

Neuroethics and Biopolitics. Consequences of the Assumption of the Non-existence of Free Will

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Abstract

Both neuroethics and biopolitics are the newest discoveries of social sciences. They provide many problems and issues concerning the human nature, critical for the current political thought. The mutual relation between them forces us also to focus on the solutions in legal system through the crucial meaning of the notion of responsibility – the critical issue of neuroethics. The main objective of this article, therefore, is to: 1) to characterize neuroethics and its main approaches; 2) to introduce the current consensus reached in the debate on the freedom of will; 3) to outline the possible biopolitical consequences within the frames of the described paradigm.

For many years, a human being remains an unsolved mystery to many branches of science, within past few decades joined by biopolitics, searching for the new conceptions of the political rules and principles, while being focused on a matter as delicate as human life. Furthermore, the science-based biopolitics tries to find the most objective measure of its assessments, to be able to provide reasonable and commonly acceptable solutions. The contemporary science seems to answer this problem in the form of cognitive science and neurobiology. In the last fi-

fty years both of them tried to discover the essence of humanity by conducting research on its base element, the human brain. According to an American philosopher, Sam Harris, the result may trigger a cultural conflict, even greater than the one caused by Darwinian theory of evolution. It would source from the debates on the consciousness and the freedom of will, recently often associated with the concepts such as morality and responsibility. The focal point of the information presented above is neuroethics as the creation of practical philosophy and neurophilosophy, being also the newest and the most technical branch of bioethics. The aim of the article is, therefore, to present the social implications, both positive and negative, as the result of the latest research on the human brain, submitted to the neuroethical thought, with the acceptance of the assumption that there is no such thing as the freedom of will. The adoption of the paradigm regarding the lack of the freedom of the will has a special meaning. During the past three decades, while cognitive science was significantly developed, the main argument of the presented paradigm began to have an actual importance in the philosophy of politics and law, the evidence of which can be found, for example, in the book of an American philosopher, Ronald

Dworkin, who asked the following questions: “Under what circumstances is someone free to act as he wishes? Is his freedom compromised only when he is subject to some external constraint—only when he is tied up or locked up, for example? Or when he is mentally ill? Or when he cannot govern himself or control his appetites as he would wish? Or when he does not behave as right reason and true morality require? Or is his freedom illusory whenever his choices and behavior are inevitable, given prior events or forces beyond his control? Is he free, that is, only if and when his own will acts as the uncaused cause of his behavior?” (Dworkin 2011, p. 211). The main objective of this article, therefore, narrows down to the execution of the following tasks: 1) to characterize neuroethics and its main approaches; 2) to introduce the current consensus reached in the debate on the freedom of will; 3) to outline the possible biopolitical consequences within the frames of the described paradigm.

Reductionist and Holistic Paradigms in Neuroethics

Before proceeding to discuss neuroethics each reader should be aware of the theoretical pitfalls waiting for him at this field of considerations. Amongst contemporary debates on neuroethics, behavior and the human brain, there is an increasingly observed return to some theses of behaviorism¹, usually resulting from the misunderstanding of the opposition between reductionist and holistic approaches

to the neurobiological research. In the dispute, a clear standpoint was taken by an American physicist, Fritjof Capra, who wrote: “The ideas set forth by organismic biologists during the first half of the twentieth century helped to give birth to a new way of thinking – “systems thinking” – in terms of connectedness, relationships, context. According to the systems view, the essential properties of an organism, or living system, are properties of the whole, which none of the parts have. They arise from the interactions and relationships among the parts. These properties are destroyed when the system is dissected, either physically or theoretically, into isolated elements. Although we can discern individual parts in any system, these parts are not isolated, and the nature of the whole is always different from the mere sum of its parts.” (Capra 1996, p. 29). In other words, Capra made an intended reference to the Cartesian paradigm, which gave birth to the biomedical model presenting the human body as a machine and its illnesses as a malfunctions. In this theory, any disruption in functioning of an organ is perceived as a damage to the whole body. The holistic approach proposed by Capra is therefore applicable to the human brain considered as a living system in the body, and seems to be the way of eradicating the returning symptoms of behaviorism from neurobiological research. For example, the issue of emotions cannot be understood by considering it only in the context of the functioning of the limbic system or its chosen structures. In this article, therefore, I argue that the research on specific parts of the brain perceived as hermetic systems, should not play a key role in explaining the

