Letter of Thanks

Dear Families, Teachers, and Directors,

Thank you very much for participating in our research this past semester! Our research is made possible by the generosity of families and communities like yours, and we greatly appreciate your support.

Our research focuses on how children learn different aspects of language, what this might tell us about the nature of cognitive and social development, and how these different aspects of development interact. This newsletter highlights some of the studies that your child or student may have participated in over the past year and gives an overview of our current findings.

If you have any questions about our projects, please feel free to contact us at (510)-664-4494 or lcdlab@berkeley.edu.

Best wishes,

Mahesh Srinivasan, Ph.D.
Assistant Professor
Department of Psychology
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Mahesh Srinivasan, Ph.D.

I am an Assistant Professor in the Department of Psychology and a member of the Cognitive Science Faculty at the University of California, Berkeley. Previously, I was a post-doctoral researcher in the Department of Psychology at the University of California, San Diego. Before this, I received a Ph.D. in Developmental Psychology from Harvard University in 2011, and received a B.S. in Symbolic Systems from Stanford University in 2005. Using empirical methods from developmental psychology and psycholinguistics, our lab's research explores how linguistic, cognitive, and social abilities arise and interact with one another during human development and across different cultures.

Using Words to Describe Object Functions

When an adult is told that an object was created for a specific function, but that this object is now used for a new function, they are likely to say that it is "really" for the original function. However, children do not seem to show this same preference, and instead, they are just as likely to say that the object is for the new function. In our work, we explore whether children believe that when a word for an object (example: 'dax') is used to describe an action involving that object (example 'I am daxing'), children expect the word for the action to refer to the original designed function of the object, rather than a new use of the object. For example, as adults, we have the intuition that when someone is "hammering" they are using a "hammer" in the way hammers were originally designed to be used. In this study, children learn the names of new

objects that they have never seen before and learn about what the objects were originally designed for and how they are currently being used. We then see which function children expect the word for the object to refer to when it is used as a verb.
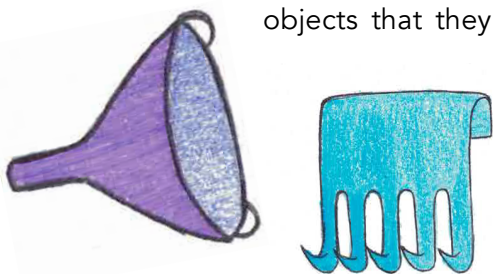
Ariel Starr, Ph.D.

I am a postdoctoral researcher in the Language and Cognitive Development Lab and in Dr. Silvia Bunge's Building Blocks of Cognition Lab. Previously, I received a PhD from Duke University in 2015 and a BA from Wesleyan University in 2007. I am interested in how language influences the way children represent and reason about the world. My research focuses on interactions between language and other cognitive domains, including reasoning, memory, and numerical cognition.

Memory Development in Children

How does children's existing knowledge shape what they remember? In these projects, we are investigating memory development in children and the situations in which memory is biased towards familiar or unfamiliar objects. Children play short games on the computer in which we ask them to remember colors, common objects, and unfamiliar objects. Children may also be asked to name the pictures or taught new facts about the objects to investigate how labels and factual knowledge influence memory. By learning more about what children remember, we hope to improve learning both inside and outside of the classroom.
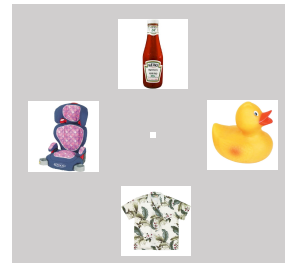
Spatial Metaphor Extension

In this study, we are examining how children form associations between different physical dimensions and the role that metaphors may play in this process. For example, we frequently use spatial language to describe time and pitch (e.g.,"she went on a long vacation" or "she sang a high note"). Our results suggest that the use of spatial language in reference to both spatial and non-spatial domains may help children form associations between these domains. Ongoing work is exploring how these associations may guide children's acquisition and comprehension of these types of spatial metaphors.

