



CREATIVITY OF BIOTECHNOLOGICAL IMMUNOLOGY: INVENTION, NATURALNESS AND BEING

Tadej PIRC

University of Ljubljana,
Faculty of Arts,
Department of Philosophy
Aškerčeva c. 2, 1000 Ljubljana, Slovenia
E-mail: tadejpirc1@gmail.com

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The article discusses three intertwined issues posed by the modern biotechnological immunology and its creativity potential: invention, naturalness and Being. In the first part, the author reflects on evolutionary paradigm and Peter Sloterdijk's theory of immunology, particularly in their relation to the biotechnological enhancement of human beings. The second part discusses Being's own naturalness and the possibility of creative invention. In the third part, the author combines these viewpoints to highlight some metaphysical challenges of biotechnological immunology. Most importantly the forgotten question of *what does it mean to be*, especially after the postmetaphysical annulment of the possibility of death. The core thesis argues for the naturalness of the creative biotechnological practice for preventive and reparative purposes.

Keywords: Being, biotechnological immunology, creativity, evolution, invention, naturalness, Peter Sloterdijk, postmetaphysics.

Introduction

In this article I set out to draw on my previous research of the postmetaphysical concept of immortality in its relation to the Enlightenment ideology of progress, and the notion of automobilization (with its representation in automobile as the most evident artefact of the postmetaphysical era). The core thesis of that philosophical-anthropological analysis – which will also use as a starting point of the present discussion – argued that immortality demands preservation which can only be guaranteed by the permanent progress, and that the constant mobilization anticipates growth, since the fundamental aim of culture as a political organism is to overgrow everything that is natural or biological. In short, the *telōs* of anything cultural (political) is to abolish everything natural (biological). Or as Jeremy Rifkin puts it:

“Every society is an organizational expression of humanity's deep desire to overcome the limits imposed by time and space. The goal is always the same. We organize to

perpetuate ourselves, and our dream is to organize ourselves so well that we will be able to overcome our temporal sojourn and experience some measure of earthly immortality” (1998: 216).

This short paragraph recaps the very essence of what I intend to consider in the following chapters. However, I prefer neither to normatively judge the creative means with which we, human beings, are attempting at this ultimate goal, nor to discuss the problems of the global mechanism in which multinational biotechnological and pharmaceutical corporations are given more and more power over the everyday lives of us, human beings. These two aspects of biotechnology – moral and economic – are frequently under scrutiny and indeed important. Nevertheless, I am going to enter the discussion neither through bioethics nor social sciences. My discussion will be first and foremost metaphysical, and what I will argue, though, is the naturalness of the biotechnological science for preventive (i.e. nutritional and genetic), and medicinal (i.e. reparative) purposes. For “if natural selection and our primate heritage is to be taken seriously our continuity with nature should be acknowledged” (Megarry 1995: 3).

Biological kinetics¹ is characteristic of all living beings (species), whereas political kinetics is distinctively and exclusively human feature. Here, I will make use of Peter Sloterdijk’s terminology and claim that political kinetics² is ethics of the posthumanist era. In other words, the metaphysical disposition of the contemporaneity is characteristically obsessed with permanent motion; however, not for self-preservation, but much more for immortality.

This political aspect of the metaphysical transformation of Will-to-Being³ into Will-to-being-forever is the one aspect of biotechnological power we should devote our attention to, for it is manifesting in three pressing issues human beings of today are faced with. These are:

- (1) the issue of creative invention, or life creation,
- (2) the issue of naturalness, and
- (3) the issue of being after the annulment of the possibility of death.

Rather than dealing with each issue rigidly isolated by itself I will discuss all three of them in their deep interconnectedness. Regarding (1) I will delve deeper into the idea of making life, of creation, or what does it mean to be inventive, creative, especially in the milieu of biotechnological science. I will stress (2) in its relation to creation and what should be made of means of human enhancement and gene engineering (biotechnology). This whole discussion is in general very morally (normatively) oriented, or, simply put, judgmental, for it seeks the limit to which biotechnologists may go – specifically regarding the scope of organism’s genome modification by

¹ I suggest this term to stress the permanent motion of natural evolution manifested in permutations, changes, transformations, adjustments, enhancements etc.

² The main concept in Sloterdijk’s work *Eurotaoismus. Zur Kritik der politischen Kinetik* (1989).

