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BIOPOLITICS, TRANSHUMANISM, AI : SOME INTRODUCTORY REMARKS

Abstract: The paper before us does not claim to present a new scientific contribution to the theories of biopolitics and their applications. The goal is to present a kind of an overview on the basis of which students of social sciences and humanities, as well as all other interested educated readers, would be informed about contemporary scientific trends when it comes to biopolitical theories and their scientific use. First, author tries to explain Foucault's interpretation of biopolitics, then presents viewpoints in science analyzing relations of biopolitics, bioethics, biotechnologies and AI
Key words: biopolitics, Michel Foucault, biotechnologies, bioethics, artificial intelligence (AI).

Introduction

The theoretical propositions of biopolitics are in a constant development and evolving; similarities and differences between thinkers, continuities and discontinuities in phenomena and interpretations can be observed, and they are closely related to the development of global-political events, social and cultural changes, the sudden rise of new technologies, above all digital, biotechnology and artificial intelligence. Theories related to the notion of biopolitics can be applied to scientific research from all spheres of social sciences and humanities, to political relations and political philosophy, bioethics, research into globalism and modern capitalism, analysis of historical and contemporary political and social processes, such as nation-building through producing the norms and standards that include and exclude certain groups and individuals; population management; administration, management, protection and care-taking of human bodies and interwining of biopower with psychoanalysis and gender issues; foreign policy and demarcation between liberal democracy and totalitarism; influence of biopolitics on art, fashion and popular culture. In brief, biopolitics may be defined as: "An apparatus of control exerted over a population as a

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whole, citing the ratio of births to deaths, the rate of reproduction, the fertility of a population, and so on, in justification. Others characterize biopolitics as the political application of bioethics; the sociopolitical consequences of the biotech revolution; the administration and regulation of human and non-human life at the levels of both the population and the individual body."[15]

As an example of multitude of issues biopolitcs puts in front of an educated reader and of the complexity of the matter, evident in everyday life, perhaps is adequate to cite Majia Holmer Nadesan:

"However, understandings and problematics of life have varied significantly across time, reflecting divergences in liberal governmentalities and distinct historical circumstances. Take, for example, the current cultural preoccupation with genetics. Genetic engineering and genetic-based pharmaceuticals, among other biotechnological pursuits, share an approach aimed at identifying and engineering what are seen as the most basic components of life. The molecularization of life accords with neoliberal rationalities by transforming complex phenomena (e.g., human diversity and disease) into biological assets and costs that can be represented and manipulated within marketized calculi of value. Accordingly, complex conditions such as depression, anxiety, and substance abuse are coded as social and economic risks with calculative costs for industry and the state that must be administered. Expert market authorities trained in molecular psychiatry offer pharmaceutical solutions. Older liberal frameworks of knowledge, such as psychoanalysis and social anomie, lose credence among the public, insurers, and the state, their experts marginalized or retrained. How has this shift in perspective and protocol been achieved? The answers to this question are myriad because shifts in the 'conduct of conduct' reflect a vast array of new technologies, new subjectivities, and new calculations. And yet, across disparate, heterogeneous, and decentralized transformations in problem-solution sets, one can also discern a particular regularity, a particular frame, focus, or reduction on the "elements" of life and their market capitalization. Foucault argued that efforts to understand and administer the life forces of the population have persisted since the eighteenth century, although formulations reflect changing liberal governmentalities producing historically distinct problem-solution frames" (Holmer Nadesan 2008, 2).

Considering a notion *biopower*, Vernon W. Cisney and Nicolae Morar say: "'Biopower,' a phrase coined by Michel Foucault, is timely in the sense that it characterizes what Foucault calls the 'history of the present' (which is always, at the same time, a thought of the future). Biopower exposes the structures, relations, and practices by which political subjects are constituted and deployed, along with the forces that have shaped and continue to shape

[15] Susan Mayhew, *A Dictionary of Geography* (6 ed.) https://www.oxfordreference.com/search?q=biopolitics&searchBtn=Search&isQuickSearch=true (accessed 12.12.2024)

modernity. […] What comes to mind when we think of power? Traditionally power was conceived as a commodity or a badge of honor supervening on life and the living, something one either has or lacks. Operating in a top-down manner, the bearer of power dictates, on possible penalty of death, what those *not* in power may and may *not* do. In other words, power is strictly delimiting, the conceptual model being that of the sovereign who rules over his (or her) subjects with greater and lesser degrees of legitimacy and severity. To guarantee its legitimacy, power must produce its own bodies of knowledge, its *truths*" (Cisney, Morar 2016, 1).