1 Despite many similarities between the basic theses of behaviorism and neuroscience, they differ significantly; while the former studies attitudes, the latter tries to explain the reasons and mechanisms of human acts. One of the branches of neuroscience, social neuroscience, is the closest discipline to behaviorism (Cacioppo, Bernston 2005). p. 221

human behavior. Instead, the emphasis should be placed on the mutual relation between two living systems: the human body and the human brain. Moreover, the problem of the freedom of will and neuroethics will be presented in the given context.

Two Dimensions of Neuroethics

The spectacular progress in neuroscience in the last fifty years has brought with it the understanding of many brain processes. Such a sensitive matter, however, aroused inevitable concerns around the obtained discoveries expressed by a Polish physicist and journalist, Tomasz Rożek, in one of his comments on the modern science: “Even if we cannot read someone’s exact thoughts, but only if the person likes or not what he or she hears or sees, I feel disturbed anyway.” (Rożek 2011, p. 304). Opinions similar to Rożek’s became the reason to the rise of the new branch of bioethics. The definition of neuroethics showed up for the first time in 1989 in R.E. Cranford’s article with a very narrow meaning. The term referred to the ethical issues of neurology as a profession, and especially to the definition of death (Cranford 1989, p. 697-713). A wider use of the concept was provided by an American publicist, William Safire, the leader of DANA Foundation, who in 2002, during the conference “Visions for A New Field of Neuroethics”, defined neuroethics as “a part of bioethics, which takes to consideration good and bad consequences of medical practices and biological research. It targets the brain, our consciousness and understanding of ourselves” and “the examination of what is right and wrong, good and bad about the treatment of, perfection of, or unwelcome invasion of

and worrisome manipulation of the human brain” (Safire 2002). Not long after the conference, an English philosopher, Adina Roskies, published her article “Neuroethics for the New Millenium”, in which she proposed a division in neuroethics based on two categories: ethics in neuroscience and neuroscience in ethics (Roskies 2002, p. 21-23), both becoming popular paradigms. The former is an extension of the definition given by Cranford and covers the most popular areas of neuroscience, namely diagnostic neuroimaging, predictive neuroimaging, neurostimulation, psychosurgery and cognitive enhancement. Although each of the branches holds promise for improving the quality of modern diagnosis and medical treatment, mentioned techniques, including e.g. Positron Emission Tomography (PET), functional Magnetic Resonance Imaging (fMRI), Transcranial Magnetic Stimulation (TMS) and Electroencephalography (EEG), focus on the human brain and can reveal detailed information about the scanned person, which may further affect personal identity, decision-making process, social interactions and many other aspects of our humanity and social existence, in both positive and negative ways. The newest example of the possibilities of scanning methods, precisely fMRI, is the research conducted by Japanese scientists from National Institute of Information and Communications Technology in Kyoto. The team under the leadership of Yukiyasu Kamitani, created a computer algorithm matching patterns of brain activity with object categories, previously made during fMRI scans. The script was then able to “read” the human dreams with more than 70 percent success rate

(Horikawa, Kamitani 2013, p. 639-642). The amazing discovery, however, raises many ethical questions and anxieties about the safety of our autonomy and privacy. The second of Roskies' paradigms, neuroscience in ethics, covers the issues especially interesting for neurophilosophers and the philosophers of law: neuronal basis of moral behavior, responsibility, a personality, decision-making process and the problem of free will. It emerged in 1848, by the well-known case of Phineas Gage, 25 years old craftsman, who's head was pierced by a metal rod through the skull, the left jaw, the eye socket, the temporal lobe and the vault. Although he survived the accident, there were many observable changes in his behavior and personality (Harlow 1848, p. 389-393). The similar events have inspired an American psychologist, Michael Gazzaniga, to conduct in 1960's experiments on the commissure intersection effect on the functions of the brain. Around his research arose many controversies, also in the field of the mentioned paradigm. Twenty years later, an American neuroscientist, Benjamin Libet, has empirically proven that the freedom of will does not exist (Libet 2002, p. 551-564), so the question "if we are actually dependent from the biology of body" has changed its form to ask about the degree of the dependence. Therefore, by using those and similar theories, neuroethics tries to establish how far reaches our responsibility for what we do in given circumstances.

