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We Do Not Like It:
A Likert-Type Scale Survey on the Attitudes of a Young Population towards the Transhumanistic Theory of Education

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1. Introduction

It is assumed that the term transhumanism was coined in 1957 by Julian Huxley, a British researcher and the first director general of UNESCO (Wolbring, 2008). It nowadays refers to an intellectual movement that calls for the need to fundamentally improve the human condition, including overcoming the process of ageing, eliminating illnesses, physical and mental disabilities, and mental dysfunctions, through the use, as well as creation and development, of new technologies (Bostrom, 2003). According to transhumanists, with new technologies, mankind will soon be able to achieve eternal youth and unlimited control over their desires, emotions and mental states. What is more, they will be able to considerably increase their ability to feel joy and love, be impressed by art, and eliminate negative feelings such as hate or anger. It will thus be a completely new man, one that we are totally unfamiliar with (Bostrom, 2003). In a sense, the origins of these considerations go back to the concepts of Nietzsche, who claimed that man should develop by overcoming their humanity, thus by pursuing the state of an overhuman (Sorgner, 2008). Indeed, that is how human progress is perceived by transhumanists. They indicate that humans should develop themselves in a way that will make it possible for them to get rid of any biological limitations; they should become a cyborg (the hybrid of nature and technology), which is better than a human being (Klichowski, 2014; Palese, 2012). These philosophies, however, are not fully convergent. This is because transhumanists want to free humans from the limitations of their body (they want to free the mind from biology), whereas Nietzsche aimed at freeing the body from the limitations of the mind (Blackford, 2010b). Nietzsche-related roots of transhumanism thus refer exclusively to the idea of man-after-man (Newman, 2012).

An individual who overcomes its humanity via various technologies is called a transhuman by transhumanists, i.e. a transitory man who is no longer human due to the influence of technology, and at the same time who is not a man-after-man yet (Sorgner, 2008; More, 2013). Transhumanists claim that we (contemporary people) are already transhumans (Bishop, 2010; Dvorsky, 2008), because our bodies and minds are enhanced with technologies to some extent (Bostrom, 2003). What is interesting is that according to transhumanists, there is no ethical difference between the processes of enhancement and education (Blackford, 2010a). There is, however, a difference between them

with regard to their effectiveness. As believed by transhumanists, technologies are ahead of education in this context (Klichowski, 2015a, 2015c). How is that possible? Education is communicative in nature, which leads to both the unpredictability of its effects and risk of its reversibility. Things are different with technologies. Technological influences are direct (unmediated in any way), and their effects are algorithmically stable (Song, 2006). Transhumanists thus conclude that educational influences whose effectiveness is low should be replaced for good with technological influences that are more effective (Bess, 2010; Greely et al., 2008). The metamorphosis of education should be based on technologies from the NBIC group, i.e.:

↓ N: Nanotechnology. Robots the size of a single atom will be implanted in human organisms to replace traditional methods of teaching. They will create (without the process of learning) new neural connections in the human brain to represent the knowledge and skills desired (Kurzweil, 2013; Wolbring, 2008).

↓ B: Biotechnology. Genetic engineering strategies will improve the human DNA and make it possible to breed humans who will be so excellent that they will not need education (Wolbring, 2008).

↓ IC: Information Technology and Cognitive Science. The human-machine interface will make it possible to upload everything from the computer memory to the human. Any knowledge or skill will thus be uploaded to humans who therefore won't need education (Hof, 2013; Tennison, 2012; Saniotis, 2009; Wolbring, 2008).

