanimously maintain that the divine predicates have to be established with reference to a revelation that lets humans participate in a reality beyond the humanly knowable. Transhumanists replace revelation with scientific research found

ded on a purely empiricist methodology, but still maintain the divine predicates. This combination of an immanent epistemology with a theological anthropology represents what has been called an immanentizing of the eschaton; it is a kind of millennialism with a strong belief in the ability of humans to build the kingdom of God on their own.⁴⁷ This millennialism is arguably inherent already in modernity's essential myth of unending progress, the most consistent attempt of a realization of which so far is represented by the modern totalitarianisms of Nazism and Communism. In transhumanism, however, this myth resurfaces with unprecedented clarity.

My analysis of transhumanist thought has shown that transhumanism is inconsistent in its use of basic ideas concepts like truth and human equality. Truth is a central idea even for transhumanist epistemology; if not true in the traditional sense of the word, transhumanism is reduced to the irrelevance of an arbitrary perspective. However, any notion of truth that takes its universal and transcultural aspects seriously is incompatible with the transhumanist insistence on anthropocentric empiricism as the only viable point of orientation. One cannot uphold a consistent notion of universal truth with reference to the (infinitely changing) human subject alone. In the same way, the idea of human equality, to which even transhumanists pay lip-service, is incompatible with the transhumanist emphasis on the unlimited malleability of the human; there is, according to transhumanism, nothing essentially human on which a doctrine of human equality could possibly be founded. The transhumanist understanding of truth and equality thus appears as instantiations of its immanentizing of the eschaton; in both cases, concepts of an essenti-

ally transcendent or metaphysical character are referred to without any reflection on what occurs when their traditional metaphysical framework no longer applies.

Transhumanists present themselves as adhering to an ideology that is rational in the sense of being free of internal inconsistencies and contradictions. We must conclude, however, that this is not the case. Far from being free from inner contradictions, transhumanism is full of them. And these inconsistencies are not related to the peripheral and uninteresting; on the contrary, they are built into

the basic tenets of the ideology to the extent that no quick fix seems possible. Our expectations of how far technology can and should continue in improving our life conditions should therefore be guided by entirely different and presumably less contradictory principles and ideologies. As a starting point, it might then be a good idea to simply take concepts like truth and equality seriously with all their metaphysical implications and try to figure out what this might entail. What happens when we don't, we learn by studying transhumanism.

Notes

1. For an overview of its development, see Hava Tirosh-Samuels, "Engaging Transhumanism" in *H+/-: Transhumanism and Its Critics*, eds. Gregory R. Hansell and William Grassie (Philadelphia: Metanexus Institute, 2011), 19-52.
2. Quoted from the website Humanity+, *Mission* (6 March 2014); available from <http://humanityplus.org/about/mission/>.
3. Humanity+, *Transhumanist FAQ* (6 [March 2014]); available from <http://humanityplus.org/philosophy/transhumanist-faq/>. It has even been suggested that we should replace the "terribly outdated Christian calendar for a new one in which year zero would be the year in which *Novum Organum* was published"; so Max More, "True Transhumanism: A Reply to Don Ihde" in *Transhumanism and Its Critics*, 136-46, 138. 2015 would then be PNO (post-Novum Organum) 395.
4. Hava Tirosh-Samuels, "Transhumanism as a Secularist Faith" *Zygon* 47, no. 4 (2012): 710-34, 719-20. The transhumanist FAQ also refers to Teilhard as an important early inspiration.
5. Humanity+, *Transhumanist FAQ*.
6. Humanity+, *Transhumanist FAQ*. Nick Bostrom, "Why I Want to be a Posthuman When I Grow Up" in *The Transhumanist Reader*, ed. Max More and Natasha Vita-More (Malden: Wiley-Blackwell, 2013), 28-53 refers to improved capacities concerning what he calls health span, cognition and emotion. Some, but not all transhumanists, think that this will eventually lead to death being a thing of the past.
7. Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (New York: Viking, 2005) is the standard work on this issue.
8. Hans Moravec, "Pigs in Cyberspace" in *The Transhumanist Reader*, 177-81, 177, complains that "only in infinitesimal fraction of existing matter and space is doing interesting work." The ultimate goal of the "singularitarians" is to change this by "saturating the universe with ... intelligence", thus constructing the universe-scale computer (Kurzweil, *The Singularity Is Near*, 364).
9. Humanity+, *Transhumanist FAQ*.
10. According to Max More, "The Philosophy of Transhumanism" in *The Transhumanist Reader*, 3-17, 15, the human body is "a marvelous yet flawed piece of engineering".
11. See Martine Rothblatt, "Mind is Deeper Than Matter: Transgenderism, Transhumanism, and the Freedom of Form" in *The Transhumanist Reader*, 317-26.
12. Humanity+, *Transhumanist FAQ*.
13. Donna Haraway, *A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century* (1985 [cited 18 September 2015]); available from <https://wayback.archive.org/web/20120214194015/http://www.stanford.edu/dept/HPS/Haraway/CyborgManifesto.html>, is the classic representative for this view.
14. See J. Jeanine Thweatt-Bates, "Artificial Wombs and Cyborg Births: Postgenderism and Theology" in *Transhumanism and Transcendence: Christian Hope in an Age of Technological Advancement*, ed. Ronald Cole-Turner (Washington DC: Georgetown University Press, 2011), 101-14.
15. Humanity+, *Transhumanist FAQ*.

