Культурно-историческая психология
2025. *21*(1), 13—23.
https://doi.org/10.17759/chp.2025210102
ISSN: 1816-5435 (печатный)
ISSN: 2224-8935 (online)

Cultural-Historical Psychology
2025. *21*(1), 13—23.
https://doi.org/10.17759/chp.2025210102
ISSN: 1816-5435 (print)
ISSN: 2224-8935 (online)

Digital Extended Man Looking for his Wholeness

Galina U. Soldatova
Lomonosov Moscow State University, The Moscow Institute of Psychoanalysis, Moscow, Russia,
ORCID: https://orcid.org/0000-0002-6690-7882, e-mail: soldatova.galina@gmail.com

Svetlana N. Ilyukhina
Lomonosov Moscow State University, The Moscow Institute of Psychoanalysis, Moscow, Russia,
ORCID: https://orcid.org/0000-0002-6690-7882, e-mail: svetla.iluhina@gmail.com

The mixed online-offline reality, with the technosystem as an integral component of the digital era's ecological human system, has given rise to a new anthropological type: the technologically augmented human, enhanced by digital tools. This extended human, simultaneously embodied in the physical realm and dematerialized through extra-corporeal expansion, becomes distributed across multiple realities and digital spaces. This distribution challenges the concept of holistic subjectivity. The problem of wholeness is examined through technological, cognitive, motivational-value, and socio-behavioral dimensions. A key focus is on identifying new methods for managing digital extensions, fostering internal coherence, and integrating digital and real-world identities to enable conscious, responsible, effective, and safe participation in digital social practices. In this era of rapid digital transformation, the wholeness of modern humans must be re-evaluated based on a fundamental principle: a changing individual exists within a constantly transforming world. This principle acknowledges the limitations of previous anthropological frameworks and norms in understanding humanity, recognizing humans as an open, unfinished project perpetually striving to realize their boundless potential.

Keywords: digital extended personality, digital socialization, holism, wholeness, externalism.

Funding. The research was supported by the Russian Science Foundation, project number 23-18-00350 (https://www.rscf.ru/project/23-18-00350/).

For citation: Soldatova G.U., Ilyukhina S.N. Digital Extended Man Looking for his Wholeness. *Kul'turno-istoricheskaya psikhologiya = Cultural-Historical Psychology*, 2025. Vol. 21, no. 1, pp. 13—23. DOI: https://doi.org/10.17759/chp.2025210102

Человек технологически достроенный: в поисках целостности

Г.У. Солдатова
Московский государственный университет имени М.В. Ломоносова
(ФГБОУ ВО «МГУ им. М.В. Ломоносова); НОЧУ ВО Московский институт психоанализа
(НОЧУ ВО МИП), г. Москва, Российская Федерация
ORCID: https://orcid.org/0000-0002-6690-7882, e-mail: soldatova.galina@gmail.com

С.Н. Илюхина
Московский государственный университет имени М.В Ломоносова
(ФГБОУ ВО «МГУ им. М.В. Ломоносова»); НОЧУ ВО Московский институт психоанализа
(НОЧУ ВО МИП), г. Москва, Российская Федерация
ORCID: https://orcid.org/0000-0002-9947-450X, e-mail: svetla.iluhina@gmail.com

Смешанная реальность и появление техносистемы, как важной части экологической системы жизнедеятельности людей в цифровую эпоху, формирует новый антропологический тип человека, технологически расширенного и достроенного цифровыми средствами. Человек достроенный, будучи одновременно телесно воплощенным и дематериализованным в своем расширении за пределы физического тела, оказывается распределенным между различными реальностями и цифровыми пространствами, что ставит под вопрос его целостную субъектность. Проблема целостности рассматривается в рамках следующих направлений: технологического, когнитивного, мотивационно-ценностного и социально-поведенческого. Важный фокус анализа — поиск новых форм управления цифровыми достройками, формирование внутренней согласованности личности, объединяющей в себе цифровые и реальные идентичности и способной осознанно, ответственно, эффективно и безопасно быть включенной в практики цифровой социальности. В эпоху цифровых трансформаций, скорость которых все нарастает, проблема целостности современного человека должна быть пересмотрена на основе ключевого принципа — изменяющийся человек находится в постоянно трансформирующемся мире, предполагающем, в том числе, что прежние антропологические лекала и нормы сковывают наше понимание о нем и что человек — открытый, незавершенный проект, нацеленный на бесконечное раскрытие своего потенциала.

Ключевые слова: технологически расширенная личность, цифровая социализация, целостность, экстернализм.

Финансирование. Исследование выполнено за счет гранта Российского научного фонда № 23-18-00350 (https://www.rscf.ru/project/23-18-00350/).

Для цитаты: *Солдатова Г.У., Илюхина С.Н.* Человек технологически достроенный: в поисках целостности // Культурно-историческая психология. 2025. Том 21. № 1. С. 13—23. DOI: https://doi.org/10.17759/chp.2025210102

The Fourth Industrial Revolution, constantly accelerating due to digital transformation is driving the inevitable evolution of humans into beings increasingly interconnected with technology. Researchers are seeking metaphors to describe, analyze, and explain these transformative changes. One such metaphor, grounded in evolutionary biology and psychophysiology, is the concept of the "completed person" where tools created by humans are viewed as external exosomatic organs — extensions of the body (A. Lotka, P. Medawar, I. Feigenberg) — enabling new forms of activity. In a transdisciplinary context, this metaphor represents a key vector in the evolutionary development of human civilization within a technologically saturated socio-cultural environment — a novel ecosystem of human existence.

