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Corporality: From Commonality to Structurality

Andrey Koss (ORCID 0009-0001-6158-3540)
National Technical University "Kharkiv Polytechnic Institute" (Ukraine)

ABSTRACT

The article conducts a philosophical and ethical investigation into the interaction between human corporeality and the technologies that transform it. As the focus on these technologies shifts, the understanding of the model of corporeality changes as well. An analysis of historical teachings about the essence of corporeality and its structural components is carried out, allowing for the determination of the limits of changes that do not distort human nature. The relationship between corporeality and spirituality in various philosophical traditions and spiritual practices is also examined. The contribution of Rene Descartes to the doctrine of corporeality is highlighted, as he approached this duality from a new perspective, using analytical methods to identify patterns in the existence of the bodily and the spiritual. He concluded that matter has the property of divisibility, while spirituality is indivisible. Corporeality has structural elements, whereas the spiritual does not possess such characteristics, which allowed for a reevaluation of corporeality and the application of a new methodology for study. Over time, structurality began to transform into functionality as an expression of corporeality. This led to the formation of doctrines, one of which viewed humans as functioning soulless machines (block-functional model), while another approach contributed to the emergence of cellular theory (ontogenetic-epistemological), as one of the key directions in the study of human corporeality.

The article examines the views on corporeality of Plato and Aristotle, focusing on their interpretation of the model of the immortality of the soul after physical death. It reveals the connections between body and spirit in the models of G.-W.-F. Hegel (the concept of interiorization) and F.-W. Nietzsche (the formation of the soul). The perspectives on corporeality by J. Baudrillard ("differentiated prosthesis", "matrix of simulation", "body as an object of fetishization") and the socio-cultural constructions of corporeality in the teachings of J.-P. Sartre, E.-G.-A. Husserl, and M. Merleau-Ponty are also discussed. Additionally, a philosophical analysis of the understanding of immortality is conducted. The article examines the influence of neuroscience on cognitive activity and bodily experiences, the expansion of embodiment beyond the physical body, CRISPR technologies, and the impact of virtual reality on existentialism.

KEYWORDS

body,
mind,
soul,
models of corporeality,
transhumanist technologies.

Introduction

In the modern world, the intellectual, bodily, and spiritual aspects of human existence intertwine with the achievements of scientific and technological progress, requiring a deep reflection on the understanding of corporeality and spirituality. Initially, corporeality intrigued philosophers in two ways: first, as the demarcation of a specific individual from the external world and other people; second, as the spatial-temporal repository of human essence. This approach has led to numerous schools and currents that ultimately shaped contemporary understandings of humanity. Each new technology, from bioengineering to virtual reality, represents a significant change, opening new horizons for transforming human existence and forming more complex connections with the surrounding world. In the context of rapid technological progress, it is crucial to find an optimal balance between the implementation of innovations and the preservation of key aspects of human nature. This requires a critical analysis of the ethical, social, and cultural issues associated with current transformations. A pressing question arises: to what extent can technology, medicine, and robotics alter corporeality while maintaining the unique essence of humanity?

Relevance. The rapid development of technology significantly expands the range of instrumental influence on the structure of the human body. There arises a need to reassess the boundaries of the impact of transhumanist achievements, such as gene therapy, cybernetic implants, bionic prosthetics, artificial intelligence, supercomputers, virtual and augmented reality, nanotechnology, and others. It is important to establish how these innovations affect the essential range of humanity, its individual identity, self-perception, and connections with the surrounding environment.

The aim of the article is to explore the historical understanding of bodily existence by identifying its structural components and defining the minimum unit within which technological transformations do not alter human essence, as well as establishing the methodological foundations for influencing this essence.

Novelty. The article examines the genesis of ideas regarding the structural components of bodily existence. It is

andreykoss8352@gmail.com

emphasized that the stem cell can be considered the minimum functional unit of the human organism. It also demonstrates that, despite any genetic modifications of cells, the introduction of prosthetics, or the experience of existing in virtual avatars, individual traits may undergo changes, but the basic essence of a human remains unchanged.

Research methods

The methodology for establishing scientific research is based on:

1. General philosophical methods: metaphysical, dialectical-materialist, and synergetic.

2. Special philosophical methods: philosophical-anthropological, socio-philosophical, historical-chronological and historical-comparative.

3. General scientific methods: system-functional, system-structural, comparative-historical, system-analytical analysis, synthesis method, historical-logical approach, inductive-deductive approach, thought experiment, modeling and philosophical-cultural analysis.

