

Philosophical Aspects of the Human Brain Cyborgization

Romanova Anna*

Department of Neuroscience, Moscow Institute of Physics and Technology, Moscow, Russia

ABSTRACT

The article discusses modern approaches to the analysis and understanding of the human brain cyborgization, in particular, the expected impact of brain implants on the continuity of consciousness and the personal identity of the “enhanced” individual. The question of the point of no return and the concept of technological singularity are considered. The author proposes a change in the current paradigm of analysis and forecasting, based on the worldview of unenhanced people, to a point of view from the position of “enhanced” people. Possible approaches to the effective and fruitful coexistence of a “natural” person and an “enhanced” person are put forward. The concept of inclusiveness is formulated to protect the interests of “natural” and “enhanced” in the process of transition to a mixed, post-singular society.

Keywords: Artificial intelligence; Cyborgization; Brain implants; Singularity; Consciousness; Transhumanism

INTRODUCTION

All-pervasive technological progress is a very controversial choice of the modern human civilization. The main dilemma is that the development of engineering skills is going much faster and more effectively than their philosophical and moral understanding. At the moment, for the first time in human history, we have reached a level of development when the fusion of biological and artificial brains has become technically possible. Mathematician and philosopher Alfred Whitehead (Whitehead) in the monograph “Introduction to Mathematics” (1911) wrote: “Civilization advances by extending the number of important operations which we can perform without thinking of them”. Intelligent technologies have become part of everyday life and are about to become part of the human brain. In interview to BBC in December 2001 Bill Gates said: “The advance of technology is based on making it fit in so that you don't really even notice it, so it's part of everyday life” (BBC).

The current rhetoric of technology optimists is still more like an advertising campaign than a response to the fundamental issues of cyborgization. In an interview with Y Combinator in September 2016, the CEO of SpaceX and Tesla Elon Musk said: “If we can effectively combine humans with artificial intelligence by improving the neural connection between your cortex and the digital extension of yourself... then you will effectively become a

human symbiote of the artificial intelligence system”. Technology proponents are pragmatic, well-equipped with financial and human resources. They carefully develop plans and strictly implement them. There is no doubt that pilot projects to improve the human brain through the use of artificial implants will sooner or later actually become part of everyday life [1].

Opponents of technology take a very contradictory position; they use the advantages of technology, but at the same time ask to limit the spread of technology. Due to such a disorganized and ambiguous approach, there are no objective prerequisites for the balanced development of technology. Both supporters and opponents of human cyborgization admit that the use of brain implants can significantly change human nature. In the September 2020 podcast, member future of life institute Lucas Perry said: “New technologies based on artificial intelligence will increasingly give us the opportunity to change what it means to be a human”. It will be too late when the human society awakens and discovers the replaced essence of humanity itself. In the financial times article the cognitive psychologist and philosopher Susan Schneider wrote: “AI-based enhancements could still be used to supplement neural activity, but if they go as far as replacing normally functioning neural tissue, at some point they may end a person's life”.

Correspondence to: Romanova Anna, Department of Neuroscience, Moscow Institute of Physics and Technology, Moscow, Russian; E-mail: romanova.as@phystech.edu

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Currently, there is a no mandatory requirement that any scientific discovery, patent application, technical solution should be accompanied by an appropriate philosophical and moral justification. Such an infantile approach was possible while humanity was playing with child-level inventions, but it will not work at the level of super technology. Understanding of cyborgization as expansion of natural human biology is one of the practical approaches to saving humanity from the loss of its essence, split or possible extinction with the technology development [2].

LITERATURE REVIEW

Current paradigm

Leading researchers are trying to find answers to fundamental questions that arise when considering the cyborgization (enhancement) of the human brain:

- Will a person's self-continue to exist after adding a brain implant or will he/she cease to exist, being replaced by someone else?
- Does brain enhancement preserve consciousness and personal identity as well?
- Is there a point of no return when replacing parts of a biological brain with brain implants? The point at which the biological brain is so diminished that, instead of providing continuity of consciousness, it ceases to exist.

