The Temporal Structure of Event Knowledge in the Mind in Relation to Autistic Traits

Kara Hannah
University of Western Ontario, London, Ontario, Canada

Kevin Brown
Oregon State University, Corvallis, Oregon, United States

Mikayla Hall-Bruce
University of Western Ontario, London, Ontario, Canada

Ryan Stevenson
University of Western Ontario, London, Ontario, Canada

Ken McRae
University of Western Ontario, London, Ontario, Canada

Abstract

How the mind represents event knowledge, a persons knowledge of events and situations in the world, is the subject of competing theories. Proposals range from an event being represented as a linear order of activities, to a hierarchical structure of scenes of related activities, or in a more fluid computational framework. Additionally, atypical event knowledge is thought to correlate with Autism Spectrum Disorder. 140 participants (20 per event) ordered normed activity lists for 80 events (e.g., taking money out of an ATM, going to a professional baseball game, baking a cake). Network analyses suggest that the temporal structure of events is rich, not strictly linear, and varies across individuals. Furthermore, we computed a consensus ordering for each event from participants activity sequences. We calculated deviations from that ordering for each participant, and correlated deviations with a battery of trait inventories to further investigate differences among individuals representations of event structure.