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The Future of Humanity. An Anthropological Perspective on Body Optimisation and Transhumanism

Anna Puzio, University of Twente

Summary. In times of rapid technological progress, transhumanism, which strives for radical technological transformations of the human being, spreads its ideas with great publicity and media impact. Although these ideas are directed towards the future, they influence how we understand humans, bodies, and technology today. This article examines the anthropology of transhumanism and investigates the extent to which it offers approaches for the contemporary anthropology of body optimisation. The article comes to the conclusion that the understanding of the human being in transhumanism is problematic in many respects and therefore not suitable for the further development of a contemporary philosophical anthropology. Nevertheless, corrective perspectives for an anthropology of contemporary body optimisation can be derived from these problems.

Keywords. Transhumanism, self-optimisation, enhancement, body, anthropology of technology, ethics

Zusammenfassung. In der Zeit schneller technologischer Entwicklungen verbreitet der Transhumanismus, der nach radikalen technologischen Transformationen des Menschen strebt, seine Ideen mit großer öffentlicher Aufmerksamkeit und Medienwirksamkeit. Obwohl die transhumanistischen Ideen auf die Zukunft gerichtet sind, beeinflussen sie, wie wir schon heute Menschen, Körper und Technik verstehen. Dieser Aufsatz untersucht das Menschenverständnis des Transhumanismus und geht der Frage nach, inwieweit dieser Ansätze für eine zeitgenössische Anthropologie der Körperoptimierung bietet. Der Aufsatz kommt zu dem Ergebnis, dass das Menschenverständnis des Transhumanismus in vielerlei Hinsicht problematisch ist und sich daher nicht für die Weiterentwicklung einer zeitgemäßen Anthropologie eignet. Dennoch lassen sich aus diesen Problemen korrigierende Perspektiven für eine Anthropologie der zeitgenössischen Körperoptimierung ableiten.

Schlüsselwörter. Transhumanismus, Selbstoptimierung, Enhancement, Körper, Technikanthropologie, Ethik

1. Introduction

In times of rapid technological progress, transhumanism, which strives for radical technological transformations of the human being, spreads its ideas with great publicity and media impact. For example, recent election posters in Germany have featured pictures of American biogerontologist Aubrey de Grey.[1] The year 2022 saw Stephan Bergmann's transhumanism documentary *Letter to the Future* [*Endlich Unendlich*]. Also, in 2022, a conspiracy theory spread in Austria, claiming that the transhumanist global elite secretly plans to render humanity infertile and controllable (Dilger 2022).

There are many misconceptions about transhumanism and difficulties in classifying what it actually is and is not. This is especially due to the fact that the transhumanist movement, its organisation and its argumentative structures require further research. Transhumanism has a polarising effect; its visions frighten some and send others into a state of euphoria. As a result, it is quickly met with either radical rejection or radical enthusiasm, and the transhumanist visions are enthusiastically covered by the media.

Therefore, a critical, scientific examination of transhumanism is needed. Since the movement strives for a transformation of the human being, the question arises as to how it understands its subject and what its target visions for optimisation are. Although these ideas are directed towards the future, they are already being designed in the present and shaping current concepts regarding human beings, bodies and technology. Adherents to transhumanism are quick to make connections between its visions and current challenges, such as the COVID-19 pandemic[2] or climate change (Bostrom 2020), and promise to offer solutions to numerous social problems. In addition, transhumanist ideas also appear outside of transhumanism in the discourse on technology (e.g. regarding robotics, information technology and entrepreneurs). Particularly popular is the idea of uploading the human being (Section 2), which is widely considered in literature and film. Furthermore, there are many ideologies and movements closely related to transhumanism, which can be grouped under the term TESCREAL. They are influential in the AI discourse and share similar argumentative structures with transhumanism. TESCREAL stands as an acronym for Transhumanism, Extropianism, Singularitarianism, Cosmism, Rationalism, Effective Altruism and Longtermism (Torres 2023).

Body optimisation has always existed in society, even beyond transhumanism. New technologies are elevating this body optimisation to a new level. Modern forms of body optimisation include genetic modifications, CRISPR, aesthetic surgery, prosthetics, implants, wearables, and biohacking. Nowadays, almost every part of the body can be technologically modified. Building on the anthropology of transhumanism, this article aims to explore what a philosophical anthropology of contemporary body optimisation might look like.