Although all these issues are significant, the main reason for them lies in the current low level of development of our science and technology in this area. According to the famous philosopher of consciousness, David Chalmers: "There is nothing even approaching an orthodox theory of why there is consciousness in the first place. Correspondingly, there is nothing even approaching an orthodox theory of what sorts of systems can be conscious and what systems cannot be". It is very possible that after a significant technological breakthrough, our basic questions will be completely different. Fundamental questions that remain unanswered do not stop research and development in the field of improving the functioning of the human brain, but they allow us to identify the most critical and high-risk areas of such research [3].

Continuity of existence of "I"

One of the key questions that arises when analyzing the consequences of partial or complete human brain cyborgization is the preservation of the continuity of existence of the human "I". This question has at least three aspects:

- Maintaining the continuity of the existence of "I" for myself.
- Maintaining the continuity of the existence of my "I" for others.
- Maintaining the continuity of the existence of the "I" in fact.

It is obvious that at the present time we do not know what a person's "I" is, what it consists of, how and when it arises, how it disappears, how to check that it is the same "I". We don't know "...in virtue of what do you survive over the time? Having

a soul? Being a material being? Having the same memories and thought patterns as your earlier self?"

However, such ignorance does not negate the practical significance of these questions: It is very important for the potential user of brain implants to know whether his "I" will remain after using the silicon implant or will disappear or will be replaced by someone else. There is currently no clear answer to this question. Susan Schneider believes: "...enhancing by moving from carbon to silicon may not be something that preserves your conscious experience or personal identity". The internal criteria of "I" or not "I" are a subjective assessment of each person. There are cases when even without installing brain implants, a person can change his subjective assessment of "I". It is very possible that when installing an implant, each person will have to independently decide and evaluate this issue. The most what philosophers can do now just to ask this question and attract the attention of interested parties.

To be able to answer the question of preserving the "I" for others, it is necessary to determine objective criteria by which the "I" before the implant can be compared with the "I" after the implant. A possible solution may be the use of tests that are designed to study dual personality conditions. In practice, the issue of the continued existence of the "I" for others can be resolved by recognizing that a new, changed "I" is emerging.

The problem of preserving the continuity of the "I" can actually be solved only when we find out what exactly our "I" consists of and how to compare two such "I substances". Moreover, the results of the work of the 2022 Nobel Prize winners in physics in the field of quantum entanglement may mean that if manipulations with the "I substance" need to be carried out on the quantum level, then two completely identical "I substances" are impossible at all [4].

Continuity of consciousness and personal identity

Susan Schneider and Cody Turner point out: "...The question of whether or not your identity survives cognitive enhancement whether that future being is really you is distinct from the question of whether or not consciousness survives". Chalmers asks the same question: "First, will an uploaded version of me be conscious? Second, will it be me?". Even under the usual circumstances, there are cases when, as a result of trauma, a person retains consciousness, but loses memory and self-awareness. It is obvious that the installation of an implant will in any case be a certain type of trauma, both physical and psychological. Moreover, as Schneider and Turner point out: "It is currently unclear whether AI can be conscious. If it is, then microchips can, at least in principle, be used in areas of the brain responsible for consciousness without one losing consciousness or experiencing diminished consciousness" [5].

If we accept that a brain implant can support consciousness, then when replacing the implant, the question will arise whether a separate consciousness is retained in the implant or conversely, part of the main consciousness is removed, turned off or changed. In extreme cases, the question may even arise: "...if the AI systems are conscious, this would be a form of genocide".

There is no doubt that a certain part of supporters of brain implants may take the point of view that “if there are systems that produce apparently super intelligent outputs, then whether or not these systems are truly conscious or intelligent, they will have a transformative impact on the rest of the world”. It can also be assumed that cultures in which community is placed above personality may, in principle, not consider the issue of preserving personal identity as critical.

DISCUSSION

Point of no return

The cyborgization of the human brain poses another, currently unsolvable problem: “...if you have these chips and they replace parts of the biological brain, there will be a point at which the biological brain is so diminished that instead of ensuring continuity over time, you would inadvertently end your life”. The question seems obvious and applies to any other part of the human body. For example, once we replace a biological arm with a synthetic implant, our biological arm will cease to exist. Once we replace our entire biological body with a synthetic body, our biological body will cease to exist.

