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DIGITAL DEMENTIA OR THE EXPLOSION OF INTELLIGENCE? ARTIFICIAL INTELLIGENCE, COMPUTER SETS AND NATURAL MAN

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::ABSTRACT

Computers and computer sets is a new tool that is rapidly developing into a complex product, a new means of mass communication. Therefore, it can be described and scientifically examined as a technology, a tool and a medium of communication. So the question is: which of the existing scientific theory allows us to most accurately and fully describe the phenomenon of the digital technology and its relations with people? The first part of the paper is devoted to scientific ignorance concerning the relation people – the Internet, so generally speaking, all the issues about which we do not know that we do not know. The second part is an attempt of introducing a conceptual apparatus, which gives a chance of proper and possibly full understanding of the essence and scope of the influence of contemporary digital technique on human beings.

Key words: Artificial intelligence, cognitive science, media determinism, transhumanism.

POVZETEK

DIGITALNA DEMENCA ALI EKSPLOZIJA INTELIGENCE?
UMETNA INTELIGENCA, RAČUNALNIŠKI NABORI IN NARAVNI ČLOVEK

Računalniki in računalniški sistemi so novo orodje, ki se naglo razvijajo v kompleksen produkt, novo sredstvo množične komunikacije. Zato ga lahko opišemo in znanstveno raziščemo kot tehnologijo, kot orodje in sredstvo komunikacije. Vprašanje je torej: katera od obstoječih znanstvenih teorij nam omogoča najbolj natančen in najpopolnejši opis pojava digitalne tehnologije in njenega odnosa do ljudi? Prvi del prispevka je posvečen znanstveni ignoranci do razmerja ljudje--medmrežje, ali splošno rečeno do vseh zadev, za katere ne vemo, da o njih nič ne vemo. Drugi del prinaša poskus uvedbe konceptualnega aparata, ki ponuja možnost ustreznega in v možnosti celostnega razumevanja bistva in obsega vpliva sodobne digitalne tehnika na ljudi.

Ključne beside: umetna inteligenca, kognitivna znanost, medijski determinizem, transhumanizem

::1. INTRODUCTION

The development of so called artificial intelligence has been evoking extreme attitudes and opinions since the very beginning. Though the notion of artificial intelligence is rather fuzzy – it is hard to asses which of the products of contemporary digital technique can be described with this notion understood in literary sense and which of them should be called like this only if it is used as a bold metaphor – common (likewise scientific in some cases) awareness has been dominated by a conviction that what we call artificial intelligence can be equaled with natural intelligence of humans or even become greater in the near future.

It would be possible to call this problem purely academic, if not for the fact that what we call (reasonably or not) artificial intelligence poses, these days, an unquestionable component of our environment and is undoubtedly typical for a current stage of the development of human civilization.

For last decades of the former century, cognitive science being a scientific discipline trying to investigate cognitive phenomena and processes in a possibly universal, versatile and exhaustive way (regardless if the agent of those phenomena is an animal, a machine or a human being) was strongly engaged in the problem of "does the computer think?" Even thought the controversy around quality/inequality of natural and artificial intellect has never been obviated[1], it does not remain so intensive today as it used to be in the period of bringing cognitive science to life. Furthermore intellectual movements (I hesitated before using the term of "philosophical branch" here) expressing no doubts about the real existence of artificial intelligence are currently being created. A significant part of this paper will be devoted to transhumanism which is one of the examples of such currents. Nevertheless I have to clearly state that further analysis concerning transhumanism is of an instrumental character. My ultimate aim is to show false awareness of people living at the beginning of XXI century and what is more transhumanism seems to remain a great expression of this. What I mean is mostly the awareness of contemporary humanities creators, but also a false common awareness, being the result of the aforementioned one.

If we were to perceive transhumanism as a philosophical branch, it would be – in my opinion – the branch of philosophy of technique. The specificity of that branch, however, concerns basically not only a current relation human being - technique, but also the future (the nearest and very distant) of this

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[1]Thesis about the actual capacity of machines programmed to think has been neither ultimately proved, nor falsified (whatever would be the understanding of those two terms)

relation. Not to mention the problem of doubtful (for some) scientific status of futurology it has to be noticed that present digital technique filling almost every area of human activity, place us in the face of many non-futuristic practical and theoretical problems demanding an urgent solution.

Both, practical and theoretical problems are mostly associated with an unprecedented speed of development of digital technology and universality of its use. Because of that reason any kind of traditional reflection, neither scientific nor humanistic, is able to follow the aforementioned development.

