Master thesis

Phenomenological perspectives on technological posthumanism

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Date: 10. 8. 2017

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Student number: 5656664

Number of Words: 24 678

Content

1. Introduction

We live in a time when technological developments are changing our views on what it means to be human. Through these developments academics, but also people outside of academia, started to discuss topics that have been only used in science fiction and utopic/dystopian literature just some decades ago, as they became the real options that need to be addressed as such. Today some of these topics are generally referred to as transhumanism or posthumanism. Since the 1990's, we have witnessed a staggering growth in the number of academic and non-academic publications that consider these ideas. Thanks to the developments in fields like artificial intelligence, computer science, biotechnology, robotics, molecular biology, neuroscience and many others, we have witnessed, for example, the first institutionally recognized cyborg – Neil Harbisson,[1] a baby sheep that has been successfully grown in an artificial womb[2] or self-driving cars. These developments raise many questions about our future, but also about our present status and our past, and give us intriguing and important[3] topics that need to be considered before some of these technologies become part of our reality.[4]

What is, in my opinion, interesting part of the transhumanism/posthumanism debate is how interdisciplinary, even transdisciplinary, the whole debate is. Engineers, journalists, scientists, economists, historians, political scientists, ethicists, theologians, computer scientists, biologists and philosophers, almost anyone who is interested in some part of human society or in the relationship between humans and technology could contribute to the debate about posthumanism. This astonishing broadness shows that it would be impossible for any

[1] See http://www.harbisson.com/ Accessed: 8. 7. 2017.
[2] See https://www.theguardian.com/science/2017/apr/25/artificial-womb-for-premature-babies-successful-in-animal-trials-biobag Accessed: 8. 7. 2017.
[3] E.g. for ethical implications that these developments produce.
[4] Clearly a better understanding of those technologies that are already part of our reality is also needed.

single work to cover all topics related to posthumanism. My concern in this thesis is therefore much narrower than that.

My main goal of this thesis is to introduce and vivify some of the arguments that are, in my opinion, important in the context of the debate about posthumanism. I argue that the main frame of this debate between transhumanists and bioconservatives is stalled. That is why I introduce these 'new' claims that might help to revive the debate and resolve in new discussions about posthumanism, which are, in my opinion, needed. These 'new' arguments are mostly focused on the ontological or empirical part of the debate, but as I show they can still be connected with the normative part, which has been the focus of transhumanists and bioconservatives. Furthermore I attempt to show how especially bioconservatives can incorporate some of these arguments into their position and therefore improve their criticism of transhumanism.

In the first part I give an explanation of the differences between transhumanism and posthumanism and explain why my thesis is titled 'technological posthumanism'. As is clear from the literature both concepts – transhumanism and posthumanism - and their use are laden with quite a lot of ambiguity that needs to be clarified for the purposes of this work.

In the second part I attempt to show the normative side[5] of the posthumanism debate. I introduce and review the ideas and arguments from two main ideological camps that are usually known as transhumanists/bioliberals and bioconservatives. It is important to properly introduce what can be called the main *paradigm* of posthumanism, as only by giving a proper overview of this discussion we can come to the conclusion that this debate is actually stalled. In addition I show that the debate between transhumanists and bioconservatives is much more ideological than some might assume.

[5] Normative questions about posthumanism are, in my opinion, also those that are mostly concerned in the debate about technological posthumanism.

Furthermore, I point out that the ideas of humanism, which are the basis of arguments for both transhumanists and conservatives, are not the only basis for argumentation that there is. Therefore what can be generally introduced as 'cultural posthumanism' is outlined. As cultural posthumanism brings to this discourse of posthumanism very different views on what it means to be human/posthuman and what humans should eventually become. Specifically, cultural posthumanists propose to change the ontological definition of human and strive to 'get rid of' dualisms that are present in the Western culture. Furthermore, cultural posthumanists are in some aspects much more critical to the transhumanists proposition than bioconservatives are. Introduction of cultural posthumanism in the context of this thesis gives us, in my opinion, a different perspective that could strongly influence the debate between transhumanists and bioconservatives as well.

The remaining chapters present a phenomenological view of posthumanism; or rather what I call technological posthumanism. The focus is not on the normative side, but on what can be called an *empirical* side of the issues related to posthumanism. Therefore the question that I attempt to answer in these chapters is not if 'posthuman should be done', but rather if it 'can be done'. This is in my opinion often unnecessarily overlooked question when discussing posthumanism, to which phenomenology has a lot to say. Again as with the topic of posthumanism, phenomenology is such a broad brand of philosophy that it differs even amongst its main proponents like Husserl and Heidegger. Therefore I draw mostly only on thoughts of one of them, namely the French phenomenologist Maurice Merleau-Ponty (1908-1961) and further on ideas of enactivism.

Enactivism is a transdisciplinary approach in cognitive science, which has been introduced by Francisco J Varela, Evan Thompson and Eleanor Rosch in *The Embodied*

Mind[6] in 1992. It is a non-reductive naturalistic theory of mind that puts emphasis on the importance of continuity of mind and life. The authors of *The Embodied Mind*, point out that the source of their inspiration lies in the work of Merleau-Ponty. Specifically they base enactivism on the idea that embodiment[7] has a double meaning: "it encompasses both the body as a lived, experiential structure and the body as the context or milieu of cognitive mechanisms."[8]

By using notions from phenomenology and enactivism I investigate which suggestions[9] by posthumanists are in the perspective of phenomenology and enactivism actually ontologically and therefore empirically feasible. These arguments, which have not been raised much in the context of posthumanism, although they are part of the debate about the human mind, can in my opinion enrich the debate about posthumanism and point out some ontological problems to which some of the proponents of transhumanism/technological posthumanism potentially commit. That is because both phenomenology and enactivism have a very different attitude to the body-mind problem, but also because, especially phenomenology, has a very different attitude towards the natural sciences than the proponents of transhumanism do.

2. Posthumanism/transhumanism – how to make sense of it all

In this chapter I will clarify what the concepts of posthumanism and transhumanism mean. That is because it is sometimes hard to recognize if there is any difference between them, as they tend to be used interchangeably. This lack of clarity comes from multiple sources. First

[6] Varela, Thompson, Rosch, The Embodied Mind.
[7] The idea of embodiment is introduced and developed more later on.
[8] Varela, Thompson, Rosch, The Embodied Mind, XVI.
[9] As technological posthumanists have many different views about what posthumanism entails. This means that there is no one single idea about how we are going to achieve technological posthumanism or how will technological posthuman look like. That is why in the last chapter of this thesis we will distinguish a moderate and a strong technological posthumanism.

of all, both transhumanism and posthumanism have been introduced only quite recently. To my knowledge there is no single publication that would be able to completely clarify the differences between these concepts.[10] The question remains if such conceptual clarification is actually feasible at all.

Secondly, posthumanism and transhumanism are closely connected conceptually and also through questions they engage in.[11] Their common interest is focused on the consideration of what it means to be human, as technological developments of recent years have muddled the whole notion of 'human nature'. These developments then bring out possibilities to redefine 'human nature' and offer different understandings of what it means to be human or what 'human nature' actually comprises.

Last but not least, the reason why the use of posthumanism and transhumanism brings out conceptual confusion is the notion of 'the posthuman'. If we take the notion of a 'posthuman' literally, we merely end up with something that is 'beyond human'. Such statement clearly does not give any apparent understanding of what is meant by it. This is proven by Francesca Ferrando who claims that "the posthuman has become an umbrella term to refer to a variety of different movements and schools of thought, including philosophical, cultural, and critical posthumanism; transhumanism (in its variations of extropianism, libertarian and democratic transhumanism, among others); the feminist approach of new materialisms; the heterogeneous landscape of antihumanism, metahumanism, metahumanities, and posthumanities."[12]

Ferrando's interpretation of diverse types of posthumanisms is only one possibility. Tamar Sharon in her book *Human Nature in an Age of Biotechnology* holds a different view. She distinguishes between four types of posthumanism: dystopian, liberal, radical and

[10] Great work in this area has been done of course, for example, by Sharon, Human Nature in Age of Biotechnology.
[11] Ranisch, Lorenz Sorgner, Introduction Post- and Transhumanism, 7. In: Ranisch, Lorenz Sorgner (eds.), Post- and Transhumanism.
[12] Ferrando, Posthumanism, Transhumanism, Antihumanism, 26.

methodological.[13] A more elaborate explanation of what some of these types mean will be introduced later. For now mentioning them is solely for the purpose to show that to define various kinds of posthumanism often depends on the author and her approach to examined issue. There is no definitive approach to posthumanism that dominates this field of study, which gives us this issue of conceptual confusion, but also offers authors to define their concepts in the way they see fit for their research and projects.

If we try to make sense of it all, it is in my opinion best to use posthumanism and posthuman as umbrella terms for any kind of posthumanism. If we subsequently want to distinguish between different connotations of posthumanism and the posthuman we should follow the example of Sharon from the previous paragraph. The specification of what posthumanism and posthuman we talk about should be done, in my opinion, by connection of an adjective, e.g. cultural, technological or methodological. This solution might not bring complete conceptual clarity, as there are still and will be different approaches even in these more specific views on posthumanism, but it does at least clarify what posthumanism and posthuman we specifically talk about. In this thesis the main focus is on what is customarily presented as transhumanism, but what would be in this context probably better understood as technological posthumanism.[14] Although technological posthumanism is therefore in my opinion the better term, I will mostly refer to the 'movement' and ideas it presents as transhumanism, as that is the established name.[15] The different case is technological posthuman as that is the only term to describe the 'final stage' of technological evolution.

[13] See Sharon, Human Nature in Age of Biotechnology.
[14] This is one of the two main reasons why this thesis is named Phenomenological perspectives on technological posthumanism. The second reason is introduced later.
[15] Ultimately these two terms can be used interchangeably.

2.1. What is transhumanism and transhuman?

The answer to what transhumanism is, is almost as complicated as it is to properly distinguish between posthumanism and transhumanism. As might be clear now the whole field is beset with many ambiguities that are in need of clarification. Already when we go back to the different types of posthumanisms introduced by Ferrando we can see that she distinguishes diverse variations of transhumanism as well – e.g. libertarian and democratic.

To resolve the issue of what is transhumanism one of the possible solutions that is offered here is to use descriptions of transhumanism introduced by its proponents.

The word 'transhumanism' seems to have been first used by the British biologist Julian Huxley (1887-1975) who wrote in 1957 that the human species can, if it wishes, transcend itself.[16] Transhumanism then for Huxley represents the idea of "man remaining man, but transcending himself, by realizing new possibilities of and for his human nature."[17] Since the times of Huxley's book New Bottles for New Wine we have witnessed new and unique approaches to transhumanism. One of the best known proponents is without a doubt Swedish philosopher Nick Bostrom[18] from Oxford University where he among other things established the Future of Humanity Institute in 2005.[19] According to Bostrom transhumanism should be viewed as "an outgrowth of secular humanism and the Enlightenment."[20] A more elaborate understanding of transhumanism by Bostrom is the following: "it is the intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical,

[16] Huxley, New Bottles for New Wine, 17.
[17] Ibid.
[18] Although Bostrom turned away from the mainstream transhumanist movement in recent years, he is still one of the main sources of transhumanist literature.
[19] See https://www.fhi.ox.ac.uk/ Accessed: 9. 7. 2017.
[20] Bostrom, The Transhumanist FAQ.

and psychological capacities."[21] British philosopher Max More, co-founder of Extropy institute, is another prominent representative of transhumanism, who states that transhumanism is "both a reason-based philosophy and a cultural movement that affirms the possibility and desirability of fundamentally improving the human condition by means of science and technology. Transhumanists seek the continuation and acceleration of the evolution of intelligent life beyond its currently human form and human limitations by means of science and technology, guided by life-promoting principles and values."[22] The last interpretation of transhumanism to mention here and to provide a general understanding of transhumanism is by American sociologist and bioethicist James Hughes who writes: "transhumanism is the belief that science can be used to transcend the limitations of the human body and brain… an ideological descendent of the Enlightenment, a part of the family of Enlightenment philosophies."[23]

From these three very similar descriptions one might infer that it is quite straightforward to identify what transhumanism is, and to some extent this is true. There is a number of characteristics that arguably any supporter of transhumanism would agree with. These characteristics are, for example, belief in science, continuous evolution of a human through technology and improvement of human conditions by use of science and technology. The term 'transhuman', on the other hand, is more vague, and again needs some clarification. We can recognize at least two distinct ways of understanding the term transhuman. The first way is to perceive the transhuman as an abbreviation for "'transitional human', which means a phase in human evolution from the ordinary human today to the posthuman of the remote

[21] Bostrom, The Transhumanist FAQ, 4.
[22] More, True Transhumanism: A Reply to Don Ihde, 62. In: Hansell, Grassie (eds.), Transhumanism and its critics.
[23] Hughes, Contradictions from the enlightenment, 622.

future."[24] In other words the 'transhuman' is understood as part of the process that is finished the moment humans evolve to the posthuman, in this case the technological posthuman.[25] We can imagine the evolutionary time scale of humans, which starts with ordinary humans, eventually developing through the use of technologies and biotechnologies e.g. genetic engineering, enhancing drugs, neural interfaces or implanted computers at some later point to transhumans. The final stage of their 'technological evolution' would be the posthuman. The second possible explanation of the term 'transhuman' does not necessarily view this term standing for some kind of technologically enhanced human, but rather for "ordinary people who support activities that promote the eventual evolvement of the posthuman."[26] In comparison with the first definition of transhuman, this interpretation can therefore be applied to contemporary proponents of the idea of a technological posthuman.[27] Even though we can understand the term transhuman in these two different notions, there are still many defining similarities that can be applied to any transhumanists, as they all believe[28] that humans are going to evolve into the technological posthumans.

Transhumanists[29], both inside and outside academia, believe that humans should take evolution into their own hands and through the use of different technologies and biotechnologies improve the lives of all humanity. They usually argue that 'mother nature' is something that can be manipulated, and we (humans) have learned through scientific

[24] Tirosh-Samuelson, Mossman, New Perspectives on Transhumanism, 33. In: Tirosh-Samuelson, Mossman (eds.), Building better humans.
[25] This is the second reason why is this thesis named Phenomenological perspectives on technological posthumanism, as the issue I want to critically examine, through phenomenological perspective, is what can be called 'the final product' of the evolutionary process as understood by transhumanists. Therefore I use the terms technological posthumanism and technological posthuman in that sense.
[26] Tirosh-Samuelson, Mossman, New Perspectives on Transhumanism, 33. In: Tirosh-Samuelson, Mossman (eds.), Building better humans.
[27] Nick Bostrom (philosopher), Ray Kurzweil (computer scientist, futurist), James Hughes (sociologist, bioethicist) or Hans Moravec (robotics, artificial intelligence).
[28] This is not certain as there can be a transhuman according to the first definition who does not necessarily have to support the ideas of the second definition transhumans.
[29] Often the supporters of transhumanism are also called bioliberals or liberal posthumanists. This interchangeability is again problematic as not all transhumanists are necessarily bioliberals and other way around. Still the most proponents of these ideas would clearly identify with both descriptions.

discoveries that we are part of that nature that can be manipulated. In other words humans are part of nature, therefore we can manipulate with what humans are. The 'transhumanists' suggestion is then the following: "due to genetic engineering, humans are now able not only to redesign themselves, presumably to get rid of various limitations, but also to redesign future generations, thereby affecting the evolutionary process itself. As a result a new, 'posthuman' phase in the evolution of the human species will emerge in which humans will live longer, will possess new physical and cognitive abilities, and will be liberated from suffering and pain due to aging and diseases."[30] This topic carries a lot of controversy, as it is disputable what exactly would be the consequences after applying these resources on humanity. The whole discussion about what we should do with these possible applications is known as a discussion between transhumanists and bioconservatives, which is introduced and developed more extensively in the subsequent chapter of this thesis. This paragraph clearly shows how descriptive, normative and utopian dimensions are entangled in the transhumanists debate. We can therefore almost never be descriptive about transhumanism without touching at least the normative side as well.

