



SPATIAL METAPHOR & THE DEVELOPMENT OF CROSS-DOMAIN MAPPINGS IN EARLY CHILDHOOD



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INTRODUCTION

Spatial language is often used metaphorically to describe other domains (e.g., a long sound, a high pitch)¹

Previous work has provided conflicting findings as to whether experience with these metaphors shapes children's cross-domain associations^{2,3}

We investigated 3 factors that might influence cross-domain associations:

- metaphor familiarity – are children better able to match relations that are reflected in English-language metaphors?
- target domain – is there an advantage for mapping between space and time compared to between space and pitch?
- verbal labels – does the presence of labels facilitate cross-domain mappings?

METHODS

Participants

128 3-, 4-, 5-, and 6-year-olds

Conditions

Familiar metaphors:

Length-duration (long/short)

Height-pitch (high/low)

Unfamiliar metaphors:

Size-duration (big/small)

Thickness-pitch (thick/thin)

Tasks

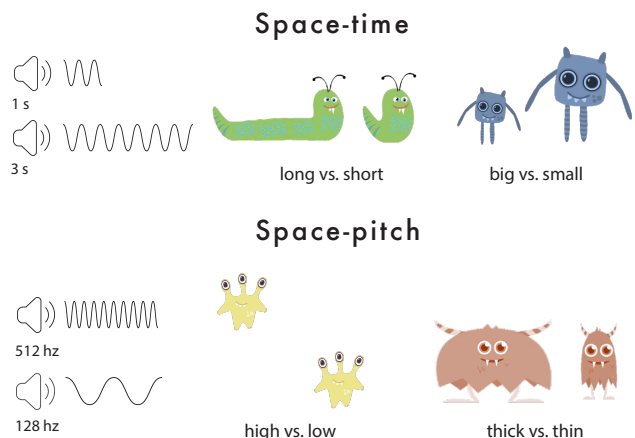
Perceptual:

Match between aliens and sounds

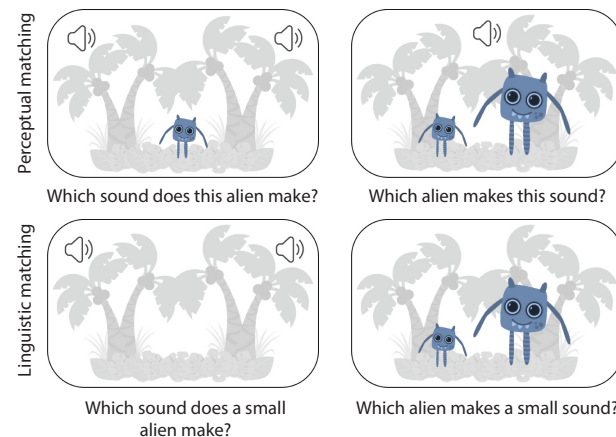
Linguistic:

Match between labels and aliens or sounds

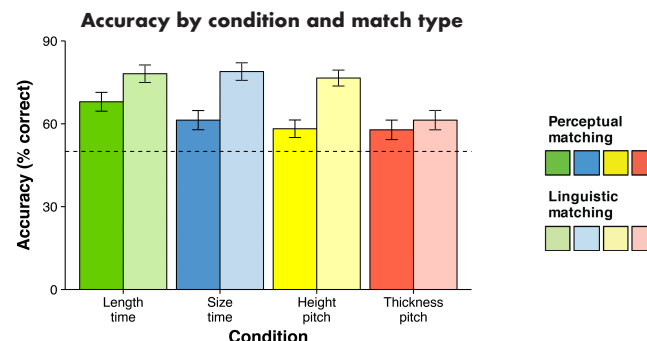
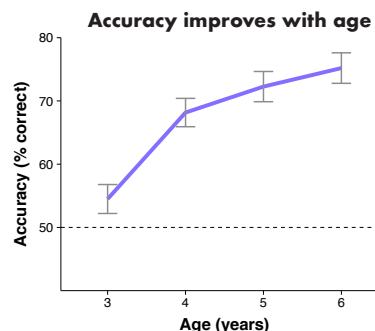
STIMULI



Task Schematics



RESULTS



SUMMARY

Children recognize spatial associations for time and pitch that are not reflected in their native language

Labels facilitated mapping performance in all conditions except for pitch-thickness

Spatial language may strengthen some cross-domain associations by highlighting shared labels or ordinal structure

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References:

1. Lakoff & Johnson, (1980). *Metaphors We Live By*.
2. Shayan et al., (2014). *Developmental Science*.
3. Dolscheid et al., (2017). *Proceedings of the 37th Annual Cognitive Science Society*.

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