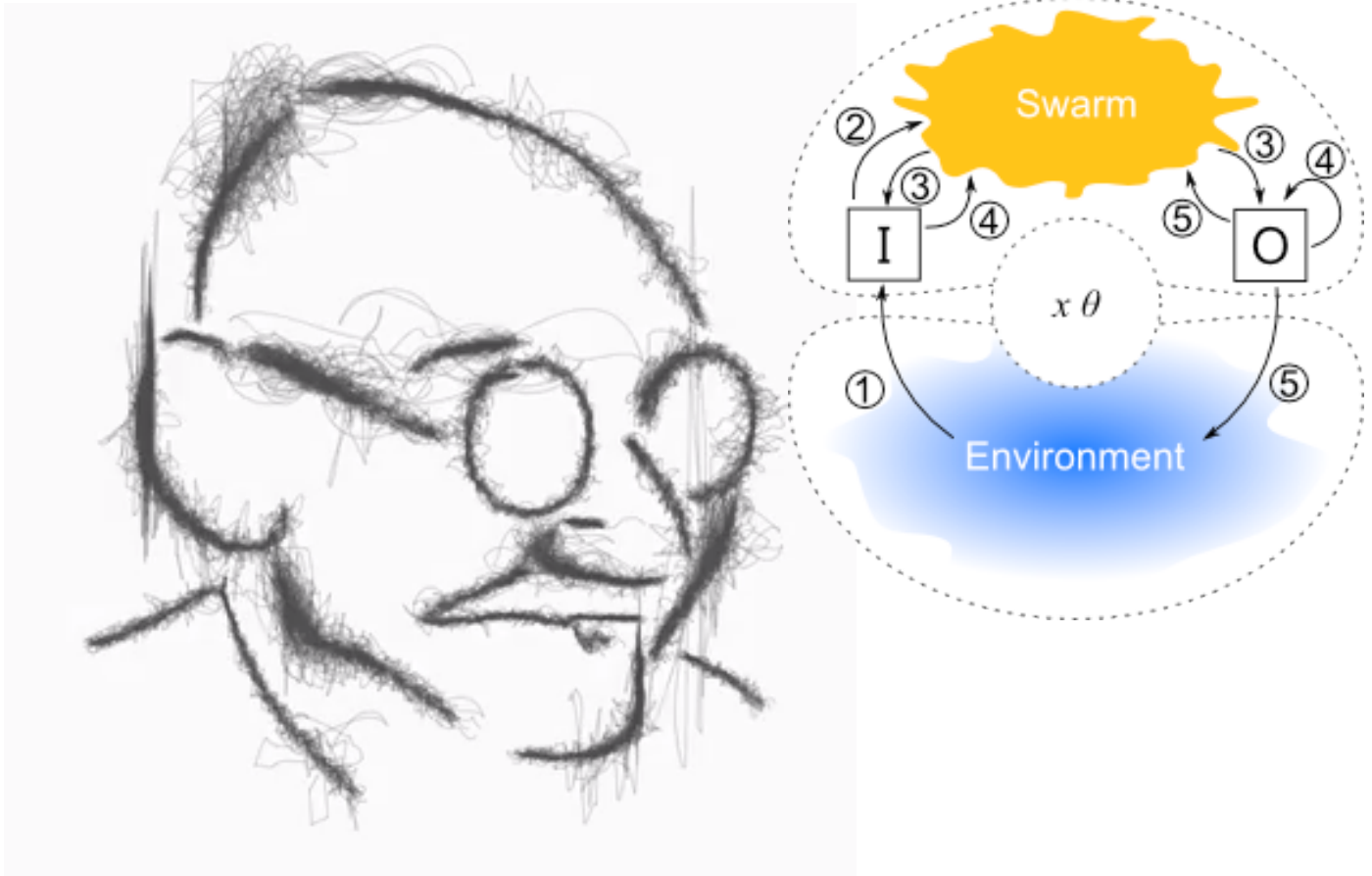


Emergent representations from stochastic diffusion dynamics



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All Welcome

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Representationalist theories of mind hold that internal representations of objects in the environment underpin natural cognitive abilities. Cognitivist accounts of representation describe these representations as manipulable internal objects which maintain stable reference to external entities, but have difficulty explaining how these symbols might be grounded such that they have meaning intrinsic to the agent. Alternatively, enactive cognitive science regards representations as behaviour-generating patterns or

constraints on the agent's continuous interaction with its environment. These patterns are conceived as being fundamentally grounded in and emergent from the constitutive autonomy enabled by agent-environment interaction. The enactive approach describes a richer, more organic form of environmental coupling and therefore provides a compelling basis for the emergence of natural cognition. In this talk, I explore the emergence of such enactive representations using Stochastic Diffusion Search (SDS) metaphor.

Matthew C Spencer completed his PhD in 2012 on data-driven and modelling techniques for the study of evolving complex networks describing neuronal functional connectivity dynamics, in both cellular cultures and whole-brain EEG. Applications of his research pertain to animats and brain-computer interfaces as well as to the classification of complex system dynamics in general. He is currently working as a post-doctoral research assistant in the Brain Embodiment Lab at the University of Reading, investigating models of cognition as communication and continuing his work on stochastic network models of brain systems.