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
University of California, Berkeley
The Language and Cognitive Development Lab is now in a new building in downtown Berkeley!

We are located at
2121 Berkeley Way
Berkeley, CA 94720
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.

When do children begin to distinguish between different types of rules?

In their everyday life, preschool aged children already encounter a lot of different rules and also begin enforcing them on their own. But how nuanced is their understanding that not all rules are the same? We are doing this study to learn more about when young children begin to distinguish between moral rules, like rules that prohibit harming other people, and arbitrary social rules, like what one should wear in school.

In the study, children watch a puppet show in which either a moral or an arbitrary social rule is introduced. The rule is then broken by one of the puppets, Max. We are interested in children’s reactions as they watch Max breaking the rule and their verbal evaluations.

Do children protest against Max's behavior? Do they think that Max is breaking the rule on purpose or do they think he is just being silly? And do they believe Max should get in trouble for breaking the rule? The aim of this study is to provide an answer to these and similar questions.
Word flexibility and word learning

A feature of languages, such as English, 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 study explores whether children use this relationship between word meanings to structure their understanding of a new word and object categories. Children are introduced to a novel material (some “dax”) and a new object that either shares the material name (a “dax”) or does not (a “wug”). We explore whether sharing the material name leads children to categorize the object with other objects made from the same material, and whether knowledge of the relationship between word meanings help children remember the meaning of novel words.

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.

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.
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.
How do children learn from overheard speech?

This study focuses on the ability of children to learn novel words from overheard speech between a speaker and a non-present other. In this study, children are introduced to a set of four objects they’ve never seen before. They are left to explore the objects freely at a table while the experimenter sits off to the side and “works” on her computer without engaging with the child. A short while later, the experimenter’s phone rings, and she feigns a conversation with a friend, casually describing the names and functions of the objects she brought with her. After hanging up, she tests whether the child learned the names and information about the objects from the overheard conversation.

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.
Learning About Design and Function

We are interested in how children learn about the design and function of objects, and the role of language in their judgments of new objects. Previous work suggests that children are less likely to take a “design stance” than adults. That is, if 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 how children’s judgments about function are affected by labeling. Do children recognize that objects can be labeled to reflect their historical purpose, and are children’s judgments affected by the historical purpose of an object? In this study, children were shown pictures of objects that they have never seen before; learn about what the objects were designed for, and the ways in which people use them. Children are then asked questions about the objects and functions.

Jonathan Wehry

I am the lab manager at the Language and Cognitive Development Lab. I received a B.A. in Psychology from the University of Pennsylvania in 2018. I am interested in studying word flexibility in the language of young children: how word flexibility influences children’s understanding of words that label objects and their construal of those object categories.
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.

**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.
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.
Rachel Jansen

I am a Ph.D. student in the Computational Cognitive Science Lab, advised by Tom Griffiths and Anna Rafferty. I am passionate about employing methods from machine learning and probabilistic modeling to the study of mathematics cognition and education. I am specifically interested in understanding more about how people learn math so that I may work towards improving both teaching practices and online educational tools. One branch of my research is centered around math learning in adults using an online algebra tutor developed by me and my advisors. I am using this tool to explore ways in which we can influence motivation and alter students' perceptions of mathematics, to ultimately remove emotional and psychological barriers so that more people may appreciate and excel at the subject. I am fortunate to be funded by the UC Berkeley Chancellor's Fellowship and NSF GRFP.

What is 'math'?

While we may talk about 'math' as if it were a universally well-defined subject, different people have different conceptions of what counts as 'math.' In this study, children sort a variety of activities according to whether or not they 'involve math.' We are interested in how individuals' definitions of 'math' may relate to their anxiety about it.
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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!

University Village Child Development Center
Bay Area Discovery Museum
Lawrence Hall of Science
Clark Kerr Campus Child Development Center
Haste Street Child Development Center
The Discovery School
Habitot Children's Museum
The Berkeley School
Harold E. Jones Child Study Center
For more information about our research and how to get involved, please go to our website
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