There is a need to mention definitions of other notions that are in the title of this paper. They may be summarized in this introduction in a following, simplified, manner. "Transhumanism [is] philosophical and scientific movement that advocates the use of current and emerging technologies—such as genetic engineering, cryonics, artificial intelligence (AI), and nanotechnology—to augment human capabilities and improve the human condition. Transhumanists envision a future in which the responsible application of such technologies enables humans to slow, reverse, or eliminate the aging process, to achieve corresponding increases in human life spans, and to enhance human cognitive and sensory capacities. The movement proposes that humans with augmented capabilities will evolve into an enhanced species that transcends humanity—the 'posthuman'"[16]. Going further, "artificial intelligence (AI) [is] the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. Since their development in the 1940s, digital computers have been programmed to carry out very complex tasks—such as discovering proofs for mathematical theorems or playing chess—with great proficiency".[17]

The paper before us does not claim to present a new scientific contribution to the theories of biopolitics and their applications. The goal is to present a kind of an overview on the basis of which students of social sciences and humanities, as well as all other interested educated readers, would be informed about contemporary scientific trends when it comes to biopolitical theories and their scientific use. There is an extensive list of references on the topic that is the subject of this book in all world languages, in our country and the region. It is almost impossible to follow everything, and to accommodate the different interpretations and attitudes in a limited, balanced and readable scope of the review. Also, author tried to go through the variety in the spectrum of main ideas and interpretations connected with biopolitics, but without taking

[16] René Ostberg, „Transhumanism", https://www.britannica.com/topic/transhumanism (accessed 18.12.2024)

[17] B. J. Copeland, „ Artificial intelligence", https://www.britannica.com/technology/artificial-intelligence (pristupljeno 18.12. 2024)

sides or entering their deeper analysis, which is utterly complex to be a work of one person.

Edwin Greenlee, analyzing Foucault's writings, stands out that Foucault's early work, (*Madness and Civilization*, *Birth of the Clinic*, and *The Order of Things*, the emphasis of which is in the *Archaeology of Knowledge*) represents the interpretation of some unique cultural phenomena and critical reflection upon contemporary society. Through these interpretations Foucault developed and refined his approach to discourse analysis. According to Foucault, discourse may be posited at the points of intersection between networks for the exercise of power and networks for the production of knowledge. Knowledge and the structures of power are in a close connection, and the structures of power are in a relation with the exercise of supervision and control functions (Greenlee 1991, 80). Greenlee continues observing Foucault's influentual work *Discipline and Punish* about the modern prison development, which, in a broder sense, considers the 'rituals of power' and techniques of social control. Foucault associates these two aspects with the development of the modern prison and other key institutions and areas of contemporary society (the factory, the hospital and the school)[18] and names these rituals and control mechanisms as disciplinary technologies.[19] Also, in the work *Discipline and Punish* Foucault rethinks the relationship of the body to power. He analyzes the process in which the "natural" body of the modern period is created socially and culturally, and this was achieved through disciplinary techniques and connected into networks of power and knowledge.[20] Actually, the discussion is about the power based upon the perspective of knowledge/truth, disciplinary techniques, normalization and discourse. Through genealogical analysis and the model of discourse Foucault integrates a wider range of perspectives, for example political economics, the social construction of culture, and the investigation of the politics and practices of Western biomedicine. He uses them for understanding of diverse phenomena: creation of the subject; macro-level political, social and economic processes; and the development of contemporary biomedicine (Greenlee 1991, 80).

Greenlee sipmlifies Foucault in two summarizing graphs:

Figure 1 (Greenlee 1991, 81)[21]

TOTAL DISCURSIVE AND NONDISCURSIVE STRUCTURE

DISCOURSE

NONDISCURSIVE ENVIRONMENT	
social relations of production	political processes

[18] See Фуко 1997, 137-145.

[19] See Фуко 1997, 163-164, 172-173.

[20] See Фуко 1997, 131-165.

[21] For the understanding of these two graphs see Фуко 1998, 25-44, 70-84.

mode of production
institutions
rules of knowledge formation
social control requirements

Figure 2 (Greenlee 1991, 81)

Discourse	
Erudite	Knowledge
Subjugated Knowledge	
elite	texts
forgotten/ignored knowledge	
dominant institutions controlling sources of knowledge creation knowledge production	diverse
specialist	knowledge
popular/minor knowledge	

Lectures delivered by Michel Foucault in the years 1978/1979 at the College de France[22] represent the moment when the topic of *biopolitics* emerged for the first time as a philosophical concept. A thread related to the notion of biopolitics runs through the most of Foucault's works, which refers to questions of the market, economy, techniques of governance, prisons, madness, sexuality, rights, sovereignty, life and death.[23] In these various phenomena, biopolitics is reflected as, called by Foucault, the *practice of truth* or the *regime of truth* (Foucault 2008, 18-22)[24], and by the term *biopower* Foucault implies the forms of power that are exercised over individuals and subjects within a certain population. In the 1978 lectures, the term *biopower*[25] Foucault connects with the theme of *governmentality*[26] (Koljević 2015, 31-32).

[22] See Fuko 2005.

[23] See Фуко 1997, Fuko 2009, Fuko 2013.

[24] Regimes of truth is a term coined by philosopher Michel Foucault, referring to a discourse that holds certain things to be "truths". Foucault sought to explore how knowledge and truth were produced by power structures of society.

