Introduction to Physics of Consciousness

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The essence of Consciousness is the ability to process information. The *necessary condition* for information to exist is *encoding*. Without encoding information simply cannot exist.

For this reason, physical nature of consciousness can be established by determining the necessary requirements for the associated information encoding.

In principle, the information encoding cannot be random, because randomly encoded information is not retrievable. Therefore, the first necessary property of information encoding (not only in consciousness) is the deterministic order (coherence).

One of the most fundamental observable properties of our consciousness is our privacy of thought – privacy of information processing in our consciousness. Our thoughts simply cannot be intercepted. Hence, the second necessary property of the information encoding in our consciousness is protected individuality of access.

What possible physical mechanisms for information encoding could facilitate the necessary requirements outlined above? Since our thoughts are easily reversible, at least several times per second, any chemical-molecular-DNA based mechanisms are highly unlikely, because they are not easily reversible.

The only plausible mechanisms of information encoding that our science today allows us to admit for consideration are of electromagnetic/electro-photonic nature. Of these, we have to exclude the possibility of any analog encoding, simply because it cannot meet the privacy requirement arising from Observable Reality.

The only possibility left seems to be some kind of digital electromagnetic/electro-photonic encoding. Experiments in quantum computing confirm that single elementary particles (electrons) can store quite large amount of information. Storing and retrieving information from electrons occurs by means of photons [2][3].

Hence, what is currently interpreted as “random”, “non-deterministic” and “unexplorable” behavior of elementary particles (the quantum world) [1] can simply be manifestation of information processing. It is very important to note, that digitally encoded transmissions will appear totally “random” to any observer who is unaware of their encoding details [4].

Quantum-digital encoding seems not only possible, but actually highly likely mechanism of information encoding in our consciousness.

Since quantum experiments confirm that elementary particles across the Universe can interact and exchange information, the entire Universe should be considered as a gigantic system for information processing. People on Earth do not have access to this information not because they are not intelligent enough, but because they dismiss such a possibility.

References

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