Bonn Melbourne Seminar in Decision Making and Computational Psychiatry

Dissecting the neural computations guiding strategic social behavior

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Abstract

Decades of neuroscience studies have identified the co-called "social brain", a network of brain areas routinely found activated during social interactions and thought to be crucial for guiding our behavior in social contexts. Evolutionary theory suggests that these brain areas may have evolved specific functions in response to the demands inherent in processing our social environment. It has, however, been surprisingly difficult to characterize the precise functional contributions of these brain areas. In my talk, I will present a series of studies that attempt to characterize the neurocomputational mechanisms by which areas of the social brain control our actions in social contexts requiring strategic behavior. The studies employ computational modelling of behavior, brain stimulation, fMRI, and EEG, in the healthy and aging brain. I hope to convince the audience that even though strategic social behavior is inherently complex, it is nevertheless causally controlled by basic neurocomputational processes that can be assessed, diagnosed, and altered by external interventions. This knowledge constrains theories about how humans act strategically in social settings. It may also help us better understand how disorders and injuries of the brain can affect social behavior, and what functions we may thus hope to target with therapeutic and rehabilitative measures.

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