Purely practical problems may be reduced to one question: What are the benefits of general informatization and is the balance of advantages and disadvantages really as positive as it seems. In other words, is the progressive digitalization able to (as many think) solve all contemporary problems including those being the result of digital technology itself.

Theoretical problems are strongly associated with the fact that the most complex product of digital technology – the Internet[2] – is at the same time the means of mass communication and a significant part of mass culture. Researchers of the Internet are derived either from the circle of popular culture researchers or from the area of sociology or psychology of communication, alternatively from the area of philosophy of technology (in my view, however, very rarely) and relatively least frequently (what should surprise us the most) the Internet is the subject of interest of contemporary epistemologists.

Regardless of how mistaken I was in estimating the "frequency of interest" presented here, one must admit that all the areas mentioned here operate totally different terminology and conceptual framework. Theoretically speaking there is such a branch of knowledge, namely cognitive science, that is predestined to investigate the relation human being - the Internet, however it is so dominated with, so called, computational theory of mind (no matter of its relevance and the degree of genuineness[3]) that it is completely ineligible for describing that relation. These, more or less, are the reasons why we are unable to predict not only social effects of further development of digital technology (including political) but also those connected with civilization. This kind of task was set by "transhumanism". It could be because of that reason, why this movement arouse my sympathy and interest, even though I do not share the views of the majority of transhumanists. As I do not agree with the majority of detailed thesis or statements followed by transhumanists, the plan of this paper is as follows:

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[2] The rules of orthography are as follows: internet written with small letters means any computer network, whereas Internet written with capital letters is integrated worldwide network.

[3] The aforementioned problem will appear further in this paper.

The first part (points 2.1. and 2.2.) will be devoted to scientific ignorance concerning the relation people – the Internet, so generally speaking, all the issues about which we do not know that we do not know. I will try to answer the question about the reasons of unawareness of scientific ignorance.

The second part (points 3 and 4) is an attempt of introducing (and convince to) a conceptual apparatus, which (in my view) gives a chance of proper and possibly full understanding of the essence and scope of the influence of contemporary digital technique on human beings.

::2. WHAT DON'T WE KNOW ABOUT HUMAN THINKING

::2. 1. Worries of cognitive science

Despite the long development of scientific psychology we still do not know what is the essence of what we call "thinking", "mind" and "consciousness". Although it poses a very old philosophical question, cognitive science springing in the last century raised it again but received no response – what was even forgotten by cognitivists themselves. It was expected, however, that we would discover the secrets of thinking and nature of mind thanks to cognitive science, and particularly thanks to such computer programmers that would be able to face the tasks that human mind constantly meets. If that happens – dreamt cognitivists and creators of artificial intelligence – we would have probably not material, but surely functional counterpart of artificial intelligence (Turing, 1950, Boden, 1977, Haugeland, 1989).

Scientific environment could be divided into two groups at that time. The first groupmon (Simon, 1980, Dennett, 1985, Minsky, 1985) predicted that it would happen within a couple of decades or so whereas the second one, skeptics (Dreyfus, 1979, Searle, 1984), shared the view that it would never happen. Even though a burning question remained unanswered after all, cognitive science gave up the attempts of digital modeling of mental processes for computer simulation of neural network (Graubard, 1988), what was supposed to lead to the creation of functional counterparts of human brains. Although computers equipped with proper programs, may successfully replace people in some cognitive functions, full simulation as well as universal artificial intelligence comparable with the one of human being, is still only a plan and a drifting away goal. On the other hand, though, certain cognitive actions are performed by machines in much faster and more reliable way.

The basic question – which somehow cannot be asked by cognitive science, neurocognitive science or the theory of artificial intelligence – comes to the following question: Is the creation of universal and independent artificial

intelligence a real purpose of sciences, or maybe it is only about the creation of tools supporting human mental functions (machines and facilities) and making them perfect? In other words creation of such machines and facilities, which support a human being on the same basis as physical functions (including locomotor and vegetative) are currently supported by various machines. Levers, hoists, cranes, knives, bows, spears, wheels, boats, bikes, cars, rockets and many others, regardless their usefulness and complexity, are and has always been perceived as such tools.

Computers, on the other hand, seem to be sovereign and autonomous agents or artificial individuals – concerning both common and scientific awareness.

If we confine to the second purpose (and presuppose that a computer is only a complex tool) then we will easily notice, that neither cognitive science nor artificial intelligence are something vitally new. For a long time books, abacus, mathematical notation support us in counting, whereas glasses, telescopes, microscopes, sonar and night vision devices help us in our perceptual functions (Bobryk, 1989, 2010).