This entanglement of these different dimensions can be presented on another important issue for transhumanists: the human body. Transhumanists state that one of the ultimate weaknesses/limitations of humans is that our bodies decay in time and we all eventually die. Therefore one of the ultimate goals of transhumanism is to overcome death. Bostrom has written in this context a short story called *The Fable of the Dragon-Tyrant* (2005). If we simplify the story it can be described as the follows: imagine a planet which has been tyrannized by a giant dragon who required human sacrifices all the time. People did not know any other way than to do by his bidding, as the dragon to them was undefeatable, and therefore they let the dragon eat as many people as he wished. People accepted this dragon as

[30] Tirosh-Samuelson, Mossman, New Perspectives on Transhumanism, 29. In: Tirosh-Samuelson, Mossman (eds.), Building better humans.

part of their lives and even gave some kind of meaning to their lives through the existence of the dragon.[31] To transhumanists death is the same as the dragon in the story. They are critical with respect to what death represents in our contemporary culture and advance a new theory that ideally we should overcome death by means of science and technology. In the context of Bostrom's story we should slay the dragon who tyrannizes our lives.

2.2. Transhumanist perception of technology and science

Another common trait of transhumanism is how they generally perceive technology. As was mentioned in the definitions of transhumanism, transhumanists characterize transhumanism among other things as a continuation of the Enlightenment.[32] This means an emphasis on a number of notions they take from the Enlightenment. These are for example rationality, critical thinking, progress and optimism. Transhumanists are techno-optimists for whom "technology becomes a hierarchical project, based on rational thought, driven towards progression."[33] Further if we consider the debate about technology itself, which can be divided between the technological social-determinist position and the technological-determinist position, there is no doubt that transhumanists will lean towards the technological one. The technological-determinist position represents a suggestion that, once invented, "technologies simply follow a line of development almost contextless, as it were."[34] In other words transhumanists who subscribe to this position claim that not only society has a minimal impact on what technologies will be discovered and developed, as a technological social determinist would claim, but once they exist there is no controlling them by humans – technologies have a 'logic' of their own.

[31] See http://www.nickbostrom.com/fable/dragon.html Available: 11. 7. 2017.
[32] Clearly the Enlightenment stands for diverse ideas. Still in the transhumanists view transhumanism takes up ideas that they see as characteristic for the Enlightenment.
[33] Ferrando, Posthumanism, Transhumanism, Antihumanism, 28.
[34] Ihde, Technology and Lifeworld, 4.

If we talk about technology it is impossible not to mention science as a whole. A general understanding of the relationship between science and technology is that science is theoretical (pure) knowledge and technology is applied knowledge. This assumption is nicely disproved by the American philosopher, Joseph Pitt, who questions this 'simplistic' understanding and advances a different attitude towards science and technology. Pitt emphasizes the importance of social dimensions; he further argues that we must comprehend science and technology as "historical phenomena that must be seen in the specific sociohistorical contexts that give them their distinctive characteristics."[35] Such an interpretation of science and technology is at odds with how transhumanists understand them, as for them social dimensions play a much smaller, if any, role. That is because for transhumanists social factors do not affect the status of science and technology.

This rather technological-determinist position is one of the reasons why we can presuppose that transhumanists have a strong and naïve belief in the power of science and technology. We can without any hesitation state that transhumanism "is the passionate belief in the transcendence of human limitations – not through religion or politics, but through science."[36] Transhumanists therefore view science as a solution to almost all the world's problems; for them almost any social issue can be offered a scientific solution. There are many good examples to demonstrate this way of thinking. Take global warming for example. If we accept that global warming as caused by humanity is real we can look at the solution for the problem from at least two different perspectives. The first one is rather social and political; we might claim that humans can fight global warming by better understanding their role on the planet and by reflecting on the ways we live. The argument that would be used is

[35] Pitt. Thinking about technology, 28.
[36] Cady, Religion and technoworld of transhumanism, 86. In: Tirosh-Samuelson, Mossman (eds.), Building better humans.

that humans[37] are over-consuming and that this increases the imbalance in our ecosystem. The solution then might be to consume less or use more efficient ways of production that will still support current living standards, but will be much more sustainable and will not endanger the capacity of our planetary resources. To some extent this is always related to the use of technologies, e.g. transferring from traditional sources of energy (fossil fuels) to renewable sources of energy. But more importantly, it relates to individuals and societies who want to live their lives in a sort of 'harmony' with the planet. Therefore this attitude is much more based on some kind of 'ascetic' way of living than on the use of technologies. This solution might also be political as it might be enforced by government by putting different types of regulations against environment-unfriendly activities. The second solution is the technological one. In this solution we do not change the way people live their lives in any way - in some sense we even support the current trend - as we argue that all problems that we experience will be solved by science. For example, if there is too much carbon dioxide in the atmosphere we do not have to regulate anything, we will just remove it by use of technology.[38, 39] This is the approach that would arguably be preferred by transhumanists.[40]

2.3. Comparison between transhumanism and religion

The transhumanist perception of technology and science can also be considered a *religious* perception. In some sense it is possible to perceive science and technology through the eyes of transhumanists as a source of societal hope. Science and technology for transhumanists becomes the sole solution of basically any societal issue, even our mortality. In this regard it is interesting to note that there are evident similarities between

[37] Especially those living in developed Western world.
[38] See http://www.cbsnews.com/news/scientists-seek-holy-grail-of-climate-change-removing-co2-from-the-atmosphere/ Accessed: 12. 7. 2017.
[39] To mention a different example we can look at technology to solve problems with obesity as well. Instead of consuming less, we might just undergo a small (chirurgical, hormonal, genetic) procedure that will solve such a problem.
[40] See http://www.huffingtonpost.com/zoltan-istvan/some-futurists-arent-worried_b_4786325.html Accessed: 8. 8. 2017.

transhumanism and religion, which might come as a surprise especially because most supporters of transhumanism identify with atheism. There are even those who give theological justification to the transhumanist project.[41] Undoubtedly any comparison of transhumanism and religion, which raises important similarities between them, is something that most transhumanists plainly reject.[42] However the fact that these similarities[43] exist and that there are religious people who support and believe in ideas of transhumanism gives us a better understanding what transhumanism represent.[44]

Another similarity between religion and transhumanism can be seen through the fact that there are transhumanists who argue that transhumanism is an alternative to religion. The moment you want to be an alternative to something you accept that you are occupying the same space and you give people beliefs/faith which can replace their old ones. A great example of such a mind-set is incorporated in ideas of Simon Young. Young presents "transhumanism as a unification of science and ethics and positions it as an alternative to academic postmodernism, *religious theism* and radical environmentalism. [my emphasis]"[45] Furthermore, Young represents transhumanism as a critique of cognitive scepticism, social constructivism, and cultural relativism.[46] This example shows that transhumanism is not only a techno-scientific project, but that it is also a strongly ideological one. There are many ideological assumptions about culture, society, economics, humanism, the Enlightenment and others that are at least hard to defend as part of objective reality, which is so important to transhumanists. Transhumanists have in mentioned areas of study quite clear cut assumptions

[41] See Hefner, Technology and Human Becoming or Peters, For the Love of Children and Science, theology and ethics.
[42] As rationality and critical thinking that transhumanists, according to them, represent have nothing to do with religion.
[43] E.g. Beth Singler pinpoints the similarities between the language of transhumanism and religion. See https://aeon.co/essays/why-is-the-language-of-transhumanists-and-religion-so-similar Accessed: 12. 7. 2017.
[44] See also Mercer, Rothen, Religion and Transhumanism.
[45] Tirosh-Samuelson, Mossman, Building better humans, 34. In: Tirosh-Samuelson, Mossman (eds.), Building better humans.
[46] Ibid.

which are not taken granted by everyone. Rather the opposite, many transhumanists' beliefs and assumptions are often a source of their criticism. Therefore we can infer that transhumanists are not as objective and value-free as they present themselves.[47]

2.4. In Summary

In this chapter I have attempted to clarify what transhumanism and the transhuman mean and how we should think about them in the context of this thesis. Transhumanism is then best understood as a belief in progress that ends with the evolvement into a technological posthuman, but also as a specific movement of people – academics and non-academics alike - who believe in it. Whereas the transhuman is an evolutionary step[48] between the human and the technological posthuman, but also a person who believes that this process will occur. I presented some of the main characteristics and assumptions that are connected to transhumanism, mainly the seemingly unshakeable belief in the progress of science and technology that will solve the problems of humanity. Furthermore, I argued that transhumanism is not only a techno-scientific project, but also a strongly ideological one by comparing transhumanism with religion.

3. Debate about transhumanism

Besides a strong belief in science and the assumption that it describes objective reality - which is independent of human perception - transhumanists have other presumptions about society, culture and human nature. One of the main hypotheses of transhumanism is the belief that by enhancing humans and their evolution into a technological posthuman, humans or rather posthumans will have much more *individual freedom*. Sharon states that bioliberals have based their argument on the definition of an individual which has been introduced in humanistic tradition. This definition reads as follows: "an individual is a free, autonomous,

[47] This issue is further developed later in the thesis.
[48] Evolutionary step is in this case technological, rather than biological.

self-contained and internal being that is detached in some fundamental way from the empirical world, unique and distinct by virtue of being a human."[49] Transhumanists infer from this definition that every individual has every right to be as free and autonomous as possible, as that is the ultimate fulfilment of human nature. Transhumanists further claim that by overcoming our biological, neurological and psychological constraints humans will acquire much more freedom than ever before. This understanding of individual freedom and its application to the case of transhumanism is why transhumanists can also be called bioliberals or liberal posthumanists. A number of them have been even recognized as libertarians.[50]

A question that arises in the context of such an understanding of individual freedom is, how transhumanists imagine the future process which will eventually make us posthumans. The answer to that question is at the core very simple. All persons have the right to do whatever they want with their bodies and minds as long as it does not negatively affect others.[51] If we would put any unnecessary restrictions on any potential enhancements or modifications we would be invading essential freedoms that belong to every person. This argument does not apply only to individuals per se, but transhumanists use this argument for unborn children as well.[52] As in their view we should liberate ourselves from the restraints and the injustices of the natural lottery and do the same for our children. Some would even argue that it is our moral duty to do so.[53] The background of the argument to enhance our children follows the same logic. If you ask any parent whether they would wish for their child to be born with any kind of physical or mental defect, they would all, hopefully, answer that this is something they really do not wish for their children, as they want them to be healthy and happy. Transhumanists argue that such a wish can be fulfilled to every parent the moment

[49] Sharon, Human Nature in an Age of Biotechnology, 42.
[50] See McNamee, Edwards, Transhumanism, medical technology and slippery slopes.
[51] This is generally known as negative freedom.
[52] See Buchanan, Brock, Daniel, Wikler, From Chance to Choice.
[53] See Savulescu, New breeds of humans.

we start to use enhancing and modifying technologies on our children even before they are born. To those who point out the potential dangers that this might bring to society and 'human nature', transhumanists generally reply that any parent wants the best for their children. Therefore the parents would not use any harming enhancements or technologies on their children.[54,55]

The same liberal/libertarian argument is used when discussing the issue of introducing these technologies to the general public as well. As you can imagine, when introduced, these enhancements and modifications are potentially going to be financially demanding. How can we then make sure that they will not be only distributed to the economical class which can afford them, therefore creating an even more divided society than we are experiencing nowadays. That is because there would be inequality between people not only because of economical differences, but also because of 'biological'[56] ones. For most transhumanists this problem is solved by the free market and its mechanisms, as not only the free market will decide what biotechnologies and enhancements will be put to use, but it will also, as time progresses, enable more and more people to afford these improvements.[57]

3.1. Transhumanism as an ideology

Transhumanism is ideologically strongly intertwined with humanism in other aspects than in consideration of individual freedom. Humanism is another term which is beset with conceptual confusion to some extent and we should at least slightly clarify its use in the context of this thesis. The word 'humanism' has an interesting history, throughout which the

[54] Discussion of dangers and criticisms of this attitude towards such liberal approach is introduced in the following chapter.
[55] Plus putting any restrictions on these enhancements would be against the ultimate human nature – freedom.
[56] By biological division I mean those potential enhancements that would influence the differences between humans' biology even more than the natural lottery does.
[57] Although Nick Bostrom, for example, observes that this might be actually problematic issue and claims that we should make sure that everyone will be able to access these technologies, he does not specify how to make sure, as forms of regulation might be problematic with his liberal opinions.

meaning of it has changed significantly[58] and even nowadays it can be understood differently.[59] In the context of transhumanism we are talking about what is usually known as 'secular humanism'. Such an understanding of humanism is connected to the start of the 20th century, when the word started to be primarily used to denote a different approach to life. This approach contained the focus on "human beings and human culture in contrast to valuing gods and religion, by affirming the effectiveness of human reason applied to evidence in contrast with theism, theological speculation and revelation."[60] Following this change of approach to life a new understanding of the term humanism has arisen and gave it the meaning it has today. This modern perception of humanism is then linked with a number of premises and claims. American philosopher and former president emeritus of American Humanist Association Corliss Lamont (1902-1995), for example, stated that there are in total ten central propositions in the Humanist philosophy, which evidently shows how complex the term humanism is.[61] From these propositions we are able to conclude that humanism believes in a naturalistic metaphysics, draws on facts of science and reason, focuses on humans and power of humankind and believes in the power of democracy, freedom and civil liberties. Humanism further asserts that human reason and human efforts are our best bet to achieve the ideal society, as only humans are the shapers of their own destiny. These ideas have a clear consequence for how, in the context of humanism, we should understand human beings. On the one hand we are unique among organisms as we are "both objects of nature and subjects that can shape our own fate."[62] On the other hand the humanist "sees the human being as not distinct from the rest of nature."[63] This gives us, in the humanist view, possibilities to

[58] See e.g. Davies. Humanism.
[59] E.g. Secular humanism and religious humanism.
[60] Copson, What Is Humanism?, 2 In: Copson, Grayling (eds.), The Wiley Blackwell Handbook of Humanism.
[61] Lamont, The Philosophy of Humanism, 13.
[62] Copson, What Is Humanism?, 10. In: Copson, Grayling (eds.), The Wiley Blackwell Handbook of Humanism.
[63] Copson, What Is Humanism?, 9. In: Copson, Grayling (eds.), The Wiley Blackwell Handbook of Humanism.

manipulate biological and physical laws that we are subjected to. In other words, we are "both inside nature and outside of it."[64]

We can see why humanism is so important for the ideas of transhumanism, as the close relation of these two stances is so similar. But there is still quite a difference on their emphasis that both humanists and transhumanists put onto the natural sciences. If we look, for example, how Dutch professor of philosophy and humanism Peter Derkx understands humanism we can conclude that his vision is a little bit more critical of science than of other humanists and especially transhumanists. Derkx expresses the following opinion: "science cannot answer existential and moral questions such as: what is the proper attitude towards our human morality, does human freedom really exist, or can the death penalty be justified."[65] For Derkx "humanism is not scientism, and involves no plea for technocracy."[66] Transhumanism is arguably positioned much closer to scientism than humanism, especially as the one understood by Derkx. As already noted in the previous parts of this thesis and in what will be further developed, transhumanism is often hard to distinguish from scientism, as it often seems that for transhumanists the solution to all problems is science.