³ Or simply Will as Will to Power, according to Friedrich Nietzsche, “‘Will to existence’: that will – do not exist! For what is not, cannot will; that, however, which is in existence – how could it still strive for existence! Only where there is life, is there also will: not, however, Will to Life, but – so teach I thee – Will to Power!” (1917: 125).

biotechnological manipulation – and it questions the normative principles of biotechnological and medicinal immunology. Hence, I stress the necessity of the metaphysical contemplation of these issues, especially through Martin Heidegger's conception of being-toward-death, and what happens with this conception of dwelling when the possibility of death vanishes, as I indicated in (3). All in all, these issues are interrelated and addressing the very fundamental metaphysical question of ontology: *What does it mean – to be?*

More than revealing the answers I could only assume, I will rather open some questions that need to be addressed in order to comprehend the metaphysical issues of biotechnological immunology more competently and thoroughly⁴. The discussion regarding bioethical and biotechnological challenges should be, in my own view, primarily and even solely a metaphysical one, for ethics, theology, science and politics necessarily cling on pure moralistic or ideological dispositions, whereas the question of Being (as Being-on-itself) stands by itself and necessarily comes before the questions of ethics and normativity, as will be shown in the last part of the article.

Evolution and immunology

“We humans are participating in the process of evolution *per se*. By that I mean that our ability, acquired through evolution, to manipulate genomes by selective breeding, and more recently by recombinant DNA technology, is an integral component of evolution itself and is not, as has been claimed in the past, ‘tinkering with evolution’. Instead, *it is* evolution” (Martin 1985: 23).

Taking this into account, my basic presupposition, therefore is, that biotechnology corresponds to the general biological and social evolution of immunological systems which are – metaphysically speaking – some sort of systemic skeletons or spheres of immunity, safety bubbles even. This is the idea introduced by Sloterdijk, who claims that these protective bubbles are our most basic *environment* without which we can imagine neither the kind of life we live, nor the world we live in. Here, one must acknowledge the influence and the insight of Heidegger, whose concept of Being-there (*Dasein*)⁵ is the fundamental idea of Sloterdijk's spatial contemplation of Being. However, Sloterdijk regards it entirely *literally* (i.e. spatially), especially in the trilogy *Spheres*, where being-in-the-world means being-in-space, being-somewhere, rather in a secure space that protects human beings from their feelings of transience and inevitable finality of life:

“Starting from the insight that humans are not only space-creating beings but that these spaces of immunity are essential to the production and the reproduction of the human, Sloterdijk attempts to correct the atopolitical discourse of the Moderns, who take as their starting point the self-sufficient individual (and hence emphasize

⁴ Immunological terminology is borrowed from Sloterdijk's works on general immunology, especially in his late texts *Spheres* (2004, 2011, 2014) and *You Must Change Your Life* (2013), where one could regard his conceptions as purely metaphysical.

⁵ Based on the ground (*life-world*) notion of being-in-the-world, or dwelling.

consciousness and time as the form of the inner sense). To do so, he shifts the discussion towards the site or locus, the bubble, where the human appears [...] and reinterprets the development of humanity, from the primitive hordes up to our virtual networks and modern apartment complexes, in terms of ‘spheres of immunity’” (Morin 2012: 79).

“Consequently”, claims Sloterdijk, “immune systems at this level can be defined *a priori* as embodied expectations of injury and the corresponding programmes of protection and repair” (2013: 8). Simultaneously, this is also the foundation on which man as a world-contemplating-Being emerges. With rationalization – which leads to *thinking ahead* – occurs also the need for self-protection⁶, however not in a mere biological manner as self-preservation, but on another level: the political. One could assume a conclusion that the biological evolution of species led human beings not only to the organization of a community based solely on anticipation of *the biological interest*, but also to the organization of a society for what I suggest is called *the political interest*, meaning the social contract with all of its safety measures and protective effects.

This is the foundation on which I intend to stress some metaphysical challenges, or consequences of the biotechnological mobilization and its creative potential. For if we adopt the validity of the paradigm of the permanent evolution in the pursuit of being-here-forever⁷, we cannot bypass Sloterdijk’s views on mobilization and the political kinetics explicated in his book *Eurotaoismus*, where the main thesis claims that modernity equals kinetic utopia. Specifically this means, as per Sloterdijk, that “progress is movement to move, movement to move more, movement to increase the possibility to move” (1989: 36)⁸. After all, as biotechnologists claim, “modern advances in medicine, driven by new knowledge from the Human Genome Project, will likely result in healthier lives and potentially increase human lifespan” (Thieman, Palladino 2009: 7); the end is indefinable, however the aim itself is, quite on the contrary, clearly evident: permanent movement (or progress) towards immortality. This aim – biological in its core – will undoubtedly have tremendous effects on social organization of human beings, their interactions, value systems, identity issues, and, ultimately, on world

⁶ A version of this idea is proposed and quite plausibly defended by Daniel Dennett (1993).

