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Inferring the internal structure of social collectives

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Abstract

We investigate how humans leverage sparse observations of social interaction to infer the rich internal structure of human social collectives. We propose a computational model of this process which integrates a domain-general structure learning mechanism with domain-specific knowledge about social contexts (i.e.: "intuitive sociologies"). We test our model in two experiments where participants observe a sequence of animated interactions between agents, and then assign the agents to groups according to their role or type within the social collective. Crucially, the two experiments depict different types of social interactions which reflect different types of underlying social structures. The patterns of correspondence between model predictions and human data support our account, and demonstrate the importance of both general statistical learning and specific social knowledge when reasoning about social collectives. Keywords: Social Inference; Intergroup Cognition; Computational Modeling

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