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THE PLASTIC BODY AS AN EPISTEMOLOGICAL FIGURE OF BIOTECHNOLOGICAL UTOPIA

Key words: body, plasticity of the body, biotechnology, utopia, epistemology

The body in the contemporary medicine manifests itself as an object of modification – reconstruction and construction. This experiencing of the body presupposes the control over all of its levels of biological structure. The conviction that control is possible evokes completely utopian model of the perfect body, indestructible, and capable of regeneration and self-healing. The realization of this project is believed to be in biotechnology, which provides the tools for control and modification of the body, and additionally offers the substituting artifacts.

This way of experiencing the body reveals paradigms that underlie the utopian projection of the perfect body. The first of them, is the understanding of the body as a habitat of deficits responsible for the disease, pain, aging, and finally for the death itself. The next is the perception of the body as biological organism exposing itself to optimization of its functions. Another is the belief in the possibilities of improving and strengthening its functions, or providing the new ones. This in turn entitles to perceive the body as biological matter, which is equivalent to other organisms, which can, therefore, be supplied with biological, or even technical prosthetics, or which can finally be programmed genetically. All of these paradigms of the medical and biotechnological contemporary discourse presuppose that the human body presents such plasticity, which allows to obtain the desired organic

forms: disease-free, resistant to aging, able to recover and extend during the time of its existence.

This set of paradigms creates just a form of experiencing the body as a plastic body, it conceals the presuppositions of modern science and medical practices, and it is the epistemological matrix of clinical discourse. The following considerations are there to precisely define its shape and write out its threads that are also the presuppositions of biotech utopia of a perfect body.

1. THE BODY AS A HABITAT OF DEFICITS AND DISABILITIES

Under the foundation of a cultural declaration of the possibility of transformation, the human condition lies in the rejection of the belief in the perfection of human existence and the acceptance of its biological incompleteness and imperfection, which are the causes of diseases, old age and, finally, human mortality. This leads to the legitimization of the concept of the human condition, under which the corporeal is seen as an accidental feature. As a consequence, human mortality also attains the before–mentioned accidental aspect, and the physical attributively possesses any deficits that necessarily imply death, "not death itself, but the man constrained by this mortal body would be the problem that is worth to be solved"[1] – post–humanistic postulate claims. Accordingly, the body is also recognized as a carrier of human existence, and as a form of existence, which also limits existence biologically. So, if in the myths immortality could have been given to the body by divine decision, then from a utopian perspective, the body can be redeemed from mortality through medical science and technology – redeemed from deficits, deficiencies, defects, and biological constraints.

In the modern utopia, the impetus of utopian thinking is limited, which focuses the whole momentum on the concept of the human be-

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[1] O. Krüger, *Die Vervollkommnung des Menschen. Tod und Unsterblichkeit im Posthumanismus und Transhumanismus*, eurozine.com.pdf/2007-08-16-kruger-de.pdf

ing in an environment of technology that transforms it. R. Saag says that it is technology that undergoes utopization, and utopian images come out of the extrapolation of technological trends[2]. The human body is therefore the subject to technological transformation, so thanks to it, the emancipation from nature – as F. Prengel writes – becomes possible[3]. So this postulate of liberation from the power of biological determinants of human existence is the source of medical utopization. Nanomedicine, genetic engineering, biotechnology should allow a man to escape from the existing physical limitations that make him susceptible to disease, injury, old age, disability, and also mortality. Here Prengel is even more explicit: "Overcoming the biological boundaries for what *transhumanism* advocates, means in practice *sculpting the man*"[4] on the road of auto evolution. N. Bostrom in A *History of Transhumanist Thought*[5] already foresees that humanity is facing a radical transformation thanks to technology that strengthens and expands human capabilities, physical as well as mental; future technology will make the human being open to an extension of these capabilities. It also assumes that this radical extension of human capabilities will not deprive a man of human characteristics[6], but will simply bring only benefits. So Bostrom postulates the freedom of individuals to choose technology at their discretion and the freedom of choice of parents for their own future children.