[25] Foucault 2004, 1-28. „A form of political power that revolves around populations (humans as a species or as productive capacity) rather than individuals (humans as subjects or citizens). The focus of much of his late work, biopower was conceived by Michel Foucault as a distinctively new form of political rationality. ... It viewed the population of the state as a resource and developed knowledge about its people accordingly: on the one hand, it wanted to learn about humans as a species and come to know their biological secrets, and on the other hand, it wanted to develop the capacity of humans as machines by disciplining their bodies. Foucault termed this new kind of political rationality biopower because it concerned itself with every aspect of life, right down to its most minute parts, though only in the abstract. It was interested in the health

Edwin J. Greenlee pointed out, already in 1991, that „concern with the political-economic context of medical practices, the critical evaluation of biomedicine, and the phenomenological illness experience of the patient are all hallmarks of present-day critical medical anthropology. [...] A number of medical anthropologists have examined the way in which biomedicine can function ideologically“ (Greenlee 1991, 79). Greenlee continues devoloping his stands: „Critical medical anthropology has also looked to research on the cultural construction of knowledge. [...] Knowledge, along with science and medicine, is a socially constructed phenomenon. As such, within the setting of contemporary western society, knowledge reflects existing social class divisions. In this instance, positive knowledge, science, and medicine are hegemonic, yet not monolithic. Alternative, non-dominant types of knowledge and science offer alternative models and solutions“ (Greenlee 1991, 80).

Biopolitics, bioethics, biotechnologies, COVID-19 pandemic

The emergence of biotechnologies and bioethics are mutually conditioned. Anthropologists deal with considerations of research ethics and the moral implications of applying actions to the human body such as reproductive

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of the people in statistical terms, not existential terms—it cared about how people live and die, but not who lives and dies“. Buchanan, Ian, *A Dictionary of Critical Theory,* https://www.oxfordreference.com/display/10.1093/oi/authority.20110803095507415 (accessed 12.12.2024)

[26] Foucault 2004, 87-134. “Introduced in the later work of Michel Foucault as a more refined way of understanding his earlier idea of power/knowledge. Government refers to a complex set of processes through which human behaviour is systematically controlled in ever wider areas of social and personal life. For Foucault, such government is not limited to the body of state ministers, or even to the state, but permeates the whole of a society and operates through dispersed mechanisms of power. It comprises both sovereign powers of command, of the kind that figure in traditional political science and political sociology, and disciplinary powers of training and self-control. Sovereign power is coercive and repressive, involving exclusion through external controls and inducements. Disciplinary power, on the other hand, concerns the formation of motives, desires, and character in individuals through techniques of the self. Disciplined individuals have acquired the habits, capacities, and skills that allow them to act in socially appropriate ways without the need for any exercise of external, coercive power. Disciplinary power developed in the modern period through such means as schools, hospitals, military barracks, and prisons, and a particularly important focus is the family itself. It is through the disciplinary agency of the family that selves and bodies are regulated at the most intimate level. Foucault traces the emergence of a whole array of ‘experts’, based in scientific ‘disciplines’ and involved in the disciplining of individuals. It is through all these means that governmentality takes place“, John Scott, Gordon Marshall, *A Dictionary of Sociology* (3 ed.), 2015, https://www.oxfordreference.com/display/10.1093/oi/authority.20110803095901877 (accessed 12.12.2024).

technology or the use of stem cells.[27] The ultimate goal of discussions on bioethics is the adoption of normative acts based on value judgments. In this way, certain biotechnological procedures are legalized in accordance with the cultural values of a certain society, i.e. in accordance with what is considered morally correct thinking and acting. The purpose of biotechnologies is to help achieve the biological function of reproduction and the therapeutic function, which eliminates the consequences of various diseases or damage to the organism when other methods of treatment are not effective. In the first case, it is about assisted reproduction, and in the second, about research in genetics, applied molecular biology, immunology and similar fields. According to some, procedures in the field of corrective surgery can be added to the above, as well as theoretically possible and yet unrealized procedures, such as human cloning, as well as transplantation procedures (Жикић 2018, 321-322).

Biotechnologies, as the use of stem cells in the treatment of autoimmune diseases, implantation of implants that regulate the work of certain organs, gene therapy of "rejuvenation", etc., lead to the questioning of cultural ideas about the body as a unique unit with established boundaries, towards the outside world and in terms of functioning, which is some a kind of guarantor of the permanence and immutability of the self and the framework of its existence. We can also consider the question of representations of the body as an organic whole, if it is not completely organic, that is, the question arises whether we can talk about the body as something natural. This raises the questions of what is the essence of being human, what is humanity in itself, how to define the self and its boundaries (Жикић 2018, 325-326). Namely, a human organism with a surgically implanted implant can be considered a cyborg, i.e. a cybernetic organism, although such usage of the term is rarely used. In this way, the boundaries of humanity, which was previously considered exclusively biological, are expanded, and thus the boundaries and frameworks in society that are considered natural are overcome. In this way, according to Bojan Žikić, "natural and social, i.e. cultural, no longer have to appear as separate ontological categories" (Жикић 2018, 326).

