



Contemporary Philosophy

On Genophilosophy

János Boros

Janus Pannonius University Pécs

boros@btk.jpte.hu

András Guttman

aguttman@genbiosys.com

ABSTRACT: Contemporary progress in life sciences, particularly in genetic engineering, is changing our concept of "human being" and a whole series of other philosophical and common notions. The conventional idea of "subject" will no longer be the final reference for philosophical thinking, since even the subject *qua* biological or psychological structure will enjoy a high degree of unpredictability. The results of gene technology require reinterpreting such concepts as reproduction, individuality, history, freedom and subjectivity. This paper focuses on the question of freedom, where freedom means the capacity to deliberate and choose between different alternatives of action. We hold that the issue of freedom is relevant for genetics. Considering that genes can "decide" between alternatives, it is possible to speak about the freedom of genes, at least in a metaphoric sense. It has been suggested that genes are "more free" than human beings because they encoded us. The human genome program thus helps us to understand what kind of structures human beings are dependent upon. The main question that we address in this paper concerns the entire human genome project and all its implications including the functions and effects of each gene, the possibility of technological manipulation, what kind of freedom, history, and "human being" will eventually "survive."

Recent developments in molecular biology and genetic engineering are going to change our human being concept and a whole series of other philosophical and common notions, such as "knowledge", "subject", "self", "history", "past", "science", "ethics", etc. The traditional idea of "subject" won't be any more the only final reference of philosophical thinking, since even the subject as biological or psychological structure, as philosophical, historical or sociological entity will change with a high degree of unpredictability. Gene technology requires dealing with, and reinterpreting terms such as reproduction, individuality, history, freedom and subjectivity. Many people consider 1989 as the symbolic turning point, when the epoch of history and society started to be replaced by the epoch of biotechnology, genetic engineering or most recently evolution-technology. We can say, that we are at the beginning of a genetic epoch (*genepoch*) or as Manfred Eigen (*Steps Towards Life*, Oxford University Press, 1992) calls it "the era of molecular biology". In this vision of history, having solved the disputed questions of society in the practice and theory of democracy, mankind begins a new historical period, the genetic period, where even the terminology of history will be a completely new kind. Avant-garde philosophers develop a new approach for investigating the genetic structure of all "traditional" problems instead of further

exploring the society, language, knowledge or physical world. The protagonists of this new "paradigm" think, that after such kind of leading principals of philosophical discussions as "democracy", "socialism", "subject" and "causal sciences", there will be a new leading idea, which by the analogy of neuronalism and cognitivism, should be called *genetism*.

It is not our goal here to review all the possible (medical, social, etc.) implications, which could be involved in genetic research and in the development of gene technology. We would like to focus only, on the question of freedom, where freedom means the capability of deliberation of and choice between different alternatives of action. A free subject sets the main rules of its own actions, and can control the ongoing events, which may influence further actions and events. The debates about freedom *of* something and freedom *for* something are harping on unsettled questions of secondary importance. The most important question is: "*Whose* freedom is it?". The freedom of the society, or the individuals — or the genes? The freedom of society over individuals was experienced without noteworthy success in the Eastern European countries in the past several decades. The freedom of individuals is experienced with more success in the Western democracies. But what about the freedom of genes? When we ask this question, we do not think, that genes would be free, like individuals and as such, subjects of ethics. But we do think, that there is a possibility to ask the question of freedom in the case of the genes, in a sense, as e.g., Dennett speaks about the intentionality of non-human beings, introducing the terminology of *intentional stance* (Dennett, D., *The Intentional Stance*, Massachusetts: The MIT Press. A Bradford Book, 1987.), where intentionality, as it has been expressed in classical philosophy, means the directness or "aboutness" of a conscious state. Dennett enlarges this concept and he interprets intentional stance as the capability of a single-cell or a human being, to be in a goal-oriented — teleological — relationship with its environment. Here the examined being or entity evolves during the course of its interactions, which is essential for its survival. Does it decide between alternative reactions or not? If not, then there is no evolution, and consequently, no development of new species. If it decides between alternatives, as we indeed consider it does, than it is possible to speak about the freedom of genes, at least in a metaphoric sense. In the overall sense, Dennett suggests that genes as intentional beings were "more free" compared to us, human beings, since they encoded us, as they had arranged into various sequences. Virtually, genes had a goal-oriented "behavior" which enabled and even ensured not only their survival but also their evolution. Furthermore, we human beings are very much limited in our actions and knowledge by our own genes. The human genome program helps us to understand what kind of structures are human beings dependent on. The question is, if the entire genome is sequenced and all the implications, functions and effects of each gene are discovered, what kind of freedom will "remain" for humankind.