In this ecosystem, the technosystem — encompassing smartphones, computers, digital platforms, applications, artificial intelligence programs, and their modes of use — serves as the primary mediating link between individuals and their surrounding world. A significant driver of technosystem development is the rapid proliferation of internet-connected people and devices, resulting in a mixed (convergent) reality — a cyber-physical environment. This environment comprises a complex interplay of physical, social, and virtual subjects, objects, and stimuli from both the real and virtual worlds [9]. All these elements coexist within a sin-

gle space-time continuum. However, while holistic perception of this continuum is presumed, traditional ontological thinking raises crucial questions about understanding the true nature of being in the digital age. Within this continuum, the ontological challenge stimulates the expansion and active augmentation of the internet-connected individual through the technosystem, leading to complex issues surrounding digital mediation and the formation of a new sense of personal wholeness across multiple realities.

Within the framework of L.S. Vygotsky's cultural-historical psychology and Urie Bronfenbrenner's ecological systems theory, human development within this new ecosystem is considered a stage of social evolution. The technosystem, as a critical component of the external environment, enhances the capabilities of both adults and children, becoming integrated into and augmenting their cognitive, behavioral, and social systems. Digital devices and environments function as cultural tools that mediate mental functions, facilitate new activities, foster social interactions, and generate new cultural practices [7].

Extended human: from stone biface to artificial intelligence

Human "expansion" is not a recent phenomenon. Three or four million years ago, Australopithecines utilized sticks as tools, extending their capabilities. Cro-Magnons consciously invented tools, and Upper Paleolithic cave paintings represent early evidence of externalizing aspects of consciousness onto "external media." Throughout history, human augmentation via tools and technologies has progressed — from digging sticks and hand axes to telescopes, surgical robots, and spacecraft. The most significant leap, however, occurred during the era of digital transformation, profoundly expanding human capabilities, particularly when compared to the less technologically advanced analog era. Combined with technological tools, including artificial intelligence, human consciousness becomes both embodied and disembodied, extending beyond the physical body and brain. Humans are no longer purely corporeal or "digital" but are constantly integrated into multiple worlds. While inextricably linked, these "incarnations" are distributed across numerous spaces simultaneously, challenging the notion of unified human subjectivity [15; 18; 26].

The extended and augmented human is central to digital socialization, which we define as a changing human's adaptation to the opportunities and risks of a constantly evolving socio-technological environment [7]. The transdisciplinary framework for studying the technologically extended personality encompasses various concepts, prominently including externalist perspectives. Understanding consciousness has evolved from internalism, reducing mental phenomena to brain characteristics, to externalism, where external objects causally influence, constitute, or organize cognitive processes. Externalist perspectives suggest that human cognition is shaped by environmental conditions, viewing humans through their external additions or extensions. This is evident in E. Kapp's philosophy of technology; enactivism (F. Varela, E. Thompson, E. Rosch); the classical externalism of H. Putnam and T. Burge; the active externalism of E. Clark and D. Chalmers; and L.S. Vygotsky's active social externalism, which emphasized social forms of mental development long before these ideas emerged elsewhere [4].

Within the digital socialization concept, studying the human through key dimensions — access and connectivity to digital technologies, mixed reality, the technologically extended personality, digital sociality, and digital well-being — reveals accelerating human extension in mixed cyber-physical reality and the resulting changes.

Technological transformations and the adoption of new digital products are accelerating. ChatGPT, for example, reached 100 million users within two months, a significantly faster rate than other popular digital platforms. Despite the prevalence of neural network-based services and futurologists' predictions of "strong" artificial intelligence within the next decade, the initial ChatGPT boom has subsided. Soon, users will possess AI-powered mobile devices — interactive, multitasking, with speech recognition and synthesis, computer vision. These devices will exhibit almost animate qualities, evolving through interactions with their owners into "unique entities" adapting to individual preferences. Such an AI-powered phone will become a companion and a crucial digital extension of the real personality, acquiring new properties and qualities within this symbiotic relationship.

The interest in the technologically extended person is not coincidental. Digital extensions across various aspects of human activity (information retrieval, knowledge systems, communication, and self-regulation) are significantly altering life-

styles and transforming individuals. This expanded, augmented person, extended through external technological tools and digital systems, is becoming an increasingly active subject in the digital world and mixed reality. This perspective necessitates a reassessment not only of norms of cognitive and personal development but also of the constructs researchers utilize when studying the complex interplay between digital and traditional socialization. Psychologists, particularly mindful of the risks associated with digital transformations, are focusing on the crucial issue of personality wholeness, a central concern across various areas of psychological science and practice.

This article aims to address the internal consistency of the individual augmented by digital technologies, highlighting key aspects that shape the complex process of developing a new sense of wholeness within the context of adaptation to rapidly changing digital environments.

The problem of wholeness in social and humanitarian sciences

The philosophical concept of wholeness is reflected in the ontological principle of holism, which opposes reductionism. Holism asserts that a whole is more than the sum of its parts, possessing emergent properties unpredictable from the properties of its individual components. This philosophical principle has transcended disciplinary boundaries, influencing fields ranging from biology and medicine to sociology and mathematics, becoming a significant methodology in systems theory and the systemic approach [22].

Holistic principles are particularly evident in information science and artificial intelligence, giving rise to the concept of "strong AI," capable not only of mimicking individual human cognitive processes and problem-solving but also of exhibiting holistic cognitive activity, including continuous learning and self-organization [21]. The potential emergence of "strong" AI remains debated, beginning with J. Searle's "Chinese Room" thought experiment, a critique of the Turing test [35]. However, the question arises whether AI already constitutes a "new digital entity" with an internal structure differing from its creators' initial intentions.

In psychology, the ontological principle of wholeness is relevant when considering the person within the unity and contradictions of nature and culture, individual and social, subjective and objective, hereditary and acquired, factual and transcendental, conscious and unconscious, and the unity of past, present, and future. The general methodological principle of organizing complex systems has shaped the understanding of the psyche's wholeness as a phenomenal field in Gestalt psychology (M. Wertheimer et al.), reflecting the universal law of the whole being greater than the sum of its parts. C.G. Jung introduced the archetype of the Self as the integrating potential of the personality, encompassing consciousness and unconsciousness, and representing the life goal. K. Lewin presented a dual view of the human psyche, depicting the personality as both a differentiated whole and a part of its personal space. G. Allport developed the concept of proprium, organizing a personality's attitudes, motives, and inclinations.