The transhumanistic theory of education assumes that traditional forms of education (based on communication acts, such as discussions at school, dialogues with teachers, reading written texts etc.) can be replaced with strictly technological operations, and that future education may be purely based on technological stimulation (for review, see Klichowski, 2015a or 2015c). This, of course, is just some technological speculation, which, due to the lack of understanding of current philosophy of education, refers more to the science fiction vision about "the end of education" (see Klichowski, 2015a), than to its real changes. As observed by Habermas (2003), however, even if this idea of total technicisation of education is only a fantasy, it still shapes some self-knowledge of humans and transforms the way of perceiving the educational reality. The fundamental question is how potential clients of education, i.e. young people whose children will soon enter the system of education, evaluate this theory. Do they perceive the transhumanistic theory of education as an opportunity or as a threat? Will they agree to

transhumanistic education? In order to check this, we asked a representative group of young Poles to evaluate their identification with eight different theories of education, including the transhumanistic theory. The results show that young people are highly sceptical of such fully technology-based theory of education and perceive the educational reality in a more traditional way. It thus seems that in the future they will put up some resistance towards the practical application of the assumptions of the transhumanistic theory of education, although it is difficult to unambiguously state what reasons there are for this.

2. Methods

2.1. Participants

One thousand two hundred and eighty-six (792 women, see Figure 1A) volunteers took part in the survey ($N = 1286$). All participants were aged between 18 and 25 (see Figure 1B). About one third of them came from big cities, one third from small cities and one third from rural areas (see Figure 1C). Half of them were university students (663 people). The others were secondary school students (331 people) or workers who were not learning at any school or university (228 people). Sixty-four people did not declare their occupation (see Figure 1D). The participants were selected to represent the young generation of adults, but they were not allowed to have any connection with education (for example, they were not allowed to be students of pedagogical studies or trainees at educational institutions).
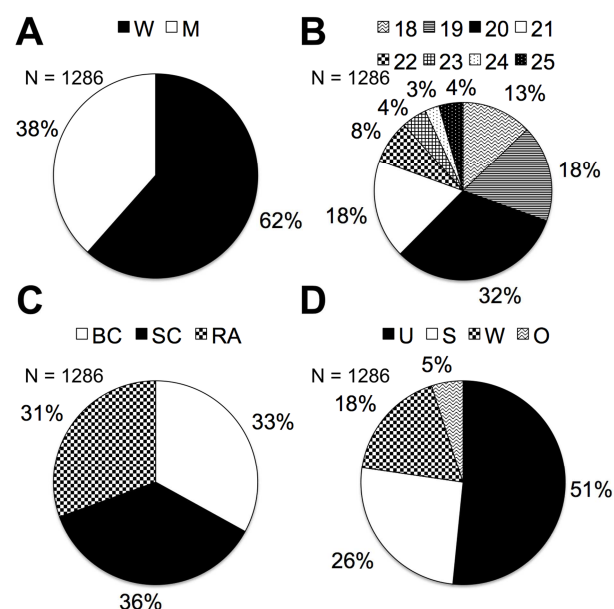

Figure 1. Characteristics of the population studied. (A) Sex: W – woman, M – man. (B) Age. (C) Place of living: BC – big city, SC – small city, RA – rural area. (D) Occupation: U – university student, S – secondary school student, W – non-learner worker, O – other.

2.2. Procedure

The questionnaire was designed in Google Forms (Google LLC, California, U.S.). The link to the questionnaire and the description of the survey was distributed in social portals. Part one of the questionnaire consisted of twenty-four statements that were ordered at random individually for each participant. Each statement was linked to a Likert-type scale. When marking one of the points of the scale, the participant was supposed to state to what extent they agree with a given statement. When analysing the data collected, we assigned point values to each declaration as follows:

- ↓ Strongly agree: 2 points.
- ↓ Somewhat agree: 1 point.
- ↓ Neither agree nor disagree: 0 points.
- ↓ Somewhat disagree: -1 point.
- ↓ Strongly disagree: -2 points.

The statements referred to eight theories of education (three statements per theory). The three statements were prepared specifically to show the most important assumptions of a given theory. Thus, the average number of points for the three statements referring to a given theory showed how a given person evaluates the assumptions of that theory. Apart from the transhumanistic theory studied here, the statements referred to seven basic theories of education (we chose them, as well as formulated statements regarding to them, based on the best Polish textbook on the theory of education: Nowak, 2008). A full list of the theories and statements describing them is presented below, together with the symbols used to describe each theory or sentence.