16. Humanity+, Transhumanist FAQ.
17. At that time, eugenics was a more or less generally accepted even among Protestant Christians; see Amy Laura Hall, "To Form a More Perfect Union: Mainline Protestantism and the Popularization of Eugenics" in *Theology, Disability and the New Genetics*, ed. John Swinton and Brian Brock, (London: T&T Clark, 2007), 75-95.
18. See Diane Paul, "Eugenics and the Left", *Journal of the History of Ideas* 45 (1984): 567-90.
19. Humanity+, *Transhumanist FAQ*. Birth control for the sake of weeding out the unhealthy should therefore not be strictly enforced.
20. Libertarian Transhumanists think that the market will provide the necessary regulation, while Technoproggressives think that governments should take steps to assure equal access to new technology; see IIEET, *Overview of Biopolitics* (12 April 2014); available from <http://iieet.org/index.php/IIEET/biopolitics>
21. According to Katherine Hayes, "Wrestling with Transhumanism," in *Transhumanism and Its Critics*, 215-26, 217-18, transhumanists on the whole are uninterested in the socioeconomic implications of technology.
22. More, "The Philosophy of Transhumanism," 15.
23. Even this terminology is explained at the IIEET website.
24. More, "The Philosophy of Transhumanism," 7, prefers "functionalism" for "dualism", though the difference is irrelevant to my argument.
25. On this reading of Plato and the Platonic tradition, see further Egil A. Wyller, "Plato/Platonismus I/II," in *Theologische Realenzyklopädie*, ed. Horst Balz, Gerhard Müller, and Gerhard Krause (Berlin, New York: Walter de Gruyter, 1996), 677-702.
26. The understanding of Kant's mathematical reductionism as an escape from embodied situatedness was maintained already by his friend and first critic Hamann; see Oswald Bayer, *A Contemporary in Dissent: Johann Georg Hamann as Radical Enlightenment*, trans. Roy A. Harrisville and Mark C. Mattes (Grand Rapids: Eerdmans, 2012), 164-65.
27. On Descartes' emphasis on reason-based certainty, see Derk Pereboom, "Early modern philosophical theology" in *A Companion to Philosophy of Religion*, ed. Philip L. Quinn and Charles Taliaferro (Oxford: Blackwell Publishing, 1999), 103-10, and Gavin Hyman, *A Short History of Atheism* (London: I.B. Tauris, 2010), 20
28. Hyman, *Short History*, 26.
29. Hyman, *Short History*, 35.
30. On "the medieval architects of modernity", see, e.g., Paul Tyson, *Returning to Reality: Christian Platonism for Our Times* (Eugene, Oregon: Cascade Books, 2014), 60-77.
31. Admittedly, Platonism is sometimes presented as a questioning of the goodness of the material. This, however, is the position of Gnosticism, which Platonism, even in its pre-Christian forms, rejected (see, e.g., the *Enneads* of Plotinus).
32. For a defence of the view that materialist reductionism is a self-refuting position, see Lynne Rudder Baker, *Saving Belief: A Critique of Physicalism* (Princeton, N.J.: Princeton University Press, 1987) and Victor Reppert, "Eliminative Materialism, Cognitive Suicide, and Begging the Question" *Metaphilosophy* 23 (1992), 378-92.
33. According to More, "The Philosophy of Transhumanism", 7, transhumanism differs from traditional physicalism, or eliminative materialism, by granting a "causal role" to "mental states such as beliefs and desires".
34. Quoted from C. S. Lewis, *The Abolition of Man* (New York: Harper Collins, 2009 [originally published 1943]), 55. The point is repeated in Ted Peters, "Transhumanism and the Posthuman Future" in *Transhumanism and Its Critics*, 147-75, 148 with direct address to contemporary transhumanism: "Transhumanist assumptions regarding progress are naïve because they fail to operate with an anthropology that is realistic regarding the human proclivity to turn good into evil."
35. Already in *The Abolition of Man*, Lewis maintains that there is a close relationship between the reduction of science to the exploration of the mathematical structures of the universe and the reduction of morality to emotivism, according to which there are no objectively valid moral norms. This corresponds quite well with the self-understanding of contemporary transhumanism.
36. This is closely related to the what has been called the precautionary principle, of which transhumanists are highly critical; see Max More, "The Proactionary Principle Optimizing Technological Outcomes" in *The Transhumanist Reader*, 258-67.
37. Quotation from Hans Jonas, *The Imperative of Responsibility: In Search of an Ethics for the Technological Age* (Chicago: University of Chicago Press, 1984), 11.
38. Jürgen Habermas, *The Future of Human Nature* (Cambridge: Polity, 2003). For a critical summary, see Elaine Graham, "Bioethics after Posthumanism: Natural law, Communicative Action and the Problem of Self-Design" *Ecotology* 9, no. 2 (2004), 178-98, 188-91.
39. Habermas, *The Future of Human Nature*, vii. Liberal eugenics ("designer babies") is here distinguished from "negative" eugenics, i.e., genetic manipulation for the sake of treatment of inherited disease.
40. Habermas, *The Future of Human Nature*, 13-14; for transhumanism, the possibility of making decisions on behalf of future generations is essential (see note 19 above).