Within science important methods are the application of reason and critical thinking. The importance of these methods for transhumanism is interesting when we apply it to the context of some propositions that transhumanists present.[67] As was already noted, we cannot perceive transhumanists as a uniform movement with the same ideas and hypotheses. Even though we were able to define some of the main characteristics that would arguably be acceptable for almost all transhumanists, there are still differences between them that need to be recognized.

[64] Ibid.
[65] Derkx, The Future of Humanism, 428-429. In: Copson, Grayling (eds.), The Wiley Blackwell Handbook of Humanism.
[66] Ibid.
[67] Listing of some of these propositions is introduced later in this thesis. Just to name one example here is notorious claim by Ray Kurzweil who suggests that by 2030s we will be able to upload our minds and by 2045 a technological singularity will occur.

The difference I want to point out here is the transhumanist's perception of the future.[68] If we think about the topics which are important to transhumanists, we soon realize that even though some of them are already part of our reality, most of them are still open questions of the future. The intellectual endeavour to describe what our future will bring is generally known as futurism. It is without any doubt that such an enterprise is highly speculative; as no one has a magic ball through which she/he could see what the future precisely entails. This is problematic as the natural sciences and the natural scientists are not keen on such exceeding speculations and always try to stick what they can actually infer from the 'empirical' world.

Obviously we are sometimes able to make some claims about the future which are confirmed.[69] The problem is that such claims are limited in scope and harder to make the further into the future we want to make them.[70] In the context of futurism there is a number of transhumanists who present their arguments about the future as if their future is without any doubt the only future there is.[71] But they do not seem to consider at all that they might be wrong, especially about some fundamental questions which allow them to make such bold statements.[72] Therefore the result of the transhumanist's behaviour in this regard is that they 'hide' behind science, reason and critical thinking notions which are highly speculative and which most scientists would hesitate to support. In other words, they hide their ideological arguments and present them as 'the real' arguments of the natural sciences.

The main goal of this and the previous section was to introduce ideas which clearly show that transhumanism can be viewed as an ideology, which has its own theories about the world, humans and society and which can be undoubtedly opposed in discussion. The fundamental

[68] I return to this later as well, as I discuss the difference between a moderate and a strong technological posthumanism.
[69] This is, for example, thanks to the natural sciences which enable us to make inductive arguments. E.g. understanding gravity gives us the ability to predict what will happen to an object dropped from the sky.
[70] This clearly depends on what subject we are investigating, as it is very different to infer what humanity will look like in 100 years and how gravity will work then.
[71] This can be connected with their technological-determinist position.
[72] E.g. mind-uploading or strong artificial intelligence.

basis for most of the transhumanist's arguments is their liberal/libertarian approach to economy and politics. Transhumanists not only argue that by letting the free market function without any restrictions there will be a positive spread of enhancing technologies to all humans, but also that by applying enhancements on humans we are ultimately going to fulfil human nature by acquiring much more individual freedom. Furthermore some of the connections between transhumanism and humanism have been shown and I have claimed that transhumanism is much closer to scientism than its predecessor humanism.

3.2. Reaction to transhumanism - bioconservatism

As any other ideology transhumanism also has its opponents who disagree with their observations and arguments. The best known opposition to transhumanism is generally labelled as bioconservatism.[73] Bioconservatives have a very different view on how bioenhancements might potentially affect humans, human nature and society. Interestingly this does not mean that bioconservatives disagree with transhumanists about everything. Tamar Sharon states that both transhumanism and bioconservatism actually base their ideas on the same definition of an individual. The difference between their argument is based on what they subsequently conclude from this definition.

We have already seen in the previous section what transhumanists infer from the basis of the humanistic definition of an individual. Whereas transhumanists claim that by using bioenhancements we build on the fundamental human nature - freedom, bioconservatives are afraid that by using bioenhancements the fundamental human nature itself is exactly what will be threatened. The biggest prospective fear for bioconservatives is that through the process of becoming posthuman we will lose what makes us human, which is going to fundamentally change our ethics, politics and the whole of society at large. Bioconservatism in this sense

[73] The debate between transhumanists and bioconservatives can also be identified as the main area of the dispute about posthumanism.

does not only mean the refusal of particular perspective change to technological posthuman, but also a statement that the way things are right now[74] is basically as good as it can be and we should not endanger such balance.

Usage of the same definition of an individual, and the close relation to humanism, are essentially all the similarities there are between transhumanists and bioconservatives. One of the reasons for that might be the fact that supporters of transhumanism and bioconservatism mostly come from different fields of study. Whereas transhumanism is mainly represented by the natural scientists and computer scientists and other exact fields, ideas of biconservativism have been expressed by authors who are more diverse. Among those who are nowadays known as proponents of bioconservatism are, for example, Francis Fukuyama[75] (American political scientist), Jürgen Habermas[76] (German sociologist and philosopher), Michael Sandel[77] (American political philosopher) and Leon Kass[78] (American physician and public intellectual). This list is just to introduce some of the most known bioconservatives, but undoubtedly there are many more academics and non-academics who could be classified in this position.

To get a better understanding of what exactly the position represented by bioconservatives is, a description of their arguments is in place. We have already seen that their assertion about human nature is based on the bioconservative definition of an individual, which is used by the transhumanists as well. Bioconservatives come to a contrasting conclusion, when they argue for protecting 'human essence' or 'human nature'. For them, technological posthumanity is

[74] E.g. The fact that most developed countries in the world are liberal democracies.
[75] Best known for his book The End of History and the Last Man, where he argued for the ultimate victory of liberal democracy which will eventually spread around the whole world.
[76] Well known for his association with so called Frankfurt school and for his support of critical theory.
[77] Sandel is a popular professor from Harvard University who supports ideas of communitarianism.
[78] Recognized from era of George W. Bush, who appointed Kass as his main advisor about stem cell research and other topics related to bioenhancements.

not at all something to strive for, as "there remains some intrinsic value within the human being outside of the realm of technology, to cherish and safeguard."[79]

The obvious question to ask about this argument is what precisely this 'human nature' is that we should defend and appreciate. One way to answer this question is presented by Fukuyama, who argued that transhumanism is the "world's most dangerous idea."[80] Fukuyama advances a theory of the so called Factor X. He claims that "when we strip all of a person's contingent and accidental characteristics away, there remains some essential human quality underneath that is worthy of a certain minimal level of respect."[81] This idea presents an image that all humans have some kind of essential human quality, which cannot be acted against. Fukuyama goes in his book through many arguments starting with Kant, Nietzsche and continues with contemporary Canadian political philosopher Charles Taylor, as Fukuyama's intention is to define what those essential qualities that make us human are. Fukuyama in the end 'fails' to give a positive description of what Factor X entails.[82] Such an 'abstract image' of Factor X leads to a number of criticisms from supporters of transhumanism and enhancements technologies.

One of these criticisms is introduced by Jonathan Glover (British bioethicist) who observes that in absence of any positive account of Factor X it is already problematic to decide if 'these' abstract qualities are something worth preserving or not. Furthermore it is hard to judge what will happen to us if we lose them if we cannot really know what exactly these qualities, which make us human, are. Without such a positive account, Glover argues, Fukuyama is "simply making a plea for precaution without any indication as to why this

[79] Van Den Eede, Where is the human, 4.
[80] See https://foreignpolicy.com/2009/10/23/transhumanism/ Accessed: 16. 7. 2017.
[81] Fukuyama, Our Posthuman Future, 149.
[82] Tobiasz Mazan in his article *Transcend the Flesh* (2015) gives what can be recognized as a definition of Factor X – "extremely complex system combining "moral choice, reason, language, sociability, sentience, emotions, consciousness or any other quality that has been put forth as a ground for human dignity."" (11). Evidently this definition does not help much to understand what Factor X actually entails, which means that Factor X is strongly abstract notion.

precaution entails the preservation rather than the sacrifice of Factor X."[83] We can still wonder whether Fukuyama wants to define Factor X in positive terms in the first place, because the moment he does, his argument will be weaker, as transhumanists might be able to argue why and how we could manipulate with these exact qualities.[84] Such vagueness as presented by Fukuyama in his definition of Factor X is a common source of criticism received by bioconservatives.

If we take it a little loose, we might understand some of the differences between the transhumanist and bioliberals philosophy, in terms of the divergence between analytic and continental philosophy. As mentioned before, transhumanism has a strong tendency for scientism, which is similar to some of the branches in the analytic philosophy.[85] Bioconservatives, on the other hand, are much more critical of the natural sciences as well as continental philosophers[86] are. More specifically, continental philosophers are critical of scientism[87], which "resides in the belief that the model of the natural sciences cannot and, moreover, should not provide human beings with their primary and most significant access to the world."[88] This position introduces quite opposite problems than scientism does, as it is often equated with *obscurantism*.[89] These problems, that are connected with the bioconservative stance, are arguably best described by the definition of bioconservatism introduced by Bostrom, who expressed the opinion that bioconservatism is "the worry that technologies might undermine our human dignity or inadvertently erode something that is

[83] Harris, Enhancing Evolution, 23.
[84] Furthermore if transhumanists would be able to show that positively defined Factor X could be improved and enhanced by biotechnologies/technologies it would mean that Fukuyama would have to endorse human enhancement.
[85] See Critchley, Continental Philosophy.
[86] Especially phenomenologists.
[87] This position is also known as anti-scientism.
[88] Critchley, Continental Philosophy, XV.
[89] See Critchley, Continental Philosophy.

deeply valuable about being human but that is difficult to put into words or factor into a cost-benefit analysis."[90]

Especially the ending of Bostrom's definition shows how distinctive the points of view that these two 'ideological camps' have are. Bostrom with this characterization of bioconservatism displays what is ultimately the most important factor for his philosophy – cost-benefit analysis. For Fukuyama such a view is clearly unacceptable, as cost-benefit analysis might work when we decide what investment to make on the market, but fails to be conducive when we analyse the value of something incalculable as, for example, the value of liberal democracy. Sharon then further observes that "advocates of enhancement often criticize opponents for grounding their appeal to the special value of human nature in intuitions and emotions, rather than in rational argument."[91] This use of intuitions and emotions is evidently true as we already saw in Fukuyama's argumentation and this will become even clearer after judging further criticisms of transhumanism, which have been put forward by other bioconservatives.

The question we have to ask ourselves is if we are even able to keep the debate about technological posthumanity confined to mere 'objective/rational debate'.[92] We have already seen that proponents of transhumanism have their own ideological assumptions, which evidently are not conclusions of an objective debate.[93] There are at least two problems with accusing any kind of critical opposition to ideas of transhumanism of not being objective. The first one can be viewed as an improper reflection on their own position, as we have seen that transhumanists tend to be highly ideological although they hide it behind the natural sciences.

[90] Bostrom, In Defense of Posthuman Dignity, 202.
[91] Sharon, Human Nature in an Age of Biotechnology, 69.
[92] It might be surprising that I use terms objective and rational interchangeably in this context. But I think that enough evidence has been already shown that transhumanists consider rational those arguments, which are objective as well.
[93] Evidently that would be basically impossible, as the debate contains so many fields that cannot be judge on the basis of mere objective criteria. E.g. politics, ethics.

The second one is the distorted view that we are going to be able to make an ultimate decision about fundamentally changing what it means to be a human only through objective debate, and completely ignore our intuitions and emotions. In psychology there is a lot of evidence supporting the idea that emotions and intuitions are often much more important for human decision-making and thinking than any kind of objective analysis.[94] Therefore, if we talk about what makes us human, emotions and intuitions are important and cannot simply be refused. The importance of emotions and intuitions can be linked with one of the most essential concepts of the transhumanist argument – evolution. It is argued by American social psychologist Timothy Wilson that a number of mental states, e.g. feelings, have evolved in humans due to their efficiency and survival advantage.[95] Therefore the evolution has 'given' us emotions and intuitions as tools for our survival, which may imply that proponents of transhumanism should listen to them as well.[96]

3.3. Bioconservative arguments – why transhumanism is not such a great idea

Fukuyama is not only concerned with any potential manipulations of Factor X, but also with the topic that has already been introduced in the section about transhumanism. It is the view that applying liberal market forces similar to those we know today is going to have a positive impact on the expansion of enhancement throughout society. It is not surprising that Fukuyama, as other bioconservatives, does not share such a sentiment. According to Fukuyama, by introducing enhancement technologies into our society through the usage of the free market, there will be an inevitable increase of inequality and discrimination.[97] Fukuyama imagines that only the wealthy people will be able to afford the best possible enhancements, whereas the middle class and lower class would be able to barely afford any enhancements at all. The conclusion from such an image is that this will lead to an increase of inequality,

[94] See e.g. Damasio, Descartes' error; Wilson, Strangers to ourselves or Kahneman, Thinking, Fast and Slow.
[95] Wilson, Strangers to ourselves, 17-43.
[96] Or at least respect them.
[97] Fukuyama, Our Posthuman Future, 160.

where the richest of people do not differ anymore only by their monetary and societal status, but also 'biologically'.[98]

Following this increase of inequality bioconservatives envision a truly dystopian future. One of those feelings that bioconservatives introduce to this debate is connected with eugenics. Almost anyone who knows what the term eugenics means immediately connects it with the darkest time of humanity – that of Nazi Germany. The methods used by the Nazis do not have to be stated here, but it is clear that their actions gave eugenics very bad reputation. Supporters of transhumanism do not like that bioconservatives bring thoughts and feelings reminiscent of Nazi Germany to the debate about technological posthumanism, because it is clear that such a negative association does not help the transhumanist popularity. That is why American ethicist Nicholas Agar introduces in his article *Liberal Eugenics* (1998) the concept of 'liberal eugenics'.[99] The distinction between 'old' eugenics and liberal eugenics proposed by Agar is based on the role of the state. Agar argues that "while old-fashioned authoritarian eugenicists sought to produce citizens out of a single centrally designed mould, the distinguishing mark of the new liberal eugenics is state neutrality."[100] Agar claims that only through the use of liberal forces, which will not direct people to evolve towards a single optimal type, we are going to achieve positive enhancements for all.[101] In other words, only if we do not restrict future technologies and enhancements in any way, we will achieve a positive result for all humans. Therefore we are back to the argument already introduced in the previous part of this thesis, which is the idea that liberalism and freedom will solve any potential issues of evolvement into the technological posthuman.

[98] It is problematic to label this difference by a single term, as the difference might not be only biological as we understand it today.
[99] Agar, Liberal Eugenics.
[100] Agar, Liberal Eugenics, 137.
[101] Agar, Liberal Eugenics: In Defence of Human Enhancement, 146.