⁷ This kind of *Dasein*’s mode of being is of course characteristic of the Darwinist conception of Being (or Life), which Herbert Spencer – and his 19th century contemporaries – stressed even before Charles Darwin’s publication of his main work, in order to point out the same basic foundation and strive of humans in socially (politically) structured organizations (Spencer 1857). Spencer’s concept of *survival of the fittest* – in principle – corresponds to the biological theory of Darwin and can be used to explain (almost) any human action, be it biological or political. As Sloterdijk argues, “the continuation of biological evolution in social and cultural evolution leads to an upgrading of immune systems. In the case of humans, we have reason to expect not only a single immune system – the biological one, which is the first in evolutionary terms, but the last in terms of its discovery history. The human sphere contains no fewer than three immune systems [...]”. The other two are the social and the symbolic or psychological immune system. Especially the latter is crucial for the present explication, since the symbolic or the psycho-immunological practices are the ones “on which humans have always relied to cope – with varying success – with their vulnerability through fate, including mortality in the form of imaginary anticipations and mental armour” (2013: 9).

⁸ In German: *Fortschritt ist Bewegung zur Bewegung, Bewegung zur Mehrbewegung, Bewegung zur gesteigerten Bewegungsfähigkeit*.

history as a macro-cultural entity as well. Some effects are already manifesting themselves very clearly.

I am, therefore, emphasizing the necessity of thinking the issues of biotechnology or transgene kinetics – most importantly the issue of gene engineering for human enhancement – first and foremost in their metaphysically constructed political outlet, since biotechnology in its core brings nothing biologically new, and is therefore both scientifically and morally justified⁹. Historical accounts that “have shown that the Chinese, Greeks, Romans, Babylonians, and Egyptians, among many others, have been involved in biotechnology since nearly 2000 B.C.” (Thieman, Palladino 2009: 2) should not be overlooked; creative biotechnological interferences have much more history than mere 60 years that passed since the discovery of the structure of the DNA molecule by James Watson and Francis Crick in 1953. Nonetheless, during the last few decades there appeared some new and rather exciting aspects of biotechnological science which are shattering nearly all established definitions and explanations of what it is to be a human being, or simply what does it mean to be human. Though, as I claim, not in a biological way, for the Darwinist paradigm is clearly and argumentatively explaining more or less all permutations of human species throughout its natural history – the main reason being preservation of the species – but in the most basic political way, which in its core fundamentally metaphysical.

Biotechnology did not start a new journey, nor drove humans off their track of progress. Conversely, biotechnology became yet another tool, with which the humanity of the 21st century – equipped with the accessories and knowledge for the structural permutation of the genome – proceeds to march towards the millennial ideal of immortality.

This kind of disposition of open and mighty – perhaps shameless as well – striving for the divine attributes calls for a redefinition of human being. If we understand posthumanism as “the enhancement of human intellectual, physical, and emotional capabilities, the elimination of disease and unnecessary suffering, and the dramatic extension of life span” (Wolfe 2010: xiii), then we should acknowledge also that “this sense of posthumanism derives directly from ideals of human perfectibility, rationality, and agency inherited from Renaissance humanism and the Enlightenment” (Garreau 2005: 231). Once again this leads to the conclusion which I earlier touched upon in regards to the social Darwinism and the 19th century sociological theories¹⁰.

In the very core, keywords of the present revolutionary gene engineering are the same as have been for the last five hundred years of world history: effectiveness and speed, regardless of particular discrepancies of *good life* criteria on the one side, and

⁹ A hasty conclusion, one might remark. The reasoning of this argument will become clear in the following paragraphs, nevertheless, it should be clarified already at this point that 1) all things biological, therefore all things natural are subject to scientific research based on general curiosity of man as *animal metaphysicum*, and that 2) issues of morality – or ethics in general – are entirely discursive, therefore social (political or ideological) issues; leading from the fact that biology (nature) precedes discourse and social organization, it cannot be subject to morally normative judgments.