4. Special scientific methods within the anthropo-genetic-nanobiotechnological paradigm: molecular-genetic (complete sequencing of the human genome – S. Nurk et al. (*2022: 44*); the method of genetic scissors using CRISPR-technology (*Hillary et al., 2023: 311*).

5. A special scientific method within the framework of the cognitive-anthropological paradigm (*Lakoff et al., 1999: 265-266*), A. R. Damasio (*1994: 249-252*), and others.

6. The method of robotic artifacts as a tool for transforming corporeality – Clark A. (1997: 215, 218), M. McLuhan, E. Kapp, D. Rothenberg, P. Brey (*2000*), and others.

7. The method of digital avatars for alternative experiences and sensations (*Rueda, Lara, 2020*).

8. Special methods within the anthropological paradigm: the Hindu tradition of polytheism and theocentrism through the lens of bodily practices and spiritual discipline (*Sri Swami Sivananda, 1988: 40; The Hindu Tradition…, 1972: 340-341*); the Christian tradition of theohumanism utilizing spiritually directed practices focused on the body (*The Epistles of Paul the Apostle, 1822: 119; Koss, 2023: 16*); Platonic dualism: the body as an obstacle to the knowledge of the perfect reality (*Plato's Phaedo, 1954: 11; The Republic of Plato, 1908: 214-215*); Aristotelian integralism: the integration of the bodily and spiritual as a foundation for understanding reality (*Aristotle De Anima, 1907: XLV-XLVI*); Stoic morality: bodily desires as a test of spirit (Epictetus (Xenakis I., 1969: 109) and other stoics); Descartes' rationalism: the synthesis of the body, mind and soul (*Descartes, 2017: 54; 1989: 37*); a rational-metaphysical view of bodily existence within a mechanistic-functional paradigm (*Hobbes, 1651: 1; De La Mettrie, 1749: 55*); a dialectico-idealistic method of organic integrity of the inner and outer: body, soul, and spirit (*Hegel, 2018: 156, 189*); a philosophical-anthropological perspective on the bodilyness of the superhuman (*Nietzsche, 1917: 32-33; 2006: 57*); biocybernetic fetishization of the body as an instrument of production and desires (*Baudrillard, 1990a: 170; 1990b: 14*); existentialist bodilyness as the key to understanding individual freedom and authentic existence (*Sartre, 1957*); phenomenological method of bodilyness: the body as the axial point for understanding consciousness and the world (*Husserl, 1983: 55-56; Merleau-Ponty, 2005*).

Results and Discussion

Initially, corporeality and spirituality in Hinduism, Buddhism, the philosophy of Plato and Aristotle, and Christianity were viewed as interconnected yet distinct entities that significantly influenced each other. In the book "The Hindu Tradition: Readings in Oriental Thought" it is stated that the body can be seen as a prison or a temple of the soul (a vessel for the divine):

> "The body has been likened to a prison. … How can the body be made the temple of God? … The Gita has answered the question in decisive language: "By desireless action; by renouncing fruits of action; by dedicating all activities to God, i.e., by surrendering oneself to Him body and soul." (*The Hindu Tradition…, 1972: 340-341*).

In the book "The Epistles of Paul the Apostle" in the letter to the Corinthians, chapter VI, verse 19, it is stated that the bodies of people are temples meant for the dwelling of the Holy Spirit, which has been given as a gift from God (*The Epistles of Paul the Apostle, 1822: 119*). In the book "Plato's Phaedo" the body is described more as an obstacle on the path to true knowledge and the pursuit of philosophy: "As long as we have this body, and an evil of that sort is mingled with our souls, ... the body is forever taking up our time with the care which it needs; ... whenever diseases attack it, they hinder us in our pursuit of real being." (*Plato's Phaedo, 1954: 11*). The dialogue addresses two different aspects of human existence. The body serves as a means of obtaining information from the material world, where things can create illusions and deceive the senses. The soul, captivated by perception and dependencies on the body, becomes entangled in a confusion of false phenomena. True reality, according to Plato, is beyond the senses and belongs to the world of ideas. In the book "The Republic of Plato" an allegory is described in which the cave and shadows symbolize the limitations of sensory perception, light represents truth and knowledge from the world of ideas, pain reflects the agonizing process of understanding true reality, and the return to the "shadows" signifies the awareness of the illusory nature of familiar material objects (*The Republic of Plato, 1908: 214-215*). In the book "De Anima", Aristotle presented an ascending scale of the hierarchy of the capacities of the souls of living beings (*Aristotle, 1907: XLV-XLVI*). In this model, the soul is viewed as the form of the body, with the human structure being the most complex and encompassing the capacities of simpler beings (plants and animals). In the book "Epictetus. Philosopher-Therapist" the human body is regarded by the stoic Epictetus as a temporary shell for the soul: "You are a little soul carrying around a corpse." (*Xenakis, 1969: 109*).

