The Transhumanist conception of body: a critical analysis from a complex systems perspective

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Abstract: What is the conception of the human body underlying the Transhumanism project? This question guides the present analysis undertaken from a philosophical-interdisciplinary perspective. Inspired by Le Breton (2008) and Morin's (2014) hypotheses about the complexity of the human body, we criticize mechanistic conception of the living body underlying the Transhumanism project. Implications of the Transhumanism project for personal identity are proposed based on hypotheses of complex systems theory as a starting point for critical reflection on a possible gloomy future envisioned by the unnatural/artificial development of the transhuman body.

Keywords: Transhumanism project; Human body; Personal identity; Mechanicism; Complexity theory; Ethics.

1. Introduction

In recent years, advances in technology, especially in the fields of genetic engineering, biochemistry, nanotechnologies, and artificial intelligence, have provided human beings with new ways of being, understanding and acting in the world. Technologies, assumed as key factors towards the development of human species, give access to multiple means of modifying it. However, as Santaella (2003) points out, until recently, the technologies remained predominantly external to the human body. A technological revolution seems to be taking place, involving the merge of drugs and technological devices with the human body, aiming a supposed improvement of the biological and moral conditions of human species.

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In accordance with the above ideas, a philosophical-scientific theory, currently known as Transhumanism, proposes to use technological advances to improve cognitive, psychological, moral, and bodily conditions. In this article, we aim to analyse the philosophical implications of the conception of body proposed by transhumanists as well as the main implications for individual and collective levels.

The central problem that guides this paper is: what is the conception of human body underlying the Transhumanism project? This problem will be analysed in three steps. In the first one, we present an overview of the Transhumanism project under development at the University of Oxford, its headquarters, as well as at other institutions. In the second step, we highlight the reductionist and mechanistic conception of the living body underlying the transhumanist perspective. Based on a provisional evaluation of the Transhumanism project, we then investigate, in the third step, possible personal identity consequences of adopting some of its assumptions. We conclude by suggesting an approach to issues related to the nature of human body based on assumptions of complex systems theory.

2. What is Transhumanism?

The term Transhumanism was introduced by Julian Huxley in 1957, when he explicitly discussed the possibility of human beings transcending their limited biological condition by using emerging technologies. However, his aspiration for human improvement dates back historically to classical antiquity. According to Bostrom (2005), examples, such as the search for the fountain of youth, the elixir of life, and other myths and idealizations, demonstrate that the desire to overcome human biological finitude is almost inherent to the species. According to the philosopher:

> The human desire to acquire new capacities is as ancient as our species itself. We have always sought to expand the boundaries of our existence, be it socially, geographically, or mentally. There is a tendency in at least some individuals always to search for a way around every obstacle and limitation to human life and happiness (Bostrom, 2005, p. 1).

Transhumanism, in this perspective, is seen as a constant search for biological rearrangement of human species dissatisfied in the face of its own limitations. Another characterization was proposed by Max More (1990), in the middle of the 20th century,

who reinforced the concept of Transhumanism as a human process of self-transformation by using intelligent technologies.

There is no consensus on the meaning of the term Transhumanism, although its characterizations have common aspects, converging mainly in an optimistic perspective about opportunities for enhancing human condition based on technological advances and the need to adapt to new scenarios provided by contemporary technologies. Taking a deeper look at Bostrom's characterization of Transhumanism, for example, we observe that it goes beyond the simple conception of a symbiotic process between human beings and technological devices:

> Transhumanism is a loosely defined movement that has developed gradually over the past two decades. It promotes an interdisciplinary approach to understanding and evaluating the opportunities for enhancing the human condition and the human organism opened up by the advancement of technology (Bostrom, 2005, p.1).

In this perspective, Transhumanism should be understood as a characteristic of the current period of great technological advances. In *A History of Transhumanist Thought*, Bostrom points out the importance of the Renaissance, at the end of the 15th century, for the development of Transhumanism. During that period, there was a reaffirmation of the belief in reason's sovereignty, considered as the instrument that would allow human beings to have access to the most magnificent knowledge.