To examine the human understanding of transhumanism is the task of the philosophical anthropology of technology, which deals with human con-

ceptions implicit in science fiction, technology development and technological movements. Anthropology of technology is not a fixed, systematic doctrine or theory about humans, but it rather encompasses diverse reflections on humans in the context of technology. In the course of technological developments, our understanding of human beings and bodies changes, and conceptions of human beings are embedded and conveyed in technologies. The anthropology of technology is dedicated to responsible renegotiations of humans and technology and their relationship with each other (Puzio 2023a). As will also become clear in this article, anthropology and ethics are closely intertwined since understanding and discussing the human being always involves normative aspects. An examination of anthropology in the context of technology, be it transhumanism or today's body optimisation, is highly relevant because the conception of the human being influences how we understand ourselves, our fellow human beings and the co-world, how we act and shape society. These efforts can reveal problematic normative implications such as discrimination.

This article examines the anthropology of transhumanism and draws conclusions for body optimisation today. In Section 2, the movement of transhumanism is presented, and its themes and visions are outlined. In contrast to transhumanism, body optimisation in today's technologised society is presented, and insight into new forms of such behaviour is given. Section 3 examines transhumanism's understanding of the human being, i.e. how it understands 'human nature', the body and information, and considers argumentation structures. Section 4 then looks at transhumanist objectives, which also play a role in current body optimisation in society. This provides insights into the normative frame of reference of transhumanism. Based on these results, Section 5 draws corrective conclusions about how an anthropology of contemporary body optimisation needs to be designed. Finally, the results are summarised in the concluding Section 6, and an outlook for further research on transhumanism and the anthropology of body optimisation is given.

2. Body Optimisation and Transhumanism

Transhumanism is a philosophical-technological movement of the 20th and 21st centuries that aims to fundamentally transform (the 'trans' in 'transhumanism') human beings by means of new technologies. It is mainly found in the English-speaking world (the United States and the United Kingdom), but it is widespread internationally. Well-known adherents include Natasha Vita-More, Max More, Nick Bostrom, David Pearce, and James Hughes. The movement is very heterogeneous and still very young in age; as such, the state of research into the field is immature and results in divergent ideas and definitions of what transhumanism is (Dilger 2022). In this article, transhumanism is understood from its own statements about itself in its foundational documents (for example the *Transhumanist FAQ* and *Transhumanist*

Declaration), its organisation, goals and visions (Puzio 2022a: Chapter 2). Transhumanism is understood here as an organised movement with institutions and an agenda, rather than denoting the many optimisation efforts that exist outside the movement.

The topics and visions of transhumanism are diverse, and the transhumanists each set their own priorities. These include the radical extension of life from several hundred years to immortality through cryonics, i.e. the freezing of body parts or the whole body, which, according to transhumanist ideas, should be preserved until immortality becomes possible. Furthermore, transhumanism aims to eradicate all diseases, aging, and suffering. Transhumanists also pursue human enhancement and strive for a true fusion of body and technology. In this case, enhancement means a series of influences on an organism (e.g. psychological, physical, reproductive, genetic, moral, neuronal), which are not therapeutic but instead optimise physical and cognitive abilities. Such efforts are also pursued outside transhumanism. Moreover, transhumanists are concerned with opening up new, sometimes virtual, worlds of experience and new forms of perception and sensory abilities, up to and including the alteration of spatiotemporal reality (Puzio 2022a: Chapter 2.3; Loh 2018).

Many transhumanists also strive for mind uploading, one of the most popular motifs that also finds its way into the societal discourse on technology. In this highly speculative vision of the future, a 'mind' is read, for example, through brain scanning, and then uploaded to an external medium (e.g. a hard disk or computer) (Moravec 1988; Krüger 2021). Strikingly, in such a system, mind, consciousness, personality, reason and various human abilities would be equated, and all transferred together so that the whole human being exists on that medium while the old body dies. In this way, from a transhumanist perspective, the human overcomes the limitations of the body, and immortality is made possible. The idea that a person can be fully transferred onto a hard drive solely by scanning their brain and exist there is highly contentious, as will become evident later (Puzio 2022a: Chapter 2.3; Loh 2018).

Not all body optimisation falls under transhumanism. In fact, bodies have been altered for years, e.g. through optimised nutrition, body training (e.g. military, bodybuilding), chemical stimulants (e.g. nicotine, caffeine) and cultural and traditional markings of the body. In today's technologised society, body optimisation is ubiquitous and part of everyday life, with wearables such as smart watches, surgical beauty procedures, apps for self-tracking of diet and body optimisation, and much more. These efforts are commonplace in social media, casting shows and television programmes.

