



THE IMPACT OF ARTIFICIAL INTELLIGENCE ON NEUROCOGNITIVE PROCESSES AND TRANSFORMATION OF THE STRUCTURE OF HUMAN CONSCIOUSNESS

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Annotation: in this work the influence of artificial intelligence is revealed, on example of Chat GPT, on how human mind and thinking begin to be re-coordinated as a result of long-term use.

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"What if your mindset has already changed and you haven't noticed?"

Have you ever caught yourself thinking how it's getting harder to read long texts? When was the last time you read an article to its end without being distracted by notifications? Imagine that you are looking at a complex scientific book. You read the first paragraph... and then your hand reaches for the phone to check social media.

It's not just a habit. It's the influence of artificial intelligence.

But what is this artificial intelligence (AI) invented by John McCarthy in 1950. It is the ability of a machine or computer system to perform tasks that normally require human intelligence: it can recognize images, write poems and make predictions based on data.

"Many people wonder what the first problem is in this frightening and here arises - dependence."

Let's consider the statistics of AI usage, using the example of Chat GPT. By December 2024, the number of weekly active ChatGPT users had exceeded 300 million, a significant increase from 200 million in August of that year. In November 2024, ChatGPT recorded about 3.8 billion visits over 30 days, which represents half of the world's population for a second. The



platform processes more than 1 billion messages daily, which highlights its widespread use. And here you can see how popular AI is becoming among people, and this is just the beginning.

Everyone has wondered at least once in their life, how the process of thinking happens on a molecular level, not apparently felt by the most thinking person, let's consider this process: When we think deeply or when we get new knowledge, the brain works intensively, By increasing the pulses being sent, if it is not active enough to create or maintain the necessary power, the brain subsequently creates new neural connections, while increasing the number of pulses being sent at once, thus improving all thinking abilities. As a result, the neural pulse reaches the centers responsible for deep and critical thinking. So we can say that the ability to think depends on these connections and their quantities, the more they are, the faster and better the person thinks. Exactly, AI affects these connections, in the course of its use, when we think less and strain our brain, these connections begin to break down and are no longer recoverable, this creates great problems in the modern world, especially among the new generation, The solution, all of this, very simple, is to develop more your cognitive abilities, start with simple tasks that can be easily found on the internet and gradually move to more complex, You will soon see how your brain has begun to analyze and make decisions even in the most complex and complicated situations, in the shortest time possible, which is the basis of critical thinking, but in the case of readily available information and the need to remember it, These processes are losing their relevance, but because neurons have their own life-spans and they die soon.

The TikTok, YouTube, ChatGPT and search engines algorithms have adapted so that we now perceive information in a very different way than ten years ago. We no longer remember data - because you can always ask AI. This situation leads to the displacement of the value of knowledge. The availability of information reduces the importance of its memory, which increases the value of critical thinking (ability to analyze and evaluate information by making informed decisions). We are less likely to analyze deeply - because we are offered already ready answers. People get used to the quick search for information, which can reduce patience for complex analysis and lead to the development of a clippy thinking (a type of perception in which the person processes short, unrelated data fragments without delving into their meaning). Some of the thought processes are delegated to AI (for example, route planning, writing texts), which leads to changes in cognitive habits. Also, neural networks can substitute reality (deep fairsies, fake news), affecting the perception of truth. Algorithms of personalized content (such as social networks) create the effect of "information bubble", reinforcing already existing beliefs. This creates another problem - automatic trust. People are increasingly relying on AI advisors (even doctors use AI to analyze data, which changes the way decisions are made)

"Do you think it's more positive or worrying changes?"

AI can affect neuroplasticity - the ability of the brain to change under the influence of experience:

- Attention change - accelerated rhythm of content consumption reduces the ability to long-term concentration. The habit of "fast thinking" is formed, which can deteriorate analytical skills or lead to their loss at the level of neural connections, i.e. the syndrome of "lazy brain" (passive consumption of information).

- Formation of new cognitive habits - constant interaction with AI leads to new models of thinking, including hyperdependence on technologies.
- Emotional influence - chat bots and virtual interlocutors change the way people interact, affecting the emotional sphere.
- Possible change of the structure of intelligence - a combination of biological and digital systems of thinking.
- Rethinking the role of human creativity - AI is already able to create works of art, which raises questions about the role of originality.
- Potential development of human and AI synergy - use of neural interfaces and AI-assistants to enhance cognitive capabilities.
- Memory loss - when information is available on demand, our brain stops bothering itself with remembering facts and information.
- Reduction of learning effort (especially among young people).