When it comes to reproduction management, this term includes demographic analyzes and projections by economists, on the basis of which certain models of reproduction management are constructed and applied, which have proven to be unreliable. There has been a conceptual change in the formulation of international population policy; there was an insistence on population control,

[27] According to Zorica Ivanović and Predrag Šarčević, "[...] although it was always present in anthropology, the body was not always a problem. Its emergence from 'theoretical anonymity' is particularly noticeable in the 1980s, not only in anthropology but also in other social sciences and humanistic disciplines that stop viewing the body and human sexuality exclusively as a biological given and direct attention to the social and cultural dimensions of its existence. In this way, the body wins, many years after the early thoughts of Paul Radin and Marcel Moss about the mechanisms of its social and cultural construction, the status of a cultural artifact" (Ivanović, Šarčević 2002, 14)

so that the orientation would be directed towards reproductive health. Žikić believes that the bearers of reproductive policy in the local context and the social and cultural motives that guide the bearers should be determined (Жикић 2008 А, 153-154). According to Žikić: "Population control, i.e. the desire to limit the growth of a country's population, for example, primarily for economic reasons, has its roots in Malthusian concerns from the second half of the last century onwards regarding the alleged population crisis, i.e. fear that the planet's population will soon threaten its natural resources and its own well-being. [...] A more direct criticism of the ideology of population control, sees it as pure racism and negative elitism or social Darwinism, i.e. as a successor to nineteenth-century and Nazi eugenics theories in every respect - ideological, organizational and personal." (Жикић 2008 Б, 15). Such attitudes are the result of the influence of the critic by feminist theorists. Also, other researchers dealt with the problem of the relationship between public health and human reproduction, towards population control programs. According to their claim these programs aimed at limiting fertility, as a solution to a problem of the population growth that concerns modern world (Жикић 2016, 61). Reproduction, reproductive rights and reproductive health are related to poverty and general insecurity, which is connection to nutrition, hygiene and health services, sociocultural determinants of health status (Жикић 2016, 62). If we take for example, contraception is socially organized by multinational pharmaceutical companies, which are in direct cooperation with international governmental and non-governmental organizations. The question arises of the role of governments in certain countries and their policies, when it comes to the immediate consequences for the development and implementation of contraceptives and strategies in terms of reproductive health. Such policies can be strongly pro-natalist, neutral and anti-natalist (Жикић 2008 Б, 16).

Various authors have been also rethinking the notion of biopolitics in the context of the consequences of COVID-19 pandemic. One may say that not all aspects of governmental control and surveillance belong to the biopolitics spectrum, but some associations could derive, while other researchers do not connect COVID-19 pandemic with the phenomenon of biopolitics. Articles in the collection of papers *Postepidemiological Stress: Historical and Medical Dilemmas*, among other, analyze post-COVID or long-COVID as the condition of those who were infected and then experienced long-term symptoms of the disease and did not fully recover. The pandemic that began in the People's Republic of China at the end of 2019 represents the first discontinuity in daily life and the global economy of its kind since the end of World War II. If viewed from a historical standpoint, the long COVID can very likely be considered a disruption in social and international relations. This disruption occurred during the closure and isolation, which triggered a general climate of distrust in institutions and medicine, while intellect and conscience in the public and private sphere regressed, and there was also a disruption of global supply chains and disruption of international relations (Divac, Dajč, Samardžić 2024, 7). The

COVID-19 pandemic has disrupted the world market and affected the fate of every individual on the planet. "Ognjen Radonić pointed to the increase in debt of the poor compared to the rich, to the growing differences between the richest and the poorest. Delayed effect and duration inflation ensued, supply routes were cut, demand for commodities was generated and, regardless of inflation, the importance of strong currencies was consolidated. This was followed by Russia's second aggression against Ukraine, in 2022, with global consequences that still cannot be clearly seen. The experience of the pandemic, destruction and economic disruptions became an incentive to re-examine the dynamics and internal trajectories of the city's everyday life" (Radonjić 2024, 95-112; Divac, Dajč, Samardžić 2024, 9). The most vulnerable social groups suffered the most and were the most threatened. Hence the reminder of Isidora Jarić, Miloš Milenković and Marko Milenković that the healthcare system in Serbia was not prepared to cope with the challenges, although there were several similar warnings about infections during the last two and a half decades. At that time, the absence of a protocol to care for patients suffering from chronic non-communicable diseases is highlighted. "Fear, uncertainty and frustration pulled the patient community, or at least a part of it, out of their comfort zone and encouraged them to try to bridge the resulting institutional void. It is no coincidence that this search directed them towards communication mediated by digital technologies" (Jarić, Milenković, Milenković 2024, 113-123; Divac, Dajč, Samardžić 2024, 9). These authors came to a following conclusion: "Of course, it remains an open question whether this fragmentary experience created at a moment that irresistibly resembles an unintended social experiment will be used to innovate and improve the existing system of health services or at least its protocols for dealing with emergency (pandemic) circumstances in which access to health services is protection reduced or disabled. It depends on how future protocols could operationalize this experience […] and whether people's inner intimate need for openness and egalitarianism in communication will defeat the need for control supported by algorithm refinement. The described case shows both sides of the reality towards which we are moving – the potential of spontaneous alienated communication between actors (patients and doctors) within a micro subcultural digital ecosystem through which a response to the real and constructed needs of patients with non-communicable diseases was articulated and a dystopian communication chain of exchange (on social networks and internet) of collected information about the impact of vaccines moderated by fear and 'algorithmic manipulation'" (Jarić, Milenković, Milenković 2024, 122).