Through rapid technological progress, body optimisation is now being taken to a new level. Innovations include biohacking and implants, gene editing in CRISPR, regenerative medicine to improve bodily functions, and the use of stem cells and nutrigenomics for personalised nutritional management. Comparing contemporary body optimisation with transhumanism promises forward-looking perspectives for the contemporary philosophical anthropology of body optimisation.

3. The Conception of the Human Being in Transhumanism

Since the transformation of the human being is at the centre of transhumanism, the question arises as to how transhumanism understands the human being at all. Transhumanism does not develop an explicit, fully developed anthropology, but the movement does contain implicit anthropological assumptions, as statements about humans are made in its argumentations and visions, and a certain understanding of humans is presupposed. I have already extensively examined the philosophical anthropology of transhumanism in another work (Puzio 2022a) and can only provide some limited insights into the results here.

Transhumanism starts with a point of view that 'human nature' is flawed, deficient, and in need of urgent improvement in order to develop its 'full potential'.[3] In transhumanism, 'human nature' is something fixed and determinable; thus, a substantialist or essentialist understanding of the human being is advocated. However, what 'human nature' implies, i.e. how the essence of the human being can be determined, is not elaborated. Inherent to transhumanism is a teleological moment of a higher development of the human being. At the end of the transhumanist transformation is a new human 'nature' or 'transhuman' / 'posthuman condition' (More 1994, 1997, 2003). The idea of a 'human nature' is normatively charged in transhumanism insofar as it considers certain aspects to be in need of improvement and others as desirable. These normative implications will be explored later. The assumption of a 'human nature' has faced significant criticism in research, as there is no unified clarification of what this 'human nature' entails, and it is often manipulatively used to justify certain arguments (for example, why a specific technological change should not be implemented because it supposedly goes against 'human nature').[4]

Even though transhumanism does not develop an explicit anthropology, assumptions about the understanding of the human being can be derived from its arguments. The natural sciences and a biologistic perspective play an important role in the transhumanists' understanding of the human being. Elsewhere, I have identified four additional discourses, alongside the discourse on 'human nature', that consistently appear in transhumanist arguments and contribute to defining the human being: They are the 'machine discourse', i.e. the interpretation of the human being as a machine (for more information on the machine discourse cf. Krüger 2021); the 'genetically coded human' discourse, i.e. the attribution of the whole human being to their genetics; the 'neuronal discourse', i.e. the complete attribution of the human being to its neurons (especially in the brain), and the 'metaphysical reflection discourse' on the relationship between body and mind.[5]

The investigation of these discourses shows that transhumanism, while pretending to refer to the natural sciences, contradicts current scientific knowledge. For example, in transhumanism's genetic discourse, character traits, behaviours, emotions, cognitive performance, moral choices, subjective well-being and happiness are all attributed to genes (Hughes 2007:

18f.; Bostrom 2005: 7; Pearce 2015: Chapter 1.8, Chapter 40, n. 30). If, according to this argument, the 'good' genes are strengthened and the 'bad' genes are removed, then an improved human being may be achieved to live a better life (Puzio 2022a: Chapter 4.3). However, the aspects listed cannot be found on genes in this way. Natural sciences show that genes do not carry information in the semantic sense. Genetic processes are context-dependent at the molecular level and influenced by environmental factors. They are not goal-directed, which means that they do not follow a predetermined set of instructions and do not inherently or exclusively lead to the development of particular traits (Schmidt 2014: 201, 222–231, 245). In addition, genetics reveal, that genes are not concrete entities at all, which can be firmly localised on a certain DNA section and which exist materially (Schmidt 2014: 222–231). They cannot be clearly determined ontologically; rather, they represent conceptualisations of temporary "functional unit[s]" (Kovács 2009: 82; Schmidt 2014: 222–231). Accordingly, genes cannot be 'rewritten', 'cut out' or transferred to other organisms or machine substrates, as transhumanism aims to do (Puzio 2022a: Chapter 4.3).

Similar observations can be made in the neuroscientific discourse (Puzio 2022b: 53–73), where brains and neurons are held responsible for all behaviour, experience and character traits (e.g. moral decision-making, addictions and emotions) (Hughes 2007: 19f.). The human being is its brain (Salaschek 2012). According to transhumanist ideas, current brain structures deny humans the full realisation of their cognitive potential, including lasting high-intensity emotions, access to new and more intense experiences and new sensory abilities. This 'cerebrocentrism'[6] (Fuchs 2017) overlooks the fact that the brain cannot stand and act on its own and that characteristics and behaviours are not produced by mere brain structures. Thomas Fuchs uses the three interaction circles 'brain – body', 'brain – body – environment' and 'personal interactions' to illustrate that perception, movement, conscious experience and affects are always based on the interplay of brain, body and environment and thereby form an indissoluble unity (Fuchs 2011: 152–160). These and other findings also make the idea of mind uploading implausible, as the brain cannot function in isolation.