Learning Figurative Language

We often refer to products by their producers (i.e. 'He's driving a Toyota', 'She's playing a Steinway', 'There's a Picasso hanging on the wall'). How do children learn this type of figurative language? Moreover, do children willingly extend producer-product relations to new words? Preliminary results show that 4- and 5-year-olds have trouble with this relation in novel contexts, but that 8- and 9-year-olds might succeed. More work is needed to figure out why we see successes and failures at these specific ages!

Rebecca Zhu

What can children's word learning reveal about underlying conceptual structures? How might language facilitate the acquisition of abstract representations? In order to tackle these questions, I study children's comprehension of figurative language (i.e. metaphor, metonymy) as well as the relationship between language and other domains of cognitive development (i.e. kinds, number, relational reasoning). I am grateful to be funded by the Berkeley Fellowship.

How do children
adapt to their environments?

Some children grow up in noisy homes with lots going on around them; others grow up in quiet homes with plenty of direct instruction. In this study, we are interested in the ways children might adapt their learning strategies to best meet the demands of their early environments. Using eye-tracking to measure children's attention in real time, we explore whether kids who grow up in more noisy or chaotic homes develop a more broad attentional style, allowing them to learn from multiple noisy sources at the same time.
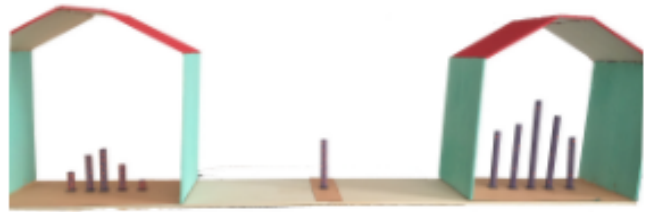
Monica Ellwood-Lowe

I am a first-year doctoral student in the Language and Cognitive Development Lab. Before this, I received a BA in Psychology from Stanford University. I'm interested in how variation in children's early social environments contributes to individual differences in their language use. In particular, I hope this research will shed light on why some children underperform in school, and how we might be able to rectify this inequality.

Disagreeing about Relative Meanings

Children understand that some words are objective like "red," and "spotted." If two people disagree about whether an object has one of these qualities, one of the people is objectively wrong. However, for words like "pretty," disagreement should be permitted because it is based on personal opinion. Similarly, disagreement may be permitted for words like "tall" which can depend on one's experience. In this study, we explore whether children allow two puppets to disagree about whether something is "spotted", "pretty" and "tall", if the puppets have had different previous experiences. We find that preschool- and early-elementary-aged children struggle to recognize that two people could both be right about entirely subjective opinions like what counts as "pretty" and tend instead to believe that people asserting the opposite of their own beliefs are "wrong." We are currently investigating what might cue them into the subjectivity of different statements, and the idea that different people can have different aesthetic preferences and opinions.

Ruthe Foushee

As a graduate student in the LCD Lab, I am interested in what language learners can tell us about the composition of meaning, what their performance on linguistic tasks reveals about their conceptions of language itself, and the implications of those developing linguistic assumptions for methodologies in the field. Many of my projects explore how we negotiate the meaning of vague or subjective language in conversation, and how children leverage their implicit social and statistical knowledge to understand these terms. I am also interested in qualitative differences in linguistic input, experimental methods in linguistic fieldwork, sociolinguistic development, and applications of cognitive science in museums. I am grateful to be funded by the NSF GRFP and the Center for Childhood Creativity.

Word Flexibility and Object Categories

A feature found in many languages is the ability to use a single word in multiple related ways. For example, the word "glass" can refer to the material "glass" and can also refer to "a glass" that one can drink out of. Our research explores whether children use this kind of relationship to guide their understanding of new word meanings and categories. Children were shown new materials and objects, including some that were created out of these materials. The objects either shared a name with the material, e.g. "dax", or had unrelated names, e.g. "wug". Our findings suggest that when children learned a word with multiple related meaning, they used the word's prior meaning to guide their use of its new meaning. That is, children were more likely to categorize an object with other objects made from the same material rather than focusing on other properties of the object such as shape or size. These results indicate that children understand that labels can pick out items from distinct, yet related categories.
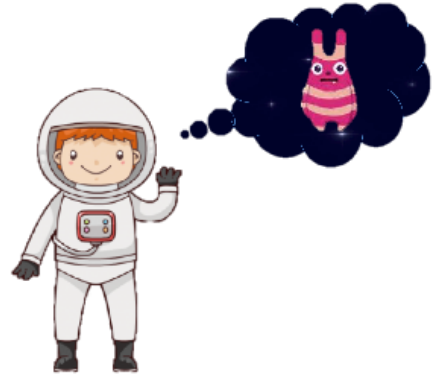
Catherine Berner

