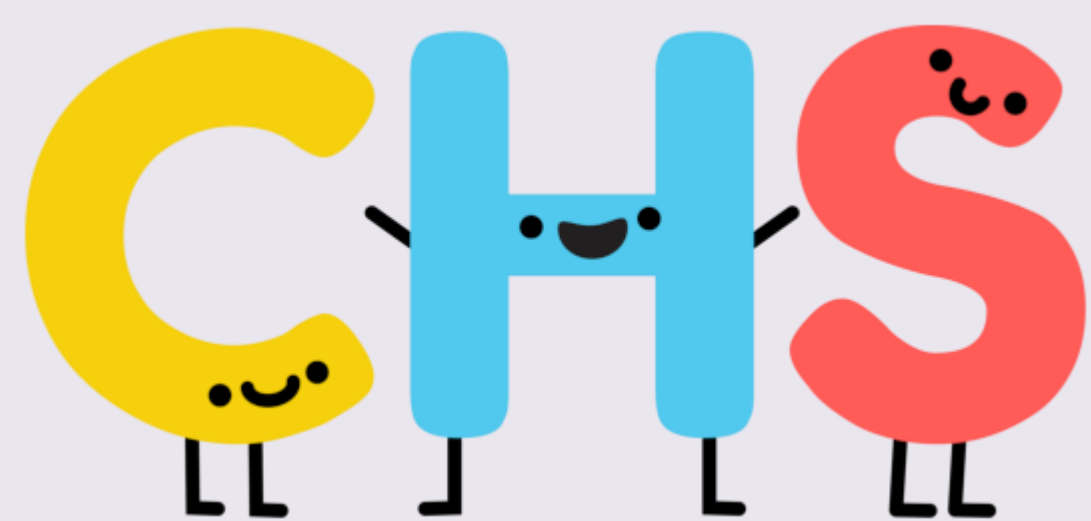




Examining strategy differences to understand the development of young children’s mental rotation performance and task understanding

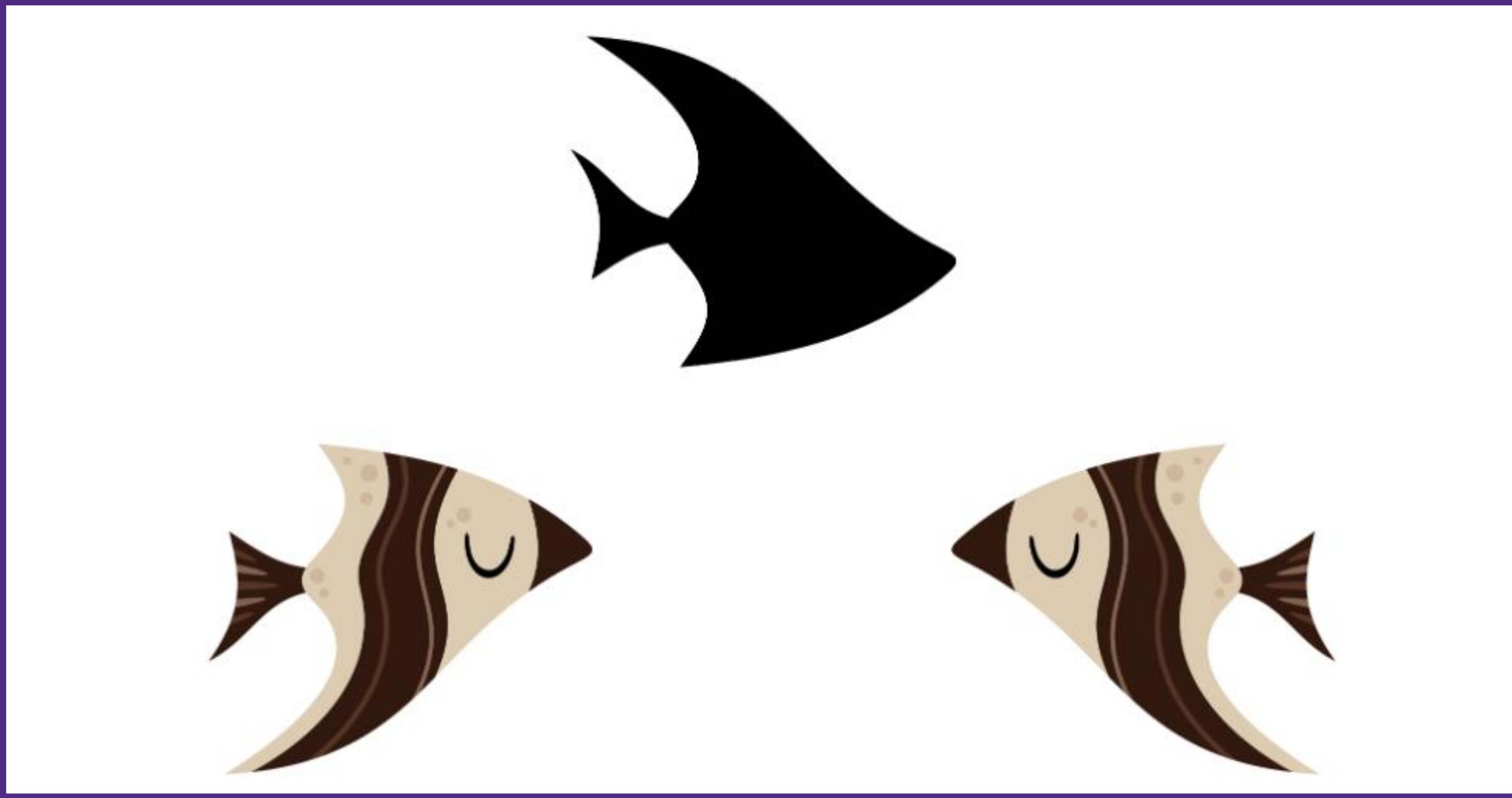
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Introduction