In the debate on transhumanism, it is important to examine argumentation structures and language. Transhumanist visions cannot be examined independently of the argumentation structures of how the movement wants to implement them. While academic research often focuses on thought experiments about the fascinating visions of transhumanism, concrete argumentation structures are often neglected. I have undertaken an investigation of transhumanist argumentation in more detail elsewhere, allowing me to question the transhumanist thought structure in its foundations (Puzio 2022a). By using manipulative argumentation structures, transhumanism can exert linguistic influence and win the approval of its recipients.

As demonstrated in the genetic discourse example, complex phenomena are oversimplified, and many aspects of human existence are overlooked. Totalisations are made, and reductionist perspectives are cast on humans

in all five transhumanist discourses, making the implementation of transhumanist visions seem simple and plausible. Complex human phenomena such as consciousness, inheritance, emotions and human behaviours, some of which have not been scientifically fathomed, appear concrete, unambiguous, explainable and simple. Therefore, according to transhumanist argumentation, it is easy to change them at will, to transfer them to machine substrates and control them. In addition, many linguistic peculiarities and neologisms introduced by transhumanism, such as 'mind uploading', 'bio-Luddites', 'extropy' and 'transhuman', stand out, and the language must be examined for normative implications (Puzio 2022a: Chapters 6, 2.2.2, 4.3.2). A deeper linguistic analysis is of no small importance for an anthropological and ethical consideration of transhumanism.

The body, which is to be improved, takes on a central significance in transhumanism. An ambivalent attitude towards the body is noticeable: on the one hand, it is given special focus with the intention of enhancing and intensifying its experience. The various technological interventions of transhumanism are focused on the body. On the other hand, it is devalued and viewed as something to be overcome. Transhumanism instrumentalises and objectifies it as a possession and a design object for arbitrary transformation (Hughes 2004: 227–232; Vita-More 2003: 17; Vita-More 2010: 78). Vita-More (2003: 78) describes the body as a 'design object' and even designs a prototype of a transhuman body. Aubrey de Grey (2007: 21) describes the body as a non-functional house or car that is to be remodelled. The focus is thus on a display of hostility toward and displacement of the body. In addition, the human being is not considered a psychosomatic unit. Visions such as mind uploading or cerebrocentrism reveal that the interaction and inseparable unity of body and mind are not taken into account.

Furthermore, information plays a special, even primary, role in the transhumanist understanding of human, as within this belief system, physical experience and the 'mind' are always traced back to information processes and reduced. According to the highly speculative vision of transhumanism, mind uploading is a process where human information is read from the brain and then transferred to a machine substrate. For this philosophy, thinking is information processing, and consciousness is a programme that runs on the brain 'computer', with the body acting as merely an information carrier (Krüger 2021). The universal character and material independence of information bring with it the advantage that humans can be conceived as transferable to any substrate (Kay 2005: 85, 234, 424). Moreover, this information can persist eternally (Kollek 2002: 115f.), which fits well with the transhumanist's striving for immortality. The use of the concept of 'information' also shows the influence of cybernetics on transhumanism. However, what information means in transhumanism and what its content is remains undefined. Moreover, by reducing the human being to information, the body, social relationships and grounding in living worlds and habitats are lost.

4. Normative Implications of Transhumanist Optimisation

Having provided an insight into transhumanism's understanding of the human being, the transhumanist goals will now be examined more closely, as they also play a role in current body optimisation in society; a closer look at these perspectives provides insights into its normative frame of reference.

4.1 Perfection and Happiness

Transhumanism aims for a comprehensive improvement of the human being, an idea that sounds attractive at first. However, the project of improvement or perfection always carries normative implications, i.e. presupposes what is 'normal', 'deficient' and 'desirable'. Transhumanism thus acts as the arbiter of what is deficient and what needs to be improved.