The Enlightenment, on the other hand, seems to represent a landmark in the modulation of a form of thought that would produce, in the 20th century, an updated formulation of the concept of Transhumanism. Bostrom (2005) points out that the emergence of the Enlightenment, with its ideals of human knowledge instrumentalization for utilitarian purposes, provides a fundamental basis for transhumanist thinking. In his article, "Transhumanist Values", Bostrom (2005, p.4) reinforces this conception:

> Transhumanism has roots in secular humanist thinking, yet is more radical in that it promotes not only traditional means of improving human nature, such as education and cultural refinement, but also direct application of medicine and technology to overcome some of our basic biological limits.

Another factor that may have contributed to the resurgence of transhumanist ideals in the 20th century, according to Bostrom (2005), is the evolutionary perspective of species, mainly represented by Darwin's hypothesis that humans, like other living beings, are undergoing a transition in their natural evolutionary process of selection throughout its development.

Bostrom (2005) emphasizes that the understanding that current technologies can be used as a path to achieve human improvement (in physical and psychological capacities, and even with the addition of capacities not previously belonging to human species) must not be interpreted using a completely optimistic bias. The philosopher recognizes that there is an ambiguity in technological development that can lead humanity to a favourable scenario or to a complete chaos. However, Bostrom (2005) argues that political and social measures must be provided so that humanity's technological potential does not lead to an existential risk, since it would not be plausible to abdicate, due to human moral immaturity, the advantages and benefits provided by technologies.

Other scholars of Transhumanism, such as Savulescu and Persson (2010), also follow the same line of argument to defend the thesis that we should not be afraid of the changes brought about by technological advances. According to them, our main concern should reside in the perspective of a (supposed) moral improvement of the species (we will problematize this term in Section 3), so that catastrophes are avoided. Savulescu and Persson, in the article "Moral Transhumanism", analyse the concept of "human", suggesting definitions that they consider essential for the understanding of Transhumanism. The authors argue that the biological human condition, if submitted to changes through technological advances, would not suffer a loss of moral values or any prospect of damage to them. They believe that there is a need for moral improvement, if serious situations are to be avoided, and that moral improvement can only be obtained by biological improvement of the species.

The moral condition of the human being is, according to Savulescu and Persson (2010), poorly equipped to deal with the new technological and social scenario emerging in the 21st century. They understand that the human being has a greater facility to practice actions that have negative social consequences, and that this trend could be intensified by the widespread use of current technologies, where a single individual can cause immense damage to a great number of people. The authors believe

that new technologies, besides expanding the capabilities of human body, could be used for moral improvement of human species, in an attempt to avoid the occurrence of disastrous scenarios; also, in a second moment, technologies could be used to correct or to mitigate social problems that afflict the majority of humanity.

Given the scenario outlined above, and considering that Transhumanism project proposes radical changes in human body by means of new technologies, supposedly to improve it, the following questions could be asked: What is the conception of human body underlying the Transhumanism project? What criteria of relevance support their assumptions? Although we do not have conclusive answers to these questions, we will propose a starting point to reflect on them from the perspective of the theory of complex systems.

3. The Transhumanist conception of body

What is a body? With this question, Chomsky, in his *New Horizons in the Study of Language and Mind*, argues that more is known about the nature of the mind than the nature of the body. His view on the living body suggests that there is a gap in the way we treat, and investigate, the complexity of its intricacies. Chomsky's perspective seems to be underestimated by transhumanists whose main research is founded on two broad fields of study: genetic engineering and artificial intelligence. In this context, genetic engineering brings together a field of research related to modifications and interventions that can be implemented using living beings, examples being DNA modification techniques and cloning, among others. Such interventions also have the support of computational techniques being developed in the scope of Artificial Intelligence. In this perspective, genetic engineering is defined as "[...] the artificial manipulation, modification, and recombination of DNA or other nucleic acid molecules in order to modify an organism or population of organisms" (Lotha et al., 2019, p.1).

Underlying the practices of genetic engineering, there still prevails, as pointed out by Le Breton (2008, p. 16), a mechanistic technoscientific discourse that conceives the body as a set of mechanical parts that can be dismembered and rearranged for different purposes. From the mechanistic perspective, human body becomes an object of manipulation, seen as an accessory.

Techniques that aim to relocate body parts, without any therapeutic justification, can be considered as reaffirming attempts to adapt the person in the emerging environment of fourth industrial revolution (Le Breton, 2008, p. 30). The technicalization of organic body would also be a consequence of the technicalization of the environment that would require adaptations, correspondence, and reciprocity with the niche to which the person belongs. The complex fragility, characteristic of body's organization, is one of the factors that leads to the introduction of the most diverse techniques for body's improvement.