Meaning of the Question About the Freedom of Will

The discussion on the freedom of will has been the domain of philosophy since it was started by St. Augustine. For fifteen centuries, many of the greatest minds have been trying to determine a consensus in this matter. The first reasonable theory to reach it, was well-argued and internally consistent philosophy of Arthur Schopenhauer. To put it in a nutshell, Schopenhauer perceived the free will as an ability to freely want what we want. He also argued that using it is impossible, because of incentives and higher motives constantly affecting our decisions. Schopenhauer's idea of the inner world² being the will itself became scientifically proven by the already mentioned Benjamin Libet. In his most famous article the American psychologist wrote: "The role of conscious free will would be, then, not to initiate a voluntary act, but rather to control occurrences of the act. We may view the unconscious initiatives for voluntary actions as "bubbling up" in the brain. The conscious-will then selects which of these initiatives may go forward to an action or which ones to veto and abort, with no act appearing." (Libet 2002, p. 560). The convergence between Schopenhauer's and Libet's theories is undeniable³. Moreover, Libet's theory caused not only a flurry in neurophilosophical circles, but also the rise of the

2 The term "the inner world" means mental representations of the world.

3 The results of Libet's experiment confirm Schopenhauer's theses. The philosophical point of view of both scientists, however, was different. While the former was a determinist, arguing that people are responsible for what they do through their ability to hold unconscious initiatives, the former was a pessimistic incompatibilist who believed that every behavior is determined by past or present events and motives.

long-sought consensus. It was not fully accepted, however, because of the deep belief of many philosophers, and people as well, that the free will exists. The conviction results from the human ability to make free choices. So-called physical freedom⁴, denied by Schopenhauer, proved to be at least partially right, because of the reference to the notions of intention and consciousness' aspect of our acts outlined by Libet. The belief has found a resonance, for instance, in the philosophy of the American law⁵.

Contemporary debates on the freedom of will gave rise to new considerations on the concepts of responsibility, morality and criminal law. One of these theories is, created by Sam Harris, the concept of moral responsibility to society. The philosopher argued that the assessment of liability must depend on the general state of mind rather than the metaphysics of mental causation. So he was ready to abandon the problem of free will in favor of the properties of mind and facts relevant to the case, for example, beliefs, desires, education and personality of the accused, the presence of drugs, etc. (Harris 2010, p. 73-74). The other and more complex theory is the one created by Ronald Dworkin, who proposed an ethical, instead of a moral, approach to the concept of responsibility. First of all, however, Dworkin began creating his

theory by underlining the logical gap between "the first set of issues – the scientific or metaphysical questions that can be answered only through empirical investigation or philosophical speculation – and the last set, about responsibility, which are independent ethical and moral issues." (Dworkin 2011, p. 221-222). Therefore, he tried to fill in this space by negating the pessimistic incompatibilism. In other words, Dworkin recognized it as false, which was caused by his thoughts on the decision-making process. The philosopher emphasized that a human is able to make reflective choices. By "reflective" he meant those, which over we consider before and after performing. Using this assumption, Dworkin created the concept of judgmental responsibility, which is based on the reflective decisions, subjected to the standard act of assessment – in the context of praise or reprimand (Dworkin 2011, p. 220-223). Another very important observation in the field of research on the concepts of responsibility has been made by Michael Gazzaniga: "Neuroscience will never find the brain correlate of responsibility, because that is something we ascribe to humans – to people – not to brains. It is a moral value we demand of our fellow, rule-following human beings. (...) The issue of responsibility (...) is a social choice. In neuroscientific terms, no person is more or less responsible than any other for actions. We are all part of a deterministic system that someday, in theory, we will completely understand. Yet the idea of responsibility, a social construct that exists in the rules of a society, does not exist in the neuronal structures of the brain." (Gazzaniga 2005, p. 101-102) Both Harris and Dworkin, and also many

4 Schopenhauer argued that there are three dimensions of freedom: physical, intellectual and moral. In his division, both the physical and moral freedom were illusionary feelings. Only a man able to negate the highest incentive, the will to live, can achieve the moral freedom.