Bioconservatives are much more sceptical and their interpretation casts doubt on such a solution introduced by transhumanist thinkers. Their inspiration is truly partly based on the history represented by Nazi Germany, as they argue that if we leave enhancement technologies without any control we might witness the creation of distinct castes. Imagine a world where there are people who are able to enhance themselves much more than others. Their looks, intelligence and all other aspects that we find important about humans improved above anything that has been 'the biological standard'. In such a society, in which we can distinguish between technological posthumans and 'mere' humans, the potential breadth of inequalities is unimaginable. Bioconservatives infer from such an image that a division like this will necessarily lead to discrimination, as there is basically no reason for posthumans to recognize the same societal status to humans.

A different focus in the debates between conservatives and liberals is represented by Habermas and Sandel. Both of them strongly argue against enhancement of children. Habermas claims that "our self-understanding as members of *species* is closely interwoven with our self-understanding as *moral persons*. [my emphasis]"[102] That is, if someone would become technological posthuman according to Habermas they would be part of a different species than humans, which would endanger the moral stance of humans. This claim can clearly be used by Fukuyama as well, but the question is how it relates to the enhancement of children.

Habermas thinks that our biology defines our morals, as the moment we would differ 'biologically'[103] there would be different morals for different biological types of humans/posthumans. We have already seen this in practice throughout history, when members of different species were considered as lesser humans, which made it acceptable to abuse,

[102] Habermas, The Future of Human Nature, 67.
[103] Evidently all humans differ biologically and it does not affect our morals. What I mean in this context is a completely different biology that has nothing to do with the present biological make-up of humans.

enslave or even annihilate them.[104] For Habermas this means for the practice of enhancing children that there would be a huge gap between parents and their children; not only a biological one but a moral one as well. Envision a possibility of creating the 'perfect' child - it would have the highest I.Q. in the history of humanity, it would be the most beautiful according to all 'objective' standards of beauty, it would be able to do the most astonishing things thanks to the changes of its 'biological makeup'. Habermas asks if we have any guarantee that such a child will consider its parents as moral equals, as in the relation to their biology this child is going to have completely distinct normative self-understanding of itself and therefore different moral self-understanding of itself as well.

Sandel approaches the issue of enhancing children from a different perspective. In the beginning of his book *The Case against Perfection* (2007) Sandel introduces the issue of autonomy.[105] Through that Sandel raises the question about the autonomy of children when their biological and mental makeup was decided by their parents. We can easily imagine cases where these practices may become quite problematic. In the Czech Republic the most favourite sport is football and a lot of parents (fathers) these days want their kids to become great football players. In our scenario it would be pretty easy to do so, whereas today you need both talent and hard work, any child would just be enhanced and modified in ways to become a great football player. This attitude can be expressed differently as follows: there is a fundamental contrast between mechanical and chemical enhancements, which in effect makes a moral difference as well.[106,107] It is completely alright for us if a football player works hard and becomes one of the best, whatever talent he was born with. But it would be against the

[104] We are again back to Nazi Germany, but this applies to so many events in human history that it would be impossible to name them all.
[105] Sandel, The Case against Perfection.
[106] Harris, Enhancing Evolution, 20.
[107] Mechanical in this context means that is it morally permissible to use tools that extend our capacities, e.g. cars, bicycles or eyeglasses. But it would be seen as immoral and also illegal to use steroids to win Tour de France, which is one of the chemical enhancements.

law but also immoral if he used steroids or other enhancement drugs to become the best.[108] Sandel actually admits that there is not much difference between parents deciding genetic makeup of their children or if it is done by genetic lottery, as both of these cases do not give children more autonomy over their lives per se.[109] But he shows that genetic manipulation of children brings a lot of moral unease, which displays how problematic issue it is. If we intentionally exaggerate the argument about football players, we can imagine a future where the genetics of all football players were manipulated exactly the same way. In this future scientists might be able to 'objectively' infer what makes for a potential best football player. They would calculate all needed parameters as height, speed, weight, diligence to work on own improvements and anything else that is needed to become the best football player.[110] This would mean that when you turn on your television, or whatever will be used to watch entertainment, there will be twenty-two most of the perfect football players playing against each other. There might be different conclusions than this, but to me this seems as the least appealing match. As it is the divergence of quality, style, talent and speed of individual players as well as the team's composition and the relations between diverse players that make any game interesting.

3.4. Human dignity and the transhumanism debate

Arguably one of the most discussed topics in the debate about technological posthumanism is human dignity. That is why it seems only fitting to discuss this issue separately, and with it conclude this debate between transhumanists and bioconservatives. Human dignity is essentially related to almost all issues which have been introduced in the

[108] The same argument can be applied to education as well. It is acceptable to pay for private tuition, but if someone would be caught using highly enhancing drugs they would be accused of cheating, or if someone would be caught using internet during an exam.
[109] But only in the context of autonomy, as the following argument shows this does not mean that parental decisions over children enhancement will not lead to more homogeneity than the natural lottery does.
[110] Clearly these parameters, especially physical ones, would differ according to the position the player is supposed to play.

previous parts. As we could see, on the one hand, Bostrom and other transhumanists represent an opinion that "transhumanists see human and posthuman dignity as compatible and complementary. They insist that dignity, in its modern sense, consist in what we are and what we have the potential to become, not in our pedigree or our causal origin."[111] Transhumanists infer from this that human nature is dynamic, partially human-made, and improvable.[112] On the other hand, bioconservatives see "the potential that human enhancement technologies might be 'dehumanizing' because they could undermine our humanness or our dignity as humans."[113]

Human dignity is therefore clearly important for transhumanists and bioconservatives as it is one of the defining characteristics of humanism. It has become the standard in developed Western countries that all human beings are regarded "as person with their own self-chosen values, goals, and purposes. Furthermore, human dignity is the basic concept underlying the idea of human rights."[114]

Transhumanists not only accept the importance of human dignity, but actually elaborate on this notion further. Nick Bostrom, for example, believes that enhancements can add to human dignity. In his article *Dignity and Enhancement* (2008) Bostrom introduces the concept of 'dignity as quality'.[115] Dignity as quality is "a kind of excellence; being worthy, noble, honourable. Persons vary in the degree to which they have this property. A form of dignity as a quality can also be ascribed to non-persons."[116] This view allows Bostrom to intertwine human dignity with technology and other augmenting devices. The idea is to make

[111] Bostrom, In Defense of Posthuman Dignity, 213.
[112] Ibid.
[113] See Fukuyama, Our Posthuman Future; Kass, Life, liberty and the Defense of Dignity; Meilander, Human dignity and public bioethics; Rubin, Human dignity and the future of man.
[114] Pinn, Humanism and Technology, 111.
[115] Bostrom, Dignity and Enhancement, 3.
[116] Ibid.

humans even more excellent by improving their qualities and by doing so increase their dignity.

Fabrice Jotterand has reviewed the claim of adding to human dignity through enhancements, introduced by Bostrom, in his article *Human dignity and transhumanism* (2010). Jotterand bases his argument on a comparison of human dignity as understood by Bostrom and as defined in the Universal Declaration on Bioethics and Human Rights (UDBHR). Bostrom suggest that if we understand dignity as a kind of excellence then we can conclude that there exists different degrees of this excellence among humans, as some humans excel in something more than others do. Therefore, if humans already have different levels of moral and other excellence, it is very probable that posthumans will attain even higher levels than the best of us.[117] Jotterand argues that such a vision is incompatible with human dignity and that "UBDHR does not suggest that one status of dignity can change based on one's capacities. Human dignity is intrinsic to one belonging to the Homo sapiens species regardless of one's capacities."[118] This argument is again connected with human biology, which is clearly important for almost all arguments against transhumanism.

Evidently it is important for transhumanist philosophy to connect technologies and enhancements with human dignity. What Bostrom argues for implies that by enhancing ourselves we can become better, even morally. The question that rises from this claim is what status these non-biological enhancements have in connection to human dignity. Jotterand refers to work of American philosopher Holmes Rolston, who suggests that "the notion of uniqueness is derived from two characteristics of the concept of dignity: personal identity and personal narrative."[119] This uniqueness is in other words represented in every individual by their ontological status in the biological world and by a socially constructed identity.

[117] Bostrom, In Defense of Posthuman Dignity, 210.
[118] Jotterand, Human dignity and transhumanism, 48.
[119] Jotterand, Human dignity and transhumanism, 50.

Therefore according to Jotterand the way we understand the concept of human dignity does not allow it to attribute dignity to *things*.

It seems that the whole concept of dignity as quality and the presented argument of connection between technology and the level of dignity is very problematic for the idea of human dignity as it is established in the Western society. This does not mean for transhumanists that the view is completely discredited. They are still able to argue that the concept of human dignity has evolved over time, and with society as well, and that there are still countries around the world today, e.g. North Korea, Russia or Saudi Arabia, who do not accept this Western understanding. Human dignity, as any other concept used in human society, develops in the context of that society. As we are only in these days finally accepting the rights and dignity of LGBT communities they deserve, it might be similar in case of humans who enhance themselves in any possible way they see fit.

Another argument about human dignity in the context of transhumanism can be taken from the most famous philosopher who dealt extensively with this concept – German philosopher of the 18th century Immanuel Kant. Kant has distinguished two types of things in the world: "things with a price and things with a dignity. According to Kant, dignity entails special treatment: one should not treat humanity (whether in own's self or in another person) as having only an instrumental value but always as having inherent, moral worth."[120] Following the critical definition of bioconservatism by Bostrom, where he claimed that the problem with bioconservatism is the fact that its argument cannot be factored into cost-benefit analysis, we see where the problem between Kant and transhumanists rises. Transhumanists tend to go too far with their 'analytic' thinking and forget that being a human is a value of its own, arguably the most important one. If we start to 'calculate' who has better dignity or what kind of a human is better according to some 'objective standards' we are stepping on a very

[120] Resnik, Embryonic Stem Cell Patents and Human Dignity, 215.

thin line. Evidently, even today, we can say that being healthy, intelligent, morally good or successful is better than the opposite, but that does not imply that by being sick we are lesser people – that we deserve less dignity. That is because, as it was pointed out: "human dignity is intrinsic to one belonging to the Homo sapiens species regardless of one's capacities."[121]

3.5. In Summary

This chapter served as an outline of the normative debate between transhumanists and bioconservatives. These two ideological camps, who use the same understanding of an individual and both build upon arguments introduced in the humanist tradition, have nevertheless a different conclusion about what posthumanism could do to humanity and our society. Whereas transhumanists think that enhancement technologies will improve on our fundamental human nature, bioconservatives are afraid that our nature is exactly what will be endangered. These two positions are considered the main frame of posthuman debate, or are at least most elaborated on. But as we could notice from the different descriptions of posthumanisms by Ferrando and Sharon there are other stances about posthumanity. One of them is usually known as cultural posthumanism, radical posthumanism or antihumanism.[122] To provide a more developed context of the whole posthumanity debate it is appropriate to introduce this position as well.

4. Cultural posthumanism – looking at the posthuman from a different perspective

Cultural posthumanism in the context of the debate about posthumanism is present much longer than some people might think. A defining text has been published already in 1984 by

[121] Jotterand, Human dignity and transhumanism, 48.
[122] There are again some conceptual differences between these different notions, to distinguish them as well would be exceeding the limitations of this thesis. Therefore all of these terms are in this work simply referred to as cultural posthumanism.

American feminist science studies scholar Donna Haraway (1944-), which is called "A Cyborg Manifesto." Nowadays cultural posthumanism is an interdisciplinary approach based on the ideas of poststructuralism and postmodernism. Furthermore, the international scholars of cultural posthumanism, albeit all from the West, are mostly involved in science and technology studies (Donna Haraway, Bruno Latour), cultural studies (N. Katherine Hayles, Jean-François Lyotard) and feminist, gender and queer theory (Anne Balsamo, Rosi Braidotti).[123] As one of the possible classifications of this intellectual endeavour (antihumanism) suggests, cultural posthumanism holds a very different attitude towards humanism than transhumanists and bioconservatives. Whereas both transhumanists and bioconservatives assign a special status to humans,[124] cultural posthumanists do not recognize humans as a "superior species in the natural order."[125] In their view there is no 'human' as understood by humanists.[126] Cultural posthumanists rather argue that humans have never been as autonomous and ontologically closed entities as we understood them within the humanist image. From this it follows that we are already posthuman as the human never existed in the first place. "Thus a 'human' is merely an ideological construct, a myth, and ultimately a lie, because the phrase suggests that there is an essential distinction between the human and the non-human, while in fact there isn't."[127] In practice this means that cultural posthumanists criticize both transhumanists and bioconservatives[128] that their view and definition of a human is very selective and does not include for example women, African-Americans, gays and lesbians or differently-abled people.[129] In other words, through the transformation of the

[123] Sharon, Human Nature in an Age of Biotechnology, 29.
[124] They view the idea of human as a fixed essence. That is why this approach is also called 'essentialism'.
[125] Miah, A Critical History of Posthumanism, 72.
[126] This view is often called 'anti-essentialism', as there is no special essence of human.
[127] Hauskeller, Utopia, 104. In: Ranisch, Lorenz Sorgner (eds.), Post- and Transhumanism.
[128] Both groups mainly composed of older white men. This is especially important for feminist theorists who claim that the liberal humanist subject has been constructed as a white European male. See Beauvoir, The Second Sex; Butler, Gender Trouble.
[129] Ferrando, Posthumanism, Transhumanism, Antihumanism, 28.

'human' by use of new technologies we might be able to include all of those who were, for any reasons, excluded in the past and – in many societies - still are today.

One of the main goals of cultural posthumanism is therefore to get rid of tacit dualisms that have been present in the Western culture. Haraway points out that "the dichotomies between mind and body, animal and human, organism and machine, public and private, nature and culture, men and women, primitive and civilized are all in question ideologically."[130] We can potentially abolish these 'artificial' boundaries with the help of new advanced technologies. Through the use of technology on humans we are to overcome the boundary between technology and the self. For cultural posthumanists technology therefore represents the potentiality to change the ontological constitution of a human and to overcome dualities.

In a way this means that transhumanists and cultural posthumanists have a very similar goal and both support the idea of posthumanism. For that reason Sharon indicates transhumanism and cultural posthumanism both as optimistic about posthumanism. But there are still crucial differences between them. Not only in the reason why they are optimistic about posthumanism, but also in what posthumanism actually implies. As a matter of fact cultural posthumanists are much more sceptical of technological posthumanism.[131] Their reason to support the idea of technological posthumanism in the first place is because they identify it as a potential change that will allow us to analyse and reconsider the way we are used to look at the world. As observed by Michael Hauskeller (1964-) who states that "Haraway does not share the enthusiasm that most transhumanists seem to feel for the ongoing technification of the life world – she even admits that it is something of a 'nightmare'."[132] Therefore it can be argued that for cultural transhumanists technological

[130] Haraway, A Manifesto for Cyborgs, 205.
[131] On the other hand this does not mean that the goal of cultural posthumanists cannot be eventually achieved by transhumanist agenda.
[132] Hauskeller, Utopia, 105. In: Ranisch, Lorenz Sorgner (eds.), Post- and Transhumanism.

enhancements present a kind of a means to an end, as the ultimate goal for cultural posthumanists is to reassess human ontology.

