

Becoming aware of cognitive brain dynamics

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Nowadays, humanity has an immeasurable amount of knowledge. This fact is not consistent with its social behavior. The human capacity to understand nature and to develop new technologies contrasts with the inability to cope with global challenges (poverty, global warming, etc.). It seems that society does not have the cognitive resources to use such knowledge. Thanks to our current communications systems, we are part of a network, that interconnects our brains with others people's brains. A higher level network. Different individual and social behavioral patterns emerge from human interaction at the speed of communication. To deeply understand these behavioral patterns a basic knowledge of dynamical tools from feedback control and self-organized system areas is required. This approach is not new. Towards the middle of the last century, a group of prestigious scientists shaped what came to be called cybernetics. It was the first rigorous interdisciplinary approach to studying the human brain functions. A tremendous amount of knowledge about brain dynamics emerged from cybernetic's scientific works. In recent decades, interdisciplinary work leading to the study of brain functions has allowed us to advance in understanding different aspects of cognition. The cognitive cycle involved in different processes like learning, memory,

problem-solving, etc., can be appreciated simply and naturally from the perspective of the feedback and self-organized systems. This systemic vision of the learning process allows people to have more tools to use his/her knowledge, and also promotes getting involved in a continuous learning process (learning to learn) and becoming aware of the effects of his/her actions in society (network propagation). The purpose of this presentation is to develop an integrated vision of the cognitive mechanisms of individual and social learning and the possible implications of promoting the social acquisition of a dynamic systemic vision of cognition.

Biography

Osvaldo Agamennoni has a Bachelor's degree in Electronics and a PhD in Control Science, both from Universidad Nacional del Sur, Argentina, and a postdoctoral experience at the University of Sydney (1992-1994), working on an AI. His research focuses on areas such as nonlinear dynamics and control, neural networks, machine learning, and neuroscience. For 15 years, he has been working on the evaluation of mild cognitive impairment through eye movements. He is a co-founder of View Mind (<https://www.viewmind.com>), a company dedicated to evaluate executive, attention and memory functions. Now is focused in the social acquisition of a systemic vision of cognition.

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