Liberation from suffering and pain, disease and death is due to occur thanks to medical technology or technologies that enhance the body, making it unnecessary for human existence. The first project leads to the cyborgization of a man, the other to the virtualization of his

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[2] R. Saage, *Utopischen Horizonten. Zwischen historischen Entwicklung und aktuellem Geltungsanspruch*, Lit Verlag, Berlin 2010, 148.

[3] F. Prengel, *Die Weiterentwicklung des Menschen – Leitvision für das neue Jahrtausend*, in: B.S. Sitter-Liver (ed.), *Utopie heute I, Zur aktuellen Bedeutung, Funktion und Kritik des Utopischen Denkens und Vorstellens*, Academic Press Fribourg, Fribourg 2007, 365.

[4] Ibidem, 364.

[5] N. Bostrom, *A History of Transhumanist Thought*, Journal of Evolution and Technology 14(2005)1, Appendix.

[6] N. Bostrom, *In Defense of Posthuman Dignity*, Bioethics 19(2005)3, 213.

existence. Both are, as forms of utopian thinking, cultural projects turned against the flesh. M. Foucault uttered very simply and convincingly the assumption specific to any utopia: all utopias have been created against the flesh, to lead it to extinction[7]. This turn against the body occurs when it is considered to be incapable of coping with the demands placed upon it. Exceeding the biological limitations of the body means also exceeding the human body itself. Allowing the technical artifact to replace the parts of the body in a contemporary clinic provides, since the therapeutic revolution, unequivocal confirmation of the implementation of the utopian intention, using prosthetics to replace the body and provide it with hitherto absent characteristics, namely, plasticity and equivalence. Immateriality of the body freeing the man from disease, pain and death is the end result of the utopian post–humanism project, which involves the separation of human existence from the flesh and the eventual transformation of person into a virtual entity: in one of the many post–humanistic visions "the material body is in the process of scanning a model for further, unlimited existence in the virtual world"[8].

Utopia of immateriality is the utopia of release from the biological nature of human existence, and – ultimately – from the materiality of the world. Post humanism is a desire to be an angel, who, as a spiritual being, is free from all evil that contaminates matter. Postulating exceeding carnality and humanity, post–humanism falls into the rut of human myths and religions, *de facto*, into everything that defines humanism. It replays scientific figures, forecasts, the old myths or translates religious ideas into the language of science, sharing the same desires and hopes, typical to mankind since the days of its social separation from the natural world. Thus T. Peters concludes, "Technology is becoming a rival to religious promise"[9].

The vision of the immateriality is followed by the modern idea of the natural being battered by industry, processed and pressed into the

[7] M. Foucault, *Die Heterotopien. Der utopischer Körper*, Suhrkamp, Frankfurt am Main 2005, 26.

[8] O. Krüger, op.cit.

[9] T. Peters, *Perfect Humans or Trans–Humans?*, in: C. Deane–Drummond, P.M. Scott (ed.), *Perfect? God, Medicine and Human Identity*, T&T Clark, London 2006, 21.

framework of artificiality. Such a being is increasingly seen as a social product and cannot be treated as a model, nor recognized as a manifestation of perfection. Neither is it believed to hold the natural beauty that is independent of human action and imagination. A being that is subject to industrial processing leaves the shreds of its former naturalness behind. And above all man, as a biological entity, is currently found to have the same naturalness, which may undergo technical transformation. A. Gehlen writes: "Man is in the absence of specific organs and instincts, poorly equipped with senses, helpless, naked, in his embryonic habitus, uncertain of his instincts"[10]. Therefore, it should come as no surprise that a people under the influence of the technology that is transforming the world, perceive themselves as imperfect natural beings, which can be modified. According to Gehlen man is doomed to technology because it is technology that made him a man – "Technology, like a man, is *nature artificielle*"[11] – and he must use it to compensate for his natural and, simultaneously, social deficits with organ replacement, their expansion and extending their capacity.