A similar attitude to technology as presented by Haraway is shared by most proponents of cultural posthumanism, as they are not as focused on technology or science as transhumanists are. Their focus is instead on conceptual, cultural, political and societal issues. This means that for cultural posthumanists fundamental changes in society occur in the social/sociocultural imaginary rather than through technology. This view is supported by another cultural posthumanist, American science and literature scholar N. Katherine Hayles (1943-). According to her the posthuman is a similar construct as a human. It is not some kind of entity that will exist in the future; it is rather a new and different way of understanding things. Hayles infers that "people *become* posthuman because they *think* they are posthuman. [my emphasis]"[133]

By rejecting the ontological difference between humans and technology, cultural posthumanists embody a distinctive relation between these two categories. According to them the experience of the world we have is always shaped by our interactions with technology; the only thing that differs in time is that technologies become more complex. This mean that humans not only *create* diverse technologies, but their existence is *produced* by them as well. We might call such a relation of humans and technology 'reciprocal'.

These claims are supported by the works of an American philosopher of technology Don Ihde, who develops arguments from phenomenology and is recognized as a post-phenomenologist.[134] In a number of publications Ihde shows how the relation between humans and technology co-constitutes our perception of reality. The most famous example

[133] Hayles, How We Became Posthuman, 6.
[134] Ihde's philosophy is further developed in the last chapter of this thesis.

that Ihde uses, are eyeglasses.[135] He argues that it is evident that by using eyeglasses our perception of the world changes. Therefore the technology, in this case eyeglasses, mediate the human experience of the world. Cultural posthumanists infer from this interconnection that 'what it means to be human' is always immersed in the technology we have at our disposal.

4.1. Dichotomies and cultural posthumanism

Hausekeller reviews one of the goals of cultural posthumanism, which is "the desire and recommended dissolution of all confining boundaries, as ultimately a utopian idea."[136] The boundaries or dualisms, if you like, do not exist only because of some ideology, but also because they help us to understand the world. They simplify the world, which often helps us to grasp its complexity. Let's take the example of men and women, which is one of those dichotomies that cultural posthumanists ideally want to overcome. There is a rising support for LGBT communities around the world. Every year more countries recognize more rights to this community.[137] LGBT people are able to get married or at least get a registered partnership, which among other things means that they are able to bequeath their property from one to another. This development should be viewed positively by everyone who advocates ideas associated with cultural posthumanism.[138]

It would be complicated to formulate all the reasons why this trend of recognizing the rights of LGBT people is happening, but it is apparent that it exists. Now with the growing support of LGBT community we witness increasing negative reactions to them as well, as the issues of LGBT community became a topic of public discourse. There are still many people to

[135] Clearly the example of eyeglasses is quite simple as it does not change 'the perception' in the sense we usually think about, as eyeglasses 'only' improve our eyesight. In the last chapter this argument will be developed more and more evident examples will be put forward.
[136] Hauskeller, Utopia, 106, In: Ranisch, Lorenz Sorgner (eds.), Post- and Transhumanism.
[137] See http://www.pewforum.org/2017/06/30/gay-marriage-around-the-world-2013/ Accessed: 20. 7. 2017.
[138] Undoubtedly it can always be argued that the situation could be always better, but if we look at the development of last 50 years, we should easily recognize that the situation was never better.

whom anything besides heterosexuality seems unnatural. This is again influenced by so many reasons such as culture, religion, politics or just unpleasant feelings about homosexuality. What can be argued for in relation to the simplification of the world is that by introducing different sexualities, sexes or genders, which are accompanied with LGBT community, many people are not capable of understanding that. They were born in the world where only men and women existed and that was clearly simple to comprehend. This does not mean that actually only men and women existed, but rather that these were the only two categories used at that time. By introducing these new concepts these people are afraid that the world, as they know it, is endangered. This is arguably one of the justifications why Hauskeller states that the goal of cultural posthumanism is a utopian idea, as there are reasons for the existence of these dualisms – they are a way to help us 'understand' the world.

Another important dichotomy against which cultural posthumanists argue is physical and non-physical. For most it is better known as the mind-body division. In philosophy it is one of the most discussed topics, which is still waiting to be solved. Everyone is familiar with religious ideas of the immortal soul. We all have this 'weird' experience of being more than our body, as we are thinking bodies capable of thoughts, feelings and more. From this, many people have concluded that there is a division between the material body and the immaterial mind.[139] The most influential application of this way of thinking is represented by French philosopher of 17th century René Descartes. Descartes' sentence "I think therefore I am" is maybe the most recognized sentence in philosophy. Descartes in philosophy, or at least a possible interpretation of Descartes, therefore represents the concept called substance dualism or Cartesian dualism.

Cultural posthumanists put strong emphasis on materialism, which means that in their interpretation there are only material bodies and there are no immaterial minds. This is

[139] This understanding was already present in Ancient Greece.

another cause for cultural posthumanists to disagree with transhumanists. Although there are many ideas about the technological posthuman by transhumanists, one of the most presented is associated with potential mind-uploading. The idea of mind-uploading is based on the growing impact of computers on our understanding of the human mind. This is connected with general development in the areas of philosophy of mind, cognitive science and artificial intelligence. As computational theories of mind have become the center of the debate about the human mind. From these theories arguably the most prominent approach during the last decades is functionalism.

Functionalism builds its theory about the mind on the computer model of information. In this interpretation mental states are computational functions, rather than physical states. From this understanding of the human mind philosophers and cognitive scientists infer that the human mind is like a computer.[140] That is how we got the famous analogy that the human body is like hardware and the human mind is like software of a computer. The moment we accept this parable there is no theoretical problem for us to presume that if we can manipulate data from a computer and transfer it to any other hardware, we will eventually be able to do the same with the human mind.[141] The human body is therefore only a kind of carrier for the human mind that can be replaced with a better one.

This idea of dividing the human body and the human mind and further arguing that we can 'get rid of' our biological bodies and still exist as our minds in some 'better' non-biological 'bodies' is something with what cultural posthumanists strongly disagree. For Haraway this interpretation represents "blissed out techno-idiocy."[142] Haraway's position is supported also by Hayles who argues that "a human mind without a human body is not a human mind."[143]

[140] Gilbert Ryle or Daniel Dennett.
[141] This has been further supported by number of achievements in the field of artificial intelligence.
[142] Gane, When We Have Never Been Human, 146.
[143] Hayles, How We Became Posthuman, 246.

This attitude clearly shows that cultural posthumanists disagree with transhumanists and their ontological understanding of the human mind. In their view the idea of mind-uploading contains tacit Cartesian dualism. Cultural posthumanists are for their interpretation of the human mind inspired by phenomenology, specifically by the notion of embodiment. The idea of embodiment implies that our biological bodies are necessary for our human skills as mental states, language or social interaction. Therefore any thought that the human mind can exist in another 'body' than the human one is considered as false.

4.2. In Summary

In this chapter I have introduced a different attitude towards the technological posthumanity known as cultural posthumanism. Cultural posthumanists focus much more on the ideas and how people perceive the world than on technological developments. Although they see potential technologies as means to change the society. Cultural posthumanists aim to redefine what it means to be a human, but not only that. They ideally want to get rid of all 'tacit' dualisms that exist in the Western culture. The most important one in the context of this thesis is so called Cartesian dualism, which is the view that the human body and the human mind are two separate entities. Cartesian dualism is according to cultural posthumanists present in the idea of mind-uploading, which is in their view also the demonstration of 'techno-idiocy'.

5. Interlude: A Stalemated Debate

After clarifying what posthumanism and the posthuman mean in the context of this thesis and the specific debate about the posthuman, we have seen three different attitudes towards this issue. First transhumanism – an extension of humanism that seeks to transcend the human and through the use of technology and enhancement create a technological posthuman. Secondly bioconservatism – an extension of humanism that argues against transhumanism and

claims that attempting to create technological posthuman would compromise fundamental human nature and therefore our whole society. Thirdly cultural posthumanism – an extension of postmodernism that seeks to tear down 'old' humanist definitions of the human and tacit dualisms presented in the Western culture; if needed through the application of technology and enhancements.

The main subject of these chapters was what is usually referred to as the normative debate. Should the technological posthuman happen was therefore the question everyone was trying to answer. We have seen that the answers to this question were strongly interconnected with the ideologies of the scholars. It is therefore fitting to conclude that the normative debate about the technological posthuman is also an ideological one. This fact raises several issues. Mainly it is 'objectively' impossible to decide which side is right, as there is no such thing as an ultimately true ideology. In my opinion transhumanists are overly liberal, to the extent of naivety. Their assumption that letting the powers of the free market decide which enhancements and technologies will spread amongst people is potentially dangerous.

In that regard bioconservatives are much more realistic. On the other hand, their attitude is sometimes too limiting and binding, and comes across as too similar with neo-luddites. Humans have used technology for centuries and for the most part it has improved our lives. Clearly potential manipulations with human biology are above anything we have ever undergone; still we should not be overly rigorous when it comes to this issue.

Concerning the dispute between transhumanists and bioconservatives I tend to agree with Michael McNamee and Steven Edwards who suggest that the whole weight of the argumentation is on transhumanists. In their view transhumanists are those who have to prove that "all of what is described as enhancements are imbued with positive normative force and are not merely technological extensions of libertarianism, whose conception of the good is

merely an extension of individual choice and consumption."[144] Bioconservatives represent in this debate sceptical critics who should raise the questions that transhumanists tend to ignore. The main problem is that transhumanists in their scientific understanding have a tendency to disregard bioconservative critique as emotional. This and the fact that the whole debate between transhumanists and bioconservatives is fundamentally ideological leads to a stalemate. Both these camps have already expressed most of their opinions and criticized each other extensively. The future of this debate will be therefore, in my opinion, mostly focused on discussing concrete developments and technologies as they are going to be introduced in time.[145]

Although it is undoubtedly important that such an issue is discussed among scholars, it is an issue that concerns every person in society. Therefore it should be of utmost interest for everyone to shift this discussion from a 'technocratic' to a much more public debate. One of the things that Fukuyama in his defence of liberal democracy against enhancements omits is what liberal democracy is capable of. It can be argued that one of the best qualities of 'Western' liberal democracy is its capacity to evolve and adapt in time. In comparison with other political systems, liberal democracy is able, through its political processes, to respond to changes while retaining its fundaments.[146] In this context it will eventually be people and their elected politicians who will decide the future of enhancing technologies. That is why it should be in everyone's interest to apprise people with what these technologies might offer and for what price.

Cultural posthumanism is a slightly different case. Their goal is not to achieve technological transcendence, but rather an ideological one. They consider the technological

[144] McNamee, Edwards, Transhumanism, medical technology and slippery slopes, 518.
[145] Although in the upcoming chapter I want to introduce some arguments and ideas that could influence this debate as well.
[146] E.g. civil rights and liberties, separation of powers, the rule of law, open society and others.

posthuman as a means to achieve radical re-examination of what it means to be human. In one sense they are therefore optimistic about technological posthumanity, in another sense they are highly critical of it. Cultural posthumanists do not share techno-optimism with transhumanism and further disagree with most definitions and ontological claims presented by transhumanists. That is why they, for example, disagree with any assumption promoting mind-body dualism. By doing so cultural posthumanists consider a question that bioconservatives mostly ignore. We might designate this question as an empirical one, because it concerns not whether technological posthumanism *should* be done but rather if it actually *can* be done. Bostrom calls this objection the "it cannot be done" objection.[147]

It is interesting that most bioconservatives plainly accept that the claims proposed by transhumanists might become a reality, and immediately focus only on the normative side of the debate. Cultural posthumanists are much more thorough in this regard and at least pinpoint what some of the issues that transhumanist's arguments mean in the context of ontological commitments.[148] We have already seen that these assertions by cultural posthumanists are inspired by phenomenology and/or post-phenomenology. This is where we begin the last chapter of this thesis, by elaborating and developing arguments presented in phenomenology, post-phenomenology and enactivism. It is, in my opinion, important to bring the content from philosophy of mind and cognitive sciences into the debate about technological posthumanism.[149] We can have a proper discussion about technological posthumanism only when we can all agree what is actually ontologically, and therefore also empirically, feasible.

[147] Bostrom, Why I Want to be a Posthuman When I Grow Up, 30. In: More, Vita-More (eds.), The Transhumanist Reader.
[148] Of which empirical problems rise as well.
[149] Although this has been already done by some cultural posthumanists; we saw the arguments made by Haraway and Hayles. I want to broaden the scope of the argument by introducing new arguments (enactivism) and apply them to transhumanism vs. bioconservatism debate.

6. Phenomenological and enactivist perspective of technological posthumanism

In this chapter we are finally coming to the issues that have been the main motivation of this thesis, as we are going to examine distinct types of technological posthumanism through the perspective of phenomenology and enactivism and argue if they are ontologically and empirically feasible. As it is my opinion that such an investigation might potentially vivify the debate about technological posthumanism and mainly inspire bioconservatives to find 'new' sources of criticisms to transhumanists ideas.

In the first part of this thesis we have noted that the ideas of transhumanists about the technological posthuman are diverse. This means that transhumanists have advanced different claims about what will be achievable through the use of technology and enhancements.[150] McNamee and Edwards in their essay present a possible partition between two kinds of transhumanism – moderate and strong.[151] Whereas moderate transhumanists 'merely' strive for an overall quality enhancement of life, strong transhumanists strive to completely overcome the limits of human nature.[152] Although even this division does not completely clarify the diverse conceptions present among transhumanists, it does at least help us distinguish most fundamental differences. We may understand moderate transhumanists as those who aim to improve human condition through the use of technologies without fundamentally changing it.[153] Strong transhumanists, on the other hand, are those who have

[150] I have also outlined that many of these ideas are connected with futurism.
[151] Another possible distinction is that between carbon and silicon based transhumanism. See Lorenz Sogner, Pedigrees, 31, In: Ranisch, Lorenz Sorgner (eds.), Post- and Transhumanism.
[152] McNamee, Edwards, Transhumanism, medical technology and slippery slopes, 513.
[153] For example by using implants, nanotechnology, performance enhancers, gene therapy or by applying technological resources to restore „biological" functions of humans (eyesight, walking, speaking, hearing etc.).

more ambitious goals, which they want to achieve through the use of mind-uploading, virtual reality or by creating artificial general intelligence (AGI).[154]

The task for the rest of this thesis is therefore to investigate how these two different stances about the technological posthuman stand in the perspective of phenomenology and enactivism. You might object that there is no need to do so for the moderate technological posthumanism as it is already clear that such augmentations and enhancements are possible. But even if we would disregard the fact that people have been using drugs and technologies, which change their status in nature, we are still witnessing a much more advanced use of technologies on humans in recent years. Neil Harbisson may be the best example of these developments. Harbisson is the world's first legally recognized cyborg. He uses an antenna implemented into his skull to overcome the disability that he was born with – not being able to perceive colours. This antenna allows him to convert colours into sounds – he hears frequencies of colours. This example and many more undoubtedly show that there cannot be any ontological or empirical issue with moderate technological posthumanism. The question therefore is why even argue about it in the perspective of phenomenology and enactivism. It is my opinion that if we want to examine the ideas of the strong technological posthumanism, we should first show that the ideas and arguments we will present can actually withstand the realities of this world. In other words, it would be pointless to present arguments against the strong technological posthumanism, if they are not applicable in the context of the moderate technological posthumanism.