Human dependence on new technologies, as Le Breton (2008) points out, would be the driving factor for the symbolic trivialization of the body. This trivialization establishes, in our view, a first stage of transhumanization of the species, making the human-environment relationship highly mediated by technologies. As Le Breton (2008, p. 20) points out:

> The relationship with the world was a relationship through the body. Certainly never as today in our Western societies, men have used their body, mobility and resistance so little. Nervous consumption (stress) has replaced physical consumption. Muscle resources fall into disuse, except in health clubs, and the inexhaustible energy provided by machines takes its place.

Following the trail of Le Breton, we understand that among the relevant criteria guiding the Transhumanism project is a reconsideration of the social role of body. If, in the past, body was the main medium of human activity, it now becomes a secondary accessory for the performance of daily activities, but still necessary for the presentation of the person's supposed identity in his/her desire to be in the environment to which he/she belongs.

In this case, as stated by Le Breton (2008, p. 23): "Medicine stops being concerned only with care, justifying itself from possible 'sufferings'; it intervenes to dominate life, to control genetic data; it has become a normative instance, a biopower (Foucault), a scientific and cruel form of enunciation of destiny [...]". He also stresses that the ideology of the supremacy of the "perfect" health, "perfect" body, and "perfect" appearance induces biotechnological advances to dissolve the person's boundaries, since genetic engineering makes possible the artificial production of the person.

In the current circumstances, humans seem to be experiencing one of the stages of transhumanization by inserting in this topic, as noted by Le Breton (2008, p. 63), the chemical and technical prostheses that are nowadays central for many individuals:

> Psychotropics offer themselves as technical aids to existence, modulating the angle of approach to everyday life, establishing a fantasy of self-control in the face of the turbulence of the world, contributing to the cyborgization of the individual, to the elimination of boundaries between what depends on us in a behavior and what is up to an external technique.

The individual's will, regarding pharmacological control, is limited to the choice of which substance to use (considering the effect he/she wishes to produce or the side effects he/she wants to avoid). Thus, there is no gain in the individual's autonomy, given that the effects produced by the chosen drug were previously determined by an influential industry from an economic and social point of view, including the creation of behavioural trends. The person is strongly induced to act according to a moral of obtaining individual advantages that always prioritize the achievement of the best possible results (Le Breton, 2008, p. 63).

In this scenario of dissatisfaction with the body, genetic engineering appears as an efficient instrument for the development of Transhumanism project in search of supposed cognitive and bodily improvements, generating the illusion of superintelligence. We understand that the use of transhumanist resources, without ethical considerations about their possible consequences, might become a powerful tool for standardization of human body according to mechanistic ideals, facilitating the science-industry dialogue, consequently reducing the fertile diversity of life.

For example, an important step in supposed bodily improvement techniques is already underway in the *in vitro* fertilization industry. By providing details of the characteristics of the donors' egg and sperm, in terms of genotypic and phenotypic manifestation, these services sometimes ignore that:

> The human genome is an evolutionary data, infinitely complex, in which dozens of genes sometimes interact for a single information. It is not the repertoire of a fatality, but a set of virtualities that express themselves differently, depending on the individual's social, cultural or ecological environment (Le Breton, 2008, p. 105).

As Le Breton suggests, behind the policy of guaranteed consumer satisfaction subtly lurks a genetic ideology, which transforms human body into a commodity governed by eugenic ideals permeated by the argument of perfect health and perfect appearance or the desire to avoid future aging and physical and social suffering.

The transhumanist notion of a planned and manipulated human body, considered as a bundle of genetic information, leaves little space for consideration of a person as carrying an identity not necessarily reducible to his/her genetic data. In this context, concerning the manipulation of genetic information, Le Breton (2008, p. 101) states that

> [...] it equates the levels of existence, it empties things of their own substance, of their value and of their meaning in order to make them comparable. It imposes on the infinite complexity of the world a unique model of comparison that allows placing different realities on the same level.

In summary, in addition to conceiving the human body through genetic engineering as a bundle of genomic information to be manipulated, the mechanicist view underlying the Transhumanism project is not restricted to the scope of body manipulation. It also spreads in social and moral universes, through the notion of "moral improvement". There is an intensive discourse by supporters of this project regarding the advances in biotechnology, in partnership with Artificial Intelligence, which has blurred many of the ethical consequences in treating body as an instrumentally mechanical object.

