A n d r z e j   S k u p i e ń
ORCID: 0000-0003-0432-8444
Jesuit University Ignatianum in Krakow

Ethics in Educational Science Fiction in the Era of Transhumanism and Posthumanism

ABSTRACT

Education is a continuous process of preparing young people to enter adulthood, of equipping them with the tools and knowledge necessary to cope in the future. It is also, in its own way, a process of "human enhancement." This article aims to introduce the philosophical concepts of transhumanism and posthumanism. First, some of the most famous visions of the future from visionaries at the end of the 19th century are presented, with a particular emphasis on those that have come true. In the next part, the very concepts of transhumanism and posthumanism are clarified, along with a presentation of the most important differences. In the last part, the educational challenges posed by proponents of these philosophical movements are indicated, as well as the main ethical problems that arise in the world of futuristic visionaries.

Visions of the future

Can we foresee the future? Is it possible for us to, based on the scarce data on the surrounding, yet constantly changing, world, outline the vision of what will happen in several dozen or several

hundred years? We are not the first people in history for whom immersion in scientific fantasy is an interesting thought experiment. What is more, there have already been people who successfully described their visions of the future or expressed them in another way (e.g. through pictures).

A perfect example of a visionary who managed to go beyond his times was Nikola Tesla. More than a hundred years ago he predicted the creation of something similar to WiFi and mobile phone network. In *New York Times* of 1915 he assumed that soon it would be possible "to send wireless messages around the world" and "to carry and operate one's own devices" (Tesla 1915). Interesting artistic works designing the vision of the future were created in France at the turn of the 19th and 20th centuries. It is particularly worth mentioning a picture drawn in 1920s that shows a café of the future and two people talking to each other without being connected with a wire. They are sending each other images and sounds through devices held in their hands. It is hard to resist the impression that what they are using are smartphones which we use now, in the 21st century.
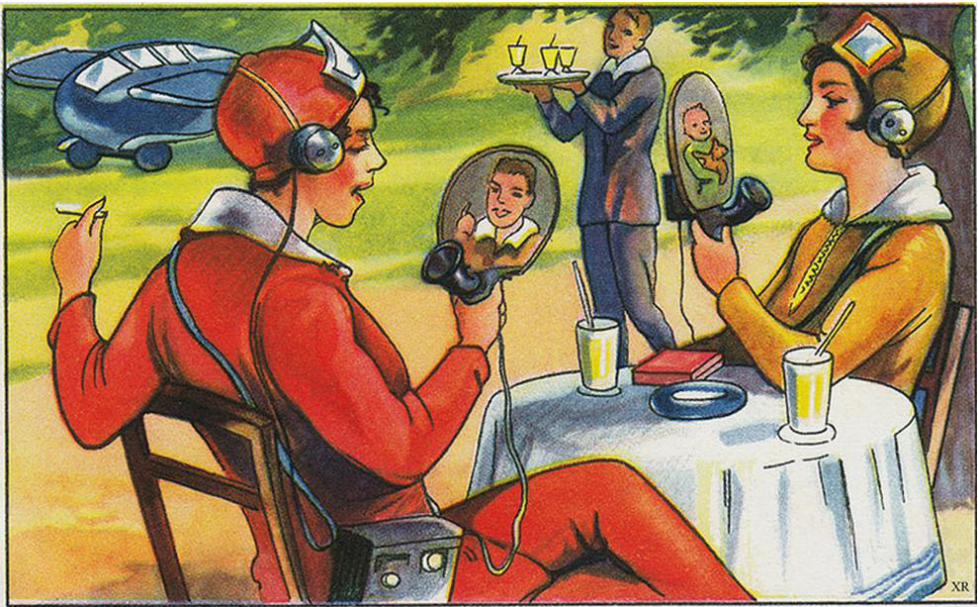

Photo 1: Face-to-face talks according to a vision from 1920s, https://imgur.com/v6oyw09