Humanistic psychology significantly contributed to understanding wholeness, emphasizing the unity and integrity of the person as a complex, open system striving for integration and interconnectedness. Studies on existential integrity (A. Maslow), personality congruence (C. Rogers), and self-identity within temporal and social contexts (E. Erikson) exemplify this understanding.

In Soviet and Russian psychology, the concept of personality itself, and the concept of individuality based on an anthropological principle, are viewed as integrating principles linking various processes, ensuring the stability and wholeness of the person through internal connections. These principles are characterized by increasing complexity in the historical-evolutionary process (B.G. Ananyev, A.G. Asmolov, K.A. Abulkhanova, A.V. Brushlinsky, V.S. Merlin, V.D. Nebylitsyn, Petrovsky, Yaroshevsky, S.L. Rubinstein, etc.).

As S.P. Gurevich notes, true wholeness remains unattainable due to the inherent incompleteness and instability of human nature: fallibility, dependence, openness to the world, infinite potential, plasticity, capacity for change, and the inevitability of internal and external conflicts and contradictions. Wholeness is not absolute; it is not inherently given but acquired as relative holism. Human existence is fundamentally incomplete, characterized by fragmentation and conflict [2]. The increasing uncertainty, nonlinearity, complexity, fluidity, and ontological fragmentation of the modern world, largely driven by digital transformations, complicate wholeness and necessitate new ways of restoring integrity or creating new forms. It is through this lens of wholeness that we will examine the Augmented Man from various perspectives.

Directions of Technologically Extended Personality Study: Indicators of New Wholeness

Based on analyses of current theoretical and empirical research, we identify four areas for studying the technologically extended personality, revealing aspects of wholeness in the digital age: technological, cognitive, motivational-value, and socio-behavioral. The distinctions between these areas are somewhat arbitrary. For each, we will consider potential indicator systems for the technologically extended personality, along with challenges and trends related to new forms of wholeness.

Technological Aspects. The current balance between the digital and the real in mixed reality, and the emergence of technosystems as the primary mediating link between individuals and their physical environment, challenge previous conceptions of worldview integrity. This can be studied using indicators such as: the technological equipment of the surrounding space; the availability and accessibility of digital devices, programs, applications, and platforms; user satisfaction with their quality; and the diversity of user experiences.

We have tracked several of these indicators since 2013. For instance, over the past decade, the number of teenagers exhibiting high levels of user activity — hyperconnected individuals (spending 8-9 or more hours online daily) — has increased fivefold. Over 80% of users now spend six or more hours online daily [9]. By 2019, a quarter of homes in major Russian cities were equipped with smart home devices, and over half of preschoolers and a third of primary school children interacted with robotic smart toys. Furthermore, the younger the children, the more technologically saturated their environment, facilitated by the Internet of Things and the increasing number of network-connected objects [8].

Digital gadgets, applications, and voice assistants expand and augment personal capabilities, optimizing various aspects of daily life (e.g., heart rate trackers, pedometers). Their convenience and simplicity lead to ubiquitous use across diverse life domains. Digital devices and spaces, due to their accessibility and prevalence, are rapidly becoming constants for modern individuals, playing a key role in shaping their sense of wholeness. Deprivation of long-term, intensive use of digital extensions can render individuals helpless and significantly reduce their effectiveness.

The personality not only expands and is augmented by digital "extensions" but also inhabits a unique space where the virtual and real continuously blend, interpenetrating and altering physical, social, and psychological dimensions. The problem of the personality's new wholeness in mixed reality is demonstrated through the interplay between various psychological phenomena and attitudes toward digital devices. Adaptation to mixed reality necessitates increased self-trust as a competent user, a condition, according to C. Rogers, for maintaining personality integrity. However, the integrity of a technologically extended personality also relies on trust in convenient, reliable, and accessible — and therefore widespread — technologies, including artificial intelligence such as voice assistants and neural networks. Simultaneously, avoiding excessive or uncritical trust in digital extensions is crucial. Research on chatbots reveals that half of user queries are emotionally driven [11]. When selecting smart home technologies, comfort and convenience often outweigh security and privacy concerns [23]. Many individuals interact with technical devices as if they were animate beings, attributing personality traits and interacting according to established cultural norms [32].

Currently, research is shifting from focusing on the utility, cost-effectiveness, labor intensity, and practical applications of specific technologies toward socio-psychological investigations into the formation of attitudes toward technology and its role in life. This includes developing a conscious and responsible user position, where individuals control their devices rather than vice versa. A new mode of internal wholeness for the extended person can be acquired through this approach — one dependent not only on the reliability of digital extensions but also, as their functions expand, on the nature of the relationship with them: ranging from anthropomorphizing devices and automatic trust to a consciously developed attitude toward them as tools and useful applications. The ontological duality of mixed reality demands a re-evaluation of individual wholeness, recognizing digital devices as constant companions.

Cognitive Aspects. Digital tools are increasingly integrated into various cognitive tasks, often becoming indispensable. This raises questions about cognitive integrity, particularly concerning the augmentation of cognitive processes by digital tools, the development of new behaviors within digitally mediated environments, the fragmentation of consciousness — especially in younger genera-

tions — and the challenges of holistically responding to mixed reality. The complexity of the interplay between cognitive and social aspects within digitally mediated cognitive processes is evident in the "Google effect," studies of networked thinking, technology-mediated social cognition, the expansion of autobiographical memory capabilities, and research on attention in media multitasking [e.g., 14; 20; 38].

Research into digitally augmented cognitive processes builds upon the extended mind thesis [15] and the trend of "cognitive unloading" — offloading cognitive processes onto external tools [19; 29], freeing resources for other activities [14; 37]. While digital devices allow individuals to perceive the utilization of external tools as an extension of their own cognitive functions, involving cognitive load distribution and resource conservation, the technosystem-mediated cognitive development of individuals yields outcomes differing from 20th-century developmental psychology norms.

