The Language and Cognitive Development Lab
2018 - 2019 Amrit Vidyalaya Newsletter

Letter of Thanks

Dear Families, Teachers, and Staff of Amrit Vidyalaya,

Thank you very much for participating in our research recently! 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 and gives an overview of our current findings.

If you have any questions about our research, feel free to contact us at lcdlab@berkeley.edu.

Best wishes,

Mahesh Srinivasan, Ph.D.
Assistant Professor
Department of Psychology
University of California, Berkeley

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.

Representing time using space

This study included children in the 1st through 9th standards. In this study, we investigated when and how children represent time using space. Children heard short stories in which a character does two activities and were asked to create diagrams to help them remember the order in which the activities occurred. Children were also shown diagrams and asked to interpret them (e.g., if shown a character with a book in front of her, children were asked whether the character read a book yesterday or is going to read a book tomorrow). This study will therefore help us understand not only how children think about time, but also whether demonstrating a consistent spatialization of time (e.g., viewing future events as being in the front and past events as being in the back) helps improve children's memory for temporal order. In addition, by learning more about how children use spatial diagrams to remember temporal order, this study may help us come up with new strategies that children can use to improve their memory and temporal reasoning skills.

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.

Explanation Transmission

This study included children in the 3rd, 4th, 6th, and 7th standards. How do stories, theories, and explanations change as they are passed from person to person? In this study, one student heard three stories, and then was asked to re-tell these studies to another student. The next student heard the first student's recording, and retold the story they received for the next student, who retold the story for the next, and so on. The first students in these 'transmission chains' heard different versions of the same set of stories explaining the customs of another group (e.g., why in a country far away, the doors of their home always face East) using religious, scientific, or mixed explanations. We're interested in how these different types of explanations changed as they traveled down the chain, and how this may interact with the student's own attitudes toward science and religion.

Explanation Propagation

In this study, we were interested in how children spontaneously explain things they don't understand in their environments, and how they share and receive explanations from peers. School is a place for informal learning (e.g., on the playground) as much as it is a place for formal learning in the classroom. The rumors, theories, and knowledge that spread quickly among students can tell us a lot about how they think about the world around them. With the permission of teachers and staff, we placed a mysterious object in a communal school area. On a subsequent day, we asked 2nd-4th grade standard to explain the presence of the unfamiliar object, along with other, more familiar items (e.g., the blackboard in the classroom, the grass in the yard).

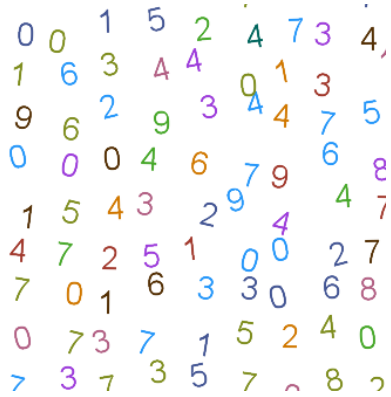
Ruthe Foushee

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.

Self-assessment of academic abilities

This study included children in the 9th standard. Many subtle cues lead people to believe that maths is a domain more well suited for boys than girls, even though both genders tend to perform equally well. Paired with this is a potentially even stronger stereotype that girls have more natural talent in verbal domains. For this project, we asked how students perceive their ability in maths and reading/writing since this is a way students might be internalizing these kinds of gendered stereotypes. Specifically, we gave students a maths test and a reading/writing test and ask them to guess how well they think they did on each. Based on previous work, it is likely that girls underestimated their score on the maths test more than boys, but that boys underestimated their performance on the reading/writing test. Children also filled out various surveys about their beliefs about stereotypes and

Math Concept



In this study, we asked students to rate how "similar" pairs of numbers are (e.g., 7 and 8, or 8 and 6), with the idea that as students learn more about numbers, their ratings will reflect not just how close those numbers are in terms of quantity, but how many mathematical properties they share. For example, while a younger student might rate 8 as more similar to 7 than to 6, an older student might instead judge 8 and 6 as more similar, even though they're further apart in terms of quantity, because 8 and 6 are both composite numbers, and multiples of two. We are interested in how readiness to think about the complex properties of numbers in this task relates to students' maths performance and ability, and how it might be used in educational settings.

Rachel Jansen

I am a Ph.D. student in the Computational Cognitive Science Lab, advised by Tom Griffiths and Anna Rafferty, as well as working in the Language and Cognitive Development Lab. 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. I am exploring 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.

Language and Cognitive Development Lab
Gujarat Research Assistants

Yusuf Kapadia

Poonam Patel

Sakina Dahodwala

Saba Baldiwala

Renuka Verma

Mushir Shaikh

Dhiraj Jagdale

Dhriti Agrawal

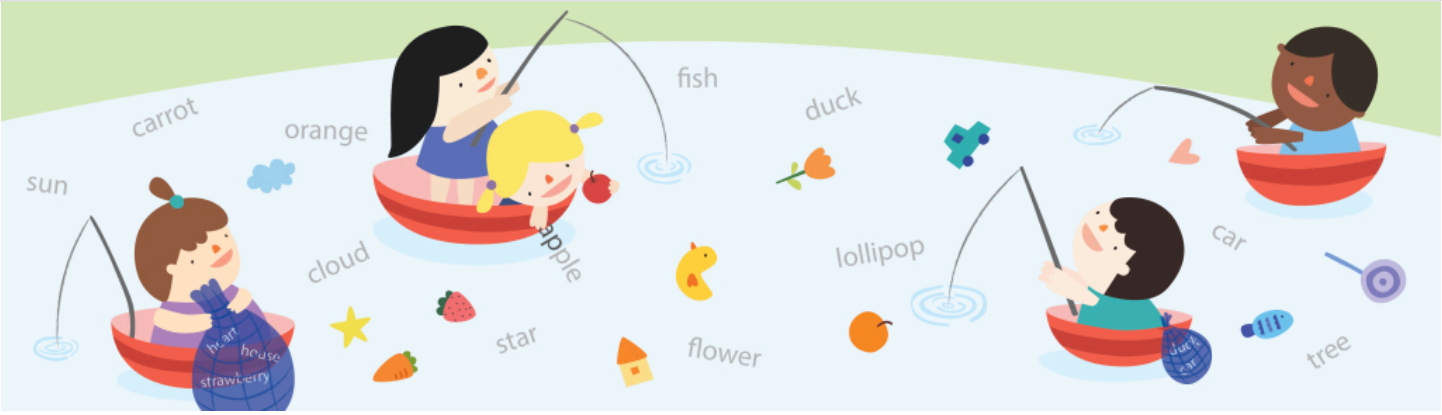
Prachi Talwar

Neha Singh

Gauri Joshi

Marishka Mehta

Huda Patel



For more information about our research, please visit our website.

http://lcdlab.berkeley.edu

Phone Number

+1 (510) 664-4494

Email Address

lcdlab@berkeley.edu