The study of properties that reveal the integral characteristics of corporeality and spirituality continued in the philosophy of the Modern era and contemporary times, where special attention is given to searching for their structures of corporeality. Rene Descartes (1596-1650) attempted to uncover the structural nature of the body and spirit. In his work "Meditations on First Philosophy" he considered a dualistic approach to corporeality, perceiving the body as a material and extended substance, while the mind was seen as unextended and thinking, capable of existing outside

the organism: "I know with certitude that I exist, ... I certainly do possess a body with which I am very closely conjoined; ... as I am only a thinking and unextended thing, ... I possess a distinct idea of body, in as far as it is only an extended and unthinking thing, it is certain that I, [that is, my mind, by which I am what I am], is entirely and truly distinct from my body, and may exist without it." (*Descartes, 2017: 54*). For Plato, the body was a source of delusions that prevented the soul from achieving true knowledge. In contrast, for R. Descartes, the body is subject to the illusions of the senses, while the thinking mind is capable of clear and distinct perception. According to Plato, the soul existed in the world of ideas before embodying in a body and already knew all truths. In his view, gaining new knowledge in the material world merely means recalling the forgotten. R. Descartes, on the other hand, emphasized the method of doubt and believed that through rational thought, it was possible to extract true knowledge. For Plato, the body is a temporary prison for the soul, and liberation from corporeality through death allows the soul to return to the world of ideas. In contrast, R. Descartes did not emphasize an afterlife. In his work "The Passions of the Soul" he suggested that the soul transmits its signals through "spirits" (liquids or invisible forces) that move through the nerves and blood to all parts of the body (*Descartes, 1989: 37*). It is important to note that at that time neuroscience was not developed yet as it is today, and such explanations served as a bridge between philosophy and medicine.

Thomas Hobbes (1588-1679) in his work "Leviathan, or The Matter, Forme and Power of a Common-Wealth Ecclesiasticall and Civill" considered man as a machine and argued that all manifestations of human behavior can be explained through mechanical processes in the body (*Hobbes, 1651: 1*). Unlike Plato, who saw the body and soul as separable and often in conflict, Aristotle and Thomas Hobbes denied their complete division. For Hobbes, the body was the primary object of analysis, and mental processes were explained through the lens of physical processes. Thus, in Aristotle's model, the soul cannot exist without the body, whereas Plato suggested that the soul outlives the body, and Hobbes outright denied the existence of the soul outside of matter. According to R. Descartes and Plato, the soul can be immortal, while the views of Aristotle and Hobbes imply that with the death of the body, the soul loses its function and ceases to exist. Julien Offray de La Mettrie (1709-1751) expressed more radical ideas compared to Hobbes. In his main work "Man a Machine" he asserted that all aspects of daily life, including consciousness and emotions, are the results of material processes, denying the existence of the soul or an immaterial force that governs the body: "The ſoul then, is nothing but an empty term, of which we have no idea, and which a man of right underſtanding ought to make uſe of, only to expreſs that part which thinks in us." (*De La Mettrie, 1749: 55*).

Georg Wilhelm Friedrich Hegel (1770-1831) in his book "The Phenomenology of Spirit" argued that the inner and outer are represented as a unified organic whole: "…the organic being is laid as the foundation, or as undivided and as the content of inner and outer, and it is the same for both." (*Hegel, 2018: 156*); that for the spirit to impact the body, spiritual individuality must be embodied, and the organs serve as mediators between the individual and the external world:

> "If spiritual individuality is now to have an effect on the body, then as a cause, it must be itself bodily. …organs are to be considered as instruments or as parts, which spirit, as one extreme, has as the mediating middle between the other extreme, the external object." (*Hegel, 2018: 189*).

