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Perceived Causal Strength in Chains vs. Common Causes

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Abstract

Recent work highlighted a cause's scope, the number of distinct effects it generates, as important for changing perceived causal strength. The findings, however, have been inconsistent, with researchers offering effect valence and domain knowledge as mutually exclusive explanations for the presence of scope effects. Our pre-registered experiment (N=322) simultaneously controlled or manipulated the links between scope and causal strength to adjudicate between the two accounts. We also examined another structural feature as a potential moderator of a cause's perceived strength: while prior work has focused on causal power in common cause networks, we compared them with causal chains, where mechanistic clarity may lead to higher causal power ratings. We found that causal strength is robustly higher in chains regardless of valence and domain ($p=.009$). However, we failed to replicate the prior findings on the scope effect. Our experiment casts doubt on previous authors' interpretation of scope's impact on causal judgments.