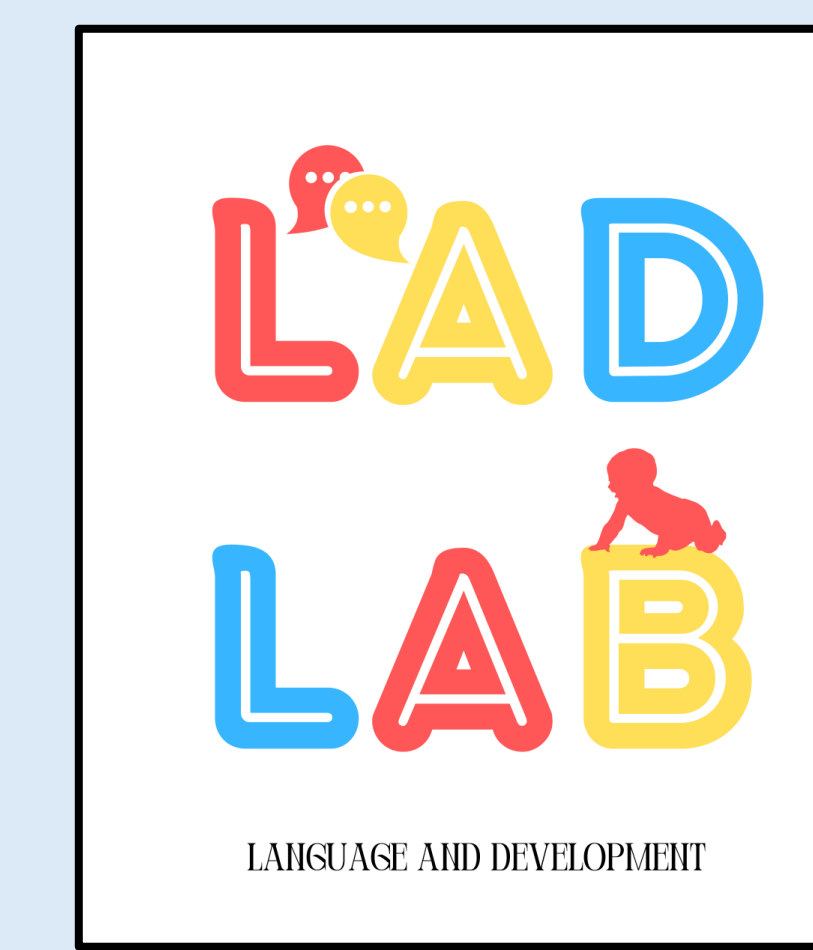


# From placeholders to chronological understanding: The construction of the concept of age

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## BACKGROUND

- As we age, our minds, bodies, and behaviors change, making age an important social cue
- Unlike cases like gender and race,<sup>1-11</sup> little is known about how children reason about age, including how they come to represent it as time spent alive
- In a recent study,<sup>12</sup> we found that preschoolers can identify who is a “grown up” at 3 years old and who is “older” at 4 years old, but whether this reflects a chronological understanding of age as time spent alive remains unclear
- Current study: Do young children represent age chronologically or is their understanding limited to categorizing people into different social groups? (e.g., “baby”, “adult”, etc.)**

