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Indice

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Unfinished evolution

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This paper discusses the social consequences of the mass appearance of operations created by man, which are capable of performing functions previously executed solely by man. The question is whether the appearance of artificial intelligence, the operation of self-developing robots supersedes or supplements man who was born into this world inherently unfinished, undetermined, and without an environment synchronized with genetic programmes. As the constructor of his environment, man has had to define himself. Is this man-faced techno-structure the new level of evolution, or is it merely the next stage of the cultural process incited by original human indeterminacy?

"Life is alive and wants to stay alive", as Endre Ady put it, spelling out the basic law of life generated on Earth, which does not simply drive the living but also forces them to compete with each other arranged into newer and newer formations. Life, as John Maynard Smith and Eörs Szathmáry point out, is the operation of a distinct organism

which is in metabolism interaction with the and capable of reproducing itself. Heredity is life continued to exist in time, which means passing on the genetic information determining the predecessors life - to the descendants. Development happens where and when the information transferring capacity increases greatly, thus making the functioning of the living organism more complex. Evolution is the appearance of more and more sophisticated life patterns, triggered off by the competition between species bearing given genetic patterns. The competition between species is facilitated by the competition between the specimens, as a result of which the specimens with the highest ability to adapt to the challenges of the environment will survive and will engraft their abilities into their descendants (Smith, Szathmáry, 1999). The last leap of evolution was the appearance of the human species in whose case the information transferred to the descendants is carried not only by the genes.

In the case of man, the information carried by the genes is not sufficient to stay alive. Man, as Nietzsche aptly describes, is an "undetermined animal" (noch nicht festgestellte Tier). This means that the genetic information about the predecessor's chances for life, which is inherited by the descendants, does not determine the human being about to be born, just as it did not determine the parents either. The genetic inheritance of man, aided by language, communication and connecting, facilitates the creation of their own environment in which they can cope with the challenges imposed on them by their natural environment, and fight the forces deriving from the natural limitations of their own bodies.

In the case of humans the genetic transmission of information is inevitably supplemented by the transmission of cultural information but the two types of information transfer are not separated from each other. The genetic inheritance of man is the precondition of the development of cultural heritage. However, once the cultural differences have developed, they will differentiate human beings by forming collective distinguishing features, dividing them into different groups. Every single person is a unique and irreproducible specimen, yet no one is on their own. G. W. Allport lists four different of types of the collective distinguishing features (Allport, 1954). In all of the four cases it can be supposed that the given features have a genetic basis, however, it is culture that lifts these features into the perceptional space between the groups and adds a distinguishing character to them. The features typical of every single member of the group belong in the first type. Such are bodily features, mainly skin colour, physique and facial features. In the second type belong features which only appear among the members of the given group, yet by far not in every single member but rather in a minority. Such characteristics may be some susceptibility to certain diseases or even special habits, rituals or superstitions. The third type comprises features which can be found in every other group but compared to these they appear either more rarely or more frequently in the given group. An excellent example of this is the different deviances, such as suicide, alcoholism, drugs, crime and mental disorders. In the fourth type we will find characteristics without which we would not even be able to talk about human existence, although the amount of the given characteristics differ in

each group. Such features are for example intelligence measured by tests, the values of which are distributed to a varying extent in the different groups.

All this merges in everyday cognition. The recognition of the groups is simplified as a result of identification, and the trust in empirical correlations is reinforced by stereotypes and prejudices. This creates the different group constructions, and the power of their recognition is further reinforced by the experience of transforming chaos into order, in addition to the sense of identity which creates the emotional polarisation between one's own group and the other groups. This way people are divided into big groups among which collective self-defining ventures play an outstanding role. This has lead to a cultural diversity within the human race, which can be the medium of war or peace between the groups alike. By the word 'civilisation' Huntington means the great cultural varieties which divide humanity, giving different answers to the excruciating big questions concerning every human being (Huntington, 1998). The differences originally carry the possibility of conflict which becomes real once the affected groups receive an unequal share of the real goods in life. The fight for dominance is the driving force behind the mask of the racial, religious, national and social superiority.

In the 21st century globalisation makes it increasingly obvious that civilisations separately stand no chance against the challenges threatening the whole of the world inhabited by man (Beck, 1999). The seemingly unstoppable growth of population, the viewing of inequalities between the developed and undeveloped regions as injustice, terrorism heated by ideologies to repair injustice, the irreversible

destruction of the natural environment, the increasing migration in addition to nuclear threat all raise questions which cannot be tackled with the old answers.

New answers and new people are needed for human survival. The competition for survival will be won by civilisations which renew the information chain inheriting human life, which makes sustainable development possible for the members of the new generations.

