The Mechanism of Suppression Effects in Conditional Reasoning

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The main purpose of this article lies in probing into the mechanism of suppression effects in conditional reasoning. A "suppression effects" is said to occur when the introduction of a second conditional premise of the form "if A, then Q" following "if P, then Q" leads to a significant decrease in the rate of endorsed conditional arguments. If "A" is necessary condition or requirement of "Q" occurring, then "if A, then Q" is called "additional conditional", which suppresses valid inferences (MP & MT). If "A" and "P" are alternatives of each other, then "if A, then Q" is called "alternative conditional", which decreases fallacies of invalid inferences (AC & DA). According to the mental model theorists, alternative or additional conditionals can offer reasoners available counterexamples, lead to reject the putative conclusion. However, the mental logic theorists deemed an additional conditional introducing uncertainty into the major premises, then the uncertainty transferred to the conclusion. Liu (2003) posed the successive-conditionalization approach for explaining conditional reasoning. In this approach, reasoners are assumed to compute the probability of the conclusion, conditionalizing first on the categorical premise, giving the knowledge-based component, and conditionalizing then on the conditional-statement premise, from which the assumption-based component is derived. In the light of the successive-conditionalization approach, almost all reasoners in the MP inferences, and some reasoners in the MT inferences could proceed two stages conditionalization. However in the case of DA/AC, reasoners can carry out first-stage conditionalization, but never achieve second-stage conditionalization. There were two experiments, in which Exp. 1 was manipulated for the fallacies, and Exp2 for valid inferences, investigate suppression effects in successive-conditionalization approach. The results of the two experiments found when the introduction of an additional or an alternative conditional, the ratings for MP/MT or DA/AC can be shown mathematically that the results of the second-stage conditionalization is the same as that of the first-stage conditionalization. In other words, the suppression effects of conditional reasoning can be said they only reflect the outcomes of the first-stage conditionalization.

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