Visionaries-futurists of those times did not only describe the future of selected aspects of life, but they treated their works in a holistic manner, without omitting what is the most important to us, i.e. education. The artists of the time presented a huge variety of concepts related to this area of life. One of the most interesting visions is presented in the series of postcards of 1910 by Maximilian Villemard entitled "In 2000." A postcard presents a machine connected to students' heads with wires. The teacher puts books into the machine and "sends" knowledge directly to the pupils' brains. Another example of similar educational visions is the American cartoon: "The Jetsons" of 1963 in which the human teacher is replaced with a robot who is to perform the same function.
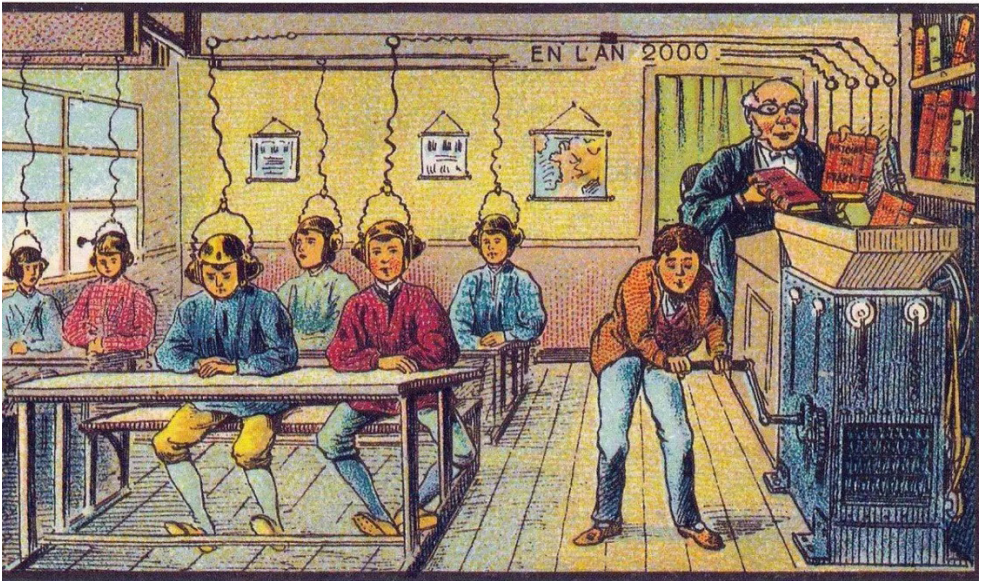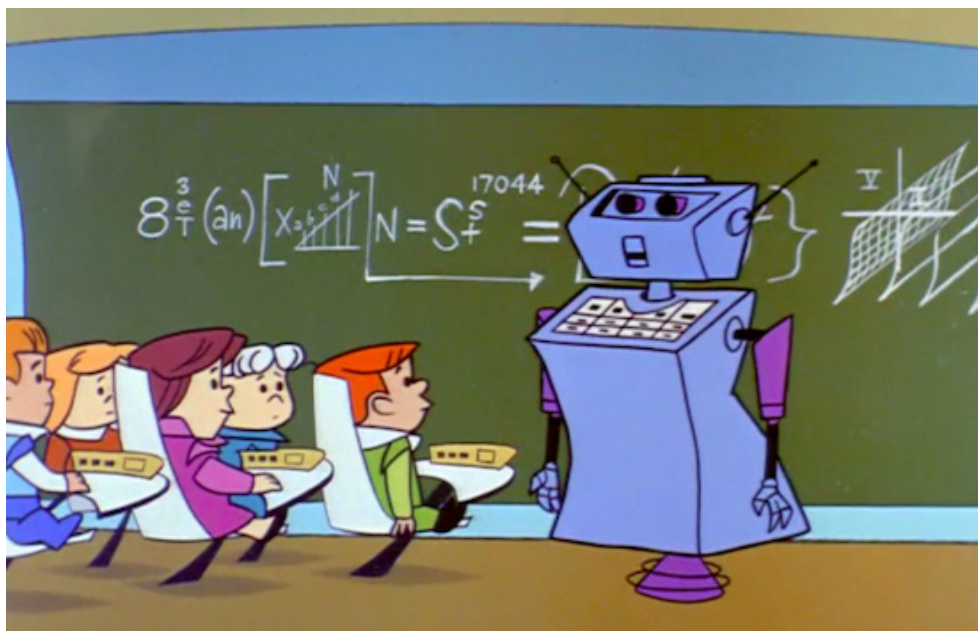

Photo 2: Classroom of the future?, https://theeconomyofmeaning.com/2020/12/20/classrooms-of-the-future/

Photo 3: "The Jetsons" cartoon frame, https://theeconomyofmeaning.com/2020/12/20/classrooms-of-the-future/

From the perspective of time, we can conclude that all those concepts and visions could be the first shy human steps towards further futurist philosophical trends, such as transhumanism and posthumanism, which will be discussed in the next part of the article. Also, the end of the 19th century is when Friedrich Nietzsche outlined his philosophical concept of a "superhuman" (German: *Übermensch*) which, however, focuses on the need to revise the previous system of values rather than on interfering with the human body to create a transhuman and, finally, a posthuman.