¹⁰ Cf. note 7 in this text.

the lack of the comprehensive idea of the totality of world history on the other side. Both keywords are, nevertheless, consistently in accordance with the general drive of mobilization which Sloterdijk identified as the kinetic utopia¹¹. Metaphysically speaking, the kinetic utopia corresponds to the biological disposition of self-preservation; both, the political and the biological ways of dwelling are fundamentally dependent on effectiveness and speed, whereas their complex constitutes a *tactics of survival*¹² manifested as *doing things as fast and quick and with as little effort as possible*. The contemporary political situation is creating an immunological demand far greater than the biological situation (nature) is capable to meet:

“Nature’s production and recycling schedules are deemed inadequate to ensure an improved standard of living for a burgeoning human population. To compensate for nature’s slower pace, new ways must be found to engineer the genetic blueprints of microbes, plants and animals in order to accelerate their transformation into useful economic products” (Rifkin 1998: 12–13).

Usefulness should be read in an immunological manner. All of these manmade products are being made for a very simple reason: to produce more and more, and perhaps one day to produce enough. If understood as an immunological intervention, the aim of this permanent growth in production is the same as the one already mentioned: survival. Exactly this is a clear evidence of political overgrowing of biological, for the growing production in order to fulfil not only biological needs (preservation) but also political or metaphysical (immortality) strongly suggests superiority of the socio-political immune system.

Naturalness of Being and inventiveness

Rifkin, in his bestseller *The Biotech Century* (1998) which highlighted some of the greatest issues of the contemporaneity, tackles biotechnological engineering mainly from the point of economic strives of the capitalist power structures, or, if I put it directly, he attacks global pharmaceutical and biotechnological mega-corporations. Although Rifkin is convinced of some particular advantages of changing and enhancing the genome of various plant and animal species in order to produce food more effectively, he cannot but vigorously attack the ambition of these corporations which are accumulating great wealth as a result of performing this service¹³.

To some extent this is of course true, however, it would be blind at the same time to overlook the profits of the conventional pharmacology, supportive medicinal industry, the medicinal practice itself, arms and military industries, oil and oil derivatives, electric power industry, other petrochemical resources, etc. Nevertheless, there is a dividing line between these industries in the global market. I propose that this line

¹¹ Most thoroughly in already mentioned *Eurotaoismus*.

¹² Tactics of survival could be understood also as Oswald Spengler’s *tactics of living*, which is technics in its most fundamental meaning (cf. 1976: chapter 1).

¹³ It is deemed as such by some people and social structures, mainly the proponents of (modern) biotechnology.

is drawn between actively and passively interfering with life, specifically interfering (tinkering) with living being. Every manmade product – either pumped or dug up raw material, intermediate product, or final product – more or less directly influences life itself if regarded as nature encased in Being. However, only biotechnological practice actively and creatively interferes with the very nature of life.

Rifkin manages to get in the vicinity of the fundamental motive that is pushing forward this technology of the future, yet he fails at grasping it in its full scale and importance. Mainly because he traps himself in mergers and acquisitions of grand corporations, investments for research and development, etc. Nonetheless, he almost gets to the essential metaphysical feature of biotechnology with an extremely lucid analogy, i.e. the restoration of a new alchemy through biotechnological science. Efforts and aspirations of the 18th century scientists, more or less forgotten in the contemporary Europe, are manifesting themselves today in modern laboratories all over the world. What used to be *alchemy* – a striving for the life elixir, absolute knowledge, or any kind of potion or means that could ensure immortality – turned today into *algeny*, which specifically means an exploration of life itself, the absolute power of control over life (and Being), and any kind of technology or intervention (procedure) that could ensure immortality:

“Today, the stage is set for the emergence of a new kind of consciousness – one that reflects the aspirations and objectives of the new biotechnological arts. ‘Algeny’ is likely to emerge as a new philosophical framework and overarching metaphor for the Biotech Century [...] Gold, in its seeming permanence, conjured up the image of immortality and perfection [...]. So convinced were the alchemist that what they were doing in the laboratory was an integral part of the natural process that they came to believe that the ‘gold’ they created was not an imitation at all but rather a superior form of gold, one that represented the perfect state toward which all natural gold aspired” (Rifkin 1998: 32–34).

It most certainly seems that Rifkin’s announcement of the century of biotechnology has not been false. Specifically, this will be – and it is already proving to be – the century of extremely refined and subtle, one could say deep interventions with which man is transforming and redesigning both nature itself and what is considered natural. In my view, this is the most metaphysical – hence, the most influential – kind of creativity human beings mastered.