A key area of discussion involves the Internet as an extended transactive memory, with digital devices acting as memory partners. This highlights the blurring of boundaries between "what the user knows and what the Internet knows," the "Google effect" [27; 36]. Human memory is extended through various devices — smartphones, computers, cameras, smartwatches, GPS devices, smart speakers, and other internet-connected devices. This raises concerns about cognitive integrity, arising from various digital effects. For example, internet use increases confidence in one's knowledge, leading to the perception of online information as part of one's own knowledge system, and increasing reliance on the internet [37]. Conversely, individuals may forget information entrusted to digital storage [25].

These observed transformations of higher mental functions reflect the human search for new wholeness in mixed reality and new ways of managing memory, attention, thinking, and social cognition within a multifaceted digital environment. Advances in artificial intelligence provide additional capabilities, creating a new "cognitive exoskeleton" for the extended personality. The question remains whether this will serve as a foundation for its wholeness.

Motivational and value Aspects. In this line of research, digital devices and environments are viewed as motivating, emotionally charged artifacts possessing special value for their owners, significantly differing from other possessions. This highlights the emergence of new "digital" needs, along with indicators of emotional attachment, trust in digital devices and AI programs, the experience of technology as part of the self, technology-related psychological states (including anxiety, phobias, and depression), and the integration of the virtual and real selves into a holistic self.

This manifests in phenomena related to the motivational-need sphere of the technologically extended personality, particularly emotional attachment to digital devices. This attachment is reflected in attributing personality traits and emotions to devices, showing concern for them [30], experiencing anxiety in their absence [33], developing technophobia, forming general attitudes toward technology [3], and experiencing nomophobia — the anxiety of being without a smartphone or internet access [24]. This emotional attachment is particularly prominent among children and teenagers, for whom a smartphone becomes a significant possession and trusted companion, making life without it difficult to imagine [8].

Smartphone users report that technology has become a bodily extension, shaping both personality and lifestyle [30; 39], with separation resulting in a partial loss of identity [33]. However, some argue that the smartphone is not a personality extension itself, but rather a combination of existing extension means representing various facets of identity [34].

S. Park and B. Kay identified three types of smartphone-based personality extension: functional (expanding cognitive and physical capabilities); anthropomorphic (attributing human characteristics); and ontological (experiencing ontological security or insecurity, "changing who they are") [30]. Closely related is problematic internet use, currently studied clinically or behaviorally, but not yet in terms of the device's significance as a technological personality extension [33; 34].

Constructing a holistic self-image, images of others, and a coherent worldview is crucial in the socialization of children, adolescents, and young adults, and presents a significant challenge in adapting to mixed reality. Teenagers and older generations approach this differently. Adults typically transfer their online identity to the digital world unchanged, preserving their existing integrity. In contrast, teenagers' real and digital world images are fluid, blending and complementing each other. Their virtual and real selves, rather than opposing each other, interact complementarily, constructed

within mixed reality and striving for integrity [6]. The digital generation independently develops skills to build a holistic personality in mixed reality, as evidenced by the convergence of digital and real personalities. This results in a new hybrid personality type, with boundaries extended by the digital dimension, potentially leading to identity choices beyond biological nature.

Social and behavioral Aspects. This research area, connected to digital sociality, primarily examines the processes of mastering socio-cultural practices within digitally mediated contexts. These practices relate to the technological expansion of personality, managing digital daily life, and self-regulation within it and in mixed reality. The research also explores the specifics of social interactions, connections, perceptions of others, attitudes toward digital personal data, and issues of identity and self-presentation. The active development of socio-cultural practices in mixed reality, utilizing digital extensions, ranges from destructive practices like cyber aggression to positive ones such as online charity and volunteering. These practices interact with real-life activities, raising critical questions about personality wholeness in modern teenagers and young adults.

Research indicates that teenagers on social networks are deeply engaged in the socio-technological expansion of their personalities. They actively digitalize themselves through posting photos, changing avatars, and constructing and editing public profiles [8]. Digital spaces offer opportunities to experiment with self-presentation, potentially transferring these presentations offline [6]. The fragmented personality and its wholeness issues are reflected in social media activity focused on self-presentation and continuous image transformation. The greater the discrepancy between different aspects of the self, the more active the user's content uploads and edits.

Regarding the image of the self and personality, we, following other authors, highlight the shift in traditional self-construction practices, now extended by digital and, importantly, mixed-reality practices. R. Belk described the dematerialization of significant, "self-filled" objects into digital copies, the reproduction of oneself in digital spaces through avatars and digital traces, and autobiographical memory distributed across digital spaces [12]. R. Brubaker, following M. Foucault, refers to self-contouring practices as "technologies of self-production," emphasizing routine self-objectification through readily accessible digital data [13]. Research into such practices includes the use of app data for self-monitoring, self-knowledge, and self-control, blurring the line between a person and their data. Hyperconnectivity creates a new technosocial infrastructure of the self through constant offline-online connection [18]. The subject's integrity takes on new dimensions — the "Digital Self" becomes "immediately available for inspection, addition, and clarification," mirroring the observation of one's own body [26, p. 59—60].

The extended personality develops new practices for constructing a social network of contacts — social online capital — which serves as a resource for development and self-realization, but also as a potential source of conflict and risk, challenging its wholeness. The internet enables nearly one-third of teenagers to reach the Dunbar number of contacts typical of the average adult, within a single social network [16; 31]. Online social capital has been shown to fulfill communication, belonging, support, and acceptance needs, thus increasing self-esteem and psychological well-being [28]. Simultaneously, the risk of encountering cyberbullying and cybergrooming increases [1]. However, the crucial question of how real and virtual world social capitals are connected, the processes within mixed reality, and the impact on individual wholeness, remains unanswered.

