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# ALGORITHMIC DEPENDENCY AND THE PROCESS OF DIGITAL ZOMBIFICATION: THREATS TO SOCIAL STABILITY AND GLOBAL SECURITY MECHANISMS

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## Abstract

This article provides a scientific analysis of the impact of modern media platform algorithms (TikTok, Instagram Reels, YouTube Shorts) on human neurobiology and behavior in the context of global digital transformation. The study highlights the specific characteristics of algorithmic dependency, dopamine stimulation, and the resulting processes of "digital manqurtization" emerging in the digital space. Furthermore, the cognitive threats posed to social stability by phenomena such as information manipulation, filter bubbles, disinformation, and trolling are investigated. Finally, systemic recommendations and global and national information security mechanisms aimed at neutralizing these threats and enhancing media literacy are proposed.

**Keywords:** Algorithmic dependency, digital manqurtization, social stability, cognitive threat, dopamine, manipulation, filter bubbles, disinformation, trolling, global security mechanisms, media literacy.

## Introduction

In the context of globalization and the rapid advancement of virtual reality technologies (the Metaverse), humanity is witnessing an entirely new stage of ideological and cognitive competition aimed at influencing human consciousness and identity. Within the contemporary information environment, individuals are increasingly transformed into passive consumers—and ultimately into



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systematically managed masses—through every message, short video (Shorts/Reels), meme, and online trend. Media platforms and the neuro-algorithms that power them exploit human cognition and emotional reflexes to exert subtle control over individual preferences and behavior. Consequently, digital content should no longer be viewed merely as a source of information; rather, it functions as a mechanism of cognitive control and a modern instrument of what may be termed “digital servitude” [1, p. 124].

The exponential expansion of digital platforms on a global scale has weakened the informational and psychological immunity of young users, leaving them increasingly vulnerable to existential crises. Ideological hacking, disinformation campaigns, cyberattacks, and targeted social manipulation are all capable of fragmenting young people’s consciousness and reshaping their perceptions of reality. Therefore, the philosophical classification of digital threats and the development of effective preventive mechanisms have become strategically important not only from a technological perspective but also in terms of scientific, psychological, social, and geopolitical security [2, p. 45].

As the digital world becomes an inseparable component of modern civilization, younger generations are becoming increasingly dependent on virtual environments. The migration of information-seeking, communication, entertainment, and socialization processes into digital space is fundamentally transforming the ways individuals perceive and interpret reality [3, p. 88]. Against this backdrop, the phenomenon traditionally associated with a “slave mentality” is evolving from its classical forms into virtual and cognitive manifestations.

From a historical and philosophical perspective, the concept of a slave referred to an individual deprived of social and legal rights, whose will had been alienated and whose existence was reduced to the satisfaction of basic physical needs. Historical experiences from Ancient Rome, Egypt, and later empires demonstrate that traditional slavery relied primarily on physical coercion and fear. The consciousness of the slave was systematically deprived of strategic and existential thinking and confined to a limited framework of unconscious directives such as “I obey,” “I am dependent,” and “I am fed.”

In the twenty-first century, visible coercion has increasingly been replaced by invisible forms of psychological and neurobiological dependency. The



mechanisms used to influence modern individuals can be interpreted as a digital modification of **Ivan Pavlov's** classical theory of conditioned and unconditioned reflexes [4, p. 67]. Whereas Pavlov's experiments relied on biological stimuli associated with physiological needs, contemporary processes of digital conditioning operate through information stimuli and signals of emotional gratification.

Unlike the traditional slave, who recognized his dependence and sought liberation from physical chains, the modern "**digital slave**" often perceives dependence as freedom. As a result, the capacity for independent strategic thinking gradually diminishes, while a psychological model based on automatic submission to virtual stimuli becomes increasingly dominant [5, p. 210].

At the core of digital conditioning lies a process of neurobiological manipulation. The brain's reward system—and particularly its principal neurotransmitter, **dopamine**—plays a central role in this mechanism. Dopamine motivates individuals to seek novelty, pursue stimulation, and repeatedly experience feelings of satisfaction and reward [6, p. 34].

The algorithms of modern media platforms such as **TikTok, Instagram Reels, and YouTube Shorts** are largely based on a **variable reward schedule**, a mechanism that continuously activates dopamine-driven behavioral cycles. This process generally unfolds through the following stages:

1. **Anticipation of new content** – dopamine levels rise as users expect the next video or stimulus.
2. **Personalized content delivery** – algorithms present materials tailored to individual interests and preferences.
3. **Short-term reward and euphoria** – the brain receives a brief dopamine surge associated with pleasure and satisfaction.
4. **Continuous scrolling behavior** – repeated engagement gradually reinforces psychological dependency.