Precisely that is why it is profoundly filled with ideological prejudice and consequential moral judgements. After all, what is nature? What conditions have to be met that a subject or an object can be considered natural? Drawing on my previous research mentioned already in the introductory paragraph, I claim that human beings primarily follow their biological, therefore natural purposes¹⁴. Principally, this means self-preservation which I understand in its postmetaphysical disposition as the striving for immortality. Biotechnological knowledge allows for the transformation of nature and natural; it allows for the transformation of human beings, and the

¹⁴ This stance is simply called *natural teleology*, its pioneer being Aristotle.

most fundamentally transformed of all is the notion of death, or rather its meaning. Postmetaphysically speaking, human being-toward-death¹⁵ transformed into posthuman being-toward-immortality. The following question ought to be asked: Is this still the same human, a humane human?

At this point, one should notice a slight distinction between the self-preservation drive and the striving for immortality; once again, this is the distinction between the biological (natural) and what I understand as political (cultural); exactly this line is the dividing crevasse between the biological kinetics and the political kinetics, and also between the biological immune system and the socio-political immune system. For this reason I introduced to this discussion the notion of posthumanism which tends to explain a newly formed constellation of the phylogenetic tree of life; a new posthuman man has performed a self-exemption from this system and is now observing it from the divine position. This is the new man – at this point it is not clear yet whether *the last man* or *the Übermensch*¹⁶ – who is self-willingly and arbitrarily manipulating life and Being itself:

“Human beings have been remaking the Earth for as long as we have had a history. Up to now, however, our ability to create our own second Genesis has been tempered by the restraints imposed by species boundaries. We have been forced to work narrowly, continually crossing close relatives in the plant or animal kingdoms to create new varieties, strains, and breeds. Through a long historical process of tinkering and trial and error we have redrawn the biological map, creating new agricultural products, new sources of energy, more durable building materials, life-saving pharmaceuticals, and other useful products. Still, in all this time, nature dictated the terms of engagement [...] The new gene splicing technologies allow us to break down the walls of nature, making the very innards of the genome vulnerable to a new kind of human colonization” (Rifkin 1998: 71).

Indeed, this intuitively seems as completely unnatural and something that only man as a being surpassing nature and everything biological is capable of. Nevertheless, I shall unfold the following argumentation, which tends to show that the validity of this intuitive thought crumbles under pressure of a slightly less *emotional* reasoning¹⁷:

p1: Nature is equivalent to the material world, or the universe;

p2: There is nothing beyond the universe¹⁸;

p3: Everything that exists is dependent on and exists only in time and space, in the universe;

¹⁵ For the explication of this notion cf. chapters 46–53 in *Being and Time* (Heidegger 1996: 219–246).

¹⁶ The distinction is clearly presented in *Zarathustra's Prologue* (Nietzsche 1917: 3–20).

¹⁷ In a sense it could also be named a *posthumanist* reasoning.

¹⁸ The universe (ontologically and materially) emerged as a result of the *First Event* or the *Primordial Miracle*. Event is a composition of temporal and spatial components; the first event being the Big Bang – according to the Big Bang Theory – which created, or caused time and space (spatial-temporal dimensions). This cosmological model of the universe, inspired by Albert Einstein's General Relativity Theory, is prevailing in current cosmological theories; it is propagated mainly by astronomy super-stars as Stephen Hawking, George F. R. Ellis and many others (Uršič 2001).

p4: Man dwells in the universe.

C: Everything available to man is natural.

It is fundamentally crucial to note, that not only physical entities, but mental, ideal, abstract, immaterial entities too are dependent on and exist only in time and space. Here, I presuppose theories that comprehend consciousness as a *result* of chemical and physical processes in brains and the nerve system. Therefore, ideas too have both, a spatial and a temporal dimension, since they always emerge as a result of some particular neurocognitive process which necessarily takes place in some particular *life-world* neural network. Phenomenologically speaking, or if I put it simply, an idea always *happens* somewhere, sometime. This theoretical position is of course in high debt to Edmund Husserl's theory¹⁹ of consciousness or *aboutness* (also *directedness*). To think is to think about something; there is no empty consciousness.

Evolution²⁰ – be it in its macro-spherical variation as the cosmological evolution (cosmological Darwinism) or micro-spherical as the evolution of species – is the only force which enables man to creatively discover (develop) new tools, processes, accessories, means, and – in line with these – needs, expectations and desires. It is impossible to invent anything new:

“The novelty of the new [...] stems from the unfolding of the known into larger, brighter, more richly contoured surfaces. Consequently, it can never be innovative in an absolute sense; in part, it is always the continuation of the cognitively existent by other means” (Sloterdijk 2013: 7).