A significant challenge for the technologically extended personality is self-regulation through the management of digital extensions. To understand these processes, the "Self-management of digital everyday life" methodology was developed and tested. This includes experiences within digital daily life, the management of digital devices, and digital sociality [5]. Research indicates that a key tool for managing the diversity of technological extensions within digital daily life — and thus addressing challenges to personal wholeness — is digital competence: the readiness and ability to use digital extensions effectively and safely. Furthermore, techno-rationalism — a conscious and balanced attitude toward technological progress — is also crucial.

Conclusion

The areas of research into the technologically extended personality (technological, cognitive, motivational-value, and socio-behavioral) defines key indicators for understanding human wholeness in the digital age. The cognitive and social

externalization of humans via the technosystem and mixed reality challenges human wholeness from various perspectives: the integrity of the Self, the Other(s), and the understanding of the world, including AI systems. This wholeness is now distributed, fragmented, and exists across multiple realities. To what extent can individuals maintain the understanding of wholeness prevalent in 20th-century social and humanistic sciences? Modern humans, more than in previous eras, constantly transform and reconstruct themselves, striving for integrity, which, under conditions of rapid change, cannot be static. It is fluid, mirroring modernity itself, and continuously acquired. Essentially, psychological, biological, and psychosocial integrity regardless of perspective is understood as a lifelong pursuit for such a complex self-organizing system as a human being. The current state of the information society necessitates addressing this problem and finding new ways for individuals to replenish their wholeness, perhaps through the creation of a new, relative integrity that evolves throughout life [10]. The question of, and the need for, integration within the modern world's multiple realities remains open.

The technologically extended personality faces significant challenges, particularly the need for self-determination and self-regulation in this new world. This involves both appropriating digital extensions devices and digital spaces and mastering them as cultural tools to develop new modes of action. Critically, this includes managing emerging digital extensions to preserve integrity, ensure security, and realize opportunities within the mixed-reality habitat and new forms of sociality. Empirical evidence of the integration of human cognitive, personal, and behavioral systems with digital tools whose unique properties define the specificity of digital mediation and require progressively less personal effort suggests that the understanding of human wholeness must differ from 20th-century perspectives. In this era of accelerating digital transformation, this view must be reconsidered based on the key principle that a changing person exists within a constantly transforming world. This acknowledges that previous anthropological models and norms limit our understanding of the person, and that the person is an open, unfinished project aimed at the infinite unfolding of their potential.

References

1. Borisenko E.V., Dozortseva E.G. Kliniko-psikhologicheskie osobennosti nesovershennoletnikh, poterpevshikh ot kibergruminga [Clinical and psychological peculiarities of juvenile victims of cybergrooming]. *Psikhologiya i parvo* [*Psychology and law*], 2022. Vol. 12, no. 3, pp. 66—76. DOI:10.17759/psylaw.2022120306 (In Russ.).

2. Gurevich P.S. Problema tselostnosti cheloveka [The problem of human's wholeness] Moscow: IFRAN, 2004. 178 p. (In Russ.).

3. Zhuravlev A.L., Nestik T.A. Sotsial'no-psikhologicheskaya determinatsiya gotovnosti lichnosti k ispol'zovaniyu novykh tekhnologii [Socio-psychological determination of readiness of personality to use new technologies]. *Psikhologicheskii zhurnal* [*Psychological journal*], 2018. Vol. 39, no. 5, pp. 5—14 (In Russ.).

4. Ivanov D.V. Eksternalizm i teoriya rasshirennogo soznaniya [Externalism and the theory of expanded consciousness]. *Filosofiya nauki i tekhniki* [*Philosophy of science and technology*], 2019. Vol. 24, no. 2, pp. 33—42. (In Russ.).

5. Soldatova G.U., Chigar'kova S.V., Ilyukhina S.N. Tekhnologicheski rasshirennaya lichnost': razrabotka i aprobatsiya shkaly samoupravleniya tsifrovoi povsednevnost'yu [Technologically Augmented Personality: Development and Validation of the Self-Management Scale of Digital Everyday Life]. *Vestnik Moskovskogo universiteta. Seriya 14: Psikhologiya* [*Lomonosov Psychology Journal*], 2024. Vol. 47, no. 2, pp. 175—200. DOI:10.11621/LPJ-24-20 (In Russ.).

6. Soldatova G.U., Chigar'kova S.V., Ilyukhina S.N. Ya-real'noe i Ya-virtual'noe: identifikatsionnye matritsy podrostkov i vzroslykh [Self-real and Self-virtual: Identity

Литература

1. *Борисенко Е.В., Дозорцева Е.Г.* Клинико-психологические особенности несовершеннолетних, потерпевших от кибергруминга. // Психология и право. 2022. Том 12. № 3. С. 66—76. DOI:10.17759/psylaw.2022120306

2. *Гуревич П.С.* Проблема целостности человека. М.: ИФРАН, 2004. 178 с.

3. *Журавлев А.Л., Нестик Т.А.* Социально-психологическая детерминация готовности личности к использованию новых технологий // Психологический журнал. 2018. Том 39. № 5. С. 5—14

4. *Иванов Д.В.* Экстернализм и теория расширенного сознания // Философия науки и техники. 2019. Том 24. № 2. С. 33—42.

5. *Солдатова Г.У., Чигарькова С.В., Илюхина С.Н.* Технологически расширенная личность: разработка и апробация шкалы самоуправления цифровой повседневностью. // Вестник Московского университета. Серия 14: Психология. 2024. Том 47. № 2. С. 175—200. DOI:10.11621/LPJ-24-20

6. *Солдатова Г.У., Чигарькова С.В., Илюхина С.Н.* Я-реальное и Я-виртуальное: идентификационные матрицы подростков и взрослых // Культурно-историческая психология. 2022. Том 18. № 4. С. 27—37. DOI:10.17759/chp.2022180403

7. *Солдатова Г.У., Войскунский А.Е.* Социально-когнитивная концепция цифровой социализации: новая экосистема и социальная эволюция психики // Психология. Журнал Высшей школы экономики. 2021. Том 18. № 3. С. 431—450. DOI:10.17323/1813-8918-2021-3-431-450

matrices of adolescents and adults]. *Kul'turno-istoricheskaya psikhologiya. = Cultural-historical psychology*, 2022. Vol. 18, no. 4, pp. 27—37. DOI:10.17759/chp.2022180403 (In Russ.).