## METHOD

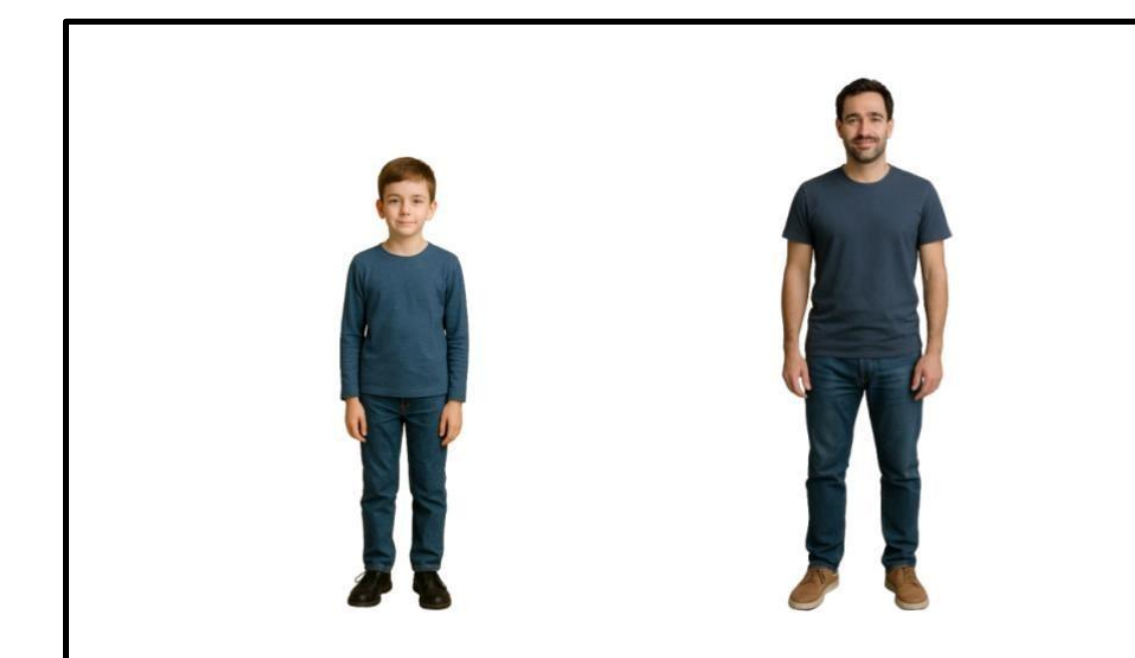
### Participants

Experiment 1:  
107 3- to 4-year-old children ( $M_{age} = 4;1$ )  
Experiment 2 (in progress, final  $n = 81$ ):  
41 4- to 6-year-old children ( $M_{age} = 5;5$ )

Children were also screened for comprehension of “next”, which did not relate to performance on the other tasks in Experiment 1 (too few “Next” non-knowers in Experiment 2 to analyze as of now)

### Label Comprehension Task

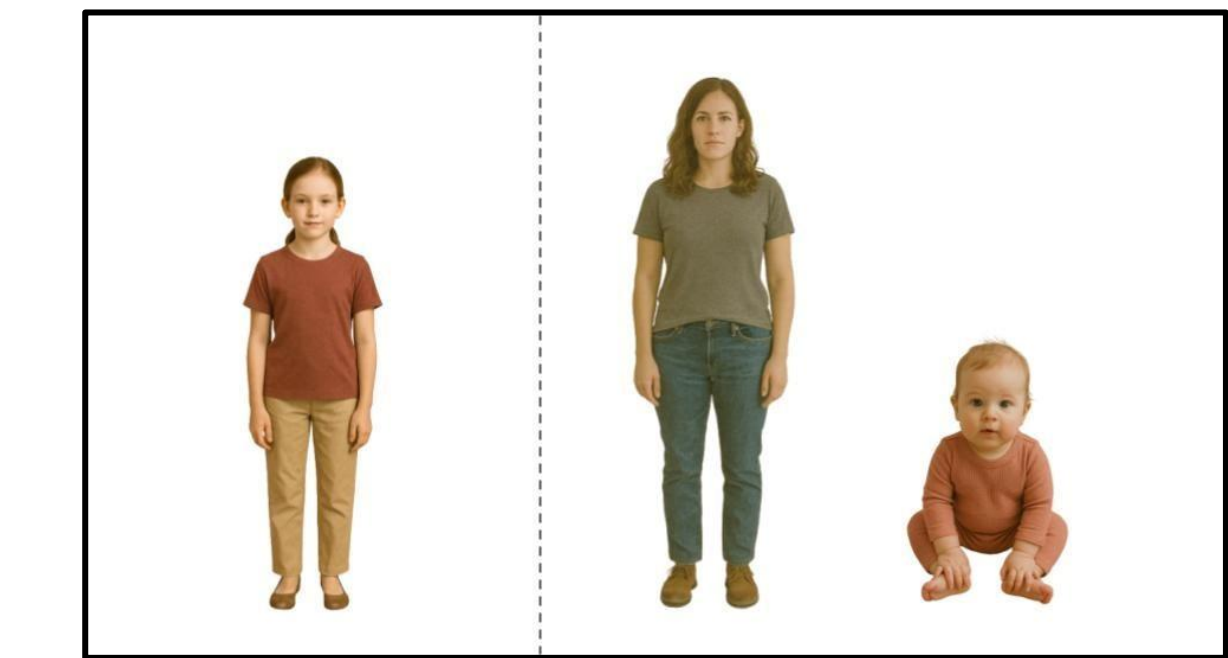
Children were asked to identify the “baby”, “child”, “boy”, “girl”, “grown up”, “lady”, or “man”



“One of these is a child and one of these is a grown up. Who is the grown up?”