41. According to Brent P. Waters, *From Human to Posthuman: Christian Theology and Technology in a Post-modern World* (Aldershot: Ashgate, 2006), 39, this implies an understanding of the unchangeability of the human nature that can only be consistently maintained from a theological perspective. Habermas is not willing to consider; according to Robert Song, "Knowing There is No God, Still We Should Not Play God? Habermas on the Future of Human nature" *Ecotheology* 11 (2006), 191-211, 205-206, he might be.
42. For a critical presentation of his position, see Graham, "Bioethics after Posthumanism," 181-85; for Fukuyama's own summary, see Francis Fukuyama, *Transhumanism* (2004 [cited 9 April 2014]); available from <http://www.foreignpolicy.com/articles/2004/09/01/transhumanism>.
43. "If we start transforming ourselves into something superior, what rights will these enhanced creatures claim, and what rights will they possess when compared to those left behind?" (Fukuyama, *Transhumanism*.) According to Graham, "Bioethics after Posthumanism", 184, this amounts to a secular version of natural law theology.
44. See Nick Bostrom, "Transhumanism: The World's Most Dangerous Idea?" (2004 [cited 9 April 2014]) available from <http://www.nickbostrom.com/papers/dangerous.html>.
45. This has for a long time been a topic of science fiction horror movies; for a discussion of the problem that tries to move it beyond the Hollywood level, see James Barrat, *Our Final Invention: Artificial Intelligence and the End of the Human Era* (New York: Thomas Dunne Books, 2013). Interestingly, in Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies* (Oxford: Oxford University Press, 2014), these problems are addressed from within the transhumanist movement. This seems to suggest a certain modification of his earlier position; how far this modification will influence the movement in general, however, remains to be seen.
46. This could then be seen as an extreme way of proving Eric Voegelin's point that what is nonsense philosophically, i.e., scientism, might still be politically important; see Mark T. Mitchell, "Personal Participation: Michael Polanyi, Eric Voegelin, and the Indispensability of Faith" *Journal of Religious Ethics* 33, no. 1 (2005): 65-89, 69.
47. On the millennialism of modernity, see the works of Eric Voegelin, in particular *The New Science of Politics*, originally published 1952, and *Science, Politics and Gnosticism*, originally published in 1958; both to be found in Eric Voegelin, *Collected Works 5: Modernity Without Restraint* (Columbia: University of Missouri, 1999). For a summary of his position, see also Mitchell, "Personal Participation" and Lee Trepanier and Steven F. McGuire, "Introduction" in *Eric Voegelin and the Continental Tradition: Explorations in Modern Political Thought*, ed. Lee Trepanier and Steven F. McGuire (Columbia and London: University of Missouri Press, 2011), 1-13. For a glimpse of how the immanentizing of the *eschaton* appears from a transhumanist perspective, see Russell Blackford, "Trite Truths about Technology: A Reply to Ted Peters" in *Transhumanism and Its Critics*, 176-88, 184-85.