6.1. Phenomenology and enactivism

We have already seen how the ideas of transhumanism are strongly intertwined with a belief in science. This is one of the reasons why phenomenology is an intriguing approach to

[154] From now on I will refer to moderate and strong transhumanism as the moderate and the strong technological posthumanism or the moderate and the strong technological posthuman. For the reasons explained in the second chapter.

examine the ideas of transhumanism, as phenomenology is known for its distinct perspective of the natural sciences. This is one of the fundamental characteristics of phenomenology since the times of its founder German philosopher Edmund Husserl. Husserl introduced, in the context of what he called the crisis of European sciences, a famous concept known as the lifeworld.[155] According to Husserl science has lost its touch with meaning and with how people experience the world.[156] This crisis started the moment when the natural sciences claimed that the 'real world' can be examined only through the use of mathematical regularities and when our natural experiencing of the world was seen as naïve. Husserl therefore wants us to return to our everyday understanding of the world around us.

Phenomenology is not interested in studying the objective world as such, but rather the subjective foundations that allows us to experience the world. In this context we end up with two divergent concepts. First the lifeworld for which the importance lies in how the world appears to us, or how it shows itself. Second, the world of mathematics and the natural sciences, for which the importance lies in laws and regularities. Husserl advanced a theory that the lifeworld is actually the foundation for the natural sciences and any other human activity as well. The potential danger is that if we take only scientific knowledge as the primary source of our recognition we will create a disconnection between our experience of the world, and this scientific image. We are able to "understand the natural sciences through understanding the lifeworld, but we cannot understand the lifeworld through the natural sciences."[157] Therefore phenomenology offers a particular epistemological position in which the primacy of human knowledge is constituted by our subjective experience of the world.

[155] In German language lebenswelt.
[156] This is sometimes seen as rejection of the natural sciences, which is not true. The point made by Husserl is rather that there is area of human knowledge that is completely ignored by the natural sciences.
[157] Patočka, Husserlova fenomenologie, fenomenologická filosofie a Karteziánské meditace, 175. In: Husserl, Karteziánské meditace.

Although Husserl's work could be in many aspects beneficial to our goal, it would mean extending the scope of this thesis. In the beginning of this thesis we have shown how many different approaches can be instantiated in one philosophical tradition. Phenomenology is not an exception in this regard. Undoubtedly since Husserl's publications phenomenology has developed into different branches and investigated many issues that were not important to Husserl. Already his famous pupil German philosopher Martin Heidegger is presented as a philosopher who introduced an idiosyncratic perspective in phenomenology. Nowadays the phenomenological tradition is even more divided. Besides those who continue in the tradition of 'classical' phenomenology, we have those who we could call 'naturalized' phenomenologists (Dan Zahavi, Shaun Gallagher) and post-phenomenologists (Don Ihde, Peter-Paul Verbeek).[158]

The main source of inspiration to bring forward arguments against the strong technological posthumanism is the French philosopher Maurice Merleau-Ponty. His ideas in phenomenology, although inspired by Husserl, have a number of distinct characteristics.[159] The center of Merleau-Ponty's philosophy is the role of the body. He distinguishes between two concepts of the body. The first is labelled as an objective body (physiology) and the second is labelled as a phenomenal body (the experience of I). It surely comes without any surprise that what is more important for Merleau-Ponty is the phenomenal body. The body according to Merleau-Ponty, is an important factor in how we experience, take action, think and perceive our personal identity. From this Merleau-Ponty infers the idea of embodiment, which "has a double meaning: it encompasses both the body as a lived, experiential structure and the body as the context or milieu of a cognitive mechanism."[160] Although Merleau-Ponty distinguishes between these two types of the body, ultimately there is only one body. For

[158] The list does not include all possible branches.
[159] See Carman, The Body in Husserl and Merleau-Ponty.
[160] Varela, Thompson, Rosch, The Embodied Mind, XVI.

Merleau-Ponty "there is mind in the body and body in the mind."[161] This means that Merleau-Ponty argues for the importance of our body as a whole system in the co-constitution of consciousness: our consciousness is not exclusively formed in our heads (brains). Therefore, the body is our sole 'instrument' of perception without it we have no place from which to perceive the world.

Merleau-Ponty's work has been so influential that it inspired the creation of an innovative position in the cognitive sciences. What can be called an extension of phenomenology is known as 'enactivism'. Enactivism has been introduced in *The Embodied Mind* in 1992.[162] It is a transdisciplinary approach based on ideas from biology[163] and phenomenology.[164] One of the main tasks of enactivism is to offer a distinct understanding of the human mind to 'traditional' individualistic and rationalistic conception of autonomy, cognition and action, which is mainly based on the computational theory of mind.[165]

The fundamental idea of enactivism is based on the relation between an autonomous adaptive system and its environment.[166] The cognition of any live autonomous system is according to enactivism, an embodied and situated process, whose meaning is generated in relation between the system and its environment. In other words, every adaptive system has a capacity to sustain its own identity which leads to the ability of cognition and sense-making. But meaning is not created just by the autonomous system, but rather through intersubjective context.

Both phenomenology and enactivism define themselves in opposition to Cartesian dualism and recognizes the human as a body-mind unity.

[161] Bullington, The Expression of the Psychosomatic Body from a Phenomenological Perspective, 25.
[162] Varela, Thompson, Rosch, The Embodied Mind.
[163] Specifically autopoiesis.
[164] From which it mainly draws from the idea of embodiment.
[165] E.g. functionalism.
[166] Urban, Enactivism and Care Ethics, 121-122.

This interconnection of phenomenology and enactivism is further developed by Tom Froese. He argues that we should get rid of 'the old' approach in the cognitive sciences, which is composed of cognitive psychology, cognitive neuroscience and computer science and replace it with co-operation between phenomenology, biology focused on organisms and dynamical systems theory.[167] Froese further advances his theory of continuity of life and mind, where biological and mental lives are linked together. He presents an opinion that biology and phenomenology not only have the same interest - the study of life - but that they are also ontologically intertwined. That is because "my living body does not only exist as an external object to biological science; I exist as this body. I experience that I am this living body during my practical engagement with the world, as a scary trip to the doctor can easily reveal."[168]

There are other aspects, besides the embodiment, present in enactivism which are taken from phenomenology, such as intentionality, intersubjectivity, sociality and social cognition. Explanation of these phenomena is one of the strongest attributes of enactivism, whereas computational theories have the biggest troubles with these. Social cognition, for example, is elucidated through social interaction. This is again where enactivism extends on Merleau-Ponty who "perceives sociality as a permanent field or as a dimension of existence, in relation to which I can never stop to exist and which precedes any explicit perception or judgment."[169] Enactivism grasps social cognition as a social interaction between different agents and through the context in which these interactions take place. This means, that social interaction cannot be understood only through the actions of autonomous individuals. Instead, it always has to be considered that interaction itself, between these agents, influences them as well. Sense-making is therefore not only an individual process, but also a social process.

[167] Froese, Breathing new life into cognitive science, 118.
[168] Froese, Breathing new life into cognitive science, 116.
[169] Urban, Fenomenologické aspekty intersubjektivity, 414.

6.2. Moderate technological posthumanism in the perspective of phenomenology/enactivism

To be able to discuss the ideas of the moderate technological posthumanism, we first have to clarify the relation between humans and technology. We have already seen this issue being raised by cultural posthumanists for whom there should not be any division between humans and technology at all. This is especially connected with the philosophy of Don Ihde who claims that "our existence is technologically textured."[170] In the chapter about transhumanism we have also introduced two distinct positions about the relation between humans and technology – the social-determinist and the technological-determinist. We have seen that transhumanism propagates the technological-determinist position. Ihde in opposition casts doubt on such an interpretation and argues for a social-determinist position. This means that, according to Ihde, humans influence the creation of technologies, but technologies also affect "the very way we act, perceive and understand."[171]

Besides the example of eyeglasses Ihde has developed other illustrations to show that "technological artifacts enable humans to perceive different aspects of reality; [that] they mediate human experience of the world."[172,173] Galileo's telescope is a great symbol to prove Ihde's claims. The understanding of the night sky through the naked eye has been an obvious limitation for humans to acquire a richer understanding of the universe. Because of this restriction people had a number of false assumptions about the universe.[174] Galileo's invention has fundamentally changed the human capacity to observe the universe and has therefore changed our understanding of it as well. The objection some might raise now is to argue that Galileo was, what we today would call a natural scientist, and that our

[170] Ihde, Technology and Lifeworld, 1.
[171] Ihde, Technology and Lifeworld, 4.
[172] E.g. telescopes or heating systems.
[173] Sharon, Human Nature in an Age of Biotechnology, 34.
[174] E.g. that planet Earth is flat or that it is the center of the universe.

apprehension of the universe is exactly through the natural sciences - how can this be a phenomenological point then.

First of all, it should be emphasized that phenomenology is not *against* the natural sciences and its methods. Merleau-Ponty stated that phenomenology needs confrontation and cooperation with empirical sciences. Husserl also expressed the following: "when it is really natural science that speaks, we listen willingly and as disciples. But the language of the natural scientists is not always that of natural science itself, and is assuredly not so when they speak of 'natural philosophy' and the 'theory of knowledge of natural science'."[175] Second of all, the embodiment of technologies is precisely what is at the center of Don Ihde's philosophy. According to Ihde our perception develops in time, as is mediated by current technologies. Therefore if we compare the perception of the ancient Greeks and ours, we are able to observe that our technologies enable us to perceive what the ancients could not. Ihde states that today "we see by means of first optical and then radio, spectrographic, and other technologically embodied vision (or hearing, or touch)."[176] If we compare this with the ancients it is self-evident that their perception was much more 'technologically' limited than ours.

Following the example of the telescope we identify that technologies transform our experience of the world. The same argument could be applied to the case of mister Harbisson, whose antenna changed his experience of the world and became part of his lifeworld. Lifeworld therefore is not something static, but something that evolves in time. Ihde in this regard establishes two different categories of perception. What is mostly understood as sensory perception[177] Ihde calls microperception and what might be called a cultural, or

[175] Husserl, Ideas, 86.
[176] Ihde, Technology and Lifeworld, 44.
[177] E.g. touching, seeing, hearing etc.

hermeneutic, perception Ihde calls macroperception.[178] Both these perceptions belong to the lifeworld and are intertwined. This means that we cannot have one without the other. If we apply this division into the example of mister Harbisson, we can observe that his microperception has changed the moment he started to use his antenna. But his macroperception has not changed, as the cultural setting did not change during this transition. What is important to note is that as both these perceptions are part of the lifeworld, both of them also evolve in time. Harbisson's microperception has radically changed since the instalment of the antenna, which since then became part of his lifeworld, as the antenna is one of his sensory/bodily perceptions. Although macroperception did not changed much for mister Harbisson it is evident that his macroperception strongly differs from the macroperception of the ancient Greeks. Mediation of the human experience through technology is therefore not in contradiction with the idea of the lifeworld or phenomenology, just the opposite.

Don Ihde's argument can been seen as an extension of similar cases developed by Martin Heidegger and Merleau-Ponty. Heidegger in his work *The Question Concerning Technology* (1977) rejects, at that time, the generally accepted opinion that technology is just a mere instrument subjected to human control.[179] This relates to his famous example of a hammer. Heidegger argues that the skilled carpenter has no conscious recognition of the hammer, the nails, or the work bench. Therefore all these 'instruments' that are part of the carpenter's activity, become part of his phenomenal world. If the carpenter and all the instruments became part of one phenomenal world, it would mean that we cannot anymore distinguish subjects and objects. Another arguably more familiar argument for most people these days would be car driving. Most of us who drive almost every day become so immersed in driving that we stop paying any 'conscious' attention to it. This description clearly fits best if we talk about a road that we already know and nothing extraordinary happens during our trip. If these

[178] Ihde, Technology and Lifeworld, 29.
[179] Heidegger, The Question concerning Technology.

conditions are met and someone asks us about our ride later, we will have substantial troubles with any recollection. In Heidegger's terminology this means that the car and the activity of our driving have become part of one single phenomenal experience, for which we cannot distinguish between diverse aspects of it.

Merleau-Ponty advances his own examples, specifically the blind man's cane and the woman's feathered hat. As well as Heidegger and Ihde, Merleau-Ponty's ambition is to illustrate that a person's bodily experience can be extended beyond her/his biological body. An elaborate quotation is beneficial to understand Merleau-Ponty's point:

"The blind man's stick has ceased to be an object for him and is no longer perceived for itself; its point has become an area of sensitivity, extending the scope and active radius of touch and providing a parallel sight. In the exploration of things, the length of the stick does not enter expressly as a middle term, as an entity-in-itself; rather, the blind man is aware of it through the position of objects through it. The position of things is immediately given through the extent of the reach which carries him to it, which comprises, besides the arm's reach, the stick's range of action."[180]

What Merleau-Ponty attempts to show in this passage, is that the blind man, the moment he acquires enough skill to properly use his stick, starts to experience the world through it. The stick becomes part of the blind man's lifeworld. In other words, humans are capable of using technological artifacts to extend their capacity of perception. Evidently there are various degrees of such a relation between technologies and humans. The experience of walking around with a stick is undoubtedly different from driving a car, for example. For this reason Evan Thompson and Mog Stapleton distinguish between 'mere extensions' and

[180] Merleau-Ponty, Phenomenology of Perception, 165-166.

'incorporations'.[181] Although humans use a number of technologies and tools, not all of them are phenomenologically incorporated. Even though we use a toothbrush everyday it does not have any impact on our perception of the world - we do not see the world in-and-through the toothbrush. A blind man's stick is evidently a contrasting case: its use is precisely to perceive the world in-and-through it. That is why a blind man's stick or Harbisson's antenna fall into the incorporated category. To be able to generally discern these two categories[182] Thompson and Stapleton introduce the following proposition: "for anything external to the body's boundary to count as part of the cognitive system it must function transparently in the body's sense-making interactions with the environment."[183]

In her paper American philosopher Michelle Maiese points out that this account promotes a question about of how we are able to infer what counts as external tool that is part of sense-making interactions.[184] Thompson and Stapleton suggest that although biological attachment is not required, there is need for some kind of intimate coupling with the body. This according to them means that these tools or technological assets, which are used to mediate our perception, must be subject to active regulation by the body.[185] In other words, there is still a phenomenological difference between the body as a sole entity and these 'tools' that are used by that body. We can again present number of examples to show this distinction. If we return to the case of mister Harbisson we realize that although his antenna is phenomenologically incorporated into his body, he is still capable of disconnect it. Such separation will still feel fundamentally different than if mister Harbisson would remove his eyes. The primary role of the body in our experiencing of the world is therefore *crucial* for Thompson and Stapleton, as the body is our 'means' for being in the world.

[181] Thompson, Stapleton, Making sense of sense making, 29.
[182] Mere extensions and incorporations.
[183] Thompson, Stapleton, Making sense of sense making, 28.
[184] See Maiese, Can the mind be embodied.
[185] Thompson, Stapleton, Making sense of sense making, 29.