7. Soldatova G.U., Voiskunskii A.E. Sotsial'no-kognitivnaya kontseptsiya tsifrovoi sotsializatsii: novaya ekosistema i sotsial'naya evolyutsiya psikhiki [Social cognitive concept of digital socialization: new ecosystem and social evolution of psyche]. *Psikhologiya. Zhurnal Vysshei shkoly ekonomiki* [*Psychology. Journal of the Higher School of Economics*], 2021. Vol. 18, no. 3, pp. 431—450. DOI:10.17323/1813-8918-2021-3-431-450 (In Russ.).

8. Soldatova G.U., Rasskazova E.I., Vishneva A.E., Teslavskaya O.I., Chigar'kova S.V. Rozhdennye tsifrovymi: semeinyi kontekst i kognitivnoe razvitie [Born digital: family context and cognitive development]. Moscow: Akropol', 2022. 356 p. (In Russ.).

9. Soldatova G.U., Chigar'kova S.V., Ilyukhina S.N. Tsifrovye praktiki solidarnosti: na sluzhbe u dobrykh del. Metodicheskoe posobie [Digital Solidarity Practices: In the service of good deeds. Methodological guide]. Moscow: MPI, 2022. 164 p. (In Russ.).

10. Yaspers K. Obshchaya psikhopatologiya: per. s nem. L.O. Akopyan. [General psychopathology: transl. from germ. L.O. Akopyan]. Moscow: Praktika, 1997. Vol. 1053, 8 p. (In Russ.).

11. Adamopoulou E., Moussiades L. Chatbots: History, technology, and applications. *Machine Learning with Applications*, 2020. Vol. 2, Art. 100006. DOI:10.1016/j.mlwa.2020.100006

12. Belk R. Extended self and the digital world. *Current Opinion in Psychology*, 2016. Vol. 10, pp. 50—54. DOI:10.1016/j.copsyc.2015.11.003

13. Brubaker R. Digital hyperconnectivity and the self. *Theory and Society*, 2020. Vol. 49, pp. 771—801. DOI:10.1007/s11186-020-09405-1

14. Choi G. The internet-extended mind: The psychological ramifications and philosophical implications of cognitive offloading. *Senior Theses*. Scripps College, 2021. 50 p.

15. Clark A., Chalmers D. The Extended Mind. *Analysis*, 1998. Vol. 58, no. 1, pp. 7—19.

16. Dunbar R.I.M. The Social Brain Hypothesis and Human Evolution. [Electronic resource]. *Oxford Research Encyclopedia of Psychology*. Oxford University Press, 2016. 31 p. URL: https://oxfordre.com/psychology/display/10.1093/acrefore/9780190236557.001.0001/acrefore-9780190236557-e-44 (Accessed 11.10.2024) DOI:10.1093/acrefore/9780190236557.013.44

17. Fernandez-Gago C., Moyano F., Lopez J. Modelling trust dynamics in the Internet of Things. *Information Sciences*, 2017. Vol. 396, pp. 72—82.

18. Floridi L. The fourth revolution: How the infosphere is reshaping human reality. OUP Oxford, 2014. 248 p.

19. Hamilton K.A., Yao M.Z. Cognitive offloading and the extended digital self. In Human-Computer Interaction. *Proceedings of the 20th International Conference "Theories, Methods, and Human Issues"*. Las Vegas, NV, USA, 2018. pp. 257—268.

20. Hejtmánek L., Oravcová I., Motýl J., Horáček J., Fajnerová I. Spatial knowledge impairment after GPS guided navigation: Eye-tracking study in a virtual town. *International Journal of Human-Computer Studies*, 2018. Vol. 116, pp. 15—24

21. Hoffmann C.H. A philosophical view on singularity and strong AI. *AI & SOCIETY*, 2023. Vol. 38, no. 4, pp. 1—18.

8. *Солдатова Г.У., Рассказова Е.И., Вишнева А.Е., Теславская О.И., Чигарькова С.В.* Рожденные цифровыми: семейный контекст и когнитивное развитие. М.: Акрополь, 2022. 356 с.

9. Солдатова Г.У., Рассказова Е.И. Итоги цифровой трансформации: от онлайн-реальности к смешанной реальности // Культурно-историческая психология. 2020. Том 16. № 4. С. 87—97. DOI: 10.17759/chp.2020160409

10. *Ясперс К.* Общая психопатология / Пер. с нем. Л.О. Акопян. М.: Практика, 1997. Том 1053. 8 с.

11. *Adamopoulou E., Moussiades L.* Chatbots: History, technology, and applications // Machine Learning with Applications. 2020. Vol. 2. Art. 100006. DOI:10.1016/j.mlwa.2020.100006

12. *Belk R.* Extended self and the digital world // Current Opinion in Psychology. 2016. Vol. 10. P. 50—54. DOI:10.1016/j.copsyc.2015.11.003

13. *Brubaker R.* Digital hyperconnectivity and the self // Theory and Society. 2020. Vol. 49. P. 771—801. DOI:10.1007/s11186-020-09405-1

14. *Choi G.* The internet-extended mind: The psychological ramifications and philosophical implications of cognitive offloading. Scripps Senior Theses. Scholarship@Claremont, 2021. 50 p.

15. *Clark A., Chalmers D.* The Extended Mind // Analysis. 1998. Vol. 58. № 1. P. 7—19.

