What the eyes tell us...

Children are learning language from the moment they are born yet take many months to start speaking. How do we ask what children know before they can tell us?

Recent technological advances allow psychologists to infer what children know based on what they choose to pay attention to when watching pictures or movies on a computer (see the example on the right). During the study, we use a webcam or a special eye-tracking camera to detect children's eye movements. This way, we can study what pre-verbal children are paying attention to while learning language.

Researchers in our lab use this method to study what children understand about the color words that they are just starting to say. In the example, we can discover how broad or narrow children’s initial understanding of “blue” is. to understand what their first guesses are about the word’s meaning.

We are currently recruiting infants aged 20 to 24 months old to participate in this study in our lab. Please contact us to find out more!

Example of experimental stimuli
We track children’s eye movements while they hear a narrator saying, “Look at the hats! The blue hats are my favorite!”

Interested in participating?
Find us on facebook @UCSDLADLab
Sign up at ladiab.com
Reach us at (858) 246-0576 or ladiab@ucsd.edu
Visit us in KidCity at the Fleet Science Center in Balboa Park
The mental timeline is gradually constructed in childhood...

BY DR. KATHARINE TILLMAN

When reasoning about time, English-speaking adults often think about a "mental timeline" that stretches from left to right. Although the direction of the timeline varies across cultures, thinking about time in a linear way has been argued to be universal and built-in from birth. With this in mind, we reasoned that children might also make use of a mental timeline when thinking about time. However, little is known about how and when the mental timeline develops.

We explored whether children think about temporal events (breakfast, lunch, and dinner) and time words (yesterday, today, tomorrow) in a linear way, and if they do so in the same way as adults (i.e., from left-to-right).

To test this, we told preschoolers and kindergarteners to think about the times of day we eat meals and times when different days happen, and then asked them to place stickers on a card to represent these items.

We found that, unlike adults and kindergarteners, preschoolers did not place the stickers in lines. They also did not prefer left-to-right over right-to-left lines, like older children and adults do. These findings suggest that the "mental timeline" is not built-in from birth, but develops gradually in early school years, becoming increasingly adult-like as a result of increasing cultural exposure.

Recent LAD Lab Publications


Yazdi, H., Barner, D., and Heyman, G. (Under review). Does concern for reputation influence giving to in-group members?
How number words help children...

BY DR. ROMAN FEIMAN

Language plays a crucial role in children’s development. Children learn some words, such as ball, dog, and car, earlier than other words, such as number words. One reason for this might be that children can associate words such as ball, dog, and car with real-world objects, while number words have a more abstract meaning. When we use numbers, we refer to a property of a group or set (how many there are).

Does learning abstract words help children understand the abstract ideas? Or is learning these words just learning which sounds go with which ideas children already have, just like an adult learning a second language? To explore these possibilities, we first measured two- to four-year-old children’s understanding of number words by giving them several objects and asking them to put a certain number on a plate. This helped us figure out which number words children knew. (For example, some children give 2 when asked for “two,” but just a handful when asked for “three” or “four.”)

Then, children played a game where we drew their attention to a picture of some fish and then asked them to pick one of two animals that either had the same amount of fish, or that did not have the same amount of fish.

We found that children were better at selecting the correct animal when a number word was used to describe the set of fish than when a more general statement was used (e.g., “There are 3 fish here. Who has/does not have 3 fish?” vs. “Look how many fish are here. Who has/does not have this many fish?”). Remarkably, this was true even when kids could not correctly give 3 fish when asked to! This suggests that number-words may help children notice how many objects they see, even when children don’t exactly know exactly how many a number picks out!

Congratulations!
The LAD Lab congratulates the authors of both of the featured studies on the new positions they have accepted at University of Austin, Texas and Brown University, respectively! We will miss you both dearly!
A huge THANK YOU to all!

THANK YOU to the San Diego families, schools, preschools, daycares, and museums that make our research possible! Your collaboration and participation help us make important discoveries about human learning, growth, and development.

Special thanks to our recent collaborators:

Lighthouse Early Childhood Center, the Reuben H. Fleet Science Center, the Birch Aquarium, Beaufort Children’s Centre, Tigger Too Preschool, Forest Circle Child Care, Lighthouse Early Learning Center, J Puddleduck Preschool, Northminster Preschool, Adventure Days Preschool, Boys and Girls Club, Adventure Park Preschool, Bright Beginnings, First United Methodist Church Chula Vista Preschool, Gillispie, JCC Nierman Preschool, Little Lamb Land Christian Preschool, NewBreak Playschool, Ridge City Daycare and Preschool, Seaside Preschool, and Zahra’s Daycare.

Our Team

Principal Investigator
Dr. David Barner

Postdoctoral Researchers
Dr. Roman Feiman

Lab Coordinator
Ashlie Pankonin

Graduate Students
Katherine Tillman
Haleh Yazdi
Elisabeth Marchand
Rose Schneider

Research Assistants
Vennisia Mo
Calvin Lee
Nicole Bonanno
Sara Lee
Yiqiao Wang
Luna Sano
Michael Wu
Kaiqi Guo
Anna Duran
Stacy Maciel

Language and Development Lab
3314 McGill Hall
9500 Gilman Drive,
La Jolla, CA, 92093-0109

Did you know?
The Language and Development Lab is part of a collaboration between the developmental psychology labs at UCSD, which together are known as Kid Science Labs. Come discover with us all!