- ↓ T1: Behaviouristic

    Q1: The teacher should define the ways of rewarding and punishing the student.

    Q2: Education is a key factor that shapes the man's personality.

    Q3: In order to educate someone well, they have to be taught specific patterns of behaviour.

- ↓ T2: Humanistic

    Q1: The man is capable of self-educating by nature.

    Q2: Creating conditions for self-growth and self-cognition should be the main objective of education.

    Q3: The student should be fully entitled to solve their educational problems themselves.

- ↓ T3: Empirical

    Q1: The teacher should experiment with different methods of education.

    Q2: The student should experience real consequences of their own behaviour.

    Q3: A well-educated individual is one that can learn from his or her own mistakes.

- ↓ T4: Normative

    Q1: Educational strategies should be based on the worldview adopted by the teacher.

    Q2: The man is born without a system of values, so they have to be shaped through education.

    Q3: The objectives of education should be derived from the teacher's worldview.

- ↓ T5: Critical

    Q1: School education is based on psychological violence and it limits the development of students' interests.

    Q2: The main objective of education should be to shape openness and tolerance.

    Q3: A well-educated individual is one that can objectively (critically) evaluate reality.

- ↓ T6: Constructivist

    Q1: Entering interactions with other people is the most effective pattern of education.

    Q2: Education should consist in shaping one's motivation to correct one's behaviour on one's own.

    Q3: The teacher should select educational methods taking into account their students' individual traits.

- ↓ T7: Post-structuralistic

    Q1: Education should not consist in instilling top-down rules or norms of behavior.

    Q2: The main objective of education should be to prepare the man to actively participate in social life.

    Q3: A well-educated individual is one upon whom a way of thinking cannot be imposed.

- ↓ T8: Transhumanistic

    Q1: Technological development is the key for educating the contemporary man in an effective way.

    Q2: Traditional methods of education should be replaced with more effective solutions,

such as genetic and technological modifications, and pharmacotherapies.

Q3: It is justified to interfere with the man's nature (biology) in order to achieve a positive change in their personality.

Part two of the questionnaire consisted of questions that characterize the participant (see Figure 1). The subject had to give an answer to each question and evaluate their level of identification with each statement.

3. Results

Figure 2A shows average levels of participants' identification with each of the statements. It turned out that the participants identified themselves with the constructivist and empirical theories most. What is interesting is that in their evaluation they were also very positive about the behaviouristic concept, which is an extremely authoritarian form of education, and the humanistic theory, which, on the other hand, is extremely permissive, or even lenient. What is key here, however, is that the transhumanistic theory of education was the only one that the participants in their majority disagreed with or even evaluated negatively (see Figure 2B). As shown in Figure 2C, the average evaluation for the transhumanistic theory was significantly different from the evaluations of the other theories (the difference between mean = 1.22 point, $t = -44.34$, $p < 0.001$), in the way that the participants rather disagreed with the assumptions of the transhumanistic theory, whereas they rather agreed with those referring to all the other theories. Women identified themselves with the transhumanistic theory of education significantly less than men (the difference between mean = 0.13 point, $F = 6.66$, $p < 0.05$, see Figure 2D). A significantly more negative approach to it was also characteristic of university students as compared to secondary school students (the difference between mean = 0.25 point, $F = 6.01$, $p < 0.001$, *Bonferroni corrected $p < 0.001$*, see Figure 2E).
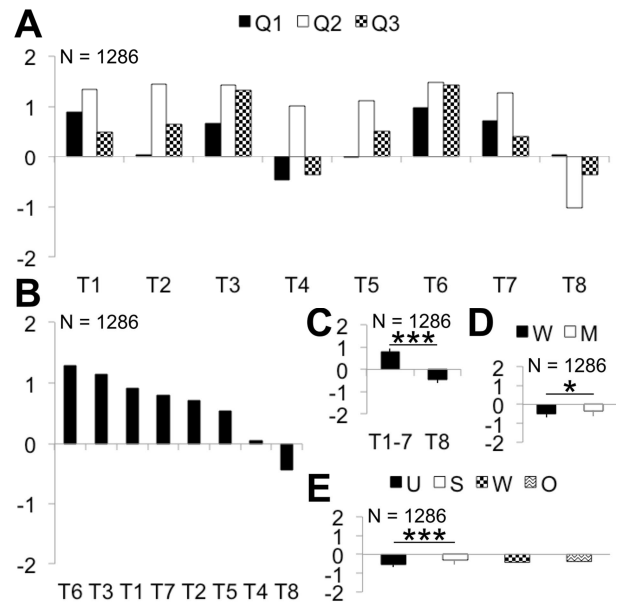