I am the lab manager at the Language and Cognitive Development Lab. I received a B.A. in Psychology from UC Berkeley in 2015. Currently I study the role of word flexibility in the language development of young children: how word flexibility influences children's understanding of words that label objects and their construal of those object categories.

Contrast Inference in Children

When we process speech, we constantly make inferences about meaning; for example, if you hear that someone is "as good at chess as Mary," you'll likely infer that Mary is good at chess, even though it isn't stated explicitly. This capacity to make inferences is a necessary element of being able to communicate effectively with other people. In this project we examine under what circumstances a statement attributing a property to one category ("Xs are good at drawing") might be taken to say something about a different, unmentioned category ("Ys are bad at drawing"), and how children develop the capacity to make such inferences. Children hear stories about two kinds of aliens ("Stripeys" and "Dotties") living on a fictional planet; the stories include a statement about one kind of aliens ("Stripeys are good at drawing") while members of the other category (Dotties) are either present or absent. In previous work with adults we found that when members of the contrasting categories were present, participants automatically made an inference about them (e.g. inferred that Dotties were bad at drawing) – significantly more so than when Dotties were absent during the utterance. The child version of this study will tell us about the developmental trajectory of making context-sensitive inferences, and will shed light on how children learn about categories.

Nadya Vasilyeva, Ph.D.

I am a postdoctoral researcher working across three labs, Dr. Mahesh Srinivasan's Language and Cognitive Development Lab, Dr. Alison Gopnik's Cognitive Development Lab, and my primary advisor Dr. Tania Lombrozo's Concepts and Cognition Lab. In my research I explore connections between explanation, inductive inference, causal reasoning, and language processing, and examine how these cognitive processes are shaped in the process of development.

Alex Carstensen, Ph.D.
I'm a postdoctoral researcher in the Meaning, Culture, and Cognition Lab at Radboud University in Nijmegen, The Netherlands. I completed my PhD in psychology at UC Berkeley, studying universals and variation in spatial language and cognition. My current research focuses on the nature of category systems across languages: how these semantic structures vary, evolve, and influence thought. I'm collaborating with the LCD lab to study the role of language in children's changing conceptualizations of space.

How Do Children Think About Space?

Our study looks at the strategies children use to think about the world around them–how they locate objects in space, relative to themselves and to landmarks and cues nearby. In the study, children play a memory game where they study the locations of toys and then recreate the scene they studied after a short delay. We're interested in what strategies children use to remember the toys' locations, and how these strategies change over development.
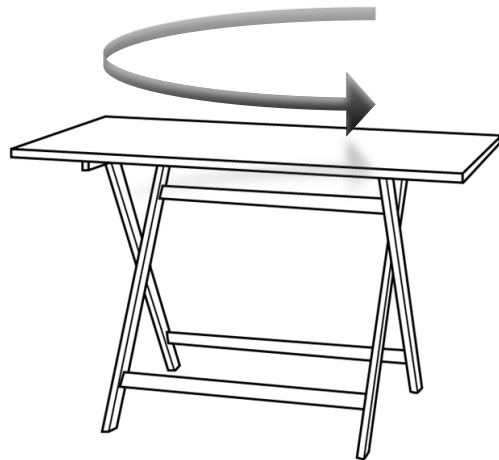
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We greatly appreciate all of the museums and preschools that continue to support our research. Our work would not be possible without your generosity and commitment to furthering the field of psychology!

For more information about our lab and other research opportunities, please feel free to contact us at:

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