Our current attempts to understand the brain cyborgization are in many ways similar to attempts to comprehend Zeno’s aporia, when the corresponding theories and tools were developed much later than the paradoxes were recognized. Let’s hope that modern attempts to understand cyborgization will generate the same fruitful research and debate as Zeno’s paradoxes [6].

Paradigm shift

At the present moment, issues of human cyborgization are considered very one-sidedly from the point of view of a “natural” person. In the view of modern philosophers, we should not improve until it is confirmed that consciousness is preserved. The enhancement is supposed to improve your quality of life by improving your survival and giving you more time on the planet as a subject of experience. However, it is obvious that the decisive opinion will ultimately belong to the “enhanced” persons. And even when trying to imagine the future point of view of an “enhanced” person, modern philosophers still build their analysis based on the currently available paradigm of interests of a “natural” person: “On Monday at 6 pm, you could have an early dinner in Rome; by 7:30 pm, you could be sipping wine nestled in the hills of the Napa valley; you need only rent a suitable android in each locale”. Authors of science fiction tried to predict one of the points of view of an “enhanced” person who has moved to the next stage of evolution: “...The overwhelming majority of people do not live on earth. All of their interests, their whole life are outside the earth. Damn it, you don’t live in bed!”.

Modern philosophy needs a paradigm shift. The process of cyborgization will be massive. As soon as the first stable technology appears, the process of technological singularity will begin. The questions that will arise in the process of mass cyborgization and the corresponding singularity will no longer concern simply the continuity and identity of an individual, but

rather the identity and continuity of the entire human civilization. These are the questions that deserve close attention and deep understanding:

- What could the singularity of the cyborgization process mean?
- Who are the "strong" and "weak" “enhanced”?
- How to prevent the split of humanity?

Some researchers view cyborgization as a panacea or the only remedy for the singularity of machine intelligence. As we will show below, the singularity of cyborgization is subject to the same problems as the singularity of machine artificial intelligence.

Singularity of cyborgization

We propose to apply the approach and analysis of the concept of “singularity” to the development and consequences of the cyborgization process, which is used in analyzing the development of machine artificial intelligence: “...An explosion to ever-greater levels of intelligence, as each generation of machines creates more intelligent machines in turn”. It is obvious that at first a few brave souls, then more and more a certain percentage of people will choose to be enhanced, despite the uncertainty and pain. The popularizer of the technological singularity Vernor Vinge notes: “...if the technological singularity can happen, it will. ...every advance in automation is so compelling that passing laws or having customs, that forbid prohibiting such things merely assures that someone else will get them first”. Numerous supporters of the idea of transhumanism are ready to become “enhanced”.

It can be assumed that each generation of “enhanced” people will create more intelligent artificial intelligence systems, which in turn will be used to create more advanced “enhanced” people. It is also appropriate to apply the concept of “explosion of speed” here. “The argument for a speed explosion starts from the familiar observation that computer processing speed doubles at regular intervals. ...Then faster processing will lead to faster designers and an ever-faster design cycle, leading to a limit point soon afterwards”.

Analyzing the singularity of cyborgization, one can agree with the opinion that “... The singularity brings up some of the hardest traditional questions in philosophy and raises some new philosophical questions as well”. If we still can somehow imagine the logic and position of the first generation of “enhanced” people right now, with the further progress their values and abilities will be less transparent. Using the machine artificial intelligence singularity analogy: “...Nothing in the singularity idea requires that an AI be a classical computational system or even that it be a computational system at all”. Likewise, nothing in the idea of singularity requires that the “enhanced” be classical homo sapiens or even that they be humanoids at all. As Vinge notes: “...The new era is simply too different to fit into the classical frame of good and evil. That frame is based on the idea of isolated, immutable minds connected by tenuous, low-bandwidth links”.

As Chalmers rightly points out, the singularity can have unprecedented consequences. However, very few researchers are studying the singularity even in machine artificial intelligence

area. Depending on how effectively these problems are worked out, humanity will move to the next level of its development: As a single whole, it will split into lower and higher races or it will split into different civilizations, complete indifference to each other: "there seem to be four options: Extinction, isolation, inferiority or integration."