2. OPTIMIZATION OF THE BODY

Medical technology that integrates nanotechnology, biotechnology, neurotechnology and information technology (NBIC), opens up to man new ways of its use for treatment, prevention, extension and sustaining life. Integrating these technologies promises that "the human body will be more durable, health, energetic, easier to repair, and resistant to many kinds of stress, biological threat, and aging process"[12]. Genetic control, control of metabolism in cells, tissues, and organs throughout the whole body, controlling the expression of neurotransmitters is the constitution of a new form of technology integration through which

[10] A. Gehlen, *W kręgu antropologii i psychologii społecznej. Studia*, tłum. z niem. K. Krzemieniowa, Czytelnik, Warszawa 2001, 148.

[11] Ibidem, 226.

[12] M.C. Roco, W.S. Bainbridge, *Overview*, in: M.C. Roco, W.S. Bainbridge (ed.), *Converging Technologies for Improving Human Performance. Nanotechnology, Biotechnology, Information Technology and Cognitive Science*, Kluwer, Dordrecht 2003, 5.

the body, mind and social communication can be designed, and the body itself repaired, modified and improved[13]. G. Berthoud, walking the paths of NBIC projects, gives them the name of "techno–utopia"[14] by drawing a new map of technological enhancement of human capabilities of the human body and social life. Technological visions of improvements of the human body are based on at least two explicit assumptions: first, the human body as a biological organism, it may be technologically "improved"; and secondly, improving the body is right in terms of axiology. The cognitive and historical optimism that accompanies it is appropriate to all utopian screenings that avoid the discourse of failure and risks, threats and limits.

The classic definition of health promotes the utopian perspective to perceive the body. According to the World Health Organization, "Health is a state of complete physical, mental and social well–being and not merely the absence of disease or infirmity" that in its interpretation is already understood as referring to an optimal state of physical, mental and social well–being[15]. The full state of health, as the best state of adaptation to the conditions, is replaced by the optimal state, which includes only one object of the transformations – the human body. So if the optimum category of the state of technical devices, which is optimized by the effort of specified energy, is moved onto a person, then the state of optimal health is understood as the acquisition for a healthy body of additional properties or abilities that will better protect the body against disease, disability and old age. It is a health condition produced that is primarily the result of medical practice. Optimized health is the kind of protective shield against "natural" health. But it is not only about health, but something more, which could be better than one's health. *Enhancement* does not make one healthy, but it provides a state better than health[16]. Induced into modern science and medical therapy the utopian discourse drives one to seek in treatment the

[13] G. Berthoud, *The Techno–Utopia of "Human Performance Enhancement"*, in: B.S. Sitter–Liver (red.), *Utopie heute I*, op.cit., 291.

[14] Ibidem.

[15] L. Nordenfelt, *On medicine and health enhancement – Towards a conceptual framework*, Medicine, Health Care and Philosophy (1998)1, 6.

[16] T. Peters, op.cit., 17.

technique of production of health and improvement of the body, and not merely a method of restoring health: *enhancement* defines medical intervention aimed at improving the human form or function beyond what is necessary to maintain or restore health[17]. Treatment turns to pathology, and the *enhancement* initiates improvement of the health state without reference to pathology, improving biological and social functions of a human being or improvement of biological properties of a human[18]. Medical interventions in the improvement of a healthy person's health, a person who doesn't have a medical problem diagnosed or doesn't really feel sick, are devoid of therapeutic activity.

3. PLASTICITY OF THE BODY

The paradigm to optimize properties of the body is an expression of disagreement with the body, its natural abilities and states. Its weaknesses, susceptibility to disease and aging, and finally its mortality are experienced as a physical evil, which should be removed, as a defect of the human condition, which should be eliminated. The biological side of human existence becomes the object of cultural transformation through medical technology to optimize properties of the body, which directly leads to the body substituted by technical artefact. It is therefore also a subject of a utopian project, which involves the disappearance of the body, which – as enhanced by prosthetics or technological artefacts – succumbs and deforms showing its plasticity, revealing also its equivalence to the technological product or the biological creation. Plasticity of the body, the equivalence and susceptibility to transformation to optimize its properties, leads to future capabilities of transformation of the human condition.

