Review of: "Towards Modeling Artificial Consciousness"

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Review

Simulation of artificial consciousness is relevant and interesting, as well as relevant to the development of the life sciences. The key idea of the article is to model consciousness as a non-linearly connected artificial neural networks. Analysis of the interaction of many information flows of various nature, patterns, etc. is extremely complex and requires a transdisciplinary approach. The author pays special attention to the synergy of information flows in a complex nonlinear artificial or natural neural network. The development of deep semantics through semantic fields is considered by the author in three articles. In fact, a stereometric semantics is proposed, the structure of which has heuristic and cognitive value. Article after structuring is undoubtedly worth reading.

Recommendations for structuring the article:

(1) Emphasize that mind modeling is a transdisciplinary topic, not an interdisciplinary one. This is very relevant for the development of education in the 21st century (UNESCO and UN Recommendations on the Transdisciplinarity of Education in the 21st Century, DOI: 10.26855/er.2022.04.001).

(2) Consider approaches to the theory of consciousness (global workspace, etc.). An analysis of their evolution will allow us to determine what is new in the proposed approach.

(3) Conclusion: “consciousness is an emergent phenomenon that arises due to specific structures and connections of the brain” justify broadly. In particular, one can use the universality of the concepts of induction and inversion for self-organized dynamical systems. The individuality of systems in the transdisciplinary cognitive space of dynamic events is most pronounced (DOI: 10.1038/srep29512). In this space, a time series of a different nature is transformed into an individual cognitive graphic image, the configuration of which displays the natural decomposition of spatio-temporal relationships.

(4) An important conclusion that “A possible mechanism for modeling consciousness is a system of neural networks in which there is a non-linear connection between neurons participating in different processes, that is, between segments of different networks” can be substantiated by complementary models. Perhaps it is worth working through the article doi: 10.32620/reks.2022.2.10, in which the connection between models of natural information flows with fractality and nonlinearity is shown.

(5) Please note that:

• from the extreme principles of natural science, the variational principles of mechanics follow,

• different types of physical similarity (dynamic, kinematic, geometric, etc.) have heuristic value.

• analogies (electromechanical, optical-mechanical, etc.) have cognitive value.

In general, systems thinking structures dynamic processes of various nature through memory, which has a holographic (synergetic) nature.