The body[186] is not only important as our fundamental 'means' to experience and perceive the world, but also to acquire meaning. The idea, present in enactivism, is that "sense-making is the interaction between an adaptive autonomous system and its environment by which the environment takes on significance or meaning for the system."[187] It is important to note that what matters is the organizational boundary, not the physical boundary of the system. "This is to say that autonomous systems are 'operationally closed' and individuated according to boundaries established by relations of reciprocal influences among components."[188] Therefore it is possible for mister Harbisson to acquire meaning through his antenna.

The idea of an autonomous adaptive system is derived from the theory of 'autopoiesis'. It essentially means that "the system is organized so that one of the results of its operations is the continued existence of that system itself."[189] For proponents of enactivism this self-organization means adaptation which leads to sense-making. Every adaptive system is a living system and therefore also a cognitive system.[190] Furthermore, every adaptive living system is autonomous in the sense of maintaining its 'identity' in its environment. From this we are capable to infer that every autonomous system has at least two perspectives; either the system exists in consonance with its environment, or not. This gives the process of sense-making and ultimately the existence a normative character, as every autonomous system favours one status (existence) over another (non-existence).[191]

[186] In enactivism the body is understood as organic, social and cognitive.
[187] Urban, Enactivism and Care Ethics, 121-122.
[188] Maiese, Can the mind be embodied, 5.
[189] Froese, Breathing new life into cognitive science, 117.
[190] See Di Paolo, Thompson, The Enactive Approach. In: L. Shapiro (ed.), The Routledge Handbook of Embodied Cognition or Froese, Di Paolo, The enactive approach.

[191] See Di Paolo, Thompson, The Enactive Approach. In: L. Shapiro (ed.), The Routledge Handbook of Embodied Cognition.

6.3. Moderate technological posthuman – can and should it happen?

Now we can examine what exactly these preceding arguments and theories mean for our idea of the technological posthuman. First, we have to realize the complications that are affiliated with our endeavour. Our interest lies in the technological posthuman, which ideally is represented by the 'final product' of the technological evolution of humans. Certainly this already raises a potential issue, because there might not be such a thing as final evolutionary state of humans. The idea is that even if we become technological posthumans, there is no certainty that at that moment there would be a complete discontinuance of evolvement. Therefore we should rather consider the applications of technologies that are already acknowledged[192] and examine if those are applicable in phenomenological and enactive framework.

Undoubtedly you were able, from the previous section, to infer what the conclusion about the moderate ideas about the technological posthuman, in terms of phenomenology and enactivism, are going to be. But we should still summarize the concrete implications that these arguments have. Ihde shows us, not only that society has a substantial influence on the development of new technologies, but more importantly, that there are two different perceptions humans possess. If we apply this to the notions presented by transhumanists we might conclude that technologies and enhancements are capable of influencing both these perceptions. We demonstrated that microperception can change rapidly when we use a technology that gives us a completely new experience – Harbisson's antenna. Furthermore, it was presented that our macroperception changes as well – the comparison of today's society with ancient Greeks. The most important argument to take away from Ihde is that technologies are and 'always' have been part of our perception of the world. The fact that they

[192] But also technologies that are already connected with the idea of a technological posthuman.

are getting more complex, sophisticated and much more intertwined with humans does not raise any issues.

This was further supported by concrete examples introduced by Heidegger and Merleau-Ponty, who already in the middle of the 20th century observed possibilities that are being confirmed today. Clearly one might argue that already the example of the blind man's stick is an adequate assertion, but if we review the case of mister Harbisson there is no doubt anymore that technologies can be used by humans to see the world in-and-through them.

Enactivism then further develops ideas of Merleau-Ponty and shows how can tools and technologies influence our perception. Much more important for us are those technologies that become incorporated in our phenomenal body, again the antenna of mister Harbisson. The enactive view therefore supports the ideas that diverse technologies and enhancements influence and change our perception of the world. What is the most essential, in the context of transhumanism, is the notion that although we can use various tools, we should always be able to disconnect them from our phenomenal body, as the primacy of the body in our perception and our experiencing of the world is 'indisputable'. In respect to the idea of a moderate technological posthuman this means that, in accordance with phenomenology and enactivism, there is no ontological or empirical issue for it to happen. Therefore using implants, enhancing drugs, augmentations or gene therapy to change human's condition is possible, as long as the body is *still* "capable of leading the dance."[193]

There is a potential issue that is related to the case of manipulating DNA. Some might argue that if we create a new 'biological' entity it might be problematic for enactivism to account for it, as clearly the biological body is an important factor in enactivist philosophy. In my opinion such a creation of a technological posthuman through DNA manipulation does not

[193] Thompson, Stapleton, Making sense of sense making, 29.

raise any potential concerns for the enactivist view, as the aforementioned posthuman would still be born into a body. This means that the theory of adaptive autonomous system would still be applicable to him. Although her/his perception and sense-making would be, most probably, distinct to ours, as her/his sensory perception would be different, she/he would still be capable of experiencing her/his own body separated from the environment. Therefore a similar concern is not connected with any empirical or ontological problem, but 'only' with a normative one.

If we return to cultural posthumanism we will realize that there are many similarities between our phenomenological/enactivist account and cultural posthumanists. Cultural posthumanists also base a number of their arguments on the philosophy of Merleau-Ponty and on his idea of embodiment. Both cultural posthumanism and enactivism can be seen as optimistic about the moderate technological posthuman. But there are still some fundamental discrepancies between them. We have observed that enactivism is essentially based on the distinction between an autonomous adaptive system and its environment. In other words, enactivism applies its own form of dualism, where adaptive system and the environment receive different ontological status. Through possessing the body these systems are alive and cognitive, whereas their environment does not have these features. Such a claim is problematic for cultural posthumanists who are explicitly arguing against such dichotomies.

In the previous paragraph I have expressed a questionable conclusion, namely that enactivism can be seen as optimistic about the moderate technological posthuman. Clearly such a claim does not relate to our empirical pursuit, but rather returns us to the normative part of the debate. I have not gotten hold of any literature that is specifically concerned with the issue of technological posthumanism from the enactive approach concerning the normative side of the debate. There probably is not such a publication either, as enactivism is focused on the issues of the mind and the body. But my impression from reading numerous

phenomenologists and enactivists is that they would not have severe issues with the idea of the moderate technological posthuman.[194] We have recognized that in terms of both phenomenology and enactivism technologies are part of the human perception of the world. Their improvement and therefore the improvement of human capacities does not seem like a genuine concern then. Rather the opposite advancing the human condition and its capacities to experience the world is seen as a positive quality. Of course, that is only true as long as we do not endanger *the primacy of the body*.

As we have slightly returned to the normative debate about technological posthumanism, let us conclude this chapter by referring back to the transhumanist and bioconservative debate. In my perspective most transhumanists would rather support the idea of the moderate technological posthuman than the idea of the strong technological posthuman. There is no sociological evidence to support this claim. It is again based on the impression from the literature, but also deduction from how most natural scientists operate. We have already discussed the fact that most transhumanists are natural scientists who therefore strongly belief in the natural sciences. What is arguably the biggest positive about the natural sciences is its method, as scientists should be very sceptical about anything that has not been proven empirically.[195] From this we can infer that most transhumanists should be at least sceptical about the idea of the strong technological posthuman and support what has actually been proven to be possible – the moderate technological posthuman.

The point that I am trying to make is that moderate technological posthumanism is also what the center of the whole debate about technological posthumanism should be, as it is something that we have evidence of and something that is already a contemporary issue. Consequently, from a bioconservative perspective, moderate technological posthumanism -

[194] Clearly in terms of ontology, but also in normative terms.
[195] This is clearly a simplification.

the endeavour to merely strive for overall quality enhancement of life - should not raise as much issues. Clearly the objections about potential dangers of enhancements that could bring even more inequality into future society or objections about potential endangerment of 'human nature' by DNA manipulation should still be brought up.

But if you want to take away the blind man's stick, mister Harbisson's antenna, or prosthetic limbs from someone, you are not bioconservative; you are a neo-luddite, which should be a distinguishable position. In other words, these potential technologies, enhancements, augmentations and DNA manipulations are connected with many potential positive qualities that could improve the lives of an unaccountable number of people. That is why bioconservatives should not just merely oppose these technologies, but distinguish between those that are going to have a positive impact and those with a negative one. I do not think and I hope that neither proponent of bioconservatism introduced in this thesis would want to take away mister Harbisson's antenna just because it is a technology that 'radically' changes how he perceives the world, or because they simply claim that similar technologies are dangerous.

6.4. The context of strong technological posthumanism

We are finally coming to the last issue that will be examined in this thesis. In this chapter we are going to consider the possibility of what McNamee and Edwards characterize as the strong transhumanism. More specifically we will focus on the idea of mind-uploading, which is merely one of the possible ideas about a strong technological posthuman. The other one is the suggestion of AGI. Unfortunately dealing with AGI would be extending the scope of this thesis, although it is, in my opinion, one of the most intriguing topics of our lifetime.

The concept of mind-uploading, as already introduced a little in the first part of this thesis, is strongly intertwined with the development of computers. Computers are, arguably, the most

impactful technology in the last forty or more years. Anyone who remembers the beginnings of custom personal computers and is capable to make the comparison with present day computers can testify to the enormous progress computers have undertaken. This progress is connected to so called Moore's law, which is basically the statement that number of transistors placed on an integrated circuit doubles approximately every two years. This consequently means that computers get two times faster every two years. This law has been always met since its introduction in 1965. Although we might soon experience the end of this law, as transistors are becoming so small that quantum interference affects them.[196]

It was only a question of time after we had witnessed numerous achievements done by computers that were always perceived as only in the capacity of humans that people started to explore potential similarities between computers and humans.[197] This is actually not the first time that humans started to model the operations of the human mind on the most fashionable technology of the day. British philosopher Jack Copeland in his book *Artificial Intelligence* (1993) shows that Descartes developed a hydraulic theory of the brain's activities; Leibniz proposed that the brain could be likened to a factory; Freud relied heavily on electromagnetics and hydraulics in his descriptions of the mind's operations. Next Sir Charles Sherrington, the eminent British neuroscientist, likened the nervous system to a telegraph. When the telegraph was ousted by the telephone, the brain became a telephone switchboard.[198] Today we have computers. The only difference is that computers can accomplish things that these other technologies could not come even remotely close to.

Computers have therefore become the main source of comparison to the human mind. Already since the brilliant British mathematician Alan Turing (1912-1954) the question if

[196] See http://www.nature.com/news/the-chips-are-down-for-moore-s-law-1.19338 Accessed: 30. 7. 2017.
[197] Among these accomplishments we can name was the famous win in chess done by the supercomputer Deep Blue over the world chess champion Garry Kasparov. Further we can list IBM's supercomputer that has beaten humans in jeopardy or quite recent victory in Go by the AlphaGo computer against Lee Sedol. Clearly the list of all achievements done by computers would be quite extensive.
[198] Copeland, Artificial Intelligence, 182.

machines can think has been the most important question in this context.[199] The fundamental philosophical question on which we can base the answer to Turing's question is: how do mind and matter relate. In other words, this fundamental question is concerned with the ontology of the mind. There is a number of ontological approaches to the human mind and as we have already mentioned there is not final answer to this question. To name some of these stances: we are already familiar with dualism and functionalism, but also with materialism,[200] which is the position generally supported by cultural posthumanists.

Our interest in the case of this thesis lies on substance dualism and functionalism. As was already mentioned in the chapter about cultural posthumanism there are scholars who claim that functionalism is laden with tacit substance dualism. This argument has not been presented only by cultural posthumanists (Haraway, Hayles), but also by phenomenologists (Shaun Gallagher, Dan Zahavi)[201] or by enactivists (Froese, Thompson).

But first, let's start with a better understanding of what functionalism is. A good description of functionalism, for the context of this thesis, is presented by the transhumanist supporter Max More. More argues that those who criticize the idea of mind uploading "to non-biological substrates are confusing dualism with functionalism."[202] In his opinion "a functionalist holds that a particular mental state or cognitive system is independent of any specific physical instantiation, but must always be physically instantiated at any time in *some* physical form."[203] According to functionalism mental states consist of their causal role. Therefore the defining feature of a mental state is its functional/causal relation to the environment, to other mental states, sensory inputs and behavioural outputs. This means that

[199] Turing is among other things known for his idea of Turing machine and his thought experiment called Turing test.
[200] Materialism as well as dualism does not have only one particular approach to the ontology of the mind. We can distinguish, for example, reductive and eliminative materialism or property and substance dualism.
[201] See Gallagher, Zahavi, The Phenomenological Mind.
[202] More, The Philosophy of Transhumanism, 7. In: More, Vita-More (eds.), The Transhumanist Reader.
[203] Ibid.

the same mental state can be realised in many different ways, and by different kinds of systems.[204]

The advantage of functionalism in comparison with materialist approaches to the mind is that it can account for so called multiple realisability, which is the idea that our mental states can be realised in many different ways and therefore they cannot be related to a single material piece of the brain. The disadvantage of functionalism, on the other hand, is the fact that it cannot account for so called 'qualia' – the qualitative nature of our experiences. That is, human subjective conscious experience of the world.[205] This then relates to other issues connected with functionalism like social cognition, sociality, intersubjectivity and others.

6.5. Strong technological posthuman – can it happen?

The question that we are going to investigate in this section is clear – is it ontologically possible to upload human mind to a different physical system than biological body. There are, in my opinion, at least two very good reasons to look at this issue from a phenomenological and enactivist perspective. The first one is the clear objection to the idea of mind-uploading that comes from the argument that mind-uploading is laden with tacit substance dualism. The second reason is that the biggest disadvantage of functionalism – not being able to account for 'qualia' – is arguably the biggest advantage of phenomenology and enactivism.

Let us return to the basic issue about the idea of mind-uploading, which is the claim that functionalism is laden with tacit substance dualism. As we have seen in the previous section transhumanists, in this case More, disagree with this claim and argue that functionalism is only confused with dualism by its critics. More in this context develops an argument that "the boundaries of the self are unclear and may not be limited to the location of a single body."[206]

[204] This is again where we get the idea of body=hardware and mind=software.
[205] E.g. how a person 'feels' when they are in love.
[206] More, The Philosophy of Transhumanism, 7. In: More, Vita-More (eds.), The Transhumanist Reader.

He infers this argument from the fact that nowadays we store our memories in external devices and create avatars that represent us in the non-material world. Although this argument is without any doubt true; there is a fundamental difference between uploading the human mind and using a computer to remind me my of dentist appointment.

I think that what is more important to clarify is whether the criticism of mind-uploading comes for mere confusion of dualism and functionalism. This is not the case, in my opinion, as there are no claims that functionalism is exactly like substance dualism, only that there are certain aspects of functionalism that contain the same ontological commitment as substance dualism. As it does not really matter whether what we transfer are functions (formal representations of the brain) or the immaterial soul because the resolution is the same – we are capable to create a distinction between the human body and the human mind. If we make such a distinction than we are able to claim that the human mind can exist in any material system, which is capable of performing the appropriate functions. Gallagher and Zahavi therefore, for example, argue that "functionalism led us to believe that cognition could be instantiated in a disembodied computer program, or 'brain-in-a-vat', and that embodiment added nothing to the mind."[207] This is the reason why functionalism is criticized for holding a mind-body dualism, which is, in my opinion, a legitimate criticism.