Restituto ad integrum, as U. Wiesing writes, was replaced by *transformatio ad optimum*[19]: if in Antiquity treatment was to restore the na-

[17] E.T. Juengst, *What Does 'Enhancement' Mean?*, in: E. Parens, *Enhancing Human Traits. Ethical and Social Implications*, Georgetown University Press, Washington 1998, 29.

[18] T. Peters, op.cit., 17.

[19] U. Wiesing, *The History of Medical Enhancement: from Restituto ad Integrum to Transformatio ad Optimum?*, in: B. Gordijn, R. Chadwick, *Medical Enhancement and*

tural harmony of elements, then today it means to transform the body to enhance its features and capabilities. The purpose of medical intervention is to strengthen the properties of the body. B. Gordijn and R. Chadwick recognize this transformational, no longer governing, intervention in the application of steroids in sports, the use of cosmetic surgery, non–therapeutic use of Prozac, Ritalin, and Viagra[20]. Mainly, the therapeutic target underwent the transformation: if you take a medical intervention and apply it to a healthy person in order to improve its capacity by strengthening his biological properties, then the subject of the treatment is the susceptible dysfunction of human biological nature – treatment becomes a compensation of natural deficit ordained by medical technology.

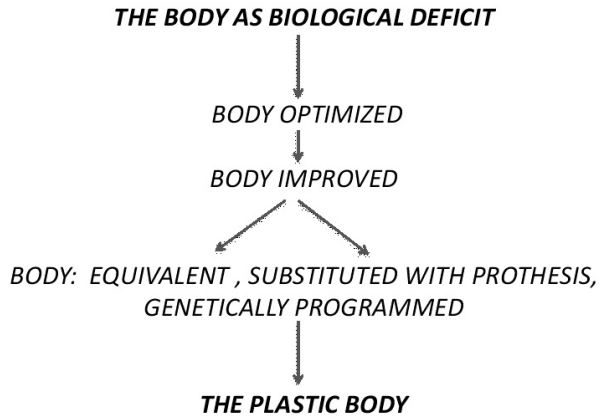

Fig.: The plasticity of the body

Medical technology projects aim at the reconstruction of the human body, which, thanks to this particular technology, and under its influence, become more and more plastic: technology, as S.J. Williams notes, or cosmetic surgery, expands the limits of how the body can be designed, shaped or rebuilt[21]. A.E. Clark et al. suggest that modern medicalization makes the transformational function real, which, thanks

Posthumanity, Springer, New York 2008, 7–24.

[20] B. Gordijn, R. Chadwick, *Introduction*, in: ibidem, 3.

[21] S.J. Williams, *Modern medicine and the "uncertain body": from corporeality to hyperreality?*, Social Science and Medicine 45(1997)7, 1042.

to biotechnology, conceptualization of disease at the level of genes, molecules, and proteins, and marketing health and lifestyle, leads to transformation of the body and production of a new individual and collective identity[22]. In biotechnological practice, "The body is no longer viewed as relatively static, immutable, and the focus of control, but instead as flexible, capable of being reconfigured and transformed"[23].

On the basis of medical science the body somatic utopia is born, understood as a project of the perfect, incorruptible body, capable of regeneration and self–healing. This utopia stimulates the projects of medical technology to explore medical penetration of all levels of biological structure of the body, and on the assumption that it is possible to exchange the organs and tissues of the body, and even modify their physiological functions. Technologization of the body follows these projects; it takes effect primarily through the implantation of artificial materials into the body, and assistive devices substituting organic functions.