In November 2020, U.S. scientists published the results of their study (Adversarial vulnerabilities of human decision-making) on the possibilities of AI to manipulate human consciousness in decision-making. If briefly, then "trained" properly AI system is able to identify "vulnerabilities" in the thinking processes of decision making and, by acting on them, push a person to a certain choice (at this stage the efficiency of manipulation algorithms in laboratory tests is about 70%). And, importantly, such a choice will be perceived by the individual as solely his own, based on the principle of "free will", not imposed by a cunning machine.

"Having learned all this, you might think that AI is a threat to humanity, but like every phenomenon, it has two variants of events"

Why is this not always bad? AI offers many opportunities for people to achieve perfection:

- Empowerment - searching for information, answering questions, quick explanations of complex topics.
- Work and training - help in writing texts, summarizing long documents etc.
- Entertainment - generating stories, poems or songs, creating scripts for games.
- Programming - code error detection, development tips, code generation according to the task description.
- Business - reporting, automation of communication with customers, marketing.
- Creativity - the generation of music, novels and scripts.
- Legal studies - analysis of laws, preparation of legal documents.
- Medicine - data analysis, physician support, personalized recommendations and influence on aging and longevity.
- No human error - accurate results.
- Zero risks - use of machines, in cases, threats to human health.
- Around the clock availability - robots have no notion of fatigue, which makes them more efficient.



The positive side effects are evident when using AI as a helper, not a substitute for your thinking. This union also allows the human brain to develop, producing hybrid thinking: the ability to use AI in difficult situations and combine it with one's own skills.

GPT is really the most versatile AI at the moment. There will be more powerful models in the future, but it already works in almost any field. Thus, while AI provides many benefits, it is important to be aware of its impact on human thinking and take steps to maintain and develop one's cognitive abilities. If used consciously, by developing own skills and critical thinking, it can become an aid in the evolution of mind, not a threat. However, if you rely on it entirely, it can lead to intellectual passivity. The impact of AI on humans can become a problem, leading to cognitive degradation, reduced critical thinking and excessive reliance on technology. AI already changes the human intellectual processes, affecting his thinking, perception and consciousness. The question is whether humanity can adapt to these changes, maintaining a balance between natural and artificial intelligence.

"Given all of the above, there is a no less important problem number two - how far can artificial intelligence progress go?"

The pace of progress of deep neural networks, large language models and image processing methods in the field of "understanding" is impressive. Just two years ago, a person could not think that he would be able to talk to ChatGPT in human language and she would answer the questions in context.

The text models and neural networks "look" at our physical reality and "understand" the circumstances of that reality they are in. They are rapidly progressing towards the point where every day they can be given another piece of work. And when they start to understand phrases like "Make me coffee, bring me slippers" or "Dairy Filing Forms in Section 7", a huge number of areas will die as the sphere of human activity. But overall, AI will temporarily replace several working roles and increase global productivity, and the need for people will always be. From history, we can draw some parallels to how the invention of steam engines changed manual labor and led to the industrial revolution.

We thought robots would replace us in simple human actions, but the most rapid progress is now being made in creative areas. For example, about 200 books written jointly by ChatGPT and human are successfully sold on Amazon.

So the world is going to change tremendously, and that's what thinking about where we think is a big question. It's a big question. We can digitize a large number of human texts, video and speech, and within this digitized entity will emerge an increasingly authentic personality, a model of the character - and yes, it will be possible to talk with it as if it were a living person. In addition, AI trained on large amounts of data can adopt cognitive distortions inherent to humans. This means that AI is capable not only of reflecting but also of reinforcing existing prejudices in society, which requires special attention when it is developed and implemented. At the moment, robots just don't have emotions and personal experience, but it's also only a matter of time.



We're not just on the threshold of a new industrial revolution in this direction. We're already inside it.

References:

1. "Artificial Intelligence Atlas: A Guide to the Future" By Kate Crawford
2. "Life 3.0. Being a human in the age of artificial intelligence" Author: Max Tegmark
3. "The future of mind" Author: Michio Kaku
4. "Architects of Intelligence: The Truth about Artificial Intelligence from its Creators" Author: Martin Ford
5. "Artificial intelligence and universal thinking" Author: A. S. Potapov
6. "Influence of cognitive processes on the development of artificial intelligence" Author: I. M. Jialoshynski
7. "Some aspects of the mutual interaction between artificial intelligence and cognitive science" Author: A. N. Rykov
8. "Cognitive processes and artificial intelligence in the context of digital civilization" Author: I. M. Jialoshynsky
9. "Influence of technologies on cognitive processes in education" Author: A. V. Ivanov.