Everything that is, that exists, was here from the very beginning²¹; it only had to be discovered and *drawn* into everyday (*life-world*) existence:

“By the new cosmological thinking, bioengineering is not something artificially superimposed on nature but something spawned by nature's own ongoing evolutionary process. It is, in effect, the next stage in the evolutionary process. Any effort, therefore, to resist bioengineering would in the end be futile and self-defeating because it would fly in the face of what is ‘natural’” (Rifkin 1998: 222).

Even though this Rifkin's statement echoes uneasiness about and distrust of biotechnology – it was certainly uttered in a context unfavourable to biotechnology – I suggest we take it as if it was meant to say exactly what the words are saying: Biotechnology is natural, therefore, to resist it would be unnatural²². Here, we are

¹⁹ It should actually be properly attributed to Franz Brentano, as the initiator of this theory.

²⁰ The theory of evolution of species through natural selection is currently the leading paradigm of explaining the emergence of human beings. By analogy with the Euclidian geometry – proven invalid in cosmic space-time by Einstein – it is to be expected that in the future the Darwinian Theory will too be proven either completely false or valid only in some micro-aspect.

²¹ Metaphysically speaking, it emerged already with the First Event – the Big Bang.

²² Moreover, it would be as unnatural as the very ecological strive for preservation of nature, dictated by the spectacle of ecology (cf. Pirc 2014); for the explication of the notion of ecological spectacle: the Ecospectacle.

faced with strong presence of the metaphysical or teleological conception of nature, the world, man and Being. But then – what is the alternative? Which alternate possibility of interpretation of the meaning of Being succeeds at bypassing the world-weariness and anxiety of recognizing the vanity of Being itself?

“At present it is impossible to create a ‘useful’ new gene in the laboratory. In this sense, biotechnology remains an extractive industry. It can ‘mine’ genetic material, but cannot create it *de novo*” (Rifkin 1998: 107). This claim was uttered in 1998; while it was valid then, it is only partially valid today. Artificial gene synthesis is gaining more and more momentum, and it achieved tremendous headway in the last ten years with many new commercial research groups and companies focusing completely on *de novo* DNA synthesis. Some new approaches and methods had significantly reduced the frequency at which errors pervade the final product (Carr *et al.* 2004). However, this method is still based and essentially dependent on the combination of molecular biological techniques and organic chemistry, and relies mainly on the efficiency and alignment of specific oligonucleotides (Reese 2005), short DNA or RNA molecules. *De novo* synthesis and other strategies of protein engineering, i.e. rational protein design and directed evolution, therefore, still do not mean *creation* in a Genesis variant (from nothing), but they simply imply the protein synthesis of complex molecules from simple molecules.

It is impossible to create or invent *something* from *nothing*. Even the matter itself did not emerge from nothing, since before the emergence of existence itself – or Being – even *nothing* did not exist. *That there is something which is not nothing* – this is all there is to the *ontologies* of Nought. If everything that exists, including nothing, is included in this world, this nature, how is it then possible to invent anything? “Scientists can accomplish remarkable feats in manipulating molecules and cells, but they are utterly incapable of re-creating even the simplest forms of life in test tubes” (Raeburn 1995: 235).

In short, biotechnology is not at all about creating new life or being, but (presumably) entirely about the *elimination of flaws* – through interference and tinkering with natural processes, cycles and handicaps – that nature bestowed on human species. There is a clearly recognisable thread going from the historical animal and plant domestication, and cross-fertilisation to the contemporary (direct) interfering with the genome. Even cloning, as one of the biotechnological possibilities, is not promising creation of life in a *biblical* manner of speaking. What is possible, though, is taking *natural* genetic material and using it for reproduction, however, not yet on the human level²³.

Postmetaphysics of creative biotechnological immunology

Science is questioning feasibility, while moral theory and bioethics – burdened with various value systems, ideologies, perspectives and interpretations of truth and

²³ There have been some indications and announcements of this already happening (e.g. cloning of a human being by Hwang Woo-suk), however, all *stories* were proven false (Thieman, Palladino 2009: 334).

understandings of good ways of living – deal with normative principles and interpretations of *proper values*. However, metaphysics deals with questions beyond, or transcendent to the life-world horizons. After all, the unbearable lightness of dwelling in the brave new world lies precisely in the core of the Heideggerian question of the meaning of Being.

