Preschool children reason about third-party goals when evaluating acoustic environments

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Background

Children as flexible learners

- Learning flexibility in children includes:
- Adjusting attention to stimuli that is learnable (Gerken et al., 2011; Kidd, 2011)
- Using emotional expressions as cues for novel object exploration (Wu & Gweon, 2021)
- Reasoning about environmental structure and goals to determine approach strategies (Meder et al., 2021)

Background noise and learning

- Acoustic noise is ubiquitous
- Repeated noise exposure influences learning and development in critical ways:
- Reduces speech perception and word recognition (Klatte et al., 2013; Bjorklund et al., 1990)
- Decreases word learning (McMillan & Saffran, 2016)
- Impinges on already limited cognitive resources for adaptive strategy building (Loh et al., 2022)

(Ecological) Active learning

- Traditional active learning:
- Learners interact with individual stimuli within their environment (Settles, 2009)
- Accurate stimuli labeling is a primary goal

Environmental selection

- Learners preferentially select acoustic environments that align with a set of goals
- Emphasizes acoustic information
- Goal-directed
- Addresses variabilities across environments

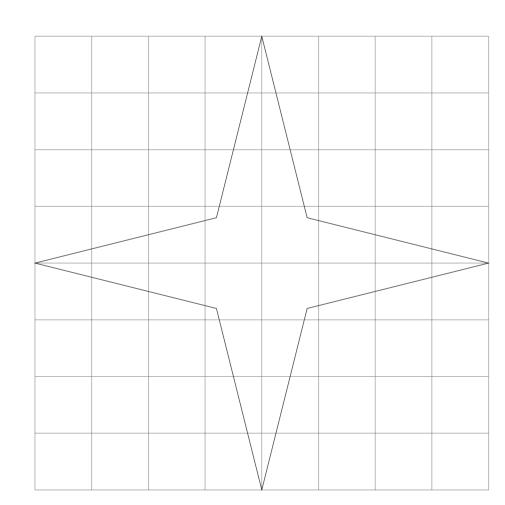


Figure 1. A figure caption.

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Background: Metacognition

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Research question

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Methods

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Table 1. A table caption.

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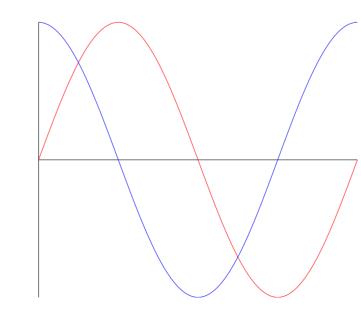


Figure 2. Another figure caption.

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Bar	2.17	1,392	β
Baz	3.14	83,742	δ
Qux	7.59	974	γ

Table 2. A table caption.

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References

[1] Claude E. Shannon.

A mathematical theory of communication. Bell System Technical Journal, 27(3):379-423, 1948