The real puzzle of modern sciences of man is the question why the products of digital technique arouse not only great but also fantastical hopes that cannot be compared with anything what had been created by humans before[4]. Politicians, some educators and other "engineers of human soul" try to convince us that the slogan "computer in every school and every office" is a reliable and easy way of fulfilling happiness of mankind. Inventors race in creating new applications and improving work of information processing equipment. Despite the fact that "information" remains to be a vague and at least polysemous notion, the "information processing" itself is conceived the synonymy of "thinking" by everyone (not only cognitivists).

Transhumanists (More & Vita-More, 2013) are seriously worried about social and ethical (and probably political) rights of robots and computers and prepare themselves and us for the era of the advent of artificial intellects infinitely surpassing the greatest people or even the groups of them in terms of mind.

::2. 2. Hopes of transhumanism

The word "transhumanism" is sometimes used instead of "posthumanism". Substantially, however, one should carefully differentiate between those two terms. On the basis of self-characteristics of transhumanism (e.g. More,

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[4]Those hopes are often based on worries. Belles-lettres is full of stories about rebelled computers and robots presented as devils and/or angels. Popular science literature feeds us with stories about virtual paradise and digital (in the meaning of non-substantial but simulated by cosmic computer) universe.

2013, Hansell & Grassie, 2011), it may be stated that, in many aspects, it remains the opposite of posthumanism. The latter stems from postmodernism (Wolfe, 2013), therefore, was born out of the worldview showing the Enlightenment's limitations and "errors" of thought. Transhumanism, on the other hand, saying with the months of its creators that it "continues to champion the core of the Enlightenment ideas and ideals" (More 2013 : 10), mostly that of rationalism, scientific methods, human rights and their freedom. The aim of transhumanism (according to its founding fathers) is not to deconstruct the notion of rationality including proclamation of the subject death or any kind of radical change in traditional understanding of subjectivity. Transhumanists (similarly to poshumanists and other representatives of social sciences) are aware of the fact that currently the humanity being in its evolution (especially technological) achieved the critical point, which demands thorough rethinking of accepted and established systems of values and practices (including ways if treating the nature and whole extra-human world). In the opinion its creators (More, 2013), transhumanism is something more than philosophy. It is constantly expanding area of research over a present and future evolution of human being and related chances of magnifying human possibilities leading eventually to acceleration of self evolution of humans.

Representatives of trashumanism are the authors of the manifest (More & More 2013: 54-55) in which they postulate careful investigation of an actual condition and prediction of future development of science and technique, which have radically changed environment of human being and have intensively started to change humans themselves. Contemporary, but mostly future "changes of human being" are the spark of interest and in this particular case transhumanists advocate mostly for following the rule named by themselves morphological freedom (Sandberg, 2013). It is supposed to be the right of every person to change their body and mind in the way that lead to the increase of their physical and intellectual possibilities; those would improve heath, lengthen life and guarantee life satisfaction.

Another important matter of reflection (again, similarly to posthumanism) is the problem of future relationships between people and constructed by them (in the future) artificial intelligent creatures and systems (Goertzel, 2013, Rothblatt, 2013) that may in fact – and according to transhumanists undoubtedly will - exceed people in terms of their intelligence. Such visions lead transhumanists to the conviction that sooner or later "explosion of intelligence" will take place. People will construct creatures (machines) smarter than themselves and those will create even greater intellects. It is supposed to happen soon, as in 1999 Hans Moravec (after Tirosh-Samuelson 2011: 23)

predicted that "before the next century finishes, human beings will no longer be the most intelligent or capable type entity on the planet".

Sooner or later artificial intelligence will open the door to people's immortality. It will be possible to copy people's minds perfectly and transfer them to computers. Raymond Kurzweill, another representative of transhumanism, surely as popular as Hans Moravec, was supposed to say (after Tirosh-Samuelson 2011: 42) what soon, as in XXI century "humans will be able to transport the content of their brains, their minds, to a nonbiological entity and thereby achieve immortality". Such eschatological visions are treated very seriously by many (see: Hansel & Grassie, 2011). Discussions within and on the outskirts of transhumanism appy not only to the possibilities for this type of change but also to ethical aspects that may be entailed. Questions that are asked the most frequently refer to the issue whether human rights should be given to artificial intelligence and intelligent robots whereas issues raised slightly less frequently pertain how far we can go in modifications of human body and mind (Hansel & Grassie, 2011).

Let us, however, suspend those aspects of tranhsumanism which pose, in my view, pure (and probably not really original in comparison to what has been created by belles-lettres) scientific fantasy and let us try to evaluate its statements and systems of values in a rational way.