Transhumanism and posthumanism

Nikolai Fyodorov (1829–1903), a Russian philosopher who was a member of the Orthodox Church, is considered to be the father of transhumanism. Fyodorov is the author of the concept according to which the dead can be revived and people can live forever (Sykulski 2013: 89–91). The very term "transhumanism" was created by an English biologist, Julian Huxley, who wrote an essay under this title

in 1957 in which he announced the appearance of a new "cosmic consciousness" that will make it possible for people to take responsibility for the evolution and decide about the future of humanity (Huxley 1968: 73).

While commenting on the origin of the idea of transhumanism, Leszek Sykulski points out:

> The history of transhumanism can be divided into two stages. The first one refers to the birth of the philosophy, and the second one includes practical actions aimed at the fulfillment of theoretical assumptions, i.e. development of high technology, as well as achievements in genetic engineering and medicine. […] However, the actual boom for transhumanism has started recently, i.e. more than a dozen years ago, and it is related to, inter alia, rapid development of nanotechnology, genetics and artificial intelligence (Sykulski 2013: 89–91).

According to the definition of the World Transhumanist Association, transhumanism is a philosophy in which technology should be used to overcome a man's biological limitations and to improve his condition. Such overcoming and improvement are perceived as becoming free from diseases and old age, as well as achievement of full happiness and replacement of many organs (ultimately the whole organism) with artificial elements. Transhumanism supports the maximum development and popularization of technology so that the above-mentioned overcoming of limitations and improvement of a human being can occur as soon as possible (Bishop 2010: 700). Transhumanists see human nature as an imperfect project which we can learn to process in a desired manner. The current human condition does not have to be the final point of the evolution. Transhumanists hope that, due to the responsible use of science, technology and other resources, we will finally become posthumans, i.e. creatures who will have much more possibilities than we have now (Bostrom 2005: 3–14). Transhumanism is rooted in humanist thinking, but it is much more radical as not only does it promote traditional ways of improving human nature, such as education and improvement of culture, but it also supports direct implementation of medicine and technology in order to overcome some of the basic human biological limitations.

Transhumanism and posthumanism do not differ in terms of the views on human existence in the biological body and on the digital domain. The biggest difference between those two philosophical

concepts is the stage of transforming both human body and social awareness and, in consequence, the acceptance of changes suggested by the activists of those movements. The accurate differentiation of the target "products" of both philosophical concepts was offered by Mike McNamee and Steven Edwards from the University of Wales in Swansea (McNamee, Edwards 2006: 514): (1) transhuman—a transitory cyborg (the object of the process of dehumanization/cyborgization), (2) posthuman—the ultimate cyborg (the result of the process of dehumanization/cyborgization).

After this cursory presentation of the most important ideas of transhumanism and posthumanism, and after outlining the differences between these two philosophical concepts, I will now focus on our basic topic, i.e. ethics in the educational vision of the future.

While commenting on the philosophical features of posthumanism, Francesca Ferrando notices:

> Posthumanism may be perceived as postexclusivism: the empirical philosophy of mediation that offers reconciliation of existence in its broadest meanings. Posthumanism does not use any frontal dualism or antithesis, demystifying any ontological polarization through postmodern practice of deconstruction (Ferrando 2013: 26–32).

