

## Introduction

• 7-month-old infants can learn “same” and “different” relations and generalize them onto new items when presented with stimuli without a word labeling [3]

• Newborns can differentiate quantities two & three [1]

• 12-month-olds understand that language can communicate unobservable information [4]

• 2.5-year-olds demonstrate relational understanding when supported by language [2]

• 3.5-year-olds perform the cardinal word principle [5]

Why do children have difficulty learning the meaning of quantity words (two/three) and relational construct labels (same/different) until preschool age?

## Question

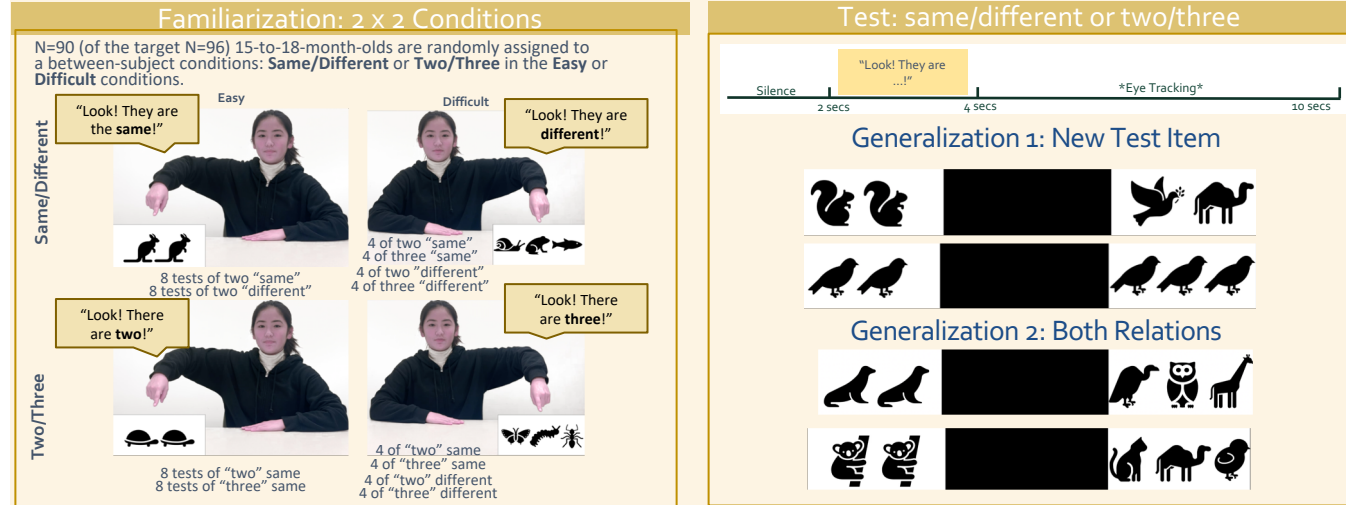
Can contrastive cross-situational labeling enhance infants' ability to learn and generalize quantity and relational terms?

## Hypothesis

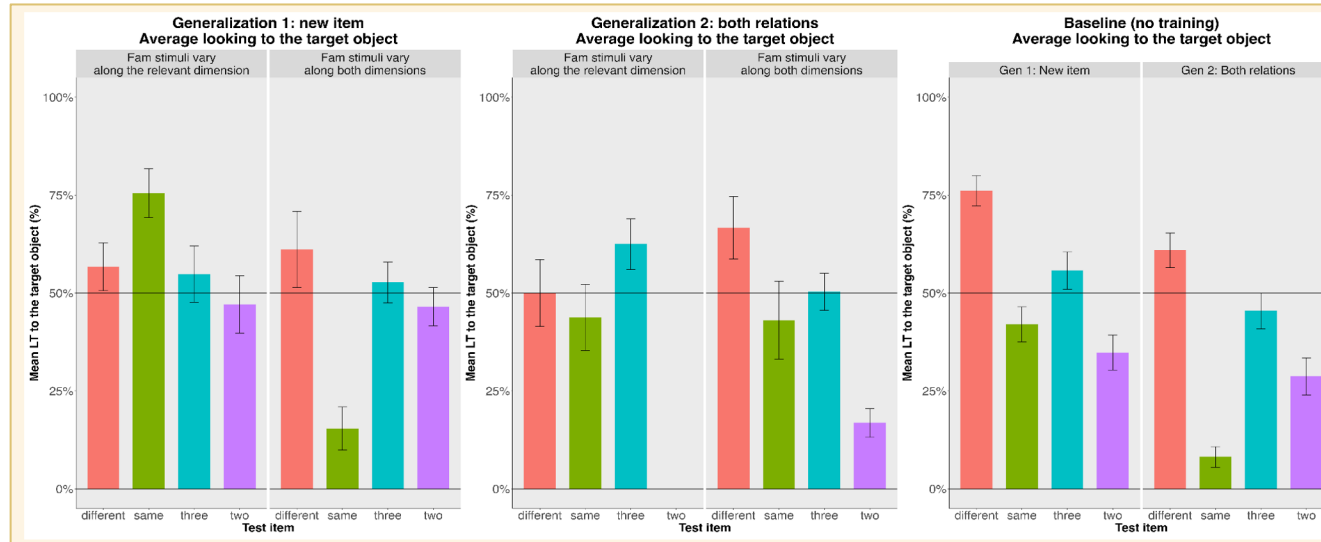
Natural language environments make it difficult for children to grasp relational words due to the widespread use of sameness in language.

By introducing infants' to contrastive cross-situational labeling, they should indicate an advanced mapping of numerical and relational language.

## Methods



## Preliminary Results



## Discussion

### Conclusions:

Infants more readily extend the meanings of “same” and “different” to novel exemplars than the meanings of quantity words when competing dimensions of variability are present.

E.g.: infants may be biased to look at a set of two different objects (vs. three same objects) even when the target quantity word is “three.”

Sets of different objects contain more information which may bias infants' looking behavior.

## Follow up

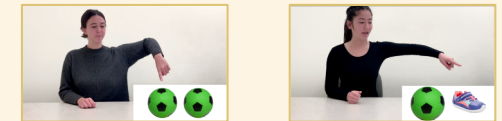
### Labeling Abstract Concepts study:

• Simplified the training trials stimuli to not differ across multiple dimensions.

• Enhanced the familiarization training trials through incorporating repetition of the items label.

E.g.: “Look! A ball and a ball. There are two balls. There are two.”

“Look! A ball and a shoe. They are different. They are different. they are different.”



• Reduced the novelty in pre-test and familiarization stimuli to simplify and improve the communication of same/different and two/three abstract concepts.