The concept of freedom is a product of the human mind. On the other hand, human beings are encoded in their genom, and in a specific way, expressed products of their genes. Hence one can say, that human freedom is in a certain sense a product of genes, although we are not aware of the possible connections yet. One of the most exciting novelty in molecular biology and gene technology is, that in the first time during evolution, the human "freedom" partially as a product of genes assumed to have some decisional power and liberty *over* the genes. The genes will be in a certain sense functions of human freedom, which is in part, a function of genes. Using mathematical analysis terminology, it is not clear any more, which is the independent and which is the dependent variable. This freedom from and over the genes is a new kind of freedom in history. If we think on an interpretation of history, which says that history is the search for freedom we will reach not only a significant milestone in history, but also the terminology of history will also be genetically transformed. Through the possibility and realization of genetic engineering/gene manipulation, mankind will be freer then ever, due to the reduced exposition to the forces of nature. This does not obviously mean, that an individual could

totally manipulate its own genetic structure, but it does mean that mankind as a whole, through the manipulation of the genes of future generations could alter its genes in time, therefore can be free of them in a certain sense. So, the natural selection and the evolution of genes has arrived at a new phase, where the first time in history, self-conscious beings (who themselves are products of genes), may alter their own genetic code. Albeit, environmental influences, such as radiation, pollution, etc., always caused changes in those structures, these random influences came from "outside". Now something, which develops from "inside" of the genes, something, which is based on genes and follows the commandments of genes, namely the human consciousness (which is of course not a direct product of genes but rather evolves during social-linguistic interactions forming the mind which we consider here as a "virtual organ") changes the genes, and consequently its own biological structures. Controlled alterations in the nucleotide sequence of genes can cause fundamental changes in the initial setup of the human brain, mind, consciousness and obviously on the entire human biological structure, thus the "mindless evolution" is replaced by an intelligently designed "minded evolution". Now, the question arises: the gene-transforming mind will function as an environment of the genes, or as something, which is "inside" of the genetic system. This is of course a question, which cannot be answered today.

Gene technology provides a new kind of freedom for humankind, and hence a new kind of history. Although, it is not clear, whether this new kind of history can be called history at all. When mankind try to change its own genetic code, it also changes its own biological past in the sense that this change will be part of the past in the future. If it is ever possible to make a science-fiction style trip into the past, then after the simple looking back into the astronomical past, it is possible to *go back virtually* with the help of gene-technology. This means that genetic experiments and operations are activities, working on structures, which were built up in the past under completely different environmental circumstances and time-dimensions as the factors, or dimensions of our laboratories are. However, our genetic experiments in the laboratory might have real effects on biological species that will alter evolution and its time structure. Genetic operations are virtual influences on the past, which may not only be virtual if it has a real influence on the codes, and can cause very real changes in the evolution of biological species.