I think such an approach resembles monism. The Cartesian dualistic concept of perceiving the world (*res cogitans* versus *res extensa*) was a departure from the scholastic concept of a human soul and from the Aristotelian principle of hylomorphism. The division into soul and body does not seem to be valid in transhumanism. Exclusivism, however, provides a form of thinking about the space in which we move, announcing a sphere unavailable to most people. Thus, postexclusivism would indicate a step further, and it would separate the sphere that is even more exclusive than the one already separated by exclusivism. This means a huge narrowing of the possibility to become a posthuman. Such a possibility would only refer to the elites who simply can afford the procedure of changing their nature. Theoretically, both transhumanism and posthumanism assume the common availability of their solutions, promising improvement to each person, but in practice such procedures would be extremely expensive and thus available to few people. In this way, we have to face imagining the world with many "species" of people whose manner and degree of transformation would be extremely varied. Assignment of

exclusivity to transhumanism, and postexclusivity to posthumanism, gives a logical meaning to the gradation of availability and progression of changes suggested by the supporters of both philosophical concepts. Through this vision, the field of ethics is extended to other species. Inevitably, questions and possible threats appear, as transhumanists aim at even greater expansion of hybrid human subjects. Ethical issues concerning the interaction of hybrids (cyborgs) with people born in a traditional way and have no modifications in their bodies remain unknown to transhumanists (Kriman 2019: 132–147).

Obviously, these are just selected concepts of the vision of a human being in the future. The considerations concerning the possibility of transferring human thoughts or awareness into the digital world are unlimited. Also, there is a certain risk resulting from a thoughtless approach to AI (artificial intelligence), especially in terms of using it in everyday life. A lot of people, especially young ones, get used to continuous activity in computer networks in which they enter into interactions with AI algorithms more frequently than with living human beings. Thus, it is difficult to say which problems are more important: the ones that require the improvement of technologies or those which refer to the condition of a contemporary man (Osiński 2021: 71–71).

Combining the transfer of thoughts or consciousness with the well-known hologram technique may transfer the direction of considerations from the sphere focused on purely biological aspects of human life to the idea according to which our thoughts or consciousness may survive without our body. Also, this transfer opens the path to considering the possible copying of the mind that would enable us to multiply ourselves, and the potential of cooperation would eliminate the conflict among the copies of the same mind (Sotala 2012: 275–291).

Some authors, such as David Roden, claim that if the policy of a posthuman is anthropologically unlimited, each ethical evaluation of the posthuman must result from his historical appearance. In Roden's opinion, if we want to follow a serious posthumanistic ethics, we have to create a posthuman or become a posthuman (Roden 2017: 99–119).

Trans- and posthumanism, and education of the future

While analyzing numerous reports of the Organization for Economic Co-operation and Development (OECD), we may come to the conclusion that, unfortunately, schools prepare students to live in the world which no longer exists. Within the last decades we can notice that learning has become much more effective in some countries due to the application of technology in educational processes. Those countries have invested significant resources (not only financial ones) in the extension of digital access, and their reforms of education were accompanied by a clear new vision of the target model. The implementation of new ways of teaching and continuous education of teachers have optimized technological opportunities in countries such as Estonia, Finland or South Korea. The rest of the world had to face similar changes within only a few months after the outbreak of the COVID-19 pandemic. As we can see from the perspective of time, most of the countries which delayed the implementation of technology before the pandemic, had to struggle with such a difficult undertaking. The results were different depending on the country. We can notice that digitalization, i.e. using new algorithms and artificial intelligence, may replace human decisions, allocating the resources in the most efficient manner in order to, for example, satisfy students' individual needs. Also, during the pandemic, solutions were implemented that made it possible for students to connect with other students and teachers through the internet. Unfortunately, apart from the benefits of online learning, there were also many challenges, as there were certain aspects of the remote educational process that caused undesired effects or even damage to students and teachers.

Nowadays, students need more social and emotional support than ever. Technology cannot replace counselling or mentorship which support students throughout the whole educational process. The lack of proper control over technology may threaten young people's wellbeing. Examples include students who thoughtlessly use video games or contents available on various internet platforms, or those who are persecuted in social media. Technology may save time spent by teachers on transferring basic knowledge and performing administrative tasks. It may also enable teachers to spend more time on correcting students' behavior or supporting them in an active manner,

especially in non-typical or hard situations in life. However, technology cannot replace their sense of being a human/teacher/mentor to whom students may come if they feel lost or uncertain. In general, education is to lead a young person from their immature form into the mature one. This process occurs within many different aspects, including the mental one, but also in the area of physical fitness. The meaning of education which is known to us is not only based on considering school tasks, but also on questioning and discussing the components of so-called apparatus of critical thinking. This requires coexistence of the relationships of both sides in the process: teacher--student (vertical communication) and student-student (horizontal communication), because we should approach the learning process in a cross-sectional manner.