The dominant paradigm in thinking about a new body, which is free of any defects, and devoid of limitations, settles therefore in the concept of the prosthesis, which assumes that deficits of the human body can be supplemented by technical or biological artefacts obtained in the process of biochemical treatment. Neuroimplants, an assistive prosthetic improving the functions of the nervous system to achieve better cognitive abilities, or an artificial pancreas producing insulin are clear testimony to the use of prosthetics in the human body by a biotechnological artefact.

The body in its natural aspect is entered into the technical and cultural idea of transforming nature and subordinating it to social needs. This transformation of nature and the production of a technical artifact from it, and further improvement and optimization of this artefact, is a matrix of experiencing the body. It succumbs, as a natural object, by modification; it becomes a thing, which through such modification changes into a desired item. This ability to transform is defined as the

[22] A.E Clark, J.K. Shim, L. Mamo, J.R. Fosket, J.R. Fishman, *Biomedicalization Technoscientific Transformations of Health, Illness, and U.S. Biomedicine*, American Sociological Review 62(2003)2, 180.

[23] Ibidem, 182.

plasticity of the body. The stronger the social or cultural pressures (moreover equipped with technological means), the lesser the resistance of the body: it undergoes the transformations and modifications, and succumbs to the paradigm of optimization. The body becomes a plastic mass, a kind of "biomass"[24], as L. Geisler writes, which can be sculpted into almost any physiological and anatomical form, including human form, and – in fact – better than human form.

Plasticity of the body is not an option – it only releases the intervention within the body and within the possible forms of its transformation. If a man discovers new lands, he will try to explore them; the same applies to the body: the cartographic metaphor not only allows for the geographic description of the body as places and depths that are discovered, but also reveals the way in which mankind follows its discoveries and visions. This is also pointed out by P. Sloterdijk, in the context of antropotechnology, who is sceptical and refers to the ability of a man to abandon what has already became his prey[25]. Plasticity is therefore not the offer of experiencing the body, but the practice, in which it is already experienced as capable of modification and transformation.

Engaging, however, in anything that is not the body itself, builds a strong dependence mainly related to the stability of the expectations connected to the results of this engagement. Substituting the body with anything else, what is not the body, but it is equivalent to it, is the example of the embodiment the world by the human being: turning the nature into the creation technically plastic, which can be formed into any body, giving it at the same time the plasticity of the body, which is to be equivalent to the technical creations. In the process of civilization the man became a social organism that has built its anthropogenesis through the transformation of surrounding him nature into his own body prosthesis. The closer, however, to the state of nature, the more the human body is more plastic; the closer to the social history the more limits there are, which body imposes: one of them is

[24] L. Geisler, *Der neue Mensch: kein Wesen mehr zum Anfassen. Über die Medizin des 21. Jahrhunderts*, in: C. Urban, J. Engelhardt (ed.), *Wirklichkeit im Zeitler ihres Verschwindens*, LIT Verlag, Münster 2000, 330.

[25] P. Sloterdijk, *Regeln für den Menschenpark. Ein Antwortschreiben zu Heideggers Brief über den Humanismus*, Suhrkamp, Frankfurt am Main 1999, 45.

inter-individual identity, the second one is the physiological functionality that can be interrupted as soon as the body and its individual elements are substituted with prosthetic implant, only to strengthen the particular function, or to obtain the specific ability of the body. The biological identity concerns the organic functionality of the human body, enabling certain capabilities, through which a man can perform specific for himself actions related to the realization of the appropriate needs. Changing needs and - with the cultural necessity - the capacity can result in the change of the function. However, such change may affect the biological identity of a man, which in turn can prevent the functioning of a biological organism without technological intervention. Aforementioned threat ignored by the transhumanists exposes the human corporeality to the addiction of the social distribution of the technical artifacts.