If time considered being linear with only one direction until the full determination and understanding of the entire human genome, time will have two directions after the code is solved. Any changes in the genetic code, any real influence on the genetic structures may result such consequences, as we would have influenced their development that took place millions and millions years ago. Thus, gene technology is going to change our view of history. It will transform the epistemology of history. History will not be a question of interpretation any more, but of creation, in a certain sense. Until now, the present was considered as the result and/or consequence of a long evolutionary process in the past. Now we can produce new results and consequences for tomorrow, but these consequences will co-appear later with the results of millions and millions of years of real evolution. Therefore, our operation will only be virtual on the past, while producing real consequences in the future. We create such kind of real present and future, which, however, won't have a real evolutionary past or even if it will, it is only partial, so still, a part of the past of its real structure will be virtual. Obviously, it is not possible to bring the past back in reality, only virtually, and our transformations are happening in the virtual past. This means, that the "coded" "now" will produce very real future of a different kind. If history was exclusively the research of the past until now, then it will become also a virtual operation on the past forming a very real future. When our transforming operations intrude into the genetic code, we intrude virtually in different time-regimes of the historic and evolutionary processes requiring otherwise millions and millions of years. We will be able to change the rhythm, the speed and the direction of evolution.

As one can imagine, this virtual transformation on the past may represent a potential danger. In a certain sense our brain (but perhaps not exclusively) and consequently our mind can be considered as a "virtual organ", a macroscopic expression and manifestation of our genes, attributing the following issues. The mind operates virtually "backwards" *there and then* where and when it really developed during the evolution. In the same time it does not know and also cannot reproduce some special and "essential and evolutionary" *need* of time, and this "backward operation" cannot even virtually answer to this need. As it cannot reproduce the *long* evolutionary *time*, it grows the speed (and the direction) of the evolution without knowing, whether the whole structure or body of genes support this new evolutionary speed. There will evolve the possibility, the chance and the danger of unforeseeable effects, that the organisms, the brain and the mind will change themselves in a high evolutionary speed in a sense, that the result will be an other kind of brain, of organism and of mind. A mind, which does not really care any more for us, or for our mind.

Without proper investigation of all aspects of evolutionary technologies and genetic engineering the results can be monster(ou)s. Because of the above-mentioned special relationship to time, the main uncertainty is, whether the consequences of the engineered operations can be foreseen and predicted. What, if the important consequences can only be seen after several generations? For attaining the possibility of successfully dealing with these questions, there is a need for common efforts of scientists, lawyers and politicians to develop new notions of time, responsibility, freedom, history and subject. Defining those notions will make possible to express these new demands and to formulate our needs and desires. Which kind of freedom, which kind of future, which kind of time, which kind of history, which kind of subject and which kind of human beings we want to be or want to have? What is what we do not want to be? Hence, what should be forbidden by legal means? Is it *really* possible to regulate evolution through ethical deliberations or with legal means? Will not disappear all our classical concepts as structural notions of a low speed evolutionary time, with this possible high-speed evolution? Whether the low speed structures will tolerate and survive high-speed evolutionary changes? Whether *our* low speed structures can resist in the struggle for success and in the selection procedure to high-speed mutants or wild types? And if not: will it still be *our* evolution? Or it will be a new kind of evolution, independent of today's human beings. Or to *interpret* in another way: it will be eventually *the same* evolution, but not *our* evolution any more. Similar to, for example, as recent biological evolution is independent of dinosaurs, which reigned once over the earth and vanished from the screen since?

As the range of activities are increasing with the new possibilities of genetic engineering, in a certain sense the freedom of philosophy is decreasing and may eventually diminishing, along with constructive science and engineering. Particularly, the kind of freedom that sets its own agenda and subject. The classical philosophy and the classical view of science come to an end as Rorty, the great contemporary American philosopher predicts. However, a new philosophy — a higher speed mutant of ancient type philosophy — should prevail with a main task to investigate and understand the consequences of these new technologies and to represent it in scientific, social and ethical debates. Similar to when Kant urged philosophers in the eighteenth century to turn towards humans, now there is a need to turn towards genes. In continuous dialogs and partnerships with life scientists and politicians, philosophers have to develop new merits of freedom, person and evolution and to investigate the possible ways of improving human life on earth. We have to remember on the pragmatic adage, if philosophy and science lack social fruits in the long run, then it does not deserve the attention of the society. On the other hand, if the science and society do not open up for philosophical deliberations, it can have monstrous consequences.