The Role of Alternative Causes in Moderating Belief-Based Data Weighting

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Abstract: Participants learning about unbelievable causes tend to place less weight on cell frequency data than those given believable causes (Goedert, Ellefson & Rehder, 2013). However, in that prior work, participants made judgments about outcomes which had a large number of possible causes. We hypothesized that belief-based alteration in data-weighting depends on the consideration of alternative causes. Here, we presented subjects with either implausible or plausible causes of outcomes that had few causal alternatives (colon cancer and chemical reactions). On each of 16 trials, participants saw complete frequency information (i.e., corresponding to all four cells of the 2x2 contingency table) and made a causal judgment. In contrast to the prior work using outcomes with lots of causal alternatives, we observed similar patterns of data-weighting for the implausible and plausible causes. These results suggest a role for the consideration of causal alternatives in the modification of belief-based data-weighting.