5 "The Supreme Court even has called free will a "universal and persistent" foundation stone in our system of law", as compared with "a deterministic view of human conduct that is inconsistent with the underlying precepts of our criminal justice system." (Bechara, Burns 2007).

other philosophers, followed Gazzaniga's thought.

The thing that should attract our attention is the common and intelligible⁶ intuition, that the pessimistic incompatibilism is false. Harris also, but unknowingly, underwent it, although these he has formulated in his book on the free will are almost identical to Schopenhauer's, which almost completely made him a non-compatibilist (Harris 2012). The given example shows how hard is to accept the fact that the free will is an illusion, even if it was scientifically proven. Being aware that decision-making process is greatly influenced by implicit processes that do not necessarily reach consciousness (Bechara, Burns 2007, p. 263-264) and that brain damage or drug usage can disturb the normal operation of some of these implicit processes (Bechara, Burns 2007, p. 264), we should consider the question about philosophical and then political consequences of the acceptance of these facts, without being influenced by the common intuition mentioned at the beginning of the paragraph.

Relations Between Neuroethics and Biopolitics

There are two categories of the possible consequences of the assumptions resulting from the outlined division of neuroethics. First of them refers to the neuroscience in ethics paradigm and concerns the concepts of morality, responsibility, free will, criminal law, etc. In the previous section of this article are described the examples of theoretical considerations on them. In this part, I will focus on the political dimension of the presented issues. The second paradigm of neuro-

ethics, ethics in neuroscience, relates to the ethical aspects of the use of the latest neurotechnology. It turns out that these discoveries carry with them as well an opportunity to improve the medical diagnosis and treatment, as threats to the social existence of a person.

One of the most important translation of the problem of free will on the language of policy took place at the turn of 18th and 19th century. Its description can be found in the book of an Italian philosopher of politics, Roberto Esposito: "The theory of a double biological layer within every living being – one vegetative and unconscious, and the other cerebral and relational – was first put forward by Bichat in the form of medical knowledge, then 'translated' by Schopenhauer into philosophical knowledge and by Comte into sociological knowledge. This theorization initiated a process of de-subjectivization, which was destined to drastically change the framework of the modern concept of the political. Once human beings were thought to be internally traversed by the tension between two heterogeneous forces and actually determined, in our passions, and even in our will, by a force more in keeping with simple reproductive life, the very premise on which the modern political paradigm was founded could no longer be sustained. If individuals were immersed in the blind corporeality of their vegetative life, incapable even of governing themselves, how could they intentionally create a political order such as to be able to derive their subjective rights from it?" (Esposito 2012, p. 6). The cited scheme of thought influenced, more or less, the many of contemporary political systems. For instance, deconstruction and desub-

⁶ According to Dworkin (Dworkin 2011).

jectivization of a person supported totalitarianism and authoritarianism; the inability to self-reliance supported the establishments of communitarianism, and so on. A special case for which we should pay attention, is the thought of Thomas Hobbes, in which he used a determinism⁷ as a premise for the creation of basis of the later liberal thought (Van den Enden 1979, p. 187). This shows up how different from each other may be reached biopolitical concepts, depending upon the original understanding of the issue of free will. I intentionally used the word “biopolitical”, because the deliberations on determinism and its acceptance or rejection, lead to a dual understanding of biopolitics, namely negative or affirmative⁸. The former assumes that people are not competent to decide their own destiny, thus they require a total power over them. The latter perceives a man as free, conscious, aware and, what is the most important, self-sufficient individual. Of course, the negative interpretation of biopolitics, but leading to the concept of social contract, as did Hobbes, is also possible. Although almost all modern legal and political systems sources from

determinism, they still weapon the conviction of an intuitive perception of the will of as a free. Hence the consequence of the complete acceptance of determinism may become the total collapse of the system and the need to create a new one, or at least the need to reform the existing, and assuming the reprioritization of its values (Bechara, Burns 2007, p. 274).