“The Brave New World has achieved prosperity, community, stability and near-universal contentment, only to be inhabited by creatures of human shape but stunted humanity. They consume, fornicate, take ‘soma,’ enjoy ‘centrifugal bumble-puppy,’ and operate the machinery that makes it all possible. They do not read, write, think, love, or govern themselves. Art and science, virtue and religion, family and friendship are all passé. What matters most is bodily health and immediate gratification: ‘Never put off till tomorrow the fun that you can have today.’ No one aspires to anything higher. Brave New Man is so dehumanized that he does not even realize what has been lost” (Kass 2002: 5).

Considering the human genome solely, the biotechnological science in its immunological form is attempting to eliminate various pathological and clinical conditions, prevent the evolution of diseases, and preserve human body healthy, fit and vital even in high age. All this is resulting in the shift of the old age far into the second part of the century of one’s life. Death is getting further and further away, it is being pushed out of the life-world reality and it is getting more and more metaphysically vague. Conversely, the notion of being-towards-immortality is getting more and more transparent and intelligible.

Average life expectancy in Europe arose from 33 years in 1800 to 80 in 2012 and it is rising progressively²⁴. What one has to admit as indisputable is that the modern biotechnology had little to do with this trend. The main factor was, as it seems plausible to me, the general improvement of living conditions, which was closely related to industrialization, and the following deindustrialization, communal sanitary installations that completely transformed the meaning and role of hygiene, and – most importantly – introduction of the public healthcare systems. Particularly the medicinal practice, as I claim, is the one which main purpose is preservation of human lives and treatment for expanding the earthly existence of each individual. This aim, after all, demands a significantly high rate of interfering with the human body and nature, especially when the pharmacology is taken into consideration.

Nevertheless, the traditional view which values medicine and human body (and mind) treatments as exclusively positive undertaking, remains extremely influential, even though there are major discrepancies in interpretations and definitions of the naturalness (and nature) of man and nature itself. It is not unusual to come across the – intuitive – statements like this one by Nicholas Agar, one of the most renown contemporary bioethics experts, in his influential book *Perfect Copy*:

“No Boeing 747s, insulin injections or VCRs could be found in the natural habitat of *Homo Sapiens*; they are all unnatural. If cloning is to be banned because it is unnat-

²⁴ A lot of interesting data (sources and methodology included) is accessible in Max Roser (2016).

ural, then so should these other things. Putting matters the other way round, if the unnaturalness of modern forms of transportation, medicine and entertainment does not suffice to make them morally objectionable, the unnaturalness of cloning should count decisively against it” (2002: 17).

One can simply substitute the term “cloning” in this statement with any other kind of gene engineering or biotechnological, therefore creative immunological practice; according to Agar, every one of them is unnatural. Although he does not condemn it as negative – since he sees many advantages in practicing biotechnology – he considers it as an unnatural practice. Hence, it is appropriate to pose the following question: What is that – *homo sapiens*? What is its natural environment? Is a stick which it uses in a walk uphill or through the woods unnatural? Is this merely a tool that does not have its place in the natural environment of *homo sapiens*? What about clothes? And language?

The answer partially lies in the informative claim of Rifkin, Agar’s colleague from the opposite pole: “Nearly three quarters of all the plant-based prescription drugs in use today were derived from drugs used in indigenous medicine” (Rifkin 1998: 49). This means that natives, who are usually regarded as *natural*, are a source of knowledge to the Western pharmaceutical corporations that use their knowledge for the production of the derivative that instantly becomes something unnatural. What is the naturalness criterion? Or, where lies the line between the natural and the unnatural? If natives’ interfering with their own bodies to relieve the pain or to preserve their life is something natural; and if, simultaneously, Westerners’ – therefore, the contemporary man of the third millennia – interfering with their own bodies to relieve the pain or to preserve their life is something unnatural, then this leads to a paradoxical conclusion, the solution of which is evident: *Everything that is (exists), is natural*. Nature itself, which is – biologically – everything that – biologically – is, is the limitation of the world, which is – metaphysically – everything that – metaphysically – is (exists). Progress is common to both, the kingdom of biology and the kingdom of metaphysics. Progress, growth, mobilization, self-preservation, efficiency, immortality; these are the fundamental notions of *ethos*, which could also be understood in this particular conception as *telōs* of humanity ever since the idea of humanity emerged. The form of this ethos is nature, whereas its matter is the world.