Concerns with the biotech interference relate to the violations of the homogeneity and to, impossible to be in any way predicted, effects of permanent modification of the human biological constitution. Therapeutic optimism is the ethical premise sufficient enough for the acceptance of biotechnology participation, but it is not the ontological argument, which authorizes the violation of homogeneity of the organic human body. Reflective trick is to recognize the disease as an event affecting the homogeneity (not an individual, but generic) because the disease is in fact a moment in the organic process. Plasticity of the body, which contains the idea of the body modification that is not amenable to illness, old age and death, involves technological opportunity to the exclusion of the body from an organic process, the suspension of the duration of the organism, despite the existing in time biochemical processes taking place. This paradox of utopia of immortality was not included in the idea of life extension in Hufeland, for whom prolonging life of the organism was associated with a slowdown of its biological processes. As K. Libelt after J. Sniadecki stated, „Life is movement and movement is a wear," „So the more of life there is, the faster consumption of forms."[26] Plasticity of the body that provides continuance must, therefore, refer to the technology liberating self-healing and self-

[26] K. Libelt, *Estetyka, czyli umnictwo piękne*, II, 1. *Piękno natury*, M. Wolf, Petersburg i Mohilew 1854, 43.

regeneration processes and at the same time refer to technology of organ substitution by the technical artifact. The less life there is in the body, the longer its duration.

Plasticizing the human body becomes a sort of technological alchemy and simultaneously seems as a comeback to the medieval sources of the natural sciences, including medicine, along with the utopian alchemist's belief in the miraculous transformation of the things and people.

4. CONCLUSIONS

Regardless of the forms and ways of medical biotechnological development, each utopia of the perfect body contained therein, a body free of any defect, denies the human body. The body eventually becomes a prosthetic graft body, and anything which is equivalent to the body, possibly becomes it, as if ready for occupation. In fact, every body utopia is a search for a new body in which one could live. If the world of human experience revolves around the body experienced as a social media of identity of a man and as a tool for the implementation of biographical purposes, then this new body is only a utopia, where, thanks to the medical technology optimizing it, forms the axiology of liberal society. To live in utopia is to live in a new, better body, which further protects human existence that provides pleasure, resists pain and suffering, disease and disability, and also mortality. In the utopia of the body, man is a seeker of a better body, which he seeks to embody.

CIAŁO PLASTYCZNE JAKO EPISTEMOLOGICZNA FIGURA BIOTECHNOLOGICZNEJ UTOPII

Streszczenie

U podstaw naukowej deklaracji o możliwości przeobrażenia kondycji ludzkiej tkwi odrzucenie przeświadczenia o doskonałości ludzkiego bytu i zaakceptowanie przekonania o jego niepełności i ułomności biologicznej, będącej źródłem chorób, starości i, wreszcie, śmiertelności człowieka. Prowadzi to do usankcjonowania takiego rozumienia ludzkiej kondycji, na mocy którego to, co cielesne, jest pojmowane jako cecha akcydentalna.

W utopijnej perspektywie biotechnologii ciało może być wybawione od cielesnych deficytów, ułomności, wad i ograniczeń. Biologiczna natura człowieka staje się przedmiotem biotechnologicznej transformacji dzięki technologiom optymalizującym własności ciała bądź substytuującym ciało artefaktem technicznym.

Ta perspektywa pociąga za sobą przekonanie o nieograniczonej i nielimitowanej plastyczności ciała, którą definiuje ekwiwalentność i podatność na transformację optymalizującą jego własności. Projekt biotechnologii medycznej mierzy w przebudowę ludzkiego ciała, które dzięki tej właśnie technologii i pod jej naporem, staje się coraz bardziej plastyczne. Na naukowo–medycznych podstawach rodzi się więc biotechnologiczna utopia ciała rozumiana jako projekt ciała doskonałego, ciała niezniszczalnego, ciała zdolnego do regeneracji i samoregeneracji. Stawia ona fundamentalne pytania o tożsamość osobniczą człowieka i jego tożsamość gatunkową.

Słowa kluczowe: ciało, plastyczność ciała, biotechnologia, utopia, epistemologia