Review of: "The functional unit of neural circuits and its relations to eventual sentience of artificial intelligence systems"

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Potential competing interests: No potential competing interests to declare.

I thank the Qeios team for inviting me to review this interesting article. The article attempts to explain a possible mechanism for human consciousness, which could potentially be used to add consciousness to evolving artificial intelligence. I must say it is a remarkable attempt that should continue until we obtain reasonable evidence for consciousness. As a neurologist with a special interest in consciousness, let me elaborate on the weak aspects of this article.

Before we implement the possible feedback loop model of consciousness operating in the neuronal functional units into the AI system, I would like to ask if it has been proven that a feedback loop system of the neuronal functional unit produces our consciousness, at least in any animal model. If not, how may I suggest incorporating it into the AI system? There might be some reports that suggest its possibility, but I think it is not yet a proven fact that this model evolves our consciousness. It is the responsibility of the theorist to suggest an appropriate experimental model to confirm their assumption(s). Therefore, we need to first experimentally prove human consciousness and only then suggest it for incorporation into AI systems.

Without giving a thorough detail of the loop model of the neuronal functional unit, this paper goes straight to correlations with the electronic hardware system and then to Johnjoe Mcfadden's Cemi field theory of consciousness. I have critically discussed the limitations of Mcfadden's Cemi field theory in my paper titled "The Integrative Brain Theory," published in the Journal of Consciousness Exploration and Research. This paper explains everything about the giant phenomenon of "Consciousness" and deserves a read. It explains how the brain can work in conjunction with its EM field despite the latter interpreting things at the speed of light. The paper does not mention the approximate dimensions of the proposed functional unit and the number of total units.

Besides all this, let me tell the audience where we are basically confused with consciousness. Consciousness is not just limited to self-awareness; that's only one aspect. We cannot do something without consciously controlling it. For example, we need to control our micturition reflex consciously until it is appropriate to void. Similarly, we think consciously, reason consciously, inhibit ourselves consciously, and behave like humans due to consciousness. Our sensations have no impact if we are consciously inattentive to their perceptions. So, consciousness is a giant entity that permeates the whole brain and is not limited to a focal area of the brain, as I have proved in my clinical research paper titled "Consciousness Emanates from the Neuronal Network of Coordination: A Fact Endorsed by Preserved Consciousness in Focal Ischemic

Infarctions," published by NeuroQuantology. If a theory fails to explain any single aspect of consciousness, the whole thing needs revision and might end up in a dustbin.

If we study the basic electrodynamics of impulse traveling along a neuron, we would know that first, a neuron is activated by the ingress of sodium ions to the inside of a neuronal membrane, which is called depolarization, and then it is repolarized by the outflow of potassium ions. Well, sodium ions are inert particles; they have no awareness of entering the neuron during depolarization. If we critically think, the neuronal membranes are also made up of complex molecules that have no awareness, and the audience would probably agree. So, if the sodium ions and the neuronal membranes have no awareness of what is happening, then at what point and what entity gives you awareness, meanings, and feelings during the whole process of neuronal activity? What if we consider sending the information back with a feedback loop if we cannot explain it to ourselves at the basic level of a single neuron? I hope that the authors would find this intuitive.

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