From this perspective, education may also be treated as a formal process of improving people. It is education which (also in the transhumanist concept) changes a man (through technology). Thus, following the transhumanist philosophy is an element that constitutes the possibility to create the concept of the world both without education and in a radically changed form about which we have not been thinking about.

A vision of such a world may reveal itself to us in two forms. The first one is the world without conventional education, i.e. education which we know and which we have been shaping for ages. Social needs, which constitute the fundamental connection between a unit and other units in the society, should be redefined or replaced in the utopian vision of transhumanists. People need other people in order to satisfy their non-material needs, such as education, friendship or culture. Those typically human (if we can put it this way) features require that we are social beings. In this way, social needs are an inseparable part of human nature (Steinhoff 2014: 1–16). So, is presenting other visions of future teaching necessarily connected with redefining human nature? According to transhumanists, this is a key element in the stage of dehumanizing a man in order to achieve the required results.

Separation of a young person from educational processes which we have worked out throughout the ages, is the only way to change the consciousness of the target society through total control over the process of transhumanist vision of human improvement. Not only is

this element crucial in the changes to the human body or its parts, but it is to change our mentality and way of perceiving the reality.

Well-developed countries already take first shy steps in this direction. For example, in one of the Japanese schools, a teacher-robot named "Saya" is employed. He transfers knowledge to the students, but he is unable to support them in the emotional sphere. As technology is developing, transhumanists believe that this will also change soon. However, the relationship between robots and children may go beyond human control. While performing the tasks to which they were programmed, robots may dominate over children, classifying all behaviors only within the frames of the programmed norms from which there can be no deflections. Instead of introducing the atmosphere of openness, creativity and trust, this could introduce misunderstanding, emotional pain and fear. This is particularly important because, as a rule, children of the 21st century trust technology and, in a blind manner, follow the orders or instructions of artificial intelligence. We all know the cases of computer games that lead to suicide or self-harm. The lack of control over technology, using it consciously for wrong purposes, or a computer virus/cyberattack may become serious risks to health and life of many students.

Another vision is the world without education. Transhumanists believe that education is a key element, but for posthumanists the process of gaining knowledge does not have to occur within the frames of the conventional system of education. The world without schools and teachers, in which we gain knowledge through software loaded into our minds and regular updates that include the whole humanity, is only possible when we overcome the existing technological barriers, such as going from nanotechnology, which we use today, to picotechnology, femtotechnology, or even attotechnology.[1] For the time being, all those technological possibilities remain within the sphere of science-fiction. Although the world of science is still light years from fulfilling the dreams of posthumanists, the activists' imagination already explores technological possibilities of using

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1 Systems of measurement in technology that specify the materials which, at least in one dimension, have the size of 1–100 nm (nanotechnology 10^{-9}), 1–100 pm (picotechnology 10^{-12}), 1–100 fm (femtotechnology 10^{-15}) and 1–100 am (attotechnology 10^{-18}).

chips, thought and consciousness transfers, as well as programming within our metal sphere.

The newest achievements of science include the "neuromorphic" equipment which is being prepared to replace the chemical-biological operation of a human brain. The pioneer Brainternet project, presented a few years ago, tries to send brainwaves to the internet, which means that a human brain could be transformed into an "internet of things" (IoT) device in www. The internet of things makes it possible to connect any device (e.g. coffee machine, washing machine, garage gate, or alarm) to the internet. Brainternet means new opportunities in the interface systems (contact line) on the border of brain-computer which make it possible to read brain signals in a device with the use of the technique known as electroencephalography (EEG). The objective of the project is enabling programming which is advanced enough to ensure interactivity and to send electric signals both ways, i.e. back from the device into the human brain (Wits University 2017). This process is not yet possible to attain because a human brain is very different from the computer processor (Andrews 2017), and the process of data conversion is still incompatible. While digital computers use binary signals consisting of digits 1 and 0, our human brains send signals consisting of several billion bioelectrochemical transmissions. If such a conversion becomes possible, we will no longer see university teachers queuing for the photocopier because students will be able to download data in a virtual manner (provided that the profession of a teacher will still exist).