16. *Dunbar R.I.M.* The Social Brain Hypothesis and Human Evolution [Электронный ресурс] // Oxford Research Encyclopedia of Psychology. Oxford University Press, 2016. 31 p. URL: https://oxfordre.com/psychology/display/10.1093/acrefore/9780190236557.001.0001/acrefore-9780190236557-e-44 (дата обращения: 11.10.2024). DOI:10.1093/acrefore/9780190236557.013.44

17. *Fernandez-Gago C., Moyano F., Lopez J.* Modelling trust dynamics in the Internet of Things // Information Sciences. 2017. Vol. 396. P. 72—82.

18. *Floridi L.* The fourth revolution: How the infosphere is reshaping human reality. OUP Oxford, 2014. 248 p.

19. *Hamilton K.A., Yao M.Z.* Cognitive offloading and the extended digital self. In Human-Computer Interaction // Proceedins of the 20th International Conference "Theories, Methods, and Human Issues". Las Vegas, NV, USA, 2018. P. 257—268.

20. *Hejtmánek L., Oravcová I., Motýl J., Horáček J., Fajnerová I.* Spatial knowledge impairment after GPS guided navigation: Eye-tracking study in a virtual town // International Journal of Human-Computer Studies. 2018. Vol. 116. pp. 15—24.

21. *Hoffmann C.H.* A philosophical view on singularity and strong AI //AI & SOCIETY. 2023. Vol. 38. № 4. P. 1—18.

22. *Holland J.H.* Emergence: From chaos to order. Oxford: Oxford University Press, 2000. 258 p.

23. *Jo T.H., Ma J.H., Cha S.H.* Elderly perception on the internet of things-based integrated smart-home system // Sensors. 2021. Vol. 21. № 4. Art. 1284.

24. *León-Mejía A.C., Gutiérrez-Ortega M., Serrano-Pintado I., González-Cabrera J.* A systematic review on nomophobia prevalence: Surfacing results and standard guidelines for future research // PloS one. 2021. Vol. 16. № 5. Art. e0250509.

25. *Lodha P.* Digital Amnesia: are we headed towards another amnesia // Indian Journal of Mental Health. 2019. Vol. 6. № 1. P. 18—23.

26. *Maguire J.S.* Leisure and the obligation of self-work: An examination of the fitness field // Leisure Studies. 2008. Vol. 27. № 1. P. 59—75. DOI:10.1080/02614360701605729

22. Holland J.H. Emergence: From chaos to order. Oxford: Oxford University Press, 2000. 258 p.

23. Jo T.H., Ma J.H., Cha S.H. Elderly perception on the internet of things-based integrated smart-home system. *Sensors*, 2021. Vol. 21, no. 4, Art. 1284.

24. León-Mejía A.C., Guti rrez-Ortega M., Serrano-Pintado I., González-Cabrera J. A systematic review on nomophobia prevalence: Surfacing results and standard guidelines for future research. *PloS one*, 2021. Vol. 16, no. 5, Art. e0250509.

25. Lodha P. Digital Amnesia: are we headed towards another amnesia. *Indian Journal of Mental Health*, 2019. Vol. 6, no. 1, pp. 18—23.

26. Maguire J.S. Leisure and the obligation of self-work: An examination of the fitness field. *Leisure Studies*, 2008. Vol. 27, no. 1, pp. 59—75. DOI:10.1080/02614360701605729.

27. Marsh E.J., Rajaram S. Cognition in the internet age: What are the Important Questions? *Journal of Applied Research in Memory and Cognition,* 2019. Vol. 8, no. 1, pp. 46—49. DOI:10.1016/j.jarmac.2019.01.004

28. Membiela-Pollán M., Rodríguez-Vázquez C., Sánchez-Amboage E. Effects of social media *on structural social capital and subjective well-being: Insights from a review of the literature*. *16th Iberian Conference on Information Systems and Technologies (CISTI)*. Chaves, Portugal, 2021. pp. 1—6. DOI:10.23919/CISTI52073.2021.9476531

29. Pandey P., Singh T., Kumar S. Cognitive Offloading: Systematic Review of a Decade. *International Journal of Indian Psychology*, 2023. Vol. 11, no. 2, pp. 1545—1563. DOI:10.25215/1102.163

30. Park C.S., Kaye B.K. Smartphone and self-extension: Functionally, anthropomorphically, and ontologically extending self via the smartphone. *Mobile Media & Communication,* 2019. Vol. 7, no. 2, pp. 215—231.

31. Perret J. The social brain of social media — a physiological boundary to the number of online relations. *Social Network Analysis and Mining,* 2021. Vol. 11, no. 1, Art. 54. DOI:10.1007/s13278-021-00762-y.

32. Poushneh A. Humanizing voice assistant: The impact of voice assistant personality on consumers' attitudes and behaviors. *Journal of Retailing and Consumer Services*, 2021. Vol. 58, Art. 102283. DOI:10.1016/j.jretconser.2020.102283.

33. Ross M.Q., Kushlev K. Antecedents and Consequences of Smartphone Self-Extension. [Electronic resource]. *arXiv, Cornell University,* 2023. URL: https://osf.io/preprints/psyarxiv/rwe7j (Accessed 18.09.2024) DOI:10.31234/osf.io/rwe7j

34. Ross M.Q., Bayer J.B. Explicating self-phones: Dimensions and correlates of smartphone selfextension. *Mobile Media & Communication,* 2021. Vol. 9, no. 3, pp. 488—512. DOI:10.1177/2050157920980508

35. Searle J.R. The Chinese room revisited. *Behavioral and brain sciences,* 1982. Vol. 5, no. 2, pp. 345—348.

36. Sparrow B., Liu J., Wegner D.M. Google effects on memory: Cognitive consequences of having information at our fingertips. *Science,* 2011. Vol. 333, no. 6043, pp. 776—778. DOI:10.1126/science.1207745

37. Storm B.C., Stone S.M., Benjamin A.S. Using the Internet to access information inflates future use of the Internet to access other information. *Memory,* 2017. Vol. 25, no. 6, pp. 717—723. DOI:10.1080/09658211.2016.1210171