For Friedrich Wilhelm Nietzsche (1844-1900), the bodily and physical experience is primary over spiritual and rational thought. For instance, in his work "Thus Spoke Zarathustra", he spoke about revising and overcoming traditional moral and spiritual limitations of human existence, describing the body as the "great reality", which, with its many aspects, represents a unity, a stage of conflict and harmony: "The body is a big sagacity, a plurality with one sense, a war and a peace, a flock and a shepherd." (*Nietzsche, 1917: 32*); he asserted that the body created spirit or reason as a tool for expressing and realizing bodily will: "The creating body created for itself spirit, as a hand to its will."; he emphasized that behind thoughts and feelings lies the "self" or "I", which is fundamentally the body: "Behind thy thoughts and feelings, my brother, there is a mighty lord, an unknown sage – it is called Self; it dwelleth in thy body, it is thy body." (*Nietzsche, 1917: 33*). In "On the Genealogy of Morality" F.-W. Nietzsche examined the process of soul formation through "internalization", where instincts, unable to find expression in the external world, impact a person's inner world, transforming into existential experiences and reflections: "All instincts which are not discharged outwardly *turn inwards* – this is what I call the *internalization* of man: with it there now evolves in man what will later be called his 'soul'." (*Nietzsche, 2006: 57*). In his model, the soul was not regarded as an immortal independent entity capable of leaving the body after death; rather, it was perceived as a part of bodily-psychophysiological processes: "But the awakened one, the knowing one, saith: "Body am I entirely, and nothing more; and soul is only the name of something in the body"" (*Nietzsche, 1917: 32*).

In the book "Seduction" Jean Baudrillard (1929-2007) examined changes in the perception of the body and the shift from a mechanistic model to a biocybernetic one, in which the cell is viewed as a "differentiated prosthesis" of the entire body, and the DNA molecule serves as a "matrix of simulation", seeking to abstract and autonomize the essence of a living being, allowing for its infinite prolongation through copies of avatars (*Baudrillard, 1990a: 170*). In the book "The Consumer Society" Baudrillard noted that previously the body was seen more as a subject of spiritual salvation and philosophical reflection, whereas in modern society, it has transformed into an object of fetishization (*Baudrillard, 1990b: 14*).

Jean-Paul Sartre (1905-1980) in his book "Being and Nothingness: An Essay on Phenomenological Ontology" argued that perception and sensations are rooted in the body, making it impossible to completely exclude the body from consciousness: "…we encounter phenomena which appear to include within themselves some connection with the body; "physical" pain, the uncomfortable, pleasure, etc. But these phenomena are no less pure facts of consciousness." (*Sartre, 1957: 306*); that the body plays a crucial role

in our interaction with the world and manifests the individuality and randomness of our existence: "...the body manifests my contingency; ... it represents the individualization of my engagement in the world." (*Sartre, 1957: 309-310*). J.-P. Sartre agreed with R. Descartes and Plato that the body plays a key role in the individualization of the soul (the individuality of consciousness does not exist outside the individual body) but denied the possibility of separating the soul from the body either in death or in contemplation: "…Plato was not wrong either in taking the body as that which individualizes the soul. Yet it would be in vain to suppose that the soul can detach itself from this individualization by separating itself from the body at death or by pure thought, for the soul is the body inasmuch as the for-itself is its own individualization." (*Sartre, 1957: 310*). For Sartre, a person initially appears in the world as a blank slate and only through actions shapes their identity, filling it with the meaning of existence: "…existence precedes essence." (*Sartre, 1957: 630*). This approach contrasts with traditional metaphysical concepts of a predetermined nature or soul. Therefore, according to Sartre's existentialist philosophy, immortality is possible through the actions taken and the memories left behind in the world, rather than through the soul or an afterlife.

Edmund Gustav Albrecht Husserl (1859-1938) wrote in his book "Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy" that there is a fundamental connection between the physical body and mental phenomena, asserting that through sensory experience we interact with reality and construct a subjective understanding of the surrounding world and our place within it. He argued that consciousness does not exist in isolation from the bodily experience of a living being and that human experience and understanding of the world are universal and shareable among people: "All that which holds for me myself holds, as I know, for all other human beings whom I find present in my surrounding world. Experiencing them as human beings, I understand and accept each of them as an Ego-subject just as I myself am one, and as related to his natural surrounding world." (*Husserl, 1983: 55*). Through mutual understanding, people collectively postulate an objective spatiotemporal reality (which can be referred to as the "social body") as the genuinely existing surrounding world to which they belong (*Husserl, 1983: 56*). Each individual perceives the surrounding world objectively in various modes and experiences it as a unity of themselves and others: "…I take their surrounding world and mine Objectively as one and the same world of which we all are conscious, only in different modes." (*Husserl, 1983: 55*).

