

# Meaning and self-organisation in cognitive science

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## Abstract

Cognitive processes can be considered, in the first instance, as self-organising and complex processes characterised by a continuous emergence of new categorisation forms and by self-referentiality. In order to understand the inner mechanisms of this kind of processes we have to outline a theory of more and more sophisticated forms of organisation. We need, for instance, to define new measures of meaningful complexity, new architectures of semantic neural networks, etc.

However, cognition is not only a self-organising process. It is also a co-operative and coupled process. If we consider the external environment as a complex, multiple and stratified Source which interacts with the nervous system, we can easily realise that the cognitive activities devoted to the "intelligent" search for the depth information living in the Source, may determine the same change of the complexity conditions according to which the Source progressively expresses its "wild" action. In this sense, simulation models are not neutral or purely speculative. The true cognition appears to be necessarily connected with successful forms of reading, those forms that permit a specific coherent unfolding of the deep information content of the Source. Therefore, the simulation models, if valid, materialise as "creative" channels, i.e., as autonomous functional systems, as the same roots of a new possible development of the entire system represented by mind and its Reality. Thus, at the level of simulation models, it appears necessary now to extend the condition of predicative activity, as defined by Quine, by admitting the necessary utilisation of specific abstract concepts in addition to the merely combinatorial concepts referring to symbols. For this purpose we must count as abstract those concepts that do not comprise properties and relations of concrete objects but which are concerned with the inner articulation of the intellectual tools of invention and control proper to the human mind.