38. Wu J.Y., Xie C. Using time pressure and note-taking to prevent digital distraction behavior and enhance online search performance: Perspectives from the load theory of attention and cognitive control. *Computers in Human Behavior,* 2018. Vol. 88, pp. 244—254. DOI:10.1016/j.chb.2018.07.008

27. *Marsh E.J., Rajaram S.* Cognition in the internet age: What are the Important Questions? // Journal of Applied Research in Memory and Cognition. 2019. Vol. 8. № 1. P. 46—49. DOI:10.1016/j.jarmac.2019.01.004

28. *Membiela-Pollán M., Rodríguez-Vázquez C., S nchez-Amboage E.* Effects of social media on structural social capital and subjective well-being: Insights from a review of the literature // 16th Iberian Conference on Information Systems and Technologies (CISTI). Chaves, Portugal, 2021. P. 1—6. DOI:10.23919/CISTI52073.2021.9476531

29. *Pandey P., Singh T., Kumar S.* Cognitive Offloading: Systematic Review of a Decade // International Journal of Indian Psychology. 2023. Vol. 11. № 2. P. 1545—1563. DOI:10.25215/1102.163

30. *Park C.S., Kaye B.K.* Smartphone and self-extension: Functionally, anthropomorphically, and ontologically extending self via the smartphone // Mobile Media & Communication. 2019. Vol. 7. № 2. P. 215—231.

31. *Perret J.* The social brain of social media — a physiological boundary to the number of online relations // Social Network Analysis and Mining. 2021. Vol. 11. № 1. Art. 54. DOI:10.1007/s13278-021-00762-y

32. *Poushneh A.* Humanizing voice assistant: The impact of voice assistant personality on consumers' attitudes and behaviors // Journal of Retailing and Consumer Services. 2021. Vol. 58. Art. 102283. DOI:10.1016/j.jretconser.2020.102283

33. *Ross M.Q., Kushlev K.* Antecedents and Consequences of Smartphone Self-Extension. [Электронный ресурс] // arXiv, Cornell University. 2023. URL: https://osf.io/preprints/psyarxiv/rwe7j (дата обращения: 18.09.2024). DOI:10.31234/osf.io/rwe7j

34. *Ross M.Q., Bayer J.B.* Explicating self-phones: Dimensions and correlates of smartphone selfextension // Mobile Media & Communication. 2021. Vol. 9. № 3. P. 488—512. DOI:10.1177/2050157920980508

35. *Searle J.R.* The Chinese room revisited // Behavioral and brain sciences. 1982. Vol. 5. № 2. P. 345—348.

36. *Sparrow B., Liu J., Wegner D.M.* Google effects on memory: Cognitive consequences of having information at our fingertips // Science. 2011. Vol. 333. № 6043. P. 776—778. DOI:10.1126/science.1207745

37. *Storm B.C., Stone S.M., Benjamin A.S.* Using the Internet to access information inflates future use of the Internet to access other information // Memory. 2017. Vol. 25. № 6. P. 717—723. DOI:10.1080/09658211.2016.1210171

38. *Wu J.Y., Xie C.* Using time pressure and note-taking to prevent digital distraction behavior and enhance online search performance: Perspectives from the load theory of attention and cognitive control // Computers in Human Behavior. 2018. Vol. 88. P. 244—254. DOI:10.1016/j.chb.2018.07.008

39. *Wu J., Qiao L., Liu Q.* The Expanded Me: Impact of Smartphone Use on Adolescents' Self-Expansion Via Smartphone // International Journal of Human-Computer Interaction. 2023. Vol. 39. № 17. P. 3324—3333. DOI:10.1080/10447318.2022.2096189

39. Wu J., Qiao L., Liu Q. The Expanded Me: Impact of Smartphone Use on Adolescents' Self-Expansion Via Smartphone. *International Journal of Human—Computer Interaction,* 2023. Vol. 39, no. 17, pp. 3324—3333. DOI:10.1080/10447318.2022.2096189

Information about the authors

Soldatova Galina U., Academician of the Russian Academy of Education, Doctor in Psychology, Professor, Faculty of Psychology, Department of Personality Psychology, Lomonosov Moscow State University, Leading Researcher The Moscow Institute of Psychoanalysis, Moscow, Russia, ORCID: https://orcid.org/0000-0002-6690-7882, e-mail: soldatova.galina@gmail.com

Ilyukhina Svetlana N., Psychologist, Faculty of Psychology, Department of Personality Psychology, Lomonosov Moscow State University, Research Fellow, The Moscow Institute of Psychoanalysis Moscow, Russia, ORCID: https://orcid.org/0000-0002-6690-7882, e-mail: svetla.iluhina@gmail.com

Информация об авторах

Солдатова Галина Уртанбековна, академик РАО, доктор психологических наук, профессор факультета психологии, Московский государственный университет имени М.В Ломоносова (ФГБОУ ВО «МГУ им. М.В. Ломоносова»); руководитель научно-образовательного центра изучения личности в цифровой и смешанной реальности, НОЧУ ВО Московский институт психоанализа (НОЧУ ВО МИП), Москва, Российская Федерация, ORCID: https://orcid.org/0000-0002-6690-7882, e-mail: soldatova.galina@gmail.com

Илюхина Светлана Николаевна, психолог факультета психологии, Московский государственный университет имени М.В. Ломоносова (ФГБОУ ВО «МГУ им. М.В. Ломоносова»); научный сотрудник научно-образовательного центра изучения личности в цифровой и смешанной реальности, НОЧУ ВО Московский институт психоанализа (НОЧУ ВО МИП), Москва, Российская Федерация, ORCID: https://orcid.org/0000-0002-6690-7882, e-mail: svetla.iluhina@gmail.com

Получена 10.11.2024
Принята в печать 14.03.2025

Received 10.11.2024
Accepted 14.03.2025