As mentioned, there are five categories of neuroscience covered by the ethics in neuroscience paradigm: diagnostic neuroimaging, predictive neuroimaging, neurostimulation, psychosurgery and cognitive enhancement. Consequences of their application was described by Francis Fukuyama, who wrote: “Biotechnology falls somewhere between extremes. Transgenic crops and human genetic engineering make people uneasy. But biotechnology also promises important benefits for human health and well-being. (...) The real threat of biotechnology is far more subtle, and therefore harder to weigh in any utilitarian calculus.” (Fukuyama 2002, p. 182). Although the philosopher mainly focused on the genetic engineering, similar words can be said about neuroscience. According to the notice of Fukuyama, I will disregard the utilitarian approach, in place of an appealing to the classic definition of neuroethics, to consider the benefits and risks of the use of neuroscience in the context of consequentialist collision of spheres: private – defined as the impact of applying a neuroscience technique to the personality, decisions and behavior of the individual – and public – in other words, social, including changes of perception of the individual by the society, in the face of new knowledge

7 “The position of Hobbes in the controversy is that which defends *actional liberty*, combined with *volitional determinism*. With *actional liberty* is meant here that some actions can be legitimately called *voluntary* actions. Those are actions which proceed from the *will* of the actor, which means that they would not occur if there were no will that determined them. For those actions the will is the sufficient determining factor. In the sense that he is capable of this sort of actions, man can be said to be *free*. He is free as far as he is a subject of such voluntary actions. (...) On the other hand, by *volitional determinism* is meant the conviction that the *will* itself cannot legitimately be called *free* in the sense of being *indetermined* and *capable of autonomous selfdetermination*. The so-called “will” can only be understood and explained if it is apprehended as a volitional process which is *determined* by its *antecedent causes*.” (Van den Enden 1979).

8 Both terms are derived from the philosophy of Roberto Esposito (Esposito 2008, 2012, Vatter 2013).

or context, resulting from the application of one of the techniques.

Let us now briefly consider the categories mentioned at the beginning of the previous paragraph, based on the given schema. The first of them is diagnostic neuroimaging, which potential therapeutic value is far more than obvious, however, is also ethically controversial. Suppose that someone does a reprehensible and blameworthy act and then undergoes fMRI scan, which shows structural damage or abnormal activity of this person's brain region, responsible, e.g., for decision-making process and control of impulsive behavior⁹. On the one hand, this information is very heavy to accept by the accused person, but on the other, it is also very useful for the society, which from now on may take medical care of that person or put him or her into jail. Moreover, diagnostic neuroimaging involves another very important issue, which I have outlined as a return of behaviorism. In other words, focusing on the specific brain region alone may be a significant oversimplification in explaining the link between functioning of the brain and reprehensible behavior¹⁰.

The second category is psychosurgery. This kind of treatment is the method of last resort for obsessive-compulsive disorder (OCD). Nowadays, its use is much more accurate than 20 years ago, but still associated with the considerable risk of damage to adjacent

parts of the brain. Despite of this, the person subjected to psychosurgery, though cured of the OCD, usually acquires and suffers from other disorders caused by the physical intervention in the brain, loses the ability to freely operating in the society, and finally becomes a burden for the latter. The given example clearly shows the contrast between personal benefit and the social investment. The very similar anxiety applies to the third category, neurostimulation, which is, however, less invasive and reversible method. It is also more often preferred solution since the invention of stereotactic procedures (Lasak, Gorecki 2009, p. 593-599), although its long-term effects remain unknown.