Figure 2. Attitudes of a young population towards the transhumanistic theory of education. (A) Average evaluation of each statement. (B) Average evaluation of each theory from the highest to the lowest marks. (C) A comparison of the average evaluation of the transhumanistic theory and the average evaluation of the other theories. (D) A comparison of the evaluation of the transhumanistic theory among women and men. (E) A comparison of the evaluation of the transhumanistic theory among people of different occupations. T – theory, Q – statement, W – woman, M – man, U – university student, S – secondary school student, W – worker, O – other. *** – $p < 0.001$, * – $p < 0.05$.

4. Discussion

In short, our survey shows that the transhumanistic theory of education is not an attractive vision of education for Poland's young generation. The participants of the study disagree with the assumptions of this theory, while they rather agree with the postulates of other concepts of education, even such authoritative ones as behaviourism or permissive ones as the humanistic theory of education. Women and university students turned out to be particularly critical of transhumanistic education; nevertheless, all our participants displayed a profound lack of trust in the transhumanistic theory of education.

This attitude is surprising because it might seem that the young generation is rather positive towards enhancing education with new technologies (e.g. Klichowski, 2017), and, to paraphrase the words of Nietzsche, they perceive non-technological education as "human, all too human". It thus seems that their critical approach may rather be caused by some reservations that are ethical in nature. According to Fukuyama (2004) transhumanism may cause such reservations, because it promotes in a sense activities aimed at changing human nature and each attempt at

changing the natural state of the human seems unethical to many young people (at least initially).

However, young people may be even more concerned about the transhumanistic vision of education because such education may contribute to an escalation of social inequalities. According to Wilson (2007), technological and educational activities aimed at creating a cyborg, as well as a man-after-man, may cause concern about their exclusive availability for affluent people of high social status. In short, they may be a source of concern about the transhumanistic theory of education being a concept of elite education, and the process of transhumanistic evolution intensifying the already existing social inequalities. Our previous analyses (Klichowski & Marciniak, 2013) suggest that transhumanistic technologies will be consumer items/services of sorts, and only the most affluent consumers will have access to the full spectrum of these goods. Others will have access only to basic versions of these technologies and means, and maybe even just to their cheap equivalents. The access to transhumanistic education may thus be a function of social inequalities, and transhumanistic technologies themselves may be rationed in a sense. Without doubt, all this may cause concern about the participation of transhumanism in the development and consolidation of social divisions, and the creation of new forms of social exclusion or a new ruling elite: a cyborg caste.

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Still, since university students, who are more knowledgeable and have more academic experience, were more critical of transhumanism than secondary school students, they may be concerned about the fact that there is actually no scientific proof of the possibilities of technologies that are radical and yet fundamental for this vision, such as, for example the transfer of knowledge or ways of behaviour directly to the human brain. In this context, transhumanists share the assumption that it is possible to pump knowledge into the neurophysiological structures of the human brain through some non-biological systems. The idea of such extra sensory perception is, however, only a philosophical one, and it is not grounded on any scientific data. This state of affairs also applies to many other educational ideas of transhumanism (see Klichowski, 2015a and 2015b).

All in all, the survey shows that future beneficiaries of education do not like the transhumanistic theory of education (at least those from Poland, although it seems that this should also apply to other EU countries). Our findings, however, do not tell us anything about why they do not like it. In order to decide if it is caused by ethical, technological or rather social reasons, it is necessary to conduct further large population-based and international studies.

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