It is hard to disagree with transhumanists on the issue that contemporary human civilization and the culture connected with it (understood mostly as a current lifestyle, intellectual habits and systems of values) are in a turning point and require a full and impartial investigations as well as careful consideration. The question, however, whether a conceptual system of transhumanism (expressed in *Tanshumanist Declaration* and typical publications of this branch) and the way of thinking of its founders give the place for full and well understanding of pitfalls and dangers which exist currently or will appear in the future.

Let us consider then, what are the sources of cognitive limits of transhumanism and how can we characterize them (if they really exist). When speaking of the cognitive limitations of transhumanism I do not mean only, or mostly, technological optimism. Even if we assume that optimistic expectations concerning the impending development of technique are not exaggerated, we should consider if the digitalization of our bodies, minds and social relationships is the way to paradise, or maybe the route to hell (or at least to purgatory) of humanity.

::3. A SOBER GLANCE ON MIND

Let as assume that Marshall McLuhan (1997: 153) was not right when he wrote that: "Every technology contrived and outered by man has the power to numb human awareness during the period of its first interiorization". Next, let us assume that even fantasies of transhumanists are neither a symptom of digital technology bewilderment nor the sign of numbness of contemporary human awareness. Let us even assume that works based on empirical investigations like *Digital Dementia* by Manfred Spitzer (2012) is a hysteria and a real exaggeration. So what is the mind and psyche in terms of theories created long before the "prophecy" of McLuhan and a "lamentation" of Spitzer?

Let us simply agree on a statement (probably hard to question) that mind is something that helps us in thinking or, saying more precisely, that humans need it in order to perform their cognitive functions. A number of "philosophical" questions emerge from such a statement: Is mind and brain the same entity? Is brain a necessary or only sufficient condition of human ability to think? Is the mind a kind of substance different than body, or maybe it is only a certain feature or disposition?

When answering this type of questions, some come up to the conclusion that they do constitute an unsolvable (or at least very difficult to solve) mind-body problem. That problem, however, may be easily solved for the purpose of foregoing considerations, which does not mean that the solution presented here is full. I would rather call it a clear statement of that problem.

I will remind here the solution (a little bit forgotten) presented by Kazimierz Twardowski (1897/1965). It was created n. b. in the spirit of subsequent linguistic theory.

On the occasion of solving a philosophical problem, it is necessary to remember that in every language we can find homonyms which are the words having the same pronunciation but different meaning. Even small children know that a Polish word "*zamek*" can mean the building, a mechanism used for closing e.g. the door and a number of other things. Other homonyms are "balance" or "press". Less obvious homonym is the word "model", and even less obvious the word "function".

Not only did Kazimierz Twardowski (1965: 95-96) notice the homonymy of the last of the aforementioned words, but also he made a very significant, in my view, conclusions:

"Depending on the meaning given to the word 'function', one can be either right or not, when calling functions of mind, functions of brain. The word

is in fact ambiguous. In mathematics a function is either quantitative or special multitude, which according to a certain law is dependent on another [multitude] in such a way that it changes its value according it. The second meaning of the word 'function' is completely different. We say e.g. teaching children is a function of a teacher, excreting bile is a function of a liver. In the second case the word 'function' means a action, performed by a person or a thing. Mental action is unfailingly a function of brain in the first meaning, since some changes taking place in brain, carry changes in mental action. Yet any mental action cannot be called a brain function in the second meaning. There is no evidence that mental action is performed fully and only by brain".

According to Kazimierz Twardowski the sentence: "The mind is the function of the brain" is entirely and undoubtedly true when taken in the quasi-mathematical sense: our mental states have to change when our brain processes change. In this, Twardowski could plausibly be seen to anticipate John Searle (1984: 18) position:

"Mental phenomena, all mental phenomena whether conscious or unconscious, visual or auditory, pains, tickles, itches, thoughts, indeed, all our mental life, are caused by processes going in the brain".

However, according to Twardowski the phrase "The mind is the function of the brain" is not true if we understand the word "function" as a synonym of "action" or "act". A common sense observation stating that the brain isolated from the rest of the body would not be able to perform any kind of mental activities (it would not be able to see, hear, know, think) somehow did not convince the majority of cognitivists. Human brain neither thinks nor feels, as well as a leg neither walks nor jumps. Only a whole human being can think, feel, walk or jump. The same human being performs many other activities. A separate issue is which organs and tissues are necessary for taking a particular action. Nevertheless, it is known on the basis of elementary logic that necessary conditions do not equal with sufficient conditions.