For man labour has been a bitter must from the beginning. It is not a coincidence that in the First Book of Moses labour is mentioned in the chapter dealing with the Fall of man, in which God dooms man to "eat bread with the sweat of his face". With time passing, sweat became less and less and bread became more and more. Man had been extremely resourceful in creating and applying tools facilitating work and enhancing productivity until the age of information technology entered, an age which bears the possibility of technology prevailing over man.

The turning point came with the first industrial revolution from the end of the 18th to the middle of the 19th century. The emblematic facilities of the first industrial revolution were the railways, the huge factories, the mines, the dark and crowded cities. As a result of the second industrial revolution there was a significant increase in energy production, the range of the products manufactured in factories widened, opportunities for mass consumption were created, highways, busy airports were built, the living standards in the industrial societies increased. The third industrial revolution unfolded in the second half of the 20th century, overshadowing, partially removing the scenes and social actors of the first two the industrial

revolutions. Knowledge, research and development, service, white-collar jobs became the main source of added values.

The lessons of the three industrial revolutions is that the Earth cannot be charged further. An increasing proportion of the world's population is pursuing the standard of living made possible by the former industrial revolutions but it is foreseeable that the natural resources will not be sufficient. A fourth industrial revolution will be needed to sustain the development embracing all the inhabitants of the Earth. To create life conditions for seven billion people will need new energy sources, new technologies, new economic and social management solutions.

The fourth industrial revolution is far more than production based on the mechanical outsourcing of simple bodily and mental functions known from previous eras. The essence of the new economy is that the whole of the economic process is linked into a unified IT network, which, as time goes on, makes the presence of humans unnecessary at all scenes, instead of whom work will be done by robots capable of humanoid behaviour, work will be done by decision-making algorithms and by artificial intelligence operations. The development of the new economy occurs in breath-taking pace.

Development is exponential, the indicator of which was given by Gordon E. Moore, one founder of Intel, in 1965, as the rate of the growth of the number of transistors in integrated circuits, which roughly shows the size of counting performance. According to Moore the number of transistors in integrated circuits doubles every 18 months. This formula was worded by Moore not as a law but as a

hypothesis suitable for observation which later, having proved itself, was given the term "law".

Raymond Kurzweil uses the term "the law of accelerating results, which already does not only deal with the integrated circuits in Moore" law but with all new technologies. Kurzweil calls the new era "singularity", in which the technological systems brought about by man will be more intelligent than their creators and then the machines themselves will create even more accomplished machines (Kurzweil, 2005).

The heroes of the fourth industrial revolution are the second-generation robots, which, unlike the first-generation ones, will not only be suitable for routine tasks but will act and learn according to the circumstances given. All this will happen in a world all elements of which relevant from the point of view of human life are linked into a unified IT system. The state of being fully linked will alter the meaning of time as everything happening in the world will leave a trace, which will never disappear. The present moment will be calculable, the present moment the derivative of the future made predictable. All things happening will be datafied, they will be transferred into ever-growing data storages as data, where waiting for suitable algorithms they will be the material for the tools of prediction more accurate than foreseen ever before. The importance of the Big Data paradigm, which will make the analysis of the data bulk being formed possible, will not be given by the size of the data bulk but by the rate of its spreading and its unstoppable growth. Already now a million tools get connected to the internet every hour and this number will only grow further.

For the ontological description of the new situation the 'virtual reality' suggested by László Ropolyi seems to be most accurate one (Ropolyi, 2016). According to Ropolyi virtual reality is spiked between the "existing" and "possible" realities described by Aristotle, making possible into existing and melting existing into possible.

Virtual reality is obviously far more than an exercise of philosophical thought. This is the reality in which space is brought about for creatures created technologically so that they enter into competition with their creators. This space is a completely linked communication system, which traces the course of products from the initial idea through development and further to the consumers. The innovations of the fourth industrial revolution are many times falsely interchanged by automatization though 4.0 industry is considerably more than this. In 4.0 industry digital transformation deeply infiltrates business environment. As both products and their consumers are connected to the net, the full life cycle of products becomes visible. Not only production but also consuming and using will provide data. Sensors built into products are constantly sending the data to the producer, who can intervene at the first sign of disorder. It is not expected to wait until the consumer makes a complaint as the possibility of error is forecast by the "early warning" system.