If we now return for a moment to the fable about the dragon written by Bostrom, we might see an intriguing connection. For many transhumanists, as well as for Bostrom, immortality is probably the fundamental goal of the whole 'movement'. Especially American futurologist Ray Kurzweil is known for his claims in this regard. But the same is true for another prominent transhumanists Austrian A.I. researcher Hans Moravec who writes the following: "bit by bit our failing brain may be replaced by superior electronic equivalents, leaving our personality and thoughts clearer than ever, though, in time, no vestige of our

[207] Gallagher, Zahavi, The Phenomenological Mind, 5.

original body or brain remains."[208] For both Kurzweil and Moravec the age of carbon-based life is coming to an end and the only solution for humans to withstand this change is to become silicon-based entities themselves by uploading their consciousness into computers/supercomputers.[209]

What I am trying to show by this diversion from the main topic of this section is that some transhumanists view mind-uploading as the only way to retain human 'existence'. Both immortality and mind-uploading are for transhumanists strongly interconnected and they both have the same goal – to transcend human biology.[210] My impression is that this is again much more related to the ideology connected with transhumanism than actual scientific reflection. As for transhumanists the biological body has become an ultimate weakness that we have to overcome.

Such an attitude towards biological body cannot be supported by phenomenology or enactivism. As we have seen in the section about the moderate technological posthuman, 'the body' and the mind are constitutive of one 'system' that allows us to perceive the world. There is a unity of the mind and the body that cannot be 'broken apart'. The basic idea from which this criticism of mind-uploading rises is the notion of the embodiment developed by Merleau-Ponty.[211] Merleau-Ponty calls this unity of the mind and the body, the 'lived body'. We have already seen the following main argument that states that the body is our sole 'instrument' of perception through which we experience the world. But could we not argue that we might just be able to change that instrument for a non-biological body and perceive the world through it instead? The problem with such a proposition is that Merleau-Ponty does not describe "the objective body in its materiality, but the subjective, lived body, in its

[208] Moravec, Robot, 169-170.
[209] Sharon, Human Nature in Age of Biotechnology, 26.
[210] This is again something that could be compared with religion, as for many religious outlooks the biological body is the source of sin.
[211] Clearly the idea of embodiment, but also other arguments have been already used in the sections about the moderate technological posthuman.

constant 'dialogue' with the world."[212] Furthermore the body is "neither an internal subject nor a fully external object of experience."[213] This is why when we perceive and experience the world we do not understand ourselves as having the body but *being* the body. For Merleau-Ponty the body is not a mere container, but a constitutive part of being in the world.

The main problem that rises from the idea of mind-uploading in the context of these claims presented by Merleau-Ponty is that transhumanists treat the body as just another object, which has no special role in our constitution and perception of the world. On the other hand, Merleau-Ponty's arguments, in my opinion, do not completely refute the idea of mind-uploading, as for Merleau-Ponty the unity of the body and the mind is connected with our experience of it. But the question is, if such a subjective experience cannot be changed through the application of new technologies. Clearly the embodiment and the lived body are important for Merleau-Ponty, but these concerns by themselves do not thwart the possible idea of mind-uploading. The argument that proponents of mind-uploading would arguably use to oppose Merleau-Ponty is that as we perceive the world through the biological body we will be capable to do the same through a non-biological one. The 'only' thing that will differ will be our sensory perceptions, as the technological posthuman would have, for example, cameras instead of eyes. What transhumanists might infer from this is that the perception of the world and the experience of it will fundamentally differ between humans and the technological posthumans. This is why American philosopher John Sullins in his article *Transcending the meat* (2000) writes the following:

"We will not be able to upload our mind into a machine and still remain ourselves for long. Even if uploading our consciousness into a machine was somehow technologically feasible, all we would achieve is the slow annihilation of our personality as it melted into the

[212] Bullington, The Expression of the Psychosomatic Body from a Phenomenological Perspective, 29.
[213] Carman, The Body in Husserl and Merleau-Ponty, 208.

functions of the machine over time. At best we would create a new machine personality with a new distinct individuality."[214]

This quote touches on the topic of personal identity that was not mentioned in this thesis yet. But what I find important about it is the acceptation of the potential mind-uploading that would lead to a creation of a completely new phenomenal body.[215] The moment we acknowledge the potential technological feasibility of mind-uploading and accept that this uploading would create a 'new machine personality';[216] the only question that remains is again if this is something that we should do. In other words, we are back in the normative debate and not the ontological one.

I might have misled you a little in the previous paragraph as it might seem now that my conclusion is that mind-uploading is ontologically possible, at least in the sense of creating a new machine personality.[217] This is to some extent true, I think that if we only take the arguments presented by Merleau-Ponty as Sullins mostly does in his paper we can come to the same conclusion as Sullins did. Transhumanists are therefore able, in this context, to argue that we can and should create technological posthuman and that her/his perception of the world through her/his technological 'body' will be better than humans'.

But what Sullins does not consider in his article are the arguments proposed by enactivism. As we have seen in the beginning of this chapter enactivism combines the arguments from phenomenology and biology, which gives it an even 'stronger' position against functionalism and its implications. Clearly this should be the case as a number of

[214] Sullins, Transcending the meat, 20.
[215] This is especially important as Sullins uses for his argumentation against mind-uploading the ideas of Merleau-Ponty as well.
[216] This basically means that we are talking about technological posthuman that fundamentally differs to humans in both her/his body and mind as well.
[217] Rather what I wanted to show was that through the application of Merleau-Ponty we can come to both conclusions about the idea of mind-uploading depending on the perspective we take. Clearly, if we want to preserve the human experience of the world, we can use Merleau-Ponty to reject mind-uploading as well.

enactivist authors themselves claim that enactivism defines itself in opposition to computational theories of the mind.[218] According to American philosopher Martin Herschbach "'enactivism' is an umbrella term that is used to describe various related approaches within cognitive science and philosophy of mind that all typically emphasize the embodied, dynamic, and environmentally situated nature of cognition."

We have already discussed the implications of the embodiment through Merleau-Ponty. This means that we can now focus on the following arguments presented by enactivism that build on the idea of embodiment. As was noted before, enactivism borrows a lot from the biological concept of autopoiesis. I have stated that for enactivism the basis of cognition lies in adaptive autonomous systems[219] that can be distinguished from their environment. In other words, every living system is adaptive to its environment as its goal is to continuously exist – a goal that environment does not have. For enactivism this means that every living system is adaptive system and therefore cognitive as well, as every system has to be able to perceive the environment, it exists in. Cognition is therefore not about representing the state of affairs, but rather about "establishing relevance through the need to maintain an identity that is constantly facing the possibility of disintegration."[220] Furthermore this means that "the body is not just the means but also an end of being a cognitive system."[221]

This argumentation of the body as an autonomous adaptive system that is therefore a cognitive one as well, leads to the arguments regarding sense-making. Enactivism holds the opinion that by being an adaptive autonomous living system, every such system is capable of sense-making through the interaction with its environment and other autonomous systems.

[218] See Froese, Breathing new life into cogntive science or Thompson, Mind in Life.
[219] This contains every living organism.
[220] Di Paolo, Thompson, The Enactive Approach, 73. In: L. Shapiro (ed.), The Routledge Handbook of Embodied Cognition.
[221] Ibid.

Sense-making is therefore understood as a bodily process of adaptive self-regulation.[222] This is the fundamental difference between the living systems and any A.I. or 'technological' system, as only living systems create their meaning within a *relational* domain.[223] Being living biological body is, according to enactivism, the only way to acquire meaning in the world. That is why the idea of mind-uploading is unacceptable for enactivists and cannot in their opinion happen, as only living systems are governed by the norm of continuous existence that is so crucial for being cognitive and sense-making.

The norm of continuous existence is an interesting notion that we have already touched upon. We have seen that according to enactivism, every living system is bound to be normative, as every system adapts itself to its environment to ensure its existence over non-existence.[224] In other words, every system follows the norm: 'it is preferable to exist'. Transhumanists, on the other hand, argue that immortality is something that we should strive for as it is our only option to 'survive' the technological developments of the future. This example shows the fundamental difference between transhumanists and enactivists, as for one side becoming immortal and existing in non-biological bodies is the only possible future of existence for the human race, whereas for the other side such an approach completely ignores what makes a living system a cognitive and sense-making system.

6.6. In Summary

In this chapter I have examined two different notions about technological posthumanism – a moderate one and a strong one. In the context of the moderate approach, in which transhumanists 'merely' strive for an overall quality enhancement of life, I have concluded that from the perspective of phenomenology and enactivism there are no ontological or empirical problems for the moderate technological posthuman to happen. In the following

[222] Ibid.
[223] See Froese, Di Paolo, The enactive approach.
[224] The question that comes to my mind is how enactivists account for suicides then.

sections we have turned our attention to the idea of the strong technological posthuman, specifically to the idea of mind-uploading. There we have first argued entirely from Merleau-Ponty's philosophy and concluded that we might potentially accept the idea of mind-uploading for the price of accepting that the created 'individual' will not be a human, but rather a 'new machine personality'. After that we have 'strengthened' the arguments of Merleau-Ponty by re-introducing the arguments proposed by enactivism. There I have advanced an argument that, following enactivism, mind-uploading is not possible, as only living systems are capable of cognition and sense-making. That is because only living systems are those whose behaviour is governed by the norm of continuous existence.

7. Conclusion

In this thesis I have discussed the debate about transhumanism or better about technological posthumanism. After I clarified the conceptual confusion that is connected with this debate I have focused on what transhumanism is and how we should think about this 'movement'. I have argued that transhumanism is much more ideological than its proponents like to admit – especially in their strong claims for which they do not have any empirical evidence, but also their unshakable belief in the progress of science and technology and their liberal/libertarian attitude towards societal issues.

In the third chapter I have outlined the main framework of the debate about technological posthumanism - specifically the normative debate between transhumanists and bioconservatives. I have discussed the arguments raised by bioconservatives and their worry that technological augmentations and enhancements will lead to an increase of inequality and discrimination and furthermore to the potential endangerment of human nature. I have connected this issue with one specific notion – human dignity. There I have showed that

Bostrom's view of *dignity as quality* is problematic to the Western understanding of human dignity.

Transhumanism and bioconservatism, although they demarcate the mainstream debate about transhumanism, are not the only attitudes towards technological posthumanism. That is why in the fourth chapter I have outlined what is known as cultural posthumanism. Cultural posthumanists have a number of specific opinions that are not touched by either transhumanists or bioconservatives. Their main motivation to be optimistic about technological posthumanism is not that they belief in the progress of science and technology - as transhumanists do - but rather they consider technological posthumanism as a means to redefine the cultural 'paradigm' of the West. In other words, cultural posthumanists strive to redefine what it means to be human and they want to 'get rid of' dichotomies that are present in the Western culture, e.g. body-mind, men-women etc. On the other hand cultural posthumanists are much more critical of transhumanism in certain aspects than bioconservatives are. Specifically they consider the idea of mind-uploading as 'techno-idiocy'. Cultural posthumanists come to this conclusion by using the philosophy of Merleau-Ponty, particularly the idea of the embodiment.

From these chapters I inferred that the debate about technological posthumanism is much more ideological than it might seem. I argued that there are number of reasons why the debate between transhumanists and bioconservatives can be considered as a stalled one. Being inspired by the arguments of cultural posthumanism I advanced the argument that we can enrich this debate by changing the focus from the normative side to the ontological and empirical one.

In the last chapter I therefore introduced the ideas from phenomenology and enactivism. In the perspective of these ideas I argued about the possibility of two distinct types of

technological posthuman. First, I examined the idea of the moderate technological posthuman. There I concluded that the moderate technological posthuman – strive for an overall quality enhancement of life – is consistent with the arguments from phenomenology and enactivism. Furthermore I pointed out that bioconservatives should apply similar phenomenological and enactive arguments into their approach to technological posthumanism, as there is a fundamental difference between being conservative and neo-luddite. This might, among other things, be beneficial for bioconservatives as they can use enactivist arguments and still keep the division between an individual and its environment. In other words, bioconservatives would be able to keep their argument about human nature, as enactivism itself applies the dualism between autonomous adaptive system and its environment. The importance of human nature is further supported by the enactivist claim that augmentation and enhancements are acceptable as long as the body (human) is leading the dance.

After that I reviewed the notion of the strong technological posthuman, specifically the idea of mind-uploading. Once again I reasoned through the perspective of phenomenology and enactivism. I showed why cultural posthumanists as well as phenomenologists and enactivists argue that the idea of mind-uploading is laden with tacit substance dualism. Thereafter I focused on the idea of the embodiment and the philosophy of Merleau-Ponty in the context of mind-uploading. There I concluded that if we focus only on the ideas of Merleau-Ponty the idea of mind-uploading might become feasible for the price of losing the identity of being human and creating 'new machine personality'.

Following the arguments of Merleau-Ponty I stated that we can turn our attention back to enactivism, as enactivism has been defined in the opposition to the computational theories of the mind. The enactive view combines the ideas of phenomenology and biology. This means that for enactivism the importance lies not only in the embodiment, but also in being autonomous adaptive system that through its relation with the environment is capable of

sense-making. In other words, the only way to be cognitive and sense-making system you have to be a living system as well, which a non-biological body is not.

The aim of this thesis was not in any way to solve the debate about technological posthuman. My intention was rather to offer new perspectives that are arguably unnecessarily ignored in the context of the debate about a technological posthuman. The arguments introduced in this thesis should, in my opinion, be especially considered by bioconservatives. I stated that their position is sometimes too easily confused with a 'mere' refusal of technology – also generally known as a neo-luddite movement. In the section about bioconservatism I suggested that bioconservatism has in many aspects close to continental philosophy. As we have seen by introducing the ideas of phenomenologists (Hussel, Merleau-Ponty, Ihde), these scholars do not argue against technology or the natural sciences, they are merely critical of them. Applying the same attitude towards technology and the natural sciences and usage and further development of arguments introduced by phenomenology and enactivism can, in my opinion, only help the bioconservative discourse.

It is my opinion that bioconservatism represents a very important position in the debate about technological posthumanism, as transhumanists tend to be very naïve and hide their ideologies behind the natural sciences. Therefore, if they are able to improve their position and vivify the debate about technological posthumanism, there should not be any reason for bioconservatives not to do so. I think that this is especially important in the context of the strong technological posthumanism, in which bioconservatives do not raise any objections to ontological and empirical commitments that the idea of mind-uploading represents. That is where bioconservatives can be inspired by cultural posthumanists, phenomenology and enactivism.

If bioconservatives do not raise any objections against the strongest claims introduced by transhumanists – especially mind-uploading and AGI, it gives an impression that they actually agree that these possibilities are real and that the only thing we have to do is to make sure that they do not happen. But as I showed in this paper, these transhumanists claims are at the best concerns of enormous debates that are far from being solved, e.g. the question about the relation between the human body and the human mind. I have stated that transhumanists 'hide' these strong claims behind their scientific and critical thinking, which already gives them more recognition than bioconservatives receive. Pointing out that a number of transhumanists arguments are quite far from the practices of the natural sciences might in the end result in a better and improved debate about what the technological future of humans actually 'entails'.

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