

Change blindness and cross-linguistic spatial relationships: potential effects of language on attention

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Abstract

Languages vary in how they categorize spatial relationships, yet the extent to which these linguistic distinctions shape cognition remains unclear. Using a change blindness paradigm, we examined whether linguistic categories affect change detection or whether certain spatial changes are universally more visually salient. In two experiments we presented images with changes in spatial relations that varied as a function of distinctions made in languages tested (Experiment 1) and the extent to which the changes were within the same spatial relation category or between spatial categories (and physically ‘possible’ or impossible; Experiments 1 and 2). In Experiment 1 (English speakers) there was limited evidence for perceptual ‘syntactic’ spatial violation as a predictor of detection. In Experiment 2 (English, Dutch, Spanish, Japanese participants) we tested if cross-linguistic differences in spatial categorization influence change detection. While no systematic effects of linguistic categorization were found, results suggest that changes between categories of spatial relations are detected faster. Our results also highlight the importance of considering individual language use when investigating the effects of language on cognition.