The fourth category is cognitive enhancement. Using drugs such as Ritalin, Modafinil or Noopept can noticeable improve our cognitive capacities, for example, concentration, memory, learning skills, perceptivity, mood, the time of wakefulness, and so on. This issue is part of the broad debate on human enhancement, in which the main objections against the use of listed and similar drugs are raised by bioconservatists. One of them, Michael Sandel, argues, that the acceptance of human enhancing methods leads to the elimination of values such as dignity, virtue, and equality (Dominiak, Perlikowski, Płotka 2013, p. 182). In other words, he considered personal benefit as a harm to the society. The issue of the improvement of cognitive abilities is also associated with the intriguing thought experiment proposed by Harris. "Consider what would happen if we discovered a cure for human evil. (...) The cure for psychopathy can be put directly into the food supply like vita-

9 Prefrontal cortex (PFC) is the one responsible.

10 For instance, in the given example of disorder of decision-making process and control of impulsive behavior, PFC is not the only one brain region having importance. Particular regions of parietal and temporal lobes are also involved.

min D. Evil is now nothing more than a nutritional deficiency. (...) Consider, for instance, the prospect of *withholding* the cure for evil from a murderer as part of his punishment. Would this make any moral sense at all? What could it possibly mean to say that a person *deserves* to have this treatment withheld? What if the treatment had been available prior to the person's crime? Would he still be responsible for his actions? It seems far more likely that those who had been aware of his case would be indicted for negligence." (Harris 2010, p. 75). The cited fragment shows not only the dependence of our moral intuitions from the development of cognitive enhancement, but also the shift in the assessment of factors responsible for the human behavior.

The last category is predictive neuroimaging. Although the latest discoveries in this discipline may provide many precious data about the human behavior, they are perceived as a threat to the autonomy of person¹¹. Notable is the fact, that predictive imaging is the only one from listed categories, which cases are almost always placed at the central point of the Figure 1. For instance, when a patient receives bad results of the scan, he "suffers" as well as his social existence, and *vice versa*, when he receives good results of the scan, it positively influences his being seen by the society. Of course, a necessary condition for the occurrence of both situations is the disclosure of patient's medical record, which is the next controversy around predictive neuroimaging. If the data

achieved during the scan can negatively affect a personality or social existence of the patient, is the researcher obligated to disclose this information? The other and highly intriguing question was aroused by the situation, in which a researcher discovers that the patient's brain indicates a predisposition to psychopathology. What should be done with such a person? A promising answer was given by an American endocrinologist, Robert Blank: "In the near future, this debate is likely to shift to the use of preemptive mandated interventions to modify the brain chemistry of those persons diagnosed through brain imaging tests as being at risk for violent behavior. Paradoxically, new knowledge about the interaction of the brain and the childhood environment also intensifies the need to develop preventive policies in response to early maladaptive behaviors of males in particular." (Blank 2011, p. 219). There is a remaining question, however, about the nature of these preventive actions – whether they will actually rely on the medical treatment or, as in Giorgio Agamben's theory, on the limiting freedom of potentially dangerous persons? Regardless of the answer to this question, one thing is certain – as writes Fukuyama: "In the face of the challenge from a technology like this, where good and bad are intimately connected, it seems to me that there can be only one possible response: countries must regulate the development and use of technology politically, setting up institutions that will discriminate between those technological advances that promote human flourishing, and those that pose a threat to human dignity and well-being." (Fukuyama 2002, p. 182). The task outlined by Fukuyama will require

11 I mean especially such methods as the dream reading or using fMRI scans, or any other neuroimaging technique, as the evidence in the court.



the elaborating of coherent and reasonable theses, which can be delivered by the new discipline of politics – biopolitics.

Conclusions

The article covered one of the most intriguing from the contemporary theoretical and practical issues – the influence of neuroethical research on political theses. Key concepts were explained in this area, providing the necessary knowledge to navigate in this subject. Therefore, the main objective of the article has been achieved, giving the wider perspective on the pragmatic meaning of the assumption of the non-existence of free will. The article can be also used as a starting point for further analysis of the outlined topics.

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