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Conditional Relational Reasoning

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Abstract: Conditional reasoning - reasoning with "if" - is very common in everyday life. Consequently, all reasoning theories provide explanations for typical logical errors in conditional reasoning. The combination of conditional reasoning with spatial relational reasoning provides a new test-bed for these theories. Take, for instance, the two assertions "If the church is to the left of the cinema then the cinema is to the left of the library" and "The church is to the right of the library". Can both assertion be true at the same time? The second statement links a term from the antecedent to the consequence. Such novel tasks pose significant problems for the reasoner, and extensions of classical theories differ in their empirical predictions. We report two behavioral experiments investigating conditional relational reasoning and provide support for predictions of the mental model theory.