Forming ethical and moral principles of trans- and post-humans

Transhumanist and posthumanist opinions make it possible for the scientists dealing with education to focus on the ethical sphere of introducing changes and on the moral evaluation of the target product, i.e. the presented visions of the world. Research and educational practices aiming at dehumanization of a man are always structurally connected with presenting the surrounding world as the product of spoiled, wasted or rotten society. Such dehumanization occurs through questioning the output of the *homo sapiens* species and rejecting the values which we all share. Traditional understanding of a "human" must be extended or replaced as another step towards

the development of reasonable society (Gladden 2016: 90). This also means saying "no" to "mother nature" and natural selection which our species has been undergoing. In this context, education not only includes the processes that secure the position of a man in future in the current form, but, according to transhumanists and posthumanists, education should include a more radical project which presents research practices in ontological and epistemological relational categories as opposed to the present ones.

Posthumanism (and transhumanism) ask us to abandon ethics rooted in universal humanism and turn towards the immanent and relational ethics. From the posthumanist perspective, we are always settled and embodied in our research practices and in a given context. Since we gain our knowledge together with the world and through developing with the world, all our research efforts are affective (Kruger 2016: 88). Does this mean that they are also ethical?

Future graduates should understand the advantages and disadvantages of technological innovations. Thus, moral attitudes of students should be shaped properly, as some of them will become teachers who should ensure the safety of applied innovative technologies in the process of improving the system of education. This should be supervised by qualified people with high level of technological knowledge, and with the support of the state as a regulatory body. However, philosophical political sciences may shed some light on ethical implications in all their details, including those which have to be considered by governments of all countries (Casten 2012: 697–698). While doing the research, we have to consider if the relationships we enter into and the relationships made possible through our research—human and non-human, organic and non-organic ones—are durable and develop another person's power to function in the full scope (Kruger 2016: 88). What is worse, the development of superintelligence may be more dangerous to us than we think. It may turn out that the object of our research will be much more intelligent than us, which seems to suggest that even if we knew a lot about such technology, it may ultimately be impossible to understand, which may become an uncontrollable field of research for us, i.e. ordinary people (Müller 2016: 1–8).

Conclusions

In my work I have described the concepts of the world of education from the point of view of transhumanists and posthumanists, and I have presented the main ethical problems resulting from the analysis of the visions suggested by the activists of those philosophical concepts. It is impossible to predict how the world will change within the next several decades. Thus, teachers should try to equip their students with highly universal tools and skills that will make it possible for them to live in the world of inevitable changes. The balance point moves from sectional, temporal limitations of the model of education into the integrated model based on competences and cooperation that will make it possible for students to master digital tools and personalize educational experiences according to their needs and interests. Students must prepare for living in the world which their current teachers cannot even imagine. This kind of a change is systemic and requires taking up new roles by teachers, parents, politicians, and especially by students. Such roles have to better match the requirements of the changing world. It seems that the key element is the proper attitude of a young person who should be prepared for critical thinking and self-aware, and should have a strong moral backbone so that he/she can adequately interpret the surrounding reality and make good decisions.

Irrespective of the path we want to follow, it should be possible to withdraw our decision. If placing artificial intelligence under control turns out to bring undesired effects, there should be a "back" button to withdraw the project. Unfortunately, not all currently discussed paths have such a security function (Yampolskiy 2020). The risk of irreversibility of changes may lead us to such a state of humanity (or anti-humanity) that, instead of cyborgs (half-people, half-gods), we will become ordinary mutants regretting our decision to "improve a human being." After all, how what is imperfect and accidental may generate what is perfect and radically improved (Duchliński 2018: 281–300)?

Each utopian vision of the world only includes an element of realism, and it is also the case with the world suggested by transhumanists and posthumanists. If the implementation of any aspect of superintelligence appears on the horizon, sooner or later it will

probably be carried out and developed (Bostrom 2003: 12–17). However, the perspective of overcoming numerous technological barriers still remains (and will remain for a long time) science-fiction mentioned in the title of this article.

Bibliography

Bishop J.P. (2010). "Transhumanism, Metaphysics, and the Posthuman God," *Journal of Medicine & Philosophy*, vol. 35, no. 6, pp. 700–720.

Bostrom N. (2003). "Ethical Issues in Advanced Artificial Intelligence," [in:] I. Smith, W. Wallach, G.E. Lasker (eds.), *Cognitive, Emotive and Ethical Aspects of Decision Making in Humans and in Artificial Intelligence*, vol. 2, Tecumseh (ON): International Institute of Advanced Studies in Systems Research and Cybernetics, pp. 12–17.