What does transhumanism consider desirable? Transhumanist visions are economically oriented and closely linked to productivity, performance and effectiveness (Bostrom 2017: 170f). For example, Bostrom associates his vision of a superintelligence with financial and economic advantages. He envisions a scenario where due to population growth and declining individual incomes, it becomes necessary to save money by existing as a brain in a tank – this is how he envisions life in an 'algorithmic economy' (Bostrom 2017: 166). The specific goals vary depending on the transhumanist in question. Above all, intelligence, health and fitness, beauty and youth can be singled out (Bostrom 2017: 41). What is striking is that happiness and successful life are considered without regard to lifestyle, action, context, concrete situation or social relationships. Happiness and a successful life are achieved purely through technology, such as brain stimulation or pharmaceuticals (Pearce 2007, 2015).

What does transhumanism consider undesirable? The answer is manifold: disease and disability, old, weak and non-functional bodies – or rather, what transhumanism considers 'weak' or 'non-functional'. In this regard, transhumanism discriminates against the sick, the elderly, people with disabilities and women (e.g., Hughes 2004: 12–18). However, transhumanism also regards the constitution of a healthy, young human being as deficient and devalues the present human being in comparison to a machine. Bostrom even ranks the human brain below a cheap smartphone: "On one estimate, the adult human brain stores about one billion bits – a couple of orders of magnitude less than a low-end smartphone" (Bostrom 2017: 60). In the opinion of transhumanism, the machine can or will do everything better than the deficient and defective human being. Transhumanism lacks plurality in its conceptions of the human and the body and gender diversity, cultural diversity and non-Western societies.

4.2 Freedom, Contingency, and Control

Another central normative reference in transhumanism is freedom. This includes firstly 'negative freedom', or 'freedom from' constraints and obstacles (Fenner 2019: 87): On one hand, transhumanism aligns itself with the Enlightenment tradition and rejects religious, societal, political, and state constraints. On the other hand, it strongly emphasises freedom from biological and natural laws. Secondly, transhumanism strives for 'freedom to', or 'positive freedom': Transhumanism aims at expanding the possibilities for action in the sense of unlimited potential. However, transhumanism is individualistically oriented and focuses on the individual's freedom from limitations and access to new options for action. Noticeably, social constraints and influences are completely disregarded. Yet, freedom cannot be conceived without them: in negative freedom, power mechanisms, social norms, social pressure, and competition play an important role. Similarly, positive freedom does not solely result from negative freedom, such as overcoming biological limitations, but requires certain social and financial structures for the realization of the possibilities of action (Fenner 2019: 92). Throughout the transhumanist discourse, it becomes apparent that transhumanism always places the freedom and autonomy of the individual at the centre, while neglecting socio-ethical norms such as justice.

Moreover, the quest for freedom within transhumanism reaches unusually extensive levels. For instance, transhumanists aspire to overcome every contingency, even striving for the elimination of death. Transhumanism differs from many moderate bioliberal positions and current self-optimisation efforts in that it does not consider the freedom of the individual within the constraints of natural law or spatiotemporal determinations but instead aims to fundamentally transform the conditions of human existence. It thus strives for the dissolution of boundaries in search of complete freedom without any restrictions and dependencies, spinning fantasies of omnipotence (Bostrom 2008: 30; More 1994, 1996; Fenner 2019: 87). More speaks of achieving complete control over matter, enabling humans to create everything 'atom by atom':

> Molecular nanotechnology [...] should eventually give us practically complete control over the structure of matter, allowing us to build anything, perfectly, atom-by-atom. We will be able to program the construction of physical objects (including our bodies) just as we now do with software (More 1994: under: "Are Posthumans Possible?").

This idea of absolute freedom underscores the extent to which human's social relationships are pushed into the background. Humans are always intertwined in relationships and societal structures, and their freedom is contingent upon others. Our freedom is constrained and promoted by others. Moreover, transhumanism associates human contingency primarily with the biological constitution of the human being and neglects the fact that suffering can arise through social injustice. Another question is wheth-

er transhumanism can truly eliminate vulnerabilities entirely. Even technologies that are meant to protect can become weapons. An immaterial existence on a hard drive would be protected from biological dangers but not from violence in virtual forms or from damage to software and hardware. Coeckelbergh distinguishes between different forms of vulnerability and illustrates that many vulnerabilities, such as those arising from emotional relatedness or relational connections with others and objects, always persist. Vulnerabilities cannot be completely eradicated but are merely transformed, resulting in new forms of vulnerability (Coeckelbergh 2011: 2–7). The question that arises from this is which forms of vulnerability we prefer in the future (Coeckelbergh 2018: 87).