### Chronological Ordering Task

Children were shown a figure (either baby or child) and asked which of two other age groups the person will be next

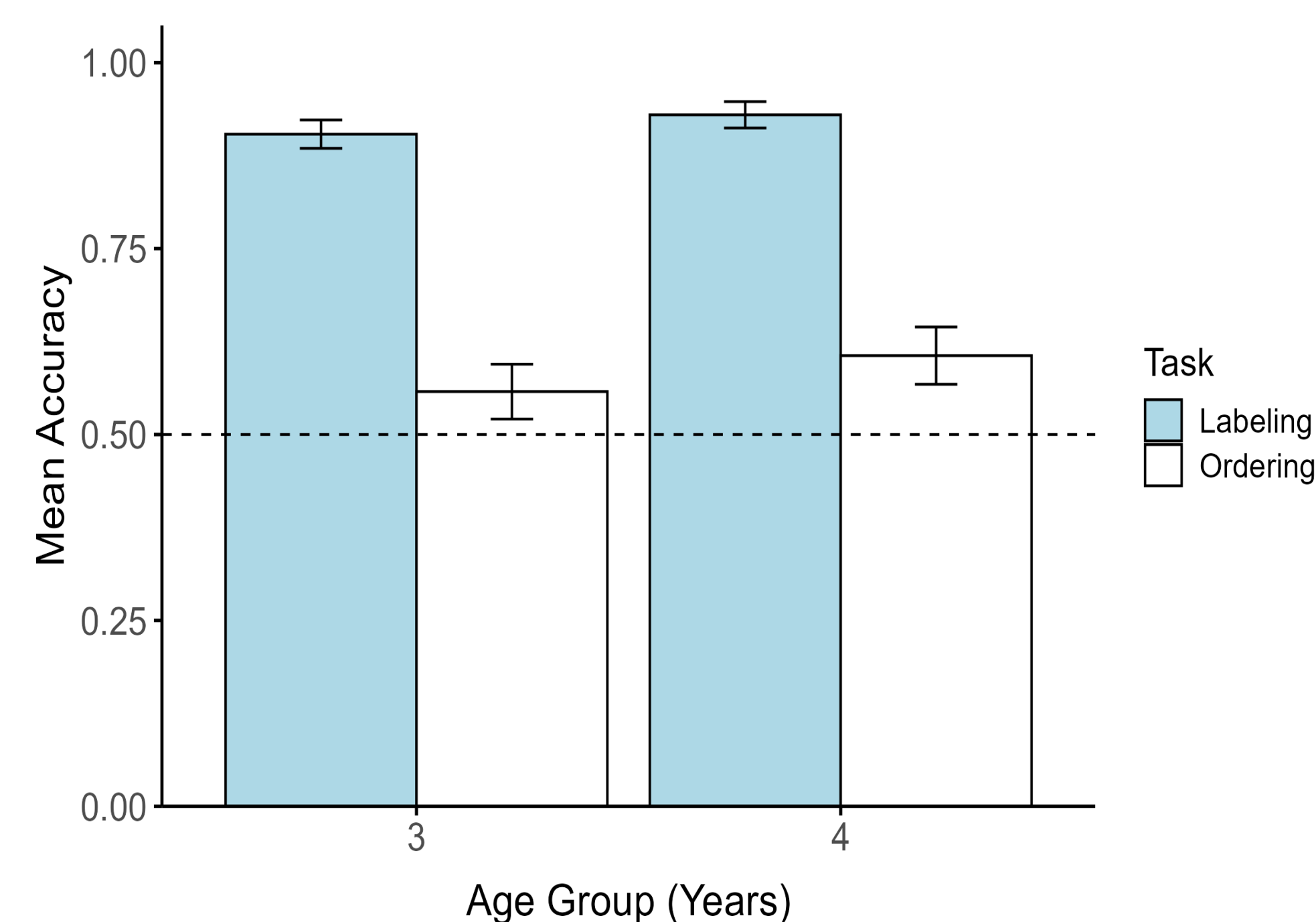


“Look, it’s a girl. What will they be next, a lady or a baby?”