Bostrom N. (2005). "Transhumanist Values," *Journal of Philosophical Research*, vol. 30 (Supplement), pp. 3–14.

Casten J.D. (2012). *Cybernetic Revelation: Deconstructing Artificial Intelligence*, Eugene (OR): Post Egoism Media, pp. 697–698.

Duchliński P. (2018). "Transhumanistyczny obraz świata. Próba spojrzenia na całość," [in:] P. Duchliński, G. Hołub (eds.), *Ulepszanie człowieka. Perspektywa filozoficzna*, Kraków: Wydawnictwo Naukowe Akademii Ignatianum w Krakowie, pp. 281–300.

Ferrando F. (2013). "Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations," *An International Journal in Philosophy, Religion, Politics and the Arts*, vol. 8, no. 2, pp. 26–32.

Gladden M.E. (2016). "A Typology of Posthumanism: A Framework for Differentiating Analytic, Synthetic, Theoretical, and Practical Posthumanisms," [in:] M.E. Gladden, *Sapient Circuits and Digitalized Flesh: The Organization as Locus of Technological Posthumanization*, Indianapolis (IN): Defragmenter Media, pp. 31–91.

Huxley J. (1968). "Transhumanism," *Journal of Humanistic Psychology*, vol. 8, no. 1, pp. 73–76.

Kriman A.I. (2019). "The Idea of the Posthuman: A Comparative Analysis of Transhumanism and Posthumanism," *Russian Journal of Philosophical Sciences = Filosofskie nauki*, vol. 62, no. 4, pp. 132–147.

Kruger F. (2016). "Posthumanism and Educational Research for Sustainable Futures," *Journal of Education*, no. 65, pp. 77–93.

McNamee M.J., Edwards S.D. (2006). "Transhumanism, Medical Technology and Slippery Slopes," *Journal of Medical Ethics*, vol. 32, no. 9, pp. 513–518.

Müller V.C. (2016). "Editorial: Risks of Artificial Intelligence," [in:] V.C. Müller (ed.), *Risks of General Intelligence*, London: CRC Press – Chapman & Hall, pp. 1–8.

Osiński G. (2021). "Theological and Ethical Aspects of Mind Transfer in Transhumanism," *Scientia et Fides*, vol. 9, no. 1, pp. 149–176.

Roden D. (2017). "On Reason and Spectral Machines: Robert Brandom and Bounded Posthumanism," [in:] R. Braidotti, R. Dolphijn (eds.), *Philosophy After Nature*, London: Rowman & Littlefield, pp. 99–119.

Sotala K. (2012). "Advantages of Artificial Intelligences, Uploads, and Digital Minds," *International Journal of Machine Consciousness*, vol. 4, no. 01, pp. 275–291.

Steinhoff J. (2014). "Transhumanism and Marxism: Philosophical Connections," *Journal of Evolution and Technology*, vol. 24, no. 2, pp. 1–16.

Sykulski L. (2013). "Rosyjski transhumanizm: geneza i współczesność," *Ante Portas. Studia nad Bezpieczeństwem*, no. 2, pp. 89–101.

Internet sources

Andrews R. (2017). "Scientists Connect a Human Brain to the Internet for the First Time," https://www.iflscience.com/scientists-connect-human-brain-internet-first-time-43726 [access: 18.03.2022].

Tesla N. (1915). "Nikola Tesla Sees a Wireless Vision," https://teslaresearch.jimdofree.com/articles-interviews/nikola-tesla-sees-a-wireless-vision-new-york-times-sunday-october-3-1915/ [access: 5.03.2022].

Yampolskiy R. (2020). "On Controllability of Artificial Intelligence," https://arxiv.org/ftp/arxiv/papers/2008/2008.04071.pdf [access: 26.03.2022].

Wits University (2017). "Biomedical Engineers Connecting a Human Brain to the Internet in Real Time," *Medical Press*, 14.09.2017, https://medicalxpress.com/news/2017-09-biomedical-human-brain-internet-real.html [access: 18.03.2022].

ADDRESS FOR CORRESPONDENCE

Andrzej Skupień
Jesuit University Ignatianum in Krakow
Institute of Philosophy
e-mail: andrzej.skupien@interia.eu