Morover, the transhumanist postulate of freedom manifests itself as a comprehensive striving for control, such as control over the body. In transhumanism, freedom and self-determination entail comprehensive control over one's own body. This includes, for example, control over reproduction and genetics, gender, aging, and illness (Hughes 2004: 11–22; More and Vita-More 2013: 213; de Grey 2007). Body control refers to a specific way of dealing with the body based on concrete normative expectations (Gugutzer 2002: 236). The human body is subordinated to and instrumentalised for transhumanist goals. As an object of design and ownership, it is intended to be fully manipulable through technology. Autonomy becomes the domination of the self over the body. The human being enters into a power relationship with the body, which is no longer understood as part of the self and human identity but is instead separated from the self and steps out of the self-relationship. Such control over the body promises to provide security and orientation (Gugutzer 2012: 185).

Now that the anthropological and ethical implications of transhumanism have been identified, conclusions can be drawn for an anthropology of body optimisation in contemporary society.

5. Philosophical Anthropology of Body Optimisation

A closer look at the current body optimisation practices in today's society, as outlined in Section 2, reveals striking parallels to transhumanism, highlighting the significant societal relevance of transhumanist themes and goals. These include, for example, the great importance of the body and the desire for its transformation and control, intensification and enhancement of bodily experience, nature and naturalness, the ideal of beauty and youthfulness, (economic) goals of efficiency, functionality and increased performance as well as ideas of controllability, feasibility and manufacturability. At the same time, however, it also becomes clear that body optimisation in today's society differs from transhumanist optimisation in terms of its extent and intentions. The above findings that transhumanism does not work scientifically, discriminates, lacks a human-affirming attitude and devalues the human being *vis-à-vis* the machine show that transhumanism is not suita-

ble for a contemporary anthropology and ethics of self-optimisation. However, it is possible to draw corrective perspectives for an anthropology of body optimisation from the shortcomings of transhumanism in a negative way or to work out aspects to be considered.

The anthropology of technology is dedicated to the responsible renegotiation of humans and technology. First, an anthropology of body optimisation must take leave of the concept of the human being. Instead of assuming a fixed, supra-temporal and prior 'human nature' and drawing up an essentialist catalogue of human characteristics, only a dynamic, fluid and open understanding of the human being can do justice to the plurality and capacity for change as it comes to the fore in body optimisation. These efforts presuppose that the human being is subject to change, and that this change may take on vastly different forms in the future. The plurality of human beings, cultures, bodies and genders prevents the elevation of certain human qualities above others. An anthropology of body optimisation must also reflect on how more diverse, anti-discriminatory, anti-racist, feminist and queer perspectives can be implemented in technologies of body optimisation.

Second, although it is not possible to set a target for what a human being should be like in the future, a minimum of a basic human-affirming attitude should be a prerequisite for an anthropology. The necessity of this became particularly evident in transhumanism, which devalues humans in comparison to technology. A modern anthropology must be able to encompass both the appreciation of the co-world and of humans.

Third, an anthropology of body optimisation must encompass a plurality of methods and disciplines. Human beings can never be understood from a single discipline alone, but only through a variety of disciplines such as genetics, neuroscience, psychology, philosophy, and sociology. From the example of transhumanism, it has also become clear that optimisation endeavours should not contradict scientific knowledge, empirical findings, and life-world experiences.

Fourth, part of an anthropology of body optimisation must also be an appropriate reflection on the body. This includes preventing the human being and the body from being instrumentalised and devalued. Moreover, body optimisation is closely related to questions of identity and self-relationship. Every perception, experience, and action is always bound to the body as an inseparable part of the self (Plessner 1970, 2010). As described above, no separation or mutual reduction of body and mind can be justified; instead, the human being exists only as a psychosomatic unit. In the same way, body parts, organs, bodily functions and processes are embedded in the whole organism, so technological interventions in the body are always interventions in the whole organismic context. Changes in body parts and functions affect other body parts and functions, which always work together and lead to the restructuring of processes (Waldenfels 2020: 133).

Fifth, an anthropology of optimisation must also consider that our understanding of the human being and body is changing through technology. Technology is not external to the human being but determines and chang-

es what the human being and the body mean. For example, sensory perception is not merely imitated and expanded by technology but transformed. Hearing aids, microphones, cameras, glasses and contact lenses change the way we see and hear (Böhme 2008: 228). In the same way, the understanding of humans and the body is changing through wearables such as smart watches, information technologies, social media and medical visualisation technologies (e.g. EEG). Ultra-microscopy, endoscopy, ultrasound and X-rays have opened up the view into the body (Böhme 2008: 239) and made parts and processes visible that are not accessible to the 'naked eye'. However, they do not provide an insight into a pre-existing body but are based on constructs and averages, thus casting a very specific perspective on the body and co-designing this body (Puzio 2023a).