Maurice Merleau-Ponty (1908-1961) in his book "Phenomenology of Perception" examined the body as an inseparable part of perception and subjective experience: "The body is our general medium for having a world." (*Merleau-Ponty, 2005: 169*); he argued that the body is the central element through which we observe, perceive, and interact with the world: "Consciousness is in the first place not a matter of 'I think that' but of 'I can'." (*Merleau-Ponty, 2005: 159*).

At the end of the 20th century and throughout the 21st century, neuroscience has been exploring the influence of cognitive activity on bodily experiences, and vice versa, opening up avenues for innovative approaches to the treatment of trauma and neurodegenerative diseases. Such research is fostering a new understanding of the interconnections between the brain, body, and environment. For instance, in their book "Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought" American linguist George Lakoff and philosopher Mark Johnson emphasize that cognitive processes are inextricably linked to the physical body and sensory experience; in other words, the mind permeates and structures interactions with the world and is inseparably connected to bodily experience (*Lakoff, Johnson, 1999: 265-266*). Neuroscientist Antonio Damasio also shares these views. In his book "Descartes' Error: Emotion, Reason, and the Human Brain" he criticizes R. Descartes' Cartesian dualism, arguing that emotional experiences cannot exist separately from the biological organism: "This is Descartes' error: the abyssal separation between body and mind, between the sizable, dimensioned, mechanically operated, infinitely divisible body stuff, on the one hand, and the unsizable, undimensioned, un-pushpullable, nondivisible mind stuff; the suggestion that reasoning, and moral judgment, and the suffering that comes from physical pain or emotional upheaval might exist separately from the body. Specifically: the separation of the most refined operations of mind from the structure and operation of a biological organism." (*Damasio, 1994: 249-250*). He emphasizes that to truly understand the mind, one must consider its biological nature in the context of the whole organism. A key focus is on studying how behavior and experience are formed through interaction with physical reality and the surrounding social environment, pointing out that the integration of mind and body contributes to a better understanding of human nature, acknowledging its complexity, fragility, finiteness, and uniqueness (*Damasio, 1994: 252*).

Due to the active development of technology at the end of the 20th century and throughout the 21st century, scholars are emerging who examine embodiment beyond the physical body. For example, Andy Clark, in his work "Being There: Putting Brain, Body, and World Together Again" argues that cognitive processes can extend beyond the physical body: "...of studying extended brain-body-world systems as integrated computational and dynamic wholes, I am convinced that it is valuable to (at times) treat cognitive processes as extending beyond the narrow confines of skin and skull." (*Clark, 1997: 215*). And when cognitive tasks are transferred to external tools, artifacts become part of thinking and the functional capabilities of the brain are enhanced: "…the biological brain is fantastically empowered by some of its strangest and most recent creations: words in the air, symbols on the printed page." (*Clark, 1997: 218*). Philip Brey, in his article "Theories of Technology as Extension of Human Faculties" analyzes the works of Marshall McLuhan, Ernst Kapp, and David Rothenberg, exploring how technological objects influence bodily existence. P. Brey notes that M. McLuhan distinguished between two types of organism extension – "individual" and "social": "Strictly speaking, McLuhan distinguishes two types of extensions: extensions of the 'individual organism' and extensions of the 'social organism.'" (*Brey, 2000: 76*); under extension, enhancement, and ac-

celeration, he refers to the performance of functions by humans that were previously done without external assistance: "All technologies are hence analyzed as amplifications or accelerations of functions originally performed by the unaided human organism, that take over or supplement these functions."; and that the extension of the organism can occur both through the body and cognitive functions: "McLuhan appears to distinguish two broad classes of extensions of the organism: *extensions of the body* and *extensions of cognitive functions*…" (*Brey, 2000: 60*). While E. Kapp's forms of technological artifacts imitate the shapes of human organs, M. McLuhan translates the functional properties of human organs into artifacts in an enhanced form: "Perhaps the most important difference between the views of McLuhan and Kapp is that Kapp, unlike McLuhan, argues that the form of technological artifacts imitates the form of human organs. McLuhan only claims that functional properties of human organs are translated, in amplified form, to artifacts." (*Brey, 2000: 62*); for D. Rothenberg, technology extends not only human capabilities but also desires, intentions, and will: "…when we make something, we thrust our intentions upon the world." (*Brey, 2000: 66*). From all these perspectives, it follows that technologies are not merely tools but function as a bidirectional process, actively participating in the formation of human experience and the perception of each individual body and the surrounding world.