## RESULTS

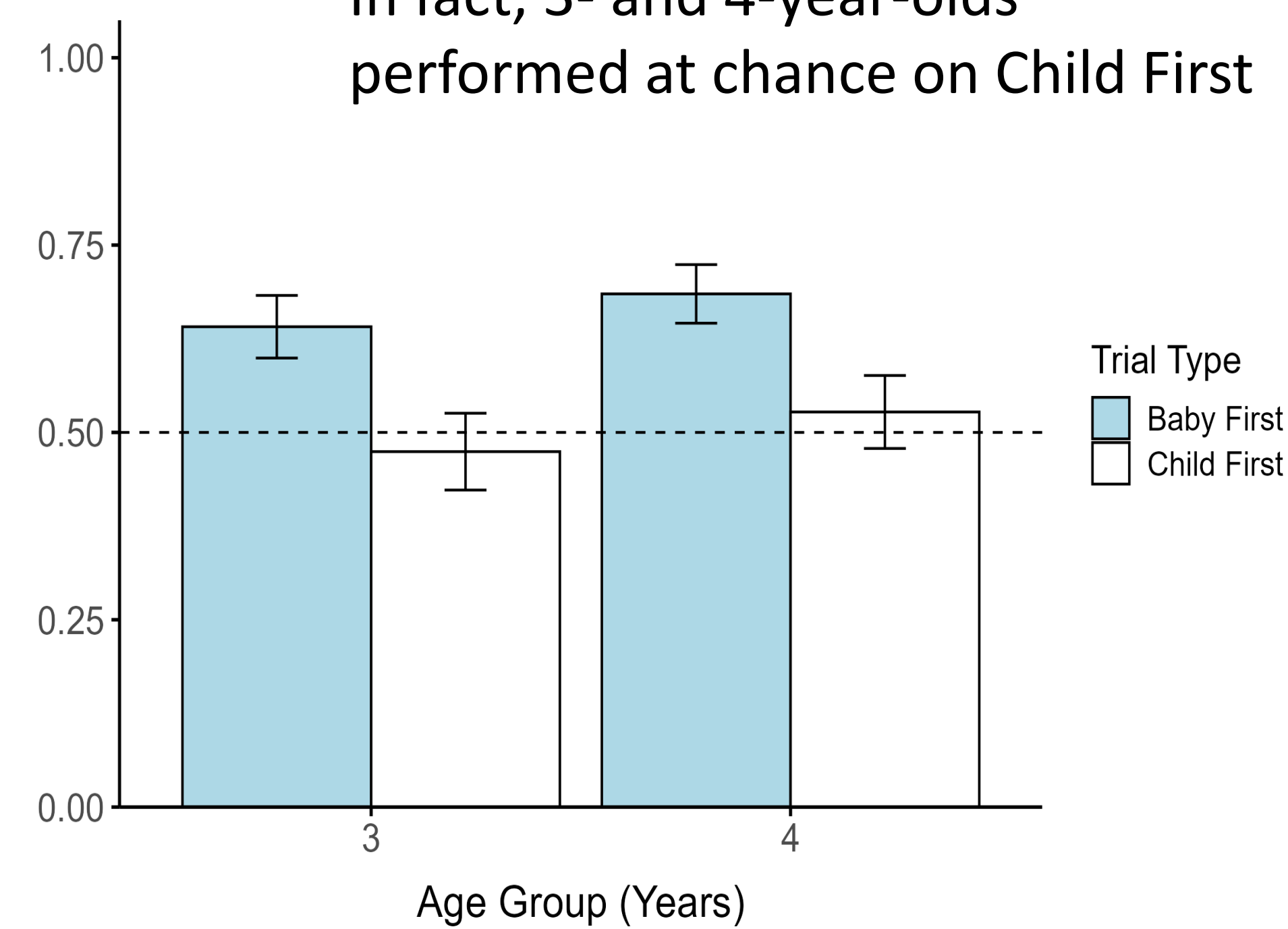
### Experiment 1

Children performed better on the Label Comprehension Task ( $M = 0.92$ ,  $SD = 0.14$ ) than the Chronological Ordering Task ( $M = 0.58$ ,  $SD = 0.28$ )



Children performed better on the Chronological Ordering Task when shown the baby first ( $M = 0.66$ ,  $SD = 0.29$ ) than the child first ( $M = 0.5$ ,  $SD = 0.36$ )