Sixth, body optimisations are embedded in social relationships and social conditions, which is why an anthropology of body optimisation needs a relational orientation. Transhumanism neglects social influences, the embedding in society and the world around us, that happiness and a successful life depend on contexts, situations and relationships, and that happiness cannot be realised purely technologically. In its postulate of autonomy, the transhumanist movement also neglects the dependence on other people and society when it comes to an individual's goals, body image and future possibilities. Body optimisation is fundamentally embedded in a highly complex network of norms and power influences. Foucault's concept of 'biopower' (1978, 2009, 2019; vgl. Fenner 2019: 136f.) can be aptly applied here, and body optimisation technologies can be interpreted as 'technologies of the self' (Foucault 1993: 26; vgl. Runkel 2010; Villa 2008), as I have elaborated on elsewhere (Puzio 2023b). This demonstrates that optimisations are always in tension between individual self-determination and heteronomy (vgl. Ach 2006: 187). Autonomous, authentic decision-making requires the disclosure of hidden norms and business strategies, the critical examination of social ideas of norms and the integration of the optimisation decision into one's own understanding of self and body. Problems of technological body optimisation can be, for example, too much social pressure, burdens and exaggerated body ideals (Fenner 2019).

Finally, an anthropology of optimisation must consider that relationality also includes our relationship with technology. While there is already extensive research on human relationships, much research is still needed on relationships with technology. Technology is constantly present in everyday life. Even friendships and partnerships with robots are already being discussed in robot ethics (Frank and Nyholm 2017; Danaher and McArthur 2017; Danaher 2019; Dörrenbächer et al. 2022; Haberland et al. 2022; Nyholm and Smids 2020). Given the close proximity of technology to the body, it is worth discussing whether technology can be understood as a part of the body. This is especially conceivable when technologies take over important functions, when they are not removable or when they have been integrated since the very first years of life. People can feel that a specific technology belongs to their bodies and no longer want to do without it. For example, disability

studies show that prostheses are seen by users as parts of their bodies (Thweatt 2018: 371). Thweatt-Bates and Graham take the cyborg concept as an opportunity to argue for a broad conception of 'embodiment' in disability studies. They argue for a broad definition of embodiment that also includes wheelchairs, prostheses and physical abilities and sensations (Graham 1999: 199; Thweatt-Bates 2016: 152). This shows how modern technological developments can be an opportunity to expand the current understanding of the body towards a broader, more inclusive concept.

Ultimately, a blanket evaluation of body optimisation is never possible; rather, it presents a complex matter that must be examined in its specific context and complexity. Body optimisation has many normative implications, which are, for example, time- and culture-dependent and therefore constantly evolving over the years. These need to be examined in terms of how they place unattainable, overwhelming demands on the individual, leading to stress or being discriminatory (e.g., sexist, ableist, racist). Such normative implications of body optimisation must be regularly evaluated. In addition, there are many other ethical aspects that could not be covered in this article, such as the principle of non-maleficence and consideration of risks, justice, and other socio-ethical challenges (Fenner 2019).

New, fruitful approaches to this philosophical anthropology of body optimisation can be found, for example, in New Materialism (also known as Critical Posthumanism), which strives for new conceptions of the human being. New Materialism is an interdisciplinary and heterogeneous current of thought that emerged in the 1990s, intersecting philosophy, social sciences, cultural studies, natural sciences, and technology studies. Key themes in New Materialism include a re-conceptualisation of matter, reflections on ontology, knowledge production, and the subject-object relationship (Hoppe and Lemke 2021). Its thinkers criticise anthropocentrism and humanism, rethink the relationship between nature and culture and focus on non-human entities. Proponents of New Materialism include Donna Haraway, Karen Barad, Lucy Suchman, Rosi Braidotti and Jane Bennett.