In the 21st century, the rendering of complex 3D images in real time has become possible thanks to graphics processors and computer technology. The development of tracking technologies (gyroscopes, accelerometers, tracking systems) allows for the creation of more accurate virtual reality devices. Social networks and the internet facilitate the global dissemination of content and interaction among users in virtual spaces. This direction opens up new ways to interact with the world, expanding perception and experience, as well as creating opportunities for learning, entertainment, and professional activities. In the article "Virtual Reality and Empathy Enhancement: Ethical Aspects" Jon Rueda, Francisco Lara and Jeremy Bailenson note that the technical characteristics of VR allow for the creation of a bodily illusion of presence, where motor, perceptual, and physiological systems function similarly to the real environment: "Our motor, perceptual and physiological systems function in virtual scenarios in the same way that they do in the "real world"…" (*Rueda, Lara, 2020: 4*); Head-Mounted Displays provide the visual component of the experience, while auditory elements are delivered through headphones or external speakers: "In a VR multisensory experience, HMDs provide the visual element. Sound is often transmitted by means of headphones/earphones or an external speaker, thus helping to increase the degree of immersion."; tactile sensations and manipulation of digital objects are achieved using controllers, joysticks, data gloves, and data suits: "There are some gadgets (handheld controllers, force-feedback joysticks, data gloves, datasuits, etc.) which are essential to the manipulation of virtual objects as well as for the sense of touch." (*Rueda, Lara, 2020: 2*). In his concept of "homuncular flexibility", Jaron Lanier emphasizes the high variability of the individual body schema in virtual reality: "Jaron Lanier invented the expression "homuncular flexibility" to refer to the high malleability of our body schema in VR experiences (*Won et al., 2015a,b*).". At the same time, Antonella Maselli and Mel Slater note that a significant element of the illusion of owning a digital avatar is the human form: "However, human-like bodily appearance is one of the building blocks of full body ownership illusion (*Maselli and Slater, 2013*),". Sofia Seinfeld, Jorge Arroyo-Palacios, Guillermo Iruretagoyena and others indicate that the sense of embodiment may decrease in non-human avatars: "…meaning that the sense of embodiment may decrease in non-human avatars compared to realistic virtual human bodies…" (*Rueda, Lara, 2020: 4*). Virtual reality is changing work methods and lifestyle, allowing individuals to actively experience simulated events through digital avatars. This technology opens new opportunities in medicine, education, and architecture, and can also influence physical behavior, skill development, and decision-making in the real world. In the article "Anthropological Dimension of Constructivism in the Culture of Presence" Olga Dolska, Olga Horodyska, and Jakov Tararoyev note that the Category of Presence emphasizes the processes of constructive perception of reality, shifting the main focus to experiences that can elevate a person to a transcendent level: "…Presence category helps to emphasise in constructing of reality and facilitates the consistency in these processes. Nonetheless the focus is such experience which is capable to elevate human to the transcendental level." (*Dolska et al., 2019: 116*). Virtual reality, as an alternative space for self-discovery and self-realization, becomes not just a technology but a powerful tool for existential exploration.

When considering the body as a fundamental part of human existence (the core of bodily existence), modern biotechnologies play a significant role in researching and improving the functioning of the human body. CRISPR/Cas technologies open up opportunities to prevent hereditary diseases even before birth by making desired changes to the genome of future generations. In the article "A Review on the Mechanism and Applications of CRISPR/Cas9/Cas12/Cas13/Cas14 Proteins Utilized for Genome Engineering" Edwin Hillary and Antony Stanislaus Ceasar write that the system takes DNA fragments from other organisms (spacers), inserts them into its structure, transcribes this information into CRISPR arrays, and processes it to obtain a special RNA molecule (gRNA) that will assist in gene editing; they also note that CRISPR genes encode special Cas proteins, which add new "memory cells" (spacers) that help defend against invading elements (such as viruses) (*Hillary et al., 2023: 311*); and note that a group of researchers led by Doudna created a metagenomic database and discovered the Cas14 protein, which encodes a significantly smaller Cas protein with a molecular weight of 40-70 kilodaltons (*Hillary et al., 2023: 321*). The search for new CAS proteins is aimed at increasing the accuracy, efficiency, and safety of DNA editing. These proteins may possess unique properties, allowing for better interaction with specific cell types. The smaller size of Cas proteins facilitates their delivery to tissues in the body and reduces the immune response, thereby enhancing the compatibility and safety of gene therapies. The diversity of these proteins enables the development of targeted and personalized treatment methods for various diseases.

