

УДК 004.81; 008.2

О. С. Томашук
(Україна)

УНІКАЛЬНІСТЬ МОДЕЛІ ШТУЧНОЇ ЦЕНТРАЛЬНОЇ НЕРВОВОЇ СИСТЕМИ

A. S. Tomashuk

DISTINCTIVE FEATURES OF THE ARTIFICIAL CENTRAL NERVOUS SYSTEM MODEL

1. Introduction.

Today, artificial intelligence (AI) technologies find their application, which does not depend on connections with technical sciences, in almost all disciplines. One of disciplines, which is part of the technical sciences, is one, that contains information about an autonomous system – a high level, such as, for example, a humanoid robot, the work of which can support its existence in society, knowledge. The availability of the development of this type of system suggests the possible existence, in the future, of new life that could be classified in the “animalia biological kingdom”, and, perhaps, a species, that would be similar to the species “homo sapiens”. If the assumption is correct, then the model of the artificial nervous system (NS), both central (CNS, ICNS) and peripheral, which was formed, initially, by computer technology methods, can become a model for simulating the life of current and future species.

Unfortunately, the models, that are used, today, do not allow the development of such a system, that could be assigned to a separate rank of hierarchical classification in biological systematics, and could be described as “artificial”, AI. However, using knowledge from the fields of biology and medicine, it becomes possible to form the following assumption, of course, not without ethics in relation to religious views.

In this work, in brief form, there is a comparison of a model, that is formed according to the knowledge of technical sciences, AI and one, that describes the work of the CNS of a living organism, such as a human.

2. Main part.

2.1. Materials and methods.

Two models are submitted for comparison: the “standard” AI model and the ICNS model; and, accordingly, the first is formed on the basis of knowledge from the field of information technology, and the second describes the structure and operation of the CNS of a living organism, such as a human.

2.2. Results.

For comparison, the following features were identified: the complexity of the design, which includes the development of the system; system capabilities; efficiency in the use of resources by the system to maintain its performance; perception of the system by a living organism.

According to the first feature, both systems are difficult to develop; however, there is another problem for the formation of the ICNS model – the lack of information regarding a structure and an operation of the NS.

According to the second – productivity and quality of work will be higher for the “standard” AI model.

According to the third – the “standard” AI model has an advantage.

According to the fourth – there is a high probability, that humanity is not ready to accept and maintain a relationship between itself and a new “artificial” object, which, in some cases, is described as a fear of the possible dominance of AI over them [1]; the ICNS model

has the advantage of being endowed with “humanity” – feelings, empathy, the possibility of getting sick, etc.

3. Conclusions.

The “standard” AI model is formed and works, bypassing, some, of the laws of the work of the NS, which is a clear advantage of the ICNS model, if, for the system, the requirement asks for work that can be assessed as “high intelligence”. Intellectual abilities are burdened not only by the quality of work, but also, for example, by maintaining homeostasis – including spontaneous rest in order to save energy. ICNS can be assessed for a highly intelligent system not only because it is capable of self-development and has an instinct for self-preservation, but also because, such a system is not static in the external environment; every “detail” allows, such a system, to develop – to know the world, feel, empathize, believe, get sick, etc. The complexity of developing, such a system, and the lack of information for its development, do not allow us to fully form an ICNS model and implement it on practice, today, although work on this continues, including the author [2-4]. Also, do not forget, that due to the fact, that such a system is artificial, like a program, it will still have some non-real relationships with the real world – due to the absence of such a phenomenon as “telepathy” (or, "sixth sense") (for example, [5]), such, how two brains, that are located at a distant distance from each other, are able to exchange information in order to transmit messages, for example, about help. If such a phenomenon can be defined and described, and, as a result, it can be modeled and implemented in practice, then, yet, the idea of the possibility, in the future, of the existence of another species is possible.

Resources

1. Tkachenko T. Neyrokhirirh Henri Marsh: Chy Spravdi Shtuchnyy Intelekt ye Zahrozoyu Lyudstvu? / T. Tkachenko // *NeyroNEWS. Psykhonevrolohiya ta neyropsykhiatriya. Khvoroby pokhyloho i starechoho viku.* – 2020. – № 1. – 64-65 s.
2. Tomashuk A. S. Can the Use of an Artificial Central Nervous System Model Lead to the Exclusion of the Work of Astronauts? / A. S. Tomashuk // *Materialy XVI Mizhnarodnoyi naukovo-tekhnichnoyi konferentsiyi «AVIA-2023».* – 2023. – 15-18 pp.
3. Tomashuk A. S. Information for a Forming a Model Artificial Intelligence, Which Describes the Work of the Human Central Nervous System / A. S. Tomashuk // *Colloquium-journal.* – 2022. – Vol. 17. – Is. 140. – 30-45 pp.
4. Tomashuk A. S. Some Information about a Structure of Parts of the Central Nervous System / A. S. Tomashuk // *Colloquium-journal.* – 2023. – Vol. 27. – Is. 186. – 44-72 pp.
5. Hosseini E. Brain-to-Brain Communication: the Possible Role of Brain Electromagnetic Fields (As a Potential Hypothesis) / E. Hosseini // *Heliyon.* – 2021. – Vol. 7. – Is. 3. – e06363.