Researching Covid-19 in Serbia from an anthropological point of view, Bojan Žikić distinguishes two patterns of thinking, considering the pandemic. The first accepted the given disease as a real danger to someone’s health and influenced a positive attitude towards risk management. The other one denied either the disease itself or the danger from it, and influenced a negative attitude towards managing the risk of it. The first type of cultural thought is based on the trust in

social institutions and may be considered as a product of modernity, and the second as a consequence of postmodernity stream effect (Жикић 2023, 235). Author has an opinion that an emphasis should be put the relatively lukewarm reaction of the state to the entire process of denying the risk of Covid-19. As two crucial factors Žikić points out resisting anti-epidemic measures and the non-existence of a systematic response to attempts to discursively deconstruct the scientific truths. Author argues: "The question can be raised, of course, whether the democratic character of the society is a factor that prevents any reaction aimed at stifling, or even just silencing, a different opinion, or whether it was a politically motivated assessment that the public divided on the issue of anti-covid measures and that we should not irritate the voters – since that is the way state managers, i.e. politicians in general, see us: as pieces of a numerical puzzle that decides on the distribution of administrative power in the state in one mandate period" (Жикић 2023, 240).

Biotechnologies, bioethics and AI

In this part of the paper will be attempted to shortly illustrate some of the viewpoints of researchers considering excessive development of AI and biotechnologies in the recent years and the possibility of their usage as a biopolitical tool. Azize Serap Tunçer, discussing effects of artificial studies in health as a biopolitical tool, states that human is in contemporary society an ideological-political subject, and artificial intelligence through its products, information technologies and programs, is used on humans with the development of biological control and regulation. Similar products are being used for self-regulation and 'self-actualization' when health is in question, for example, through diet, sports, etc. Author delivers a bold statement: "There is technique in the historical origin of this control network, and at the stage we have reached today, artificial intelligence programs have taken over. Fears of epidemics have been the legitimate ground of biopolitical control since the first appearance of registration and registration processes in the UK case in health care. The Covid 19 experience has made this linear line once again clearly visible. On the one hand, large-budget health artificial intelligence studies have been accelerated, on the other hand, digitalization processes have entered the daily life of all people" (Serap Tunçer 2022, 110). Following, in the conclusion: "Various negative developments may occur, especially if they are used as a tool for future biopolitics, and the existence of functional programs that nourish the human mind and solve its health problems is also of vital importance. In this process, finding the ethical framework and staying within this framework with a global harmony may also be the main determinant of the duty and future of human beings" (Serap Tunçer 2022, 112).

Nora L. Jones puts the light on the following issues of bioethics: "An embodied ethics brings two important transformations to bioethics, currently dominated by a normative and principle-based tradition. First, an embodied ethics leads us to

ask new types of questions. In the realm of organ transplantation, for example, bioethicists overwhelmingly focus on how to increase the supply of organs for donation, on rethinking the parameters of organ compatibility, and the issues of compensating organ donors and their families. Bodies in these discussions appear only as the carriers of organs. Shifting our gaze to questions of embodiment, identity, and the daily realities of the bodies-in-action-in-context brings us instead to the concerns and preoccupations of the recipients and donors themselves and provides a more holistic and grounded view of organ transplant practices. Replacing the body as the vessel of organs with embodied donors and recipients redirects bioethicists to ask questions about changes in embodiment while waiting for an organ, the meaning of living with a transplanted organ, and about the relationships between donors and recipients. Second, an embodied ethics focuses not only on the embodiment of the patient, but also on the embodiment of all the stakeholders in medicine. It shines a reflexive light on the social processes that lead practitioners to focus on the specimen and the public to focus on the spectacle. It changes the way we see the relationships among selves, bodies, and illness. In so doing it opens a way forward to a more genuine and more generally healthful engagement between people and all that modern medical technology has to offer today, in a way that does not marginalize the body to specimen but brings it to the center of care and holds it at the center of our attention" (Jones 2011, 83-84).

The boundaries of the body are, according to Bojan Žikić, in a real sense of meaning, boundaries of culture. Extra-human elements may be regarded as the intrusion of the extra-cultural into the culture, on the one hand, and as a way to enrich the range of culture with new elements, so, according to this interpretation, technicized body structurally becomes less human, but the self-concept of humans goes beyond of the limits of biological, i. e. organic frameworks. Žikić concludes that „the question of the boundaries of corporeality, the self, society and culture are thus revealed, as are the questions of control and power known to humanist discourses. The human, i.e. social and cultural world is the world over which man has control and the power to shape it according to his needs and interests [...]" (Жикић 2018, 328).

Gregor Mobius considers: „It seems that the four key properties of life: metabolism, replication, observation and memory could be interpreted through the observer-observed relationship. In fact metabolism relates to observation and replication relates to memory. While metabolism and observation are exchanges/interactions with the environment (inside-outside), replications and memory are processes within the living being (observer) itself (inside-inside). However, both these relationships, external and internal, form 'pictures of the world' impressed into the living being (from DNA to Biosphere), which are being continuously updated throughout its life. Without the observer there is no observed. Without life there is no world. Without the living there is no non-living matter. There is a possibility that, at some "bio-singularity" point, something we could call Bio General Intelligence (BGI) will emerge and