The chronic repetition of this cycle exhausts the brain's natural neural pathways. As a result, individuals become less capable of deriving satisfaction from activities that require sustained effort and delayed gratification, such as reading books, conducting in-depth scientific research, or engaging in meaningful face-to-face communication. The capacity for independent decision-making weakens,



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and individuals increasingly rely on the rapid emotional stimuli supplied by algorithmic feeds, gradually transforming into what may be described as “**digital zombies**” [5, p. 215]. Rational reflection and critical judgment are replaced by automatic emotional reactions.

In his theory of the **collective unconscious**, **Carl Gustav Jung** argued that large groups of people can be influenced by unconscious archetypes and deep psychological impulses [7, p. 91]. In the contemporary digital era, this collective unconscious is increasingly modeled and manipulated through network technologies. Trends, challenges, memes, and flash mobs have become key instruments for influencing collective behavior.

### **Trends and Challenges**

These mechanisms exploit young people's desire for social inclusion, recognition, and belonging. Challenges often bypass conscious analysis and activate a reflex of mass imitation. In certain cases, they evolve into socially dangerous forms, including destructive or self-harming challenges that may pose serious risks to participants [8, p. 412].

### **Memes and Flash Mobs**

These formats transmit complex ideas through simplified, humorous, or highly visual representations. Memes frequently bypass critical-thinking filters and create preconfigured emotional attitudes toward particular social or political issues. As a consequence, individual rationality may be weakened and replaced by reflexive responses characteristic of a digitally conditioned “consumer crowd.”

From the perspective of their nature and socio-psychological consequences, digital content can generally be divided into two categories:

### **Beneficial Content**

Beneficial content includes scientific and educational programs, interactive learning platforms, and constructive cognitive activities. Its social and cognitive effects include the systematization of thought processes, the development of



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critical and strategic thinking, and improved adaptation to real-world environments [1, p. 130].

### **Harmful Content**

Harmful content encompasses destructive information, manipulative visualizations, violent materials, and superficial “hype-oriented” formats. Such content may negatively affect mental health, contribute to cognitive regression, and weaken traditional value systems [2, p. 50].

International studies conducted in the **United States, South Korea, and China** indicate that continuous consumption of short-form content is increasingly being examined through the concept commonly summarized as “**short content → long stupidity**”, referring to the long-term cognitive consequences of excessive exposure to brief and highly stimulating media formats [10, p. 14].

From a neuropsychological perspective, this phenomenon overactivates the brain’s reward and excitement centers while weakening the functions of the **prefrontal cortex**, the region responsible for attention control, self-regulation, and complex decision-making [11, p. 73].

As a result, individuals may develop what researchers describe as the **instant gratification syndrome** accompanied by persistent attention deficits. The ability to read lengthy texts, analyze complex problems, and maintain concentration over extended periods gradually deteriorates [6, p. 45].

Contemporary information warfare and digital manipulation are increasingly conducted through the effect known as **filter bubbles** within social media environments. Because algorithms selectively provide content that aligns with users’ existing interests and preferences, individuals become isolated from alternative perspectives and information sources [13, p. 56].

This process contributes to ideological polarization, growing intolerance, and social fragmentation within societies [12, p. 215]. As users are continuously exposed to homogeneous viewpoints, opportunities for critical dialogue and balanced understanding diminish, making populations more vulnerable to manipulation, disinformation, and cognitive control strategies.

From a philosophical and political perspective, contemporary threats in the digital environment can be classified into three fundamental categories:



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**Disinformation** refers to the deliberate and systematic dissemination of false or fabricated information with the intention of misleading society, influencing public opinion, or achieving political, ideological, or economic objectives. It functions as a powerful instrument of cognitive warfare.

**Malinformation** involves the intentional disclosure or misuse of genuine information taken out of context in order to harm an individual, organization, community, or national security interests [14, p. 19].

**Misinformation** refers to the unintentional sharing and amplification of inaccurate or false information due to misunderstanding, insufficient verification, or human error. In managing and exploiting these processes, internet trolls and so-called “**troll factories**” financed by specific geopolitical actors increasingly employ trolling technologies to disrupt social equilibrium, maintain an atmosphere of tension and hostility, and cultivate collective stress within society. In this regard, contemporary digital zombification may be interpreted as a technologically advanced and largely invisible manifestation of the classical concept of **mankurtization** described in Chingiz Aitmatov’s novel *The Day Lasts More Than a Hundred Years* [15, p. 230]. Whereas the traditional mankurt was deprived of memory and identity through physical torture, the modern digital zombie voluntarily abandons personal autonomy through algorithmic control, cognitive pressure, and dopamine dependency.

