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Real-time processing of symmetrical predicates: Semantic categorization over time

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Abstract

Symmetry, a fundamental concept in perception and language, poses an interpretative challenge due to the disparity between its formal definition and linguistic expression. Formal symmetry is often distorted when expressed linguistically, such that e.g., 'North Korea is similar to Red China' is interpreted differently from 'Red China is similar to North Korea' despite their logical equivalence (Tversky, 1977). Gleitman et al. (1996) found this interpretive asymmetry stems from the syntactic positions of arguments, such that symmetry is restored when both arguments are on equal syntactic footing (e.g., a Conjoined NP Intransitive, "North Korea and China are similar"). Here a novel eye-tracking method tested how syntax and lexical semantics contribute to symmetrical interpretations. Participants were asked to rapidly sort spoken utterances by clicking on visible folders marked with a symmetrical or asymmetrical icon. Commitments to symmetry based on syntactic evidence emerged rapidly as the sentence unfolded over time.