Conclusion

The article examines the historical-epistemological process of the development of the doctrine of corporeality, from its wholeness to systemic components. Issues of corporeality have existed throughout history, changing with the sociocultural context. In ancient civilizations, corporeality was perceived through mythology and religion, connecting it with the earthly and the divine. In Ancient Greece, philosophers like Plato and Aristotle began to explore the relationship between body and soul. In the Middle Ages, the body was associated with sin but also regarded as the temple of the soul. The Renaissance revived interest in ancient culture, weakening religious dogmas. The Enlightenment emphasized human experience, linking corporeality with consciousness and perception. In modern times, psychoanalysis and phenomenology highlight the importance of corporeality for perceiving the world. Today, corporeality is viewed as a multifactorial element, including sociocultural, existential, phenomenological, sexual, biotechnological, and other aspects. These directions make corporeality increasingly structured and multifaceted, moving from a general holistic phenomenon to a more structured and complex system. Technologies like CRISPR/Cas9 and similar methods are altering the functional aspects of health. They allow for the removal or deactivation of mutations, treatment of allergies, and autoimmune diseases by adjusting immune responses. It is also possible to create effective vaccines using genetically modified probiotics and influence the synthesis of neurotransmitters and hormones, affecting decision-making and emotional stability. When addressing legal and ethical issues, the selection of individuals with specific characteristics may be possible. Virtual reality provides ways to experience life and create individuals with programmed qualities, but this raises numerous ethical and legal problems. Currently, altering human nature technologically is not feasible. The stem cell is seen as the basic unit of human corporeality, capable of transforming into various specialized cells that make up the entire human body.

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Тілесність: від цілісності до структурності

Андрій Косс (ORCID 0009-0001-6158-3540)
Національний технічний університет "Харківський політехнічний інститут" (Україна)

У статті проводиться філософсько-етичне дослідження взаємодії між людською тілесністю та технологіями, які її трансформують. Залежно від зміни фокуса розглянутих технологій змінюється розуміння моделі тілесності. Проводиться аналіз історичних учень про сутність тілесності та її структурні компоненти, що дозволяє визначити межі змін, які не змінюють людську природу. Розглядається зв'язок тілесності та духовності в різних філософських традиціях і духовних практиках. Показано внесок у вчення про тілесність Рене Декарта, який підійшов до цієї дуальності з нового ракурсу, застосовуючи метод аналізу для виявлення закономірностей в існуванні тілесного і духовного. Він дійшов висновку, що матерія має властивість подільності, тоді як духовність — неподільна. Тілесність має структурні елементи, у той час як духовне не має подібної особливості, що дозволило по-новому розглянути тілесність і застосувати нову методологію дослідження. З часом структурність почала трансформуватися у функціональність як вираження тілесності. Це призвело до формування вчень, одне з яких розглядало людину як функціонуючу бездушну машину (блочно-функціональна модель), тоді як інший підхід сприяв виникненню клітинної теорії (онтогносеологічна) як одного з ключових напрямків вивчення людської тілесності.

В статті розглядаються погляди на тілесність Платона та Аристотеля, їх трактування моделі безсмертя душі після фізичної смерті. Відкриваються взаємозв'язки між тілом і духом у моделях Г.-В.-Ф. Гегеля (концепція інтеріоризації) та Ф.-В. Ніцше (формування душі). Обговорюються погляди на тілесність Ж. Бодрійяра («диференційований протез», «матриця симуляції», «тіло як об'єкт фетишизації») та соціально-культурологічні конструкції тілесності у вченні Ж.-П. Сартра, Е.-Ґ.-А. Гуссерля та М. Мерло-Понті. Також проведено філософський аналіз розуміння безсмертя. Досліджується також вплив нейронаук на когнітивну активність і тілесні переживання, розширення тілесності за межі фізичного тіла, технології CRISPR, а також вплив віртуальної реальності на екзистенціалізм.

Ключові слова: тіло, розум, душа, моделі тілесності, трансгуманістичні технології.

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