We understand that the propagation of the transhumanist ideal concerning the possibility of a supposed radical improvement of human beings, with the prevention of aging and the extinction of suffering, by means of moral improvement, disregards factors inherent to the complex systems of life into which the living body (not only human) is inserted, leading to an unattainable ideal of perfection.

The notion of moral improvement can be illustrated, according to Liao and Roache (2011), using the example of changes in emotional states through the use of drugs. According to them, emotional improvement would result in moral attitudes that can be characterized as adequate/desirable. The modification of emotions through the use of drugs is known as mood enhancement.

> Mood enhancement drugs could potentially help with such collective action problems. While altruism and empathy have large cultural components and are

strongly affected by individual moral choices, there is evidence that they also have biological underpinnings (Liao & Roache, 2011, p. 246).

The example presented by the researchers concerns the use of drugs in order to promote improvement in the emotional states of postpartum women who are unable to emotionally connect with their children; such a scenario could lead them to experience "strangeness" or "resentment" towards their babies (Liao & Roache, 2011). They extend the example of improving emotional states (which would culminate in collectively praised attitudes) to parents of adopted children who, for some reason, are unable to establish a deep and loving connection with them.

> If pills that could induce the feelings associated with parental love were available, this might enable one to provide the kind of love that children need, thereby relieving this frustration. Indeed, in being able to induce parental love that one does not feel spontaneously, one may also be able at least partially to fulfill a duty to love a child (Liao & Roache, 2011, p. 246).

The above statement suggests the possibility of improving moral attitudes by using "prosocial" hormones, such as oxytocin. Liao and Roache (2011) presented research showing that individuals who used oxytocin became more willing to act in a reliable and empathic way, contributing to cooperative behaviour in situations of social engagement.

Although there is much enthusiasm about the use of hormones to manipulate emotional states, which could promote changes in moral attitudes, we believe that it would be pertinent to go beyond the investigation of the effects caused by the use of certain synthetic drugs in specific situations; it is also important to investigate possible origins of feelings considered undesirable, as well as the social structure that gives rise to certain emotions.

Let us consider the example presented by Liao and Roache (2011) concerning the use of drugs to overcome feelings of strangeness and/or resentment towards a child, in the case of postpartum women. Although there is a biological dimension of significant hormonal changes in a woman's body as a result of pregnancy, the social-family context also needs to be studied as one of the relevant factors in understanding the cause of these feelings considered socially inappropriate.

There is a series of questions that we cannot lose sight of in the face of the simplistic discourse of emotional/moral improvement through the ingestion of drugs. Although in extreme cases, involving highly aggressive and violent conduct, for example, the use of drugs that alter the person's behaviour or emotional states may be justified, it would be desirable to perform a critical analysis of the indiscriminate prescription of drugs for improving the emotional relationships among human beings.

In addition to the critical analysis, pertinent to the example of moral/emotional improvement, the very notion of improvement should be questioned: who would it be aiming for? Would it be directed towards self-organized relationships, built collectively (with a purposeful attitude of changing undesirable/harmful or morally unacceptable social habits), or towards an individualistic notion of improvement according to the perspective of the creators of technologies that express a restricted worldview regarding ways of being and living?

Beyond critical analysis of the notion of "moral improvement", there are questions to be raised concerning the personal and collective identities emerging from the genetic transformation of the individual into a transhuman (or, as suggested by transhumanists, by the transformation from human to post-human). It seems that genetic engineering resources are prominent in the transhumanist project of modifying human nature, with moral implications that are still little discussed in the scientific and philosophical spheres.

To provisionally conclude this reflection, we consider the implications of the transhumanist project for personal identity based on the assumptions of the theory of complexity, indicating the role of chance in the development of a possible gloomy future envisioned with the development of the transhuman body.

4. The Transhumanist conception of body considered from the perspective of complex thinking

From the summarised view of Transhumanism project, in this section we investigate the following question: what are the possible implications for personal identity of bodily changes such as those conceived by the Transhumanism project?

Philosophical studies of personal identity tend to describe a problem known as "The personal identity problem", which consists of the difficulty in establishing criteria

that make it possible (or not) to identify constant characteristics involved in conceiving an individual as being the same, despite the numerous changes to which he/she is susceptible throughout his/her life. In Philosophy of Mind, there have been numerous attempts to address this difficulty by going back to the body/mind problem. Given the extent of such attempts, and the limited space available for exposition of our proposal in the present paper, we will not describe the different approaches offered by the theoretical perspectives of the body/mind problem, applied to the personal identity problem.

