Reach Tracking Reveals Distinct Inhibitory Control Processes in Adults' False Belief Inferences

David Sobel
Brown University, Providence, Rhode Island, United States

David Kamper
UCLA, Los Angelas, California, United States

Joo-Hyun Song
Brown University, Providence, Rhode Island, United States

Abstract

The present study examines distinct inhibitory processes as adults make inferences about others' true and false beliefs while the movement of their finger is tracked in 3D space over time. This reach tracking method allows us to isolate distinct inhibitory control processes while participants make an inference. Adult participants were asked to make inferences about others' true and false belief states, as well as two control trials that differed in the use of inhibitory control. Adults showed a difference in accuracy in responding to others' true and false beliefs, suggesting that even though young children can recognize others' belief states, such performance is not at ceiling in adulthood. Moreover, adults showed a difference in the inhibitory resources necessary to make a response selection processes to accurately infer a false belief as opposed to a true one. Such differences were not present for other inferences that required different inhibitory control. This suggests that adults need specific inhibitory systems to infer others' false (as opposed to true) beliefs, and those systems are not involved in other inferences that require inhibition.

In L. K. Samuelson, S. L. Frank, M. Toneva, A. Mackey, & E. Hazeltine (Eds.), *Proceedings of the 46th Annual Conference of the Cognitive Science Society.*