become a living alternative to Artificial General Intelligence (AGI)“, putting an emphasis on the question „could the properties which have so far been specific only to living matter (intelligence, consciousness, selfawareness, self-initiative, self-reflection, curiosity) be extended to non-living matter as well, not to mention feelings like happiness, fear, empathy, intuition, anger“ (Mobius 2021, 1). Mobius gives the following thoughts: „When and how, under what conditions, does non-living matter become alive? Below what order of magnitude is living matter not possible? What about the 'proton motive force' that is maintaining life in all living cells? Are protons (and electrons) taking part in these processes non-living or living? These questions of countless relationships between living and non-living matter will be probably redefined with a new layer on the macro level, with the emergence of the Bio General Intelligence as a single largest conscious living entity and non-living Artificial General Intelligence if and when it ever appears as an independent entity. Whatever the future brings, it seems that in the case of the emergence of Bio General Intelligence and/or Artificial General Intelligence the key role(s) will be played by humans“ (Mobius 2021, 3).
Considering permeating AI and biotechnologies, Weiping Sun has an opinion: “Once such powerful AI technology is blended with biotechnology, there will be the greater probability that the integration will surpass human intelligence, which will lead to huge uncertainty and risks. At the same time, confronting this critical emerging technology, we realize an intense contrast between the robust AI development and our deficiencies, including backward concept, unclear policy orientation, shortage of ethical regulations, the tenuous moral ideas and the imperfect laws and regulations. Under such circumstances, we should set foothold in ourselves, conduct an all-round introspection on AI and the application consequences. We should persist in people-first principle, safeguard human dignity, guard against and dissolve the possible risks so as to establish a reasonable, righteous ethical order” (Sun 2018, 30).

Summarizing research results

When Michel Foucault wrote on sovereignty, governmentality and biopolitics, he and his works were of immense influence in social and political thought throughout the scientific world and public sphere, including literary and cultural studies. Contemporary theorists who discuss mechanisms of biopolitical power and social control imposed by the state in the 21st century often lie upon and are rethinking the work of Foucault. Michael Hardt and Antonio Negri mention Foucault’s historical analysis of disciplinary power, claiming it precedes their standpoint of the passage from disciplinary to the society of control and that Foucault’s thinking brought them to recognizing biopolitical nature of the new paradigm of power. The source for Giorgio Agamben’s concept of bare life and sovereign power was, according to his own words, in a intellectual way, Foucault’s theory of biopolitics, being a cornerstone of Agamben’s rethinking

of the political. Also, many contemporary theorists bring into doubt if Foucault's hypothesis of biopolitics is completely consistent with the today's notion of the society of control and biopower. For example, instead of Foucault's presumption that the modern state is doing something new when it puts biological life as a central point, Agamben claims that sovereign political power is founded on the exclusion of bare life (Morton, Bygrave 2008, 2-3).

While acknowledging Foucault's work, researchers today cling to the conclusion that it is more and more inadequate for describing how complex contemporary forms of sovereign power and biopolitical power have become (Morton, Bygrave 2008, 3). Quoting the words of Stephen Morton and Stephen Bygrave: "Foucault does offer something like a conventional stadial history from the mid-seventeenth to the late eighteenth centuries, and it may be tempting to characterise his account of the movement from sovereign power to disciplinary power to biopower as a grand metanarrative. For this account is after all a story of the replacement of monarchy by discursive institutions (prisons, medicine, the law, education), the power of which is expressed as discipline over the individual, usually expressed on the body, then the replacement of such disciplinary power in turn by what he calls biopower. Biopower is the new discursive regulation of populations through surveillance and control of their health, sexuality, reproduction, and so on. While the power of the sovereign was principally that of life and death over his subjects – which meant principally the power to have them put to death – biopower assumes the right to life over a whole population" (Morton, Bygrave 2008, 4).

The other way to put it is: "At the same time, the discoveries that Foucault makes with the concept of biopower have resulted in conceptual apparatuses that occupy his work for the remainder of his life. Some of these discoveries are as follows: (1) a model of power relations that is essentially expansionary of the forces of life, rather than delimiting; (2) the ubiquity of power relations throughout all other modes and types of relations; (3) the persistence with which new models of power employ the fear of sovereign power for the purposes of maintaining insidious control. All in all, these conceptual apparatuses, as the diversity of contributions in this volume attests, have not gone away — they continue to operate to this day throughout all areas of life" (Cisney, Morar 2016, 14).

According to Sandro Chignola, "whole Foucauldian production – at least from the second half of the 1970s onward – as intended to challenge the traditional paradigm of modern political philosophy and its reduction of the question of power to the juridical scheme of sovereignty. [...] Based on an accurate diagnosis of the status of politics in the current era, of the processes of subjectivation that intersect it, of the governmental devices that mark it, Foucault steps away from a political philosophy centred on the modern problem of the genesis and legitimation of the sovereign. The decisive transformation that concerns power relations, from the nineteenth century to the second half of the twentieth, moves the site of 'veridiction' from the state to the market. It is

the market (and not the legal scheme of the composition of rights) that defines the system of relations whereby subjects represent themselves as individuals. [...] In Foucault's theory, this passage is marked by the introduction of the terms 'biopower' and 'biopolitics'. On the one hand, these become indications for the deconstruction of the concept of individual. In the view that portrays the individual as an agent involved in trade and the marketplace, this individual is radically different from the 'natural' rights-bearer – rights that are claimed vis-à-vis the state and can be used as a natural shelter against the expansion of the state action. On the other hand, the concepts of biopower and biopolitics overstep the burdensome sequence of events that led to the state and paves the way for an inquiry into the devices of governmentality. This research marginalizes the state – the alleged cornerstone of Western constitutional history – and demonstrates that the series of events that led to it is but a mere 'peripeteia' (literally: 'péripétie', as Foucault writes) of more general processes – ones that antedated the state, crossed its legal profiles and its institutional dimensions, and exceeded and overflowed it continuously" (Chignola 2019, 10-11).

