

Complexity in Neuroscience: How to relate the Digital aspects of Brain function with the Analog-driven Mind Processes?

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Abstract

If we consider that mind (especially, consciousness and self-reference) is more than a collection of mechanisms (we are not just robots or zombies), this question arise: what more “it is added” at the brain function (the mechanisms) to produce the mental phenomena?

The so called “hard problem” in the studies about the consciousness, alert us that always we are confronted with the subjective component of it. But, if we are not so ambitious in the scope of our investigations, the possibility of success it may be more probable.

The dynamical development of living forms, with the management of matter and energy from the environment, will generate the basic forms of transmitted information processes.

In this respect, the emergence of mental properties and processes from the normal activity of the brain will be a central focus of our presentation. So, with this clarification, we propose an investigation about the most fundamental forms of mental processes.

An important issue, it is to ask how the brain structures the data that comes from external and internal to organism. And with these has the possibility or capacity to represent information.

In this respect our first question is: Which are the conditions that make it possible the emergence of “meaning” or “semantic” in the information coming from the data received in the brain?

In our presentation, we centre in a region of information management that code analogic signals to digital signs: auditive perceptions.

With the final purpose to open the debate about if neuron are able to pass the analogic information to digital information and again to analogic information; and incorporate the ‘meaning’ capable to be expressed in an integrated spatial-temporal network organizations by neurons (for us, they certainly do continuously).