- Mental rotation is one of the most commonly used spatial tests for both adults and children.
- Despite assumptions that individuals solve these tests by mentally rotating the stimuli, adults can use non-rotation strategies (Hegarty, 2018).
- There is little work done on what kinds of strategies children use on children’s mental rotation tests (Frick et al. 2013, Quaiser-Pohl et al., 2010).
- **The goal of this study was to examine children’s strategies on a fit-to-shadow mental rotation paradigm.**

Mental Rotation Task



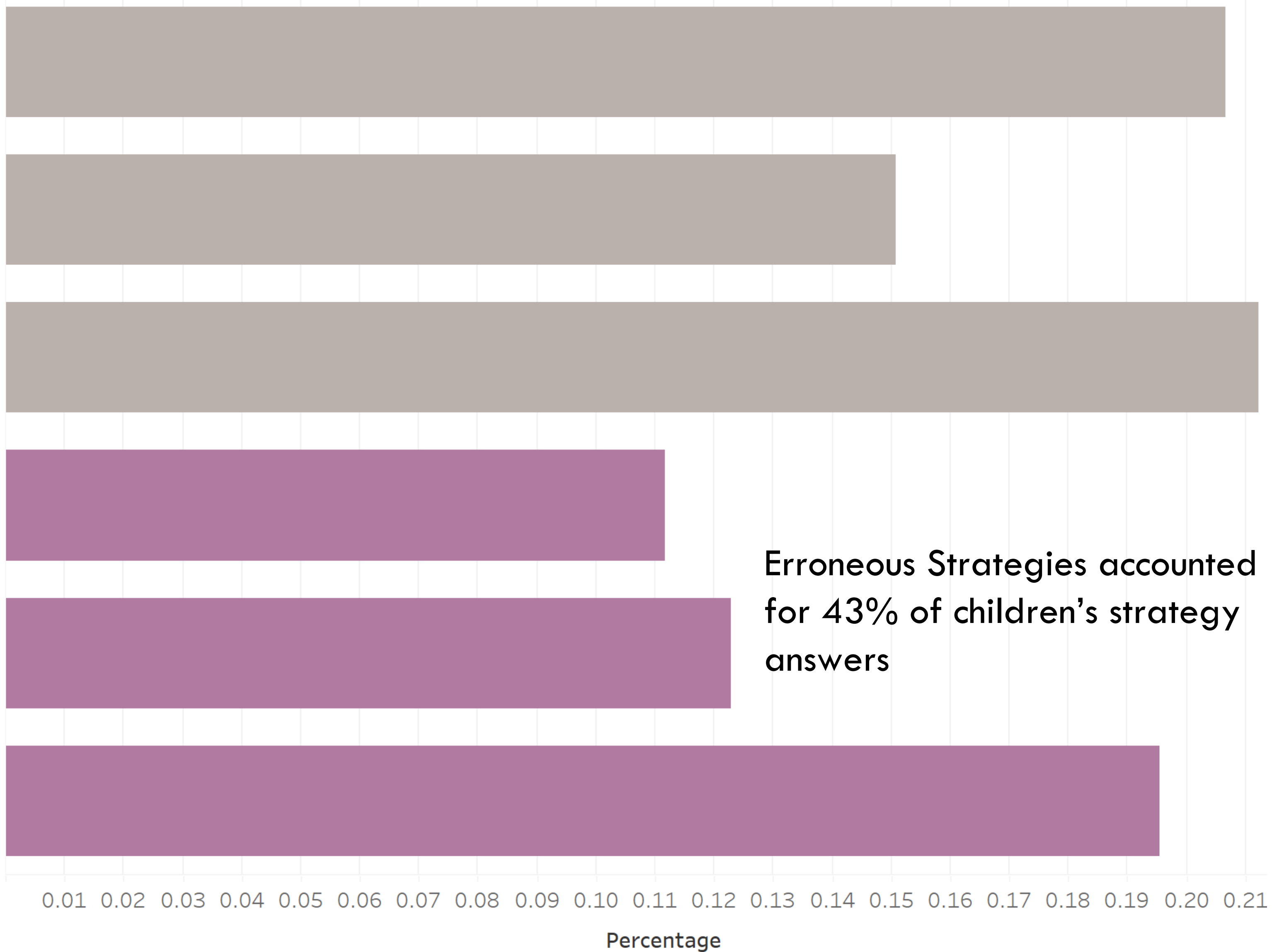
Participants & Procedures

- 92 4.5–6-year-old children ($M_{age} = 5.53$ years, $SD = 0.71$) completed the study online using LookIt
- Children completed a mental rotation task, and then were asked two strategy questions
- Children’s strategy answers were coded and classified into different strategy categories.

Strategy Categories

Strategy Category	Example
Rotational	“...I turned them in my mind”
Orientation	“Because it’s facing the same way”
Other	“I moved it in my mind”
Feature Matching	“Cause that one, this one, is closing his eye”
Flipping	“I used my brain to flip it up, flip it up, and then put into the shadow”
No Strategy	“I just guessed”

Percentage of Total



Discussion and Implications

- Many children reported using strategies that can result in the incorrect answer.
- These erroneous strategies can reflect children’s understanding of the task.
- In previous studies that have claimed children can not mentally rotate, children might have just misunderstood the task.
- Before drawing conclusions about children’s mental rotation development, more work needs to be done to understand children’s mental rotation tests and how children solve them.

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