The reflections on the human being in New Materialism mark a *caesura* in anthropological thinking, as they are critical of anthropocentrism and argue that the boundaries between humans, animals, and technology are becoming increasingly blurred. Donna Haraway introduced the ontological, political, and ethical figure of the cyborg in her *Cyborg Manifesto* (originally published in 1985), which has become a central figure in New Materialism: "A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (Haraway 2004: 7). This makes the figure of the cyborg well-suited to highlighting the human connection with non-humans such as animals and technology. The hybridity of the cyborg refuses a fixed, unambiguous identity (Graham 2002: 205) and opposes essentialisms and universalisms (Thweatt-Bates 2016: 37). Instead, her identity is "fragmented, partial and unclosed" (Hammer and Stieß 1995: 30). The openness of the cyborg lends itself well to a "radical [...] indeterminacy" of the human being (Thweatt-Bates 2016: 80f.). At

the same time, the cyborg and her[7] body, which cannot be universalised, stand for a plurality of understandings of human and body. The figure of the cyborg thus takes up the "multiple possibilities of embodiment" (Thweatt-Bates 2016: 80f.) and broadens the view for many genders, queer identities, people of colour or people with disabilities (Thweatt-Bates 2016: 133). This can open up valuable perspectives, especially for a contemporary understanding of the human being and today's body optimisation.[8]

6. Conclusion

The article has examined the conception of the human being and the goals of transhumanism, identifying several problematic aspects. Among these issues, the article found that transhumanism represents a reductionist understanding of the human being, contradicts scientific knowledge, does not do justice to the human body, is discriminatory, and has problematic normative implications. Since transhumanism does not even take a human-affirming stance, it is not suitable for further development of anthropology, such as a contemporary anthropology of body optimisation. The discussion also made it clear that transhumanism and contemporary body optimisation differ, and that body optimisation itself should not be rejected.

Although transhumanism does not offer an appropriate approach for the further development of anthropology, it has become evident that transhumanism is highly relevant and shapes societal debates. For this reason, continued engagement with transhumanism remains an important desideratum for future research. I encourage shifting the focus from transhumanist speculations about which visions might be feasible to examining its arguments, normative implications, and powerful allure. What drives the emergence of radical technological movements, and why does transhumanism hold such high appeal in society? How can this be prevented? Future tasks, even beyond transhumanism, will involve uncovering and critically examining radical techno-euphoric and technophobic positions. Transhumanism, by reducing complexity and avoiding reality, can provide a sense of stability and identity. However, a movement that promises to solve all problems and promotes unrealistic ideas on matters such as how to overcome the COVID-19 pandemic – when numerous conspiracy theories are already abound – can be seductive. Yet the paradise transhumanism depicts, upon closer inspection, is merely a paradise of ones and zeros. The transhumanist idea of improving humanity and human life sounds appealing until one closely examines what transhumanism actually considers to be 'improvement.'

Building on the problems identified in transhumanist anthropology, improved perspectives for an anthropology of body optimisation could be derived. Since technologies and body optimisation are closely linked to our understanding of the human being, anthropological reflections remain of crucial importance in future research. Technologies convey conceptions of the human being and reveal insights into how we understand human beings

and their bodies. At the same time, technological body optimisations can be seen as an opportunity to reconsider and renegotiate our understanding of the human being, for example, towards an inclusive and diverse conception. Looking into the open future of technological development can encourage precisely open-future conceptions of the human being that embrace human indeterminacy and take into account our capacity for change.

Notes

1 Aubrey de Grey does not describe himself as a transhumanist, but he is very close to transhumanism and is a major proponent of transhumanist ideas. The 'Partei für Gesundheitsforschung' ('Party for Health Research') depicts Aubrey de Grey on its election posters.

2 Cf. the transhumanist events on the COVID-19 pandemic, such as the event "Post-pandemic: A future free of disease and destruction" by Humanity+ (7.–9. July 2021). Since transhumanism claims that its technologies can stop aging, reduce suffering and enable immortality, it can readily argue that COVID-19 will not pose a problem in the transhumanist future either.

3 For more information on 'human nature' cf. Puzio 2022a: Chapter 4.1.

4 For more information on 'human nature' cf. Puzio 2022a: Chapter 4.1.; Birnbacher 2006: 133–156.

5 On the investigation of these discourses, cf. Puzio 2022a: Chapter 4.

6 Cerebrocentrism refers to the belief that the brain holds a central and primary position (Fuchs 2017: 40, 312).

7 Haraway's cyborg is female.

8 On the fruitfulness of Haraway and Latour for new anthropological approaches, cf. Puzio 2023a.

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Filmography

Love Letter to the Future [*Endlich unendlich*] (USA, AU, UK, FR, GER, AT 2022, directed by: Stephan Bergmann).

Dr. Anna Puzio
University of Twente
ESDiT Programme (Ethics of Socially Disruptive Technologies)
Faculty of Behavioural, Management and Social Sciences (BMS), Philosophy (WIJSB)
7522 NB Enschede
The Netherlands
E-Mail: a.s.puzio@utwente.nl
www.anna-puzio.com