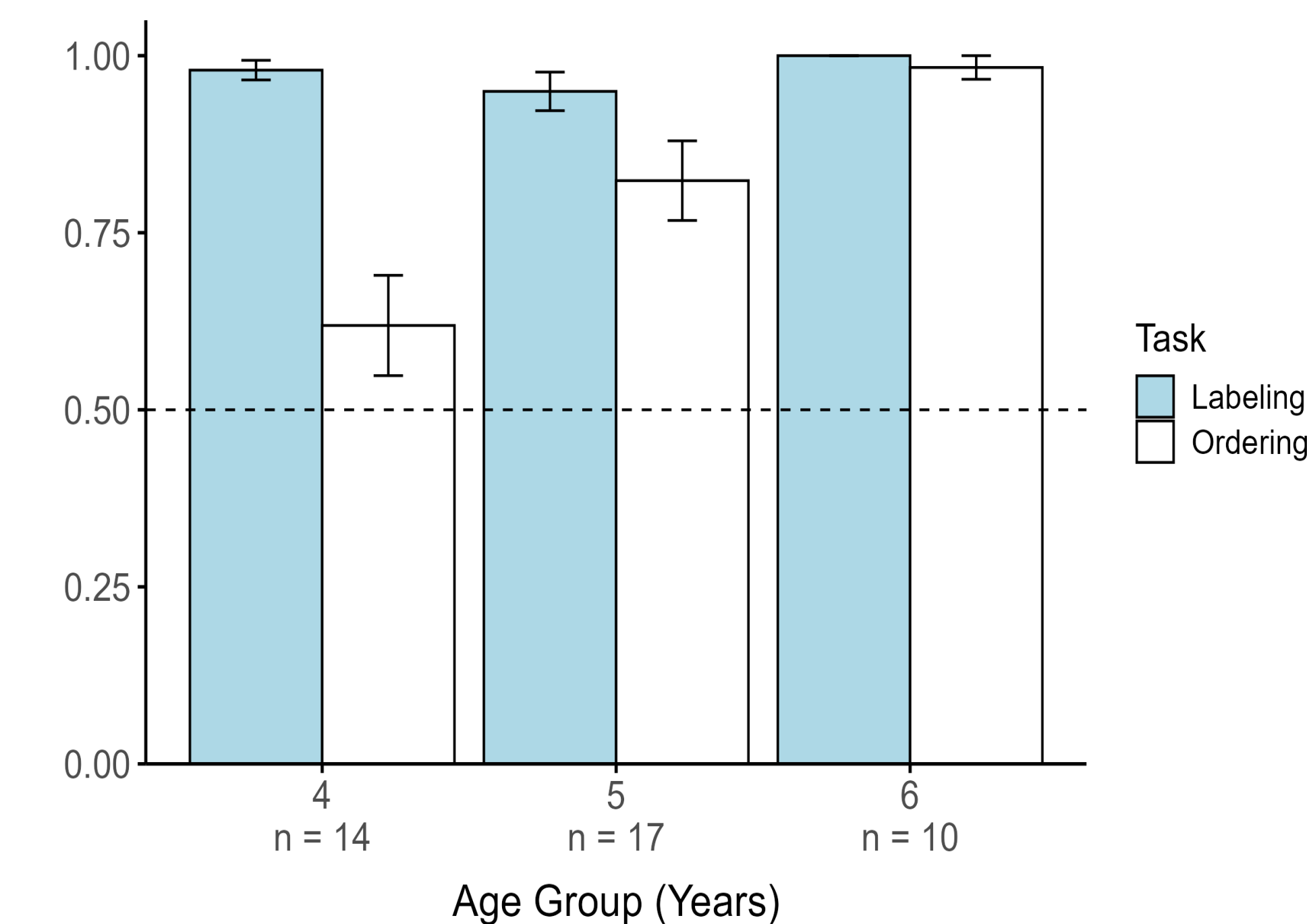
In fact, 3- and 4-year-olds performed at chance on Child First



Error bars represent SEM

### Experiment 2

While 4-year-olds are still performing at chance on the Chronological Ordering Task, 5- and 6-year-olds are performing above chance



## DISCUSSION

- Through two experiments, we found that although children master age group labels by 3 years old, they cannot chronologically order age groups until 5 years old
- This suggests that age group categories are merely social categories which lack temporal content for young children, and that “older” may first denote people with certain visual features and greater numerical ages before being related to temporal duration
- Age group categories may function as placeholder structures in children’s construction of the concept age,<sup>13</sup> to be related chronologically later in development
- How children progress from a category-based to a chronological understanding is an open question
- Our recent study suggests acquiring a number system may play a role<sup>12</sup>