Although we consider that theoretical perspectives, such as substantial dualism, the materialist theory of mind (type-type identity), and functionalism, offer relevant approaches for investigating the personal identity problem, we understand that there are explanatory gaps that lead us to look for alternatives in the proposed investigation. For this reason, we will present a perspective of investigation underlying the central assumptions of complex systems theory, which are not necessarily in opposition to previous attempts to solve the problem of personal identity based on theories about the mind-body relationship.

We understand that complex systems theory, based on an interdisciplinary method of investigation, allows different scales of analysis, as it's appropriate to the investigation of a specific problem. Among the central concepts of this theory, we highlight the systems, self-organization, emergence, and the holographic and non-linearity principles.

In the understanding of D'Ottaviano and Bresciani (2004, p. 2), a system can be defined as follows:

> [...] a unitary entity, of a complex and organized nature, constituted by a non-empty set of active elements that maintain relations, with characteristics of time-invariance, which guarantee its own identity. In this sense, a system consists of a set of elements that form a structure, which has functionality.

Due to its generality, this definition of a system could be applied to artificial ones, but an important characteristic of complex systems, as stressed by Morin (2001, 2014), is the capacity to self-organisation. In addition, complex systems are informationally open, that is, they establish exchanges with the environment, allowing the phenomenon of emergence to occur. In this way, what may appear to be merely

mechanical, for example, at the macro level, may appear different in a deeper layer of the system, indicating difficulties when analysed in mechanistic ways.

According to Debrun (2009), the processes of self-organization underlying a complex system are characterized by encounters between very different elements; they develop, according to spontaneous communicative interactions, without a supervisor or central controller. The processes of self-organization, in addition to developing in the absence of an omnipotent supervisor, allow the possibility of the emergence of novelties in the system, such as spontaneous complexification of systems that already exist (secondary self-organization) or the creation of a new system (primary self-organization).

The capacities for renewal and restructuring of complex systems, such as the human body, are mainly due to communicative exchanges between agents in their niches. As Debrun (2009) points out, these changes stem from dynamic relationships often involving self-organized adjustments and learning with the environments in which social agents are inserted. As a consequence, these systems establish a co-dependency relationship with the environment, obeying, as explained by Morin (2001) the holographic principle according to which each part of a complex system contains encapsulated information about the totality of that system.

The notion of "whole" depends on the scale of the analysis under investigation; a "whole" can be understood as a social body and its "parts" as the elements that allow the functionality of the system. In the same way, the identity of a human individual might be considered as a whole (or system) that, in order to constitute himself/herself, establishes informational exchanges with other systems or subsystems (living beings, ecological environment, educational, political, and economic systems, among others).

It should be noted that complex systems, as open systems that establish exchange with their surroundings, are not limited to the mere sum of their parts. Such a statement can be better understood in the formulation of the principle of nonlinearity, according to which "the whole is greater than the sum of its parts" (Morin, 2001, p.150). In the case of living systems, given the interdependence between agents and the other systems, it is not possible to operationalize the isolation and the precise delimitation of their parts.

From the perspective of Morin's complexity theory, the dynamics characteristics of an individual identity can be summarised as follows:

1) Exchange of matter, energy, and information with the environment;

2) Subordination of agents in relation to the systems and subsystems with which they are integrated (holographic principle);

3) Manifestation of emergence (from the dynamics of self-organization);

4) Ability to be (self)organized in the absence of an absolute controlling centre.

In accordance with the above principles underlying Morin's theory of complex systems, we are committed to an interdisciplinary and systemic way of analysing a given problem. The complex systems methodology recommends that problems should be investigated using various perspectives and scales, as well as emphasizing the interdependence between agent and environment, or, to put it in another way, between a system and the other subsystems that integrate it (Morin, 2008).

In short, the body and its relation to personal identity are analysed, from the perspective of complex systems thinking, by considering the dynamics of interdependence in several domains, such as the social, psychological, biological, and ecological, as clarified by the holographic principle. In this light, human body is dynamic, liable to be constituted and influenced by the environment and the complex self-organized relationships established therein. In this way, body's identity, which is a central characteristic of individuals, depends on adequate conditions of food, housing, and basic sanitation, as well as income generation, cultural activities (such as dance and physical education), and effective planning for the implementation of educational practices and public policies in a specific niche of social interaction.