Moreover it has to be stated that various activities and actions, in certain circumstances, can be performed only under the condition that a human being will "supplement" what was given to him by nature. One can see in darkness when using a night vision device, observe microbes by using the microscope, lift weights thanks to a pulley, fly in the aerials and swim under water when using other devices. This also applies to activities considered as "purely mental". None of the normal humans can count a ration of 8799792987704 and

50034994949595 without at least a piece of paper and a pencil (though every adult can count the ratio of 2 and 3) or remember an adequately long text (e.g. multivolume encyclopedia). Thereby the material basis for many activities and actions are functional systems consisting of organic and non-organic parts. The latter are not only implements, prosthesis and machines, but also scripture, abacus, formal languages, and today also computers.

So why the computers seem to be something more than tools? Maybe because there are automations. Automations have been built by people almost since the very beginning of their existence (those are also snares, traps for hunting or an autopilot) but only recently we have been building computers and computer networks which are very complicated and work really fast. When describing human mental acts psychologists differentiate between controlled processes (which are conscious and connected with will) and automatic processes (standard and unconscious in the majority of cases). The latter are fast and dependable, but only in predictable and standard situations.

Admittedly cognitivists and constructors of artificial intelligence have an ambitious theoretical and practical programme of demonstrating that all mental activities are automatic, though – so far – it has not been realized.

::4. WHAT ARE THE SOURCES OF HUMAN FASCINATION WITH DIGITAL TECHNOLOGY AND WHAT ARE ITS POSSIBLE EFFECTS?

We do not know if properly programmed computers or any kind of artificial devices will ever start to think and gain consciousness. We must suspend the ultimate answer for the question: "Can the computer think?"

At the same time we know, that a human being in certain circumstances and situations can stop thinking. We also know that there are some substances because of which the consciousness of a human being is lost or seriously limited.

The urgent task that social sciences and humanities (actually whole mankind) have to face nowadays is not only answering the question: "can a machine think and be conscious"?, but rather solving the problem of: "what should be done if people deprive themselves of full consciousness and limit their thinking intentionally and being aware of this"? How can the situation of mass and frequent activities of this type be averted?

What is the relation between questions asked above and transhumanism together with cognitive sciences?

It seems that this relation is quite strict and obvious. Thinking is quite difficult activity and consciousness provides us sometimes with unpleasant feelings and gloomy reflection. One should not be surprised then that people

sometimes avoid thinking and use substances that bring us into "a different state of consciousness" (such a state is irrational optimism).

Advanced technology exempted us from the must of performing hard physical labor. Advanced digital technology supports us in our mental efforts. Far-reaching physical debility is still more and more visible and therefore easy to diagnose and control. Though mental debility frequently flees our attention. In a nutshell that is all what can be said about possible negative effects of using thinking (or seemingly thinking) machines.

But what about the dangers resulting from transhumanism? As a surrogate of traditional religion it can turn out to be "opium of the people". However, it is much more serious drug, as well as every drug prepared in a hurry and poorly tested. Let us leave, however, parareligious aspects of transhumanism and concentrate on social and pragmatic effects of implementing at least part of its program. What can the plan of improvement and acceleration of human mental abilities mean?

Making decisions and "processing of information" (thinking) in a faster way, remembering more, reaching useful data easier and more efficiently, making knowledge more accessible, informing everyone who is concerned about important events – these are aims and tasks supported by digital technology. What is more some of those tasks can be accomplished by automations. These are not – as far as I am concerned – all, or even the most important, tasks faced by a contemporary human being. Critical and truly creative thinking, agreeing on the hierarchy of values, responsibilities and authorization of thinking and acting subjects are definitely not the tasks that could be entrusted to automation. Nor they can be wholly entrusted to the creators of those machines. Every automation functions as a monad never able to reckon with aims and actions of other monads. Despite the fact that people have never been free from egoism and egocentrism, they learnt (because of the necessity and imperfectly) how to cooperate and how to restrict themselves. In other words, "an improvement of humans" (whatever it could be) cannot be restricted to their individual features. It is necessary to constantly build and improve everything what happens among people (Searle, 2010), who remain creatures having their individual aims, but able to sacrifice their own good for the common good. Improvement of man is the improvement of their virtues (in Aristotle's understanding), their pragmatic features, not only for themselves but also for others. These are not the tasks for "social engineering", but rather for social sciences and humanities understood in a traditional way. These are the tasks remaining much more difficult than transhumanists can even imagine.

Translated into English by Natalia Miklaszewska

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