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LARGE-SCALE CORTICAL NETWORK COORDINATION: A PROPOSAL FOR THE NEURAL SUBSTRATE OF EXPECTANCY

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Optimal human behavior depends on the expectancy of future events based on perceptual analysis of an individual's present situation using knowledge gained from past experience. This article explores the proposition that the neural processes underlying perceptual analysis, knowledge retrieval, and expectancy are all integrated through the coordination of large-scale networks of the cerebral cortex. It is proposed that expectancy is created when local networks expressing knowledge of the likely future events associated with an individual's present situation are coordinated as part of large-scale networks expressing the totality of knowledge relations concerning the situation.

Keywords: Cerebral cortex; expectancy; neural network