Sensors built into products send data to the service centre of the producer, thanks to which it is possible to know even before failure that servicing would be timely. If the system is set suitably, it automatically alerts the mechanic about the servicing time. An article on Index illustrates this situation with this description. "*Zenoway* from Austria has a solution for tracking the daily operation of

forklifts so that the owner will be able to enhance efficiency and avoid accidents. They attach sensors to the forklifts subsequently to track the battery, the lifting height, the weight of the freight and speed; at the workplaces, they are applied reputedly the after-work forklift competitions have been stopped. And the bump-analyser alerts management without delay so that they check if a shelf has been damaged. No need for explanation why this is important – there are several videos on the internet where whole warehouses fall into ruin as a consequence of one small bump." (Tóth, 2016)

Manual work will cease to exist in intelligent factories. Sensors are read by the hundreds of thousands by the new generation, high performance networks and previous producers will become operators and servicing jobs will be created in the footsteps of ceasing manual jobs. In order that reading the sensors and tracking from a distance is running smoothly 5G mobile networks will be necessary. The new generation larger capacity networks will allow several hundreds of thousands sensors to be read. Thanks to 5G response times will be very short. Plants will be fragmented in space as well. The production of numerous spare parts will be made possible with 3D printers, which will make the tailoring of spare parts and their quick delivery to the customers possible.

Owing to full digitalization western countries may win production back from the plants previously located in eastern countries, the competitiveness of which latter had been ensured by cheap labour. Economic activity previously held too expensive in western regions will be made competitive again through the application of robotic technologies controlled by network systems of artificial intel-

ligence. Moreover, the east-directed exports of softwares ensuring the operation of the 4.0 industry, together with digital solutions will result in considerable income. The aim of intelligent investments is position determination, following, monitoring, prevention and, as the total sum of these, the optimalisation of production and consumption. This could be a breakout point for the economy of Europe.

In the clever plants of the fourth industrial revolution the production lines are driven by bits, not by atoms. Intelligent robots take the place of manual work ceasing to exist. The connected, intelligent robotized technology will radically change the service sector as well where humans will be forced out as they get tired, make mistakes and are emotionally defenceless. Knowledge suitable for giving answers to pragmatic everyday problems will be organized into learning systems capable of written and spoken answers and operating strenuously for 24 hours each day. There will no longer be any need for humans who know what and where to find, whether it is an object, an image or a piece of text or music. The intelligent robot advisors developed by Google, Facebook, Apple or Amazon are already able to fulfil limited customer service tasks and their abilities with time will inevitably improve. In virtual reality, the traditional functions of knowledge will be taken over by artificial intelligence.

As a result of the changes millions of jobs will be terminated. Parallel to this, however, new jobs will also be created as the production and service-providing systems based on connected, intelligent robotized mechanisms will need those inventing and creating them and after being created they will also need those operating them. The era fore-

told by Kurzweil is still far in the future when robots become more intelligent than the humans creating them and, reproducing themselves, they will open a chapter in the history of evolution.

The period of human life has constantly been in growth already during the time of previous industrial revolutions. The human body cannot be left untouched either by the series of economic and social changes caused by the 4.0 industrial revolution. Immortality is predicted to man connected into the space of virtual reality by Kurzweil, which Hanson can see viable through the translocation or emulation of information stored in brain cells to computerized models. According to Hanson translocation of brain signals into suitable virtual operations practically makes all activities performed by man traditionally possible. Tasks needing manual work will be performed by robot bodies, intellectual work will be done by softwares capable of artificial intelligence. Hanson leaves just one question unanswered, namely, when the translocation of brain signals is completed, what will be left with humans (Hanson, 2016). These predictions may seem utopistic today but the appearance of the hybrid of the natural and technological definitions of the human body is more than probable. The transition of genetic information will not disappear, even the modification of genes through technology will make it possible to change the bodily and intellectual features of individuals beneficially, to prevent and cure diseases tailored to individuals, due to which long and healthy life expectancy is to be seen widely.

The economy and society of virtual reality will have the power to free all from the captivity of need through

guaranteed minimal income. However, inequalities can be extreme. People brought to perfection through genetical and technological improvements remind us of Nietzsche's "superhuman beings", who are faced by crowds of "unnecessary" people living with no aims or reason. The former will be characterised by thinking and creating and expanding the limits of virtual reality while the latter will, in the best case, become just "homo ludens".

The biggest challenge to virtual reality is safety. Man facing man in their whole bodies will not fight any longer since we can see that even today battles are fought by virus programs, drones and robots. However, the enemy, and the urge for fighting will remain. The battle for survival will not be fought by civilisations, nations and classes but on their commission a cross-breed of human and computer intelligence. This cross-breed will have no emotions, no concept of good or evil. It will make choices and take decisions, always on the basis of expected certainty.

Hungarian poet, István Kormos, asked another Hungarian poet, László Nagy, the question, "What is your message to those who will be sitting facing you in a hundred or five hundred years'time?". László Nagy gave this answer, "If, at all, they have human faces, then I will give them a kiss. Should they have human mind as well, I will let them know, I will send them the message that this much is all I have had the power to do for them".

Today, in 2016 we are not yet able to tell if there will be anyone in the world who László Nagy could give a kiss to.

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