An individual who loses intellectual depth and whose value system is reduced to the level of transient virtual trends gradually becomes incapable of understanding not only personal and national interests but also the stability and long-term development of the society and state to which he or she belongs. Such a “**consumer crowd**” becomes highly susceptible to manipulation. It can be easily directed, mobilized around destructive narratives, and exploited against the internal stability of the state.

Therefore, algorithmic dependency and digital zombification should not be viewed merely as cultural or psychological issues. Rather, they constitute hybrid and cognitive threats that directly affect state sovereignty, national security, and social resilience.

Neutralizing these existential and cognitive risks requires a comprehensive and coordinated architecture involving the state, society, and educational institutions:



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### **1. Institutionalization of Cognitive Defense and Critical Thinking**

Systematically integrating methodologies of information verification (fact-checking), comparative analysis, source evaluation, and logical reasoning into all levels of the educational system.

### **2. Digital Cognitive Hygiene and Media Literacy**

Promoting a culture capable of distinguishing beneficial content from harmful content, while establishing legal, educational, and psychological mechanisms to protect citizens from cyberbullying, manipulation, and information warfare [2, p. 55].

### **3. Algorithmic Detoxification and Digital Moderation**

Monitoring and regulating the consumption of short-form entertainment content at both individual and societal levels, preventing virtual environments from completely replacing real-life experiences and interpersonal relationships.

### **4. Encouraging Deep and Reflective Thinking**

Supporting reading culture, fundamental scientific research, analytical reasoning, and constructive forms of creativity through educational, cultural, and socio-economic initiatives.

### **5. Developing a National and Value-Oriented Digital Content Architecture**

Creating alternative digital ecosystems capable of attracting young audiences by offering nationally grounded, educational, and value-oriented content that can effectively compete with globally dominant algorithm-driven platforms.

Thus, the principal battlefield of twenty-first-century geopolitical and ideological competition is no longer territory but the human mind and its cognitive architecture. In a society where individual thought and will have been alienated, neither genuine freedom nor sovereignty can be sustained.

The fundamental condition for ensuring national development, preserving social stability, and protecting society from the threats of digital zombification lies in guaranteeing **systemic cognitive security** through the cultivation of independent, critically thinking, morally conscious, and socially responsible individuals



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capable of resisting all forms of algorithmic manipulation and cognitive influence.

## References

1. Castells, M. (2010). *The Rise of the Network Society* (2nd ed.). Wiley-Blackwell. – pp. 120-145.
2. Karimov, A. (2021). *Raqamli makonda yoshlar xavfsizligini ta'minlash muammolari*. Toshkent: Ilm-fan. – 43-62-betlar.
3. Ummatov, B. (2023). *Internet va yoshlar ijtimoiy hayoti*. *Jamiyat va boshqaruv jurnali*, №2. – 85-92-betlar.
4. Pavlov, I. P. (1927). *Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex*. Oxford University Press. – pp. 60-78.
5. Carr, N. (2011). *The Shallows: What the Internet Is Doing to Our Brains*. W. W. Norton & Company. – pp. 204-222.
6. Lembke, A. (2021). *Dopamine Nation: Finding Balance in the Age of Indulgence*. Dutton. – pp. 31-54.
7. Jung, C. G. (1959). *The Archetypes and the Collective Unconscious*. Princeton University Press. – pp. 87-110.
8. O'Keeffe, G. S., & Clarke-Pearson, K. (2011). *The impact of social media on children, adolescents, and families*. *Pediatrics*, 127(4). – pp. 410-418.
9. Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. PublicAffairs. – pp. 185-202.
10. Bauerlein, M. (2008). *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future*. TarcherPerigee. – pp. 12-35.
11. Greenfield, S. (2015). *Mind Change: How digital technologies are leaving their mark on our brains*. Random House. – pp. 70-89.
12. Allcott, H., & Gentzkow, M. (2017). *Social media and fake news in the 2016 election*. *Journal of Economic Perspectives*, 31(2). – pp. 211-236.
13. Pariser, E. (2011). *The Filter Bubble: What the Net Is Hiding from You*. Penguin Press. – pp. 52-74.



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4.0 International License.*

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14. Wardle, C., & Derakhshan, H. (2017). Information Disorder: Toward an interdisciplinary framework for research and policymaking. Council of Europe Report. – pp. 16-25.
  15. Aytmatov, Ch. (1980). Asrga tatigulik kun. Toshkent: G'afur G'ulom nomidagi adabiyot va san'at nashriyoti. – 225-242-betlar.