"Strong" and "weak" "improved"

Another term commonly used in the analysis of machine artificial intelligence is obviously applicable to the analysis of the consequences of the human brain cyborgization: The "strong" and "weak" "enhanced". "Strong super humanity would be more than cranking up the clock speed on a human-equivalent mind". As Vinge rightly notes: "...Most speculations about super-intelligence seem to be based on the weakly superhuman model". However, "...Our best guesses about the post-singularity world can be obtained by by thinking on the nature of strong super humanity" [7].

How to prevent the split of humanity?

A split or division will obviously weaken humanity, while the community of "natural" and "enhanced" people will create preconditions for the further development and prosperity of the human race. Philosophers, who are trying to analyze and comprehend the human brain cyborgization must go beyond analyzing the consequences of improvement for one separate individual. It is necessary to develop concepts that will allow to cooperate effectively and fruitfully together for the benefit of human civilization. The lack of understanding of the cyborgization results, the use of ill-conceived terms and definitions, the recognition of someone as a subhuman or conversely, a superhuman, can precisely serve as a catalyst for the split or division of humanity. A huge responsibility falls on the shoulders of philosophers who undertake to speak out on the topic of human improvement and perhaps for the first time in the history of philosophy, they have the opportunity to avoid the mistakes of the past.

Nick Bostrom, a popularizer of the idea of transhumanism, rightly notes: "For most of human history, there were no significant existential risks... By definition, of course, no existential disaster has yet happened. As a species we may therefore be less well prepared to understand and manage this new kind of risk". Definitely the integration of "natural" and "enhanced" is the most acceptable option based on our understanding of the future today. But can there be objective prerequisites for such integration? Yes, if there are options for mutually beneficial exchange. But what can "naturals" offer to "enhanced" ones? Perhaps, in the first stages, when the main human, financial and material resources are still controlled by "naturals" cooperation will be still possible. And what then, when the "enhanced" race becomes so strong that it could control a sufficient amount of resources? A possible solution appears to be the approaches that are currently used to protect diverse minorities: Non-discrimination, inclusion, etc. If at the first stages of cyborgization we are talking about inclusiveness for the "enhanced" people, then in the future, based on the theory of singularity, it will be a policy of inclusiveness for "natural"

people. "This is a task that we can begin to tackle now by fostering a climate of tolerance and acceptance towards those who are different from ourselves". In practice, it is advisable that companies producing brain implants, in parallel with scientific research and their implementation, simultaneously conduct research in the field of a future social contract that will allow "natural" and "enhanced" to happily coexist together.

Obviously, one of the approaches being considered to avoid a split could be all kinds of restrictions. As Nick Bostrom notes, while considering the creation of machine super-intelligence the restrictions would be rather pointless: Development may well continue in any case, either because people do not consider the gradual displacement of biological people by machines as necessarily a bad outcome or because such strong forces (driven by short-term profit, curiosity, ideology or desire for the possibilities that super-intelligence can bring to its creators) are so active that a collective decision to prohibit new research in this area cannot be reached and successfully implemented. In relation to cyborgization, this argument is even more powerful, since if machines do not take part in voting on this issue, then the "enhanced" ones will be increasingly involved in making relevant decisions.

Transhumanists assume that individuals will choose the effective solution themselves. The option of doing nothing and waiting, hoping that the super-mind itself will decide everything, is also an option. But since the transition to super-intelligence will not be immediate, this approach will not alleviate the difficulties of the transition period. One could consider the experience of establishing control over atomic research, when on the international level, under the auspices of the UN, it was possible to establish an effective and reasonable use of scientific developments in this area. But we must not forget that the transition to cyborgization will most likely be a mass phenomenon, therefore such a global method of control will most likely be inapplicable. We have very recent experience in controlling global mass phenomena we needed to control the spread of COVID-19. In the worst case, humanity will have to apply measures developed to control epidemics and pandemics strict restrictions, lockdowns, special protective equipment.

CONCLUSION

The cyborgization of the human brain will happen, it is already happening in small, small steps. The task not only for philosophers, but for every person who looks hopefully into the future and sees the prospects for the merger of biological and artificial intelligence, is to prepare as best as possible for the impending singularity. It is important to develop approaches at the global level, but the basis of the global approach should be personal understanding.

CONFLICT OF INTERESTS

The author declares no conflicts of interest.

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