As Majia Holmer Nadesan describes modern notion of contemporary biopolitics in a simple manner: "Biopower is seductive because its logics, technologies, and experts offer, or at least purport to offer, tools for societal self-government. Biopower's mantra of the rational administration of life promises means for realizing the elusive cybernetic fantasy of a society of self-regulating individuals. Under neoliberal governmentalities, sovereignty is disseminated amongst society's members as the welfare state sheds responsibility for its pastorate by shifting risk and empowerment to its subjects. Thus, the classical liberal fantasy of a society of self-regulating individuals is invoked as a rationale for the dissemination of risk and responsibility achieved by and though biopower's operations. In essence, the emergence of biopower as a major force in shaping, eliciting, and controlling populations is inextricably linked with historically contingent developments in liberal, and now neoliberal, forms of government" (Holmer Nadesan 2008, 3).

Analyzing biopower and cyber power in online news, Dominic Boyer argues that "Foucault's concept of biopolitics is already articulated in a cyberpolitical register. That is to say, Foucault's biopolitics already takes for granted that modern *pouvoir–savoir* is distributed through the circuits of an integrated field of forces and signs. Recent cyberpolitical discourse posits much the same field template but describes it (only somewhat more narrowly) as a matter of a revolution in communication technology generative of new forms of publicity, relationality and knowledge. One of the most interesting aspects of engaging digital publicity as an anthropological problem is that its streamlined cyberpolitical narratives bring into clearer focus a cyberpolitical imaginary that has long been at work in Western social theory" (Boyer 2011, 98). Also, according to the same author: "after chasing biopolitics from early modern Europe into the contemporary domain of cyberpolitics we have found that

biopower was cyberpolitical all along. In the human sciences, Foucault's biopolitics has been an exceptionally effective symptom of what I would describe as an unspoken (and perhaps unspeakable until our more recent saturation in talk of digital revolution) but nevertheless epistemically consequential 'cybernetic unconscious' within postwar social theory. Reading Foucault's analytics of biopower prepares us well for encountering contemporary digital publicity. Which is perhaps to say that Foucault had internalized a cyberpolitical awareness long before many of us did. And, this may also help to explain the widespread intuitiveness and application of Foucault's analytic method in anthropology and the human sciences since the rise of digital publicity" (Boyer 2011, 99).

The complexity of the philosophy of biopolitics is reflected, among other things, in the multitude of possible applications in social science and humanities research. The application of concepts of biopolitics enpowers scientists to define and deeper analyze historical and contemporary political and social processes, such as nation-building through producing the norms and standards that include and exclude certain groups and individuals; administration, management, protection and care-taking of human bodies and interwining of biopower with psychoanalysis and gender issues; foreign policy and demarcation between liberal democracy and totalitarism, and many others. For example, biopolitical aspects are discussed in contemporary philosophy, referring to the concept of life in the contexts of biopolitics and postmodernism or used to compare Foucault with other philosophers, even from the more distant past, then, in political philosophy, which is applied to the analysis of global-political events in the first decades of the 21st century.[28] Some authors connect biopolitics and modern digital technologies with the concept of "surveillance capitalism", others emphasize biopolitical discontinuities and other biopolitical consequences caused by the pandemic of the COVID-19 virus. Also, with all this, the researchers highlight the connection between biopolitics and popular culture, through which biopolitics has been influencing the formation of a disciplinary society, where even fairy tales played an important role in the civilizing process and had an important role in the formation of a polite court society as well as disciplining women. In the same way biopolitical issues are being analyzed by researchers in the context of science fiction. The connection of biopolitics and biotechnologies can also be seen in some phenomena of modern art and fashion development.[29] Contemporary science connects Foucault's theory of biopolitics and his social epistemology, and applies it to

[28] Brunon-Ernst 2012; Koljević 2014; Koljević 2015; Koljević Griffith 2019, 63-80; Кољевић Griffith 2022, 1229-1250; Кољевић Грифит 2023, 65-80; Krivak 2007; Krivak 2010, 117-137; Krivak, Marjanović 2014, 19-38.

[29] For example Podjed 2023, 7-19; Миленковић 2023, 57-69; Петровић 2023, 103-115; Лошонц 2023, 71-94; Zubof 2020; Marinković, Major 2020, 486-502; Перић Дилгенски 2020, 627-646; Tratnik 2020, 113-125; Tratnik 2022, 135-155; Šlesingerová 2018, 59-76; Žikić 2012, 81-104; Davidovac 2024.

contemporary issues of biopolitical philosophy (Italian thinkers Agamben, Negri and Esposito), analyzes the interweaving of biopolitics with the epistemology of religion and gender, with decoloniality and „border epistemology", epistemological and ontological dimensions of biopolitics of global crises of the modern era, biopolitics and knowledge about human (in)security, concepts of environmental protection in the service of biopolitics, as well as the question of the relationship between biopolitics and the preservation of endangered species.[30]

Transhumanism brought on the public stage the ideas that scrutinized by some researchers criticize because it gives the possibility of using AI as a tool of biopolitics. Some authors have dilemmas if enhancing consciousness and the related changes in the character of human knowledge may influence our relationship with other biotechnologies and whether changed nature of knowledge with whom human brain operates can be used for political manipulation. Others think that in order to protect man from the omnipotence of technology and its unethical application is necessary to establish cyborgoethics that would determine the implementation of an artificial boundary in the natural body.