“[...] no bounds have been fixed to the improvement of the human faculties [...] the perfectibility of man is absolutely indefinite [...] the progress of this perfectibility, henceforth above the control of every power that would impede it, has no other limit than the duration of the globe upon which nature has placed us” (Condorcet 1796: 4–5).

This kind of thought has evolved on the wings of the Enlightenment project, when the stance that the future generations have to exhaust, knead and transform nature, in order to expand the boundaries of the human empire to affect all potential things gained a normatively positive echo²⁵. These dreams were supposed to come true with

²⁵ Propagated by Francis Bacon (e.g. in *Novum Organum* (1902)) and his contemporaries.

the genome modification technology, for “to negate nature, to remake it in our own image, to use it for our own ends, is to fulfil our destiny. Genetic technology represents the ultimate negation of nature” (Rifkin 1998: 170). But then again, is this really so? As long as one is holding on to the traditional and conventional ethics and metaphysics of the previous century this intuitively certainly is true. However, I have shown the paradoxical outcome of this kind of argumentation, since it is impossible to argue for the unnaturalness of gene engineering. How could man – by comparison with nature, an ignorant and helpless being – transcend into deity?

Therefore, I firmly stand by the assertion that biotechnology merely represents another creative tool which is used by human beings to help them preserve and improve (enhance) themselves. But here the question of the permanent progress²⁶ comes to mind. If this immunological progress has indeed its own internal aim to *secure the future*, it certainly has no sense of what then, when man finally switches from the Heideggerian way of dwelling as being-toward-death to the postmetaphysical, or maybe even more accurately posthumanist way of dwelling as being-toward-immortality. The most basic component of Being-here (*Dasein*), i.e. the anxiety, vanishes. It could be said, that in this postmetaphysical sense Being loses its meaning. This finding is the gateway into discussions regarding biotechnology and human enhancement, and the enhancement of the natural environment as well.

Conclusions

The emphasized postmetaphysical strive and the creative means of fulfilment of this the highest of all ends, is merely one of the archetypes of natural ethos. However, it is *the* natural archetype which makes it clear – if I borrow my concluding thought from Heidegger – that:

“the threat to man does not come in the first instance from the potentially lethal machines and apparatus of technology. The actual threat has already affected man in his essence. The rule of Enframing threatens man with the possibility that it could be denied to him to enter into a more original revealing and hence to experience the call of a more primal truth” (1977: 28).

Man brought the real danger already with himself, for the threat was present and real even before technology made its first revolutionary and seemingly jeopardizing steps.

In the notion of jeopardy the anxiety and strive for immortality reflect through both domains of human dwelling: biological and political. At this point man meets himself, specifically, the political man meets his own limits and collides with the biological man. Perhaps, this is the point where individualization – which emerged on the foundation of emancipation of political from biological – makes a turn back into the collective and social groupings, for it ultimately turns out that man as an individual being cannot survive his own death. Immortality, after all, is not something

²⁶ Mobilization or movement in Sloterdijk’s words.

that could the worldly *human-animal* achieve, despite the immense power of imagination. Evolution, as Darwinism comprehends it, is creativity at its best.

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KŪRYBIŠKUMAS BIOTECHNOLOGINĖJE IMUNOLOGIJOJE: IŠRADIMAS, GAMTIŠKUMAS IR BŪTIS

Tadej PIRC

Santrauka

Straipsnyje gvildenami trys glaudžiai susiję klausimai, keliami šiuolaikinės biotechnologinės imunologijos ir jai būdingo kūrybinio potencialo: išradimo, gamtiškumo ir būties. Pirmojoje dalyje autorius apmąsto evoliucijos paradigmą ir Peterio Sloterdijko imunologijos teoriją, ypač jų santykį su žmonių biotechnologiniu tobulinimu. Antrojoje dalyje svarstomas pačios būties gamtiškumas ir kūrybiško išradimo galimybė. Trečiojoje dalyje autorius apjungia šiuos požiūrius, siekdamas išryškinti tam tikrus metafizinius biotechnologinės imunologijos iššūkius. Visų svarbiausias – pamirštas klausimas *ką reiškia būti*, ypač postmetafiziškai panaikinus mirties galimybę. Pagrindine teze teigiama, kad kūrybiška biotechnologinė praktika yra gamtiška prevenciniu ir atkuriamuoju tikslais.

Reikšminiai žodžiai: būtis, biotechnologinė imunologija, kūrybiškumas, evoliucija, išradimas, gamtiškumas, Peteris Sloterdijkas, postmetafizika.