The Influence of Indirect Social Relationships on Human Social Navigation

Ming-Cheng Miao
East China Normal University, Shanghai, China

Chen Zhou
University of Glasgow, Glasgow, United Kingdom

Shuye Chen
East China Normal University, Shanghai, Shanghai, China

Qi Chang
School of Psychology and Cognitive Science, Shanghai, Shanghai, China

Yihe Gu
School of Psychology and Cognitive Science, Shanghai, Shanghai, China

Shuguang Kuai
East China Normal University, Shanghai, Shanghai, China

Abstract

In social navigation, individuals adjust their behavior based on social environment, often modifying proximity to others according to the strength of their relationships. While people generally maintain greater physical distance from strangers and allow closer proximity to familiar individuals, social relationships often extend beyond direct connections, forming complex networks of indirect ties. This study investigates how these indirect social relationships influence human navigation behavior. We quantified participants' relationships through self-reported ratings and constructed a social network. Our findings revealed that human navigation was shaped not only by direct familiarity but also by the broader structure of social networks. We developed a quantitative model integrating both direct familiarity and indirect social distance to predict human navigation and verified its robustness by showing how human navigation dynamically adjusts to variations in network structure. This study highlights the significance of social relationships and demonstrates their role in shaping how individuals navigate social environments.

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