Chinese scientists delivered following opinion in 2018: "Before AI was available, people were living in a binary space which consisted of physical space (P for short) and human social space (H for short). In this binary space, the orders for human activities are decided by the interactions and interrelations among the people and between man and object and man acts as the formulator and dominator in human social orders. With the rapid development of mega-data, cloud computing and IOT, intelligent mobile devices, wearable alliances, and "Internet+" react on different sectors of human society and promote the advent of the third industrial revolution and the intelligence era, which drive people to the ternary space (PHC) marked by physical space (P), human social space (H), and CyberSpace (C for short). In the ternary space (PHC), the orders of human society will be invariably restructured. Whether you are aware of such change or not, the profound influence upon human social life which is brought by artificial intelligence becomes a consensus of all walks of life. Therefore, mankind should take the initiative measures so that they may adapt themselves to such change" (Zhang et al. 2018, 2).

The development of AI certainly leads to transformations of human society and the individual in it. They can be fast, undesirable, and sometimes society cannot keep pace with such transformations. On the other hand, they can contribute to progress in the sphere of science, health, education, economic and infrastructural development, help in solving population crises, enable the extension and facilitation of human life, etc. Given the multitude of possible scenarios when it comes to the question of directions in which the development

[30] Ettlinger 2011; Meloni 2010; Dillon, Lobo-Guerrero 2008; Marks 2006; Mignolo 2013; Tlostanova 2011; Grayson 2008; Auga 2020; Mori 2008; Srinivasan 2017.

of AI can lead humanity, only time will tell to which destination this development will take us (Popović, Kulenović 2024, 75-76).
It seems that a moderate path is always the best solution when decisions need to be made regarding dilemmas related to the relationship between artificial intelligence and human beings. According to our opinion, it implies the use of AI for the benefit of humanity, and preserving a relationship with technology in which human would not lose personal identity, unique physical, psychological and intellectual properties, the ability to develop and progress in all possible aspects, through personal work and achievements, and the interaction with the world in which lives. AI technologies and humans can and must co-exist in a modern society, and for this co-existence, sometimes, it is necessary to set limits determing the extent to which artificial intelligence can replace or permeate the human entity (Popović, Kulenović 2024, 76).

One of the possible ways to conclude chapters of this review that considers contemporary research on biopolitics, reflecting its complexity, is to cite Thomas Lemke, "biopolitics introduces a reflexive dimension. That is to say, it places at the innermost core of politics that which usually lies at its limits, namely, the body and life. Seen this way, biopolitics again includes the excluded other of politics. Indeed, neither politics nor life is what it was before the advent of biopolitics. Life has ceased to be the assumed but seldom explicitly identified counterpart of politics. It is no longer confined to the singularity of concrete existence but has become an abstraction, an object of scientific knowledge, administrative concern, and technical improvement" (Lemke 2011, 117). Following, "analytics of biopolitics has its starting point in the theoretical perspective outlined by Michel Foucault, but it 'lives,' so to speak, from the numerous corrections and elaborations of biopolitics [...]. Taken together, these lines of reception have advanced and substantiated the Foucauldian notion of biopolitics in different ways. First, they make clear that contemporary biopolitical processes are based on an altered and expanded knowledge of the body and biological processes. Thus, the body is conceived of as an informational network rather than a physical substrate or an anatomical machine. Second, it was necessary to supplement the analysis of biopolitical mechanisms with an examination of the modes of subjectivation. This theoretical move allows us to assess how the regulation of life processes affects individual and collective actors and gives rise to new forms of identity. In short, following Foucault, recent studies of biopolitical processes have focused on the importance of knowledge production and forms of subjectivation. An analytics of biopolitics should investigate the network of relations among power processes, knowledge practices, and modes of subjectivation." (Lemke 2011, 18-19).

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BIOPOLITIKA, TRANSHUMANIZAM, VEŠTAČKA INTELIGENCIJA: NEKOLIKO UVODNIH NAPOMENA

Apstrakt: Rad koji je pred nama ne pretenduje da ponudi novi naučni doprinos teorijama biopolitike i njihovim primenama. Cilj je da se pruži pregled na osnovu kojeg bi studenti društvenih i humanističkih nauka, kao i svi ostali zainteresovani obrazovani čitaoci, mogli upoznati sa savremenim naučnim trendovima kada je reč o biopolitičkim teorijama i njihovoj naučnoj upotrebi. Najpre, autor nastoji da objasni Fukoovo tumačenje biopolitike, a zatim predstavlja stavove u nauci koji analiziraju odnose biopolitike, bioetike, biotehnologija i veštačke inteligencije .

Ključne reči: biopolitika, Mišel Fuko, biotehnologije, bioetika, veštačka inteligencija (AI)