The Continuity of Mind



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著者:Michael Spivey

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The cognitive and neural sciences have been on the brink of a paradigm shift for over a decade now. The traditional information-processing framework in psychology, with its computer metaphor of the mind, is still considered to be the mainstream approach. However, the dynamical-systems perspective on mental activity is now receiving a more rigorous treatment, allowing it to move beyond the trendy buzzwords that have become associated with it. The Continuity of Mind will help to galvanize the forces of dynamical systems theory, cognitive and computational neuroscience, connectionism, and ecological psychology that are needed to complete this paradigm shift. In this book, Michael Spivey lays bare the fact that comprehending a spoken sentence, understanding a visual scene, or just thinking about the day's events involves the coalescing of different neuronal activation patterns over time, i.e., a continuous state-space trajectory that flirts with a series of point attractors. As a result, the brain cannot help but spend most of its time instantiating patterns of activity that are in between identifiable mental states rather than in them. When this scenario is combined with the fact that most cognitive processes are richly embedded in their environmental context in real time, the state space (in which brief visitations of attractor basins are your 'thoughts') suddenly encompasses not just neuronal dimensions, but extends to biomechanical and environmental dimensions as well. As a result, your

moment-by-moment experience of the world around you, even right now, can be described as a continuous trajectory through a high-dimensional state space that comprises diverse mental states. Spivey has organized The Continuity of Mind to present a systematic overview of how perception, cognition, and action are partially overlapping segments of one continuous mental flow, rather than three distinct mental systems. As a result, the apparent partitions that were once thought to separate mental constructs inevitably turn out, upon closer inspection, to be fuzzy graded transitions. The initial chapters provide first-hand demonstrations of the 'gray ăreas' in mental activity that happen in between discretely labeled mental events, as well as geometric visualizations of attractors in state space that make the dynamical-systems framework seem less mathematically abstract. The middle chapters present scores of behavioral and neurophysiológical studies that portray the continuous temporal dynamics inherent in categorization, language comprehension, visual perception, as well as attention, action, and reasoning. The final chapters discuss what the mind itself must look like if its activity is continuous in time and its contents are distributed in state space. The Continuity of Mind is essential reading for those in the cognitive and neural sciences who want to see where the Dynamical Cognition movement is taking us.

作者介绍:

Michael Spivey is at Cornell University.

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标签

认知

哲学

评论

基本上解决。是一本为Dynamic theory of Cognition辩护的书。里面我个人觉得最有趣的是categorization这一章

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书评

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