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Crosslinguistic Consistency in the Interpretation of Logical Connectives: The case of English, Hungarian, Spanish, and Mandarin Chinese

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Abstract

Languages have constructions that convey the logical concepts of negation, conjunction, and disjunction. These constructions are often logically ambiguous. A disjunction can be exclusive (XOR) or inclusive (IOR), and a negative conjunction/disjunction can be an alternative denial (NAND) or joint denial (NOR). Previous studies have suggested that there is substantial crosslinguistic variation in the interpretation of logical constructions and that languages fall into two groups. The first group including English interprets a negative conjunction as alternative denial (NAND) and a negative disjunction as joint denial (NOR). The second group including Hungarian and Chinese has the opposite interpretation pattern. However, there have been few crosslinguistic studies on the adult interpretation of logical constructions. Using an card selection task, we tested speakers of English, Hungarian, Spanish, and Chinese on different logical constructions. We found that speakers of these languages showed consistency in their interpretations of these constructions in the question environment.