In contrast to the complex systems perspective, summarised above, the Transhumanism proposal for human body and the improvement of individuals seems to be based on the presupposition that humans are made up of pieces organized by central controllers. These pieces are seen as parts of a system that could be assembled and disassembled, in a reductionist way, without any prejudice to its functionality. It also seems to propose a conception of body apart from its most fundamental situational self-organizing relations, ignoring, for example, the fundamentals of the principle of nonlinearity, according to which an individual, or even his/her bodily identity, is not limited to the mere sum of its parts.

Complex systems thinking is opposed to the reductionist conceptions of body and identity, which seem to be responsible for the aggravation of agent-environment fragmentation. As a result of such conceptions, we are taken to a context in which the

body is understood in a market sense, where it can be improved by the purchase and exchange of its supposedly defective and/or ineffective pieces, associated with an over-abundance of tasks to be performed. This can be foreseen in the transhumanist conception of emotions improvement, illustrated in the previous section, separated from the complex system of interactions in which agents are inserted.

Furthermore, transhumanism seems to be inseparable from the ideas of normality and control. What is redefined as "healthy", for example, seems to be normalized in terms of statistical values and interests that lie outside of medical science itself, such as pharmaceutical industry and insurance companies. As already denounced by Foucault (1978, p. 140): "biopower" consists of the "[...] administration of bodies and the calculated management of life [...]; an explosion of numerous and diverse techniques for achieving the subjugation of bodies and the control of populations".

5. Provisional concluding remarks

So far, we have suggested criticisms of the transhumanist project of human improvements, claiming that, by implementing a reductionist mechanistic view, it does not take in consideration the intricate self-organized complexity involved in the dynamics of life – in which the human body/identity is part of. From the complex systems perspective, we claimed that attempts to change the nature of body/identity should take in consideration the complexity of the environment and social interactions, as well as the effective self-organizing mechanisms that promote nourishing practices in different domains. The social, ecological, biological, and psychological spheres should be considered, in interdisciplinary modes, as kinds of subsystems that make up the body identity (individual and collective).

Although the Transhumanism project could be considered as interdisciplinary research, given that it relies mainly on the areas of artificial intelligence, genetic engineering, and biotechnology, it remains attached to a reductionist concept of fragmentation of the individual, which is separated from his/her context and systems of self-organized interactions. We understand that such a conception is in disagreement with the perspective of complexity, which teaches us to look carefully for the relevance of the self-organized relationships established between agent and environment, as well

as the various subsystems that integrate it, in the search for improvement of body and identity.

Some philosophers, such as Floridi (2020), believe that transhumanist ideals should not be considered seriously, as anything other than an imaginative exercise of science fiction. Others, in contrast, as in our case, understand that Transhumanism is a long-standing project that now gains space for its implementation. This space was reached by means of the facilities provided by genetic engineering and artificial intelligence developed in the digital age, among others. Despite the historical links that body fragmentation has with control and manipulation means in the practical domain, the Transhumanism project seems to advance in large steps.

Finally, we consider that the supposed improvement of personal and bodily identity, envisaged by transhumanists, is external to the individual and his/her self-organizing system of interactions, since it depends on a group of technicians who are often not concerned with improving identity as considered from a complex systems perspective. An important point to be highlighted, in view of this proposal, is the question of the hegemony of certain standards at the expense of others. It is worth remembering that the models of personal and collective identity underlying the Transhumanism project refer to certain Western standards that are little questioned by their proponents. Such standards, as well as the presence of a specific group of specialists who are in the position to modify body and personal identity, become omnipotent supervisors of the dynamics constitutive of people's identities, restricting the possibilities of choices and self-organized individual and collective interactions. There is a legitimate concern that the Transhumanism project may have deviated from its original or acceptable goals, namely the promotion of people's well-being and quality of life.

The question remains concerning any real novelties that the improvement proposed by the transhumanists could bring to human beings, given that, as suggested in the first section, humans might still be unsatisfied and looking for an even more powerful way to improve their condition. Perhaps the answer to transhumanists could be found in what the spirit of Earth says to Faust: why, instead, do you not fight to become a Mensch-authentic human being?

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