

Causal reasoning in decision making: A test of causal model theory of choice

Motoyuki Saito

Kwansei Gakuin University

Tsuneo Shimazaki

Kwansei Gakuin University

Abstract: Hagmayer & Sloman (2009) proposed causal model theory of choice based on causal Bayesian networks in order to provide comprehensive explanation for causal reasoning and decision making. The purpose of this study is to test predictions made by their theory. It considers that a deliberately chosen action is an intervention and that inferences based on choice are derived from structure of causal models in disregard of parameters of them (i.e., base rate, causal strength). In Experiment 1, we manipulated base rate and asked participants to infer probabilities conditional on deliberately chosen actions, interventions, and observations within common cause model. The estimates based on choices resembled that based on interventions and didn't reflect the differences in base rate. In Experiment 2, in which causal strength was manipulated within participants, the results revealed that participants neglected common cause. The differences in experimental situations between causal reasoning and decision making are discussed.