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LCD Lab Newsletter

Spring 2017



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,

A handwritten signature in black ink, appearing to read "Mahesh Srinivasan".

Mahesh Srinivasan

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The Development of Analogical Reasoning

In this study, we are examining how reasoning ability develops during childhood. In particular, we are interested in how children reason about relations between different sets of items or concepts, and how children reason about relations between relations. This study uses an eye tracker to provide information about how children are acquiring and integrating information during the reasoning game. Our results suggest that improvements in analogical reasoning are the product of more efficient problem-solving strategies. Ongoing work is exploring how verbal abilities and inhibitory control contribute to this shift in strategy.



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.



How do preschoolers learn about social norms?

Preschool-aged children encounter a variety of rules regarding how they ought to behave. This study explores how children begin to distinguish between moral norms (which concern the welfare of others) and arbitrary norms (like what is an appropriate outfit for school). Children play a game with a puppet, "Max," who breaks an explicit rule. We explore how children judge Max's action and whether they consider Max's knowledge (or lack of knowledge) about the rule when deciding how bad Max's action is. So far, we've found that preschoolers judge that Max's rule breaking is worse when he breaks a moral rule than when he breaks an arbitrary rule.



Disagreeing about Relative Meaning

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.



Math Concept and Anxiety

While we may talk about 'math' as if it were a universally well-defined subject, people conceptualize what counts as 'math' very differently. In this study, children and adults sort a variety of activities according to whether or not they 'involve math.' For example, "does sewing involve math?" We are interested in how individuals' definitions of 'math' may relate to their anxiety about it. Our results suggest that both adults and children hold varied ideas of what types of activities could involve math. We additionally observed in two separate studies - one with adults in the US and another with 7th- and 8th-grade children in India - that the breadth of an individual's conception of math is linked to lower math anxiety. Ongoing work is exploring possible interventions on math conceptions and whether this will in turn lower individuals' math anxiety.



Using Words as Nouns and Verbs

A central feature of language is creativity: we can express an unlimited number of thoughts in language. One way in which we do this is by using words in new ways, to express new meanings. An example of this in English is the flexible use of words, like shovel or hammer, to label tools, as nouns, or functional uses of those tools, as verbs, (e.g., "She hammered the nail"). We do this routinely to create new meanings for words: For example, it is now common to hear people use google to label the act of searching for something on-line. We hope to explore what such uses of words reveal about the structure of word meanings, and correspondingly, the locus of creativity in language. The present study explores whether toddlers are capable of using words in creative ways like this.



What types of patterns do children use to help learn object names?

The ability to use a single word in multiple related ways is a feature in many languages. For example, in English 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. 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.



The Scope of Conventionality

In this study we are examining when and how children extend lexical knowledge to others. In particular, we are interested in whether, if children are given the impression that an object's name is not common knowledge, they will still extend this lexical knowledge to others. This study uses several different situations with a puppet and novel objects to provide information about how the puppet being present or absent and the names of objects being coined or pedagogical affects the children's responses in terms of extending their lexical knowledge to others. Our results suggest that children's responses do not reflect assumptions of shared conventional knowledge. This re-opens the question of how children reason about if a newly-learned word will be known by others.

Thank You!

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!

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Bay Area Discovery Museum

Harold E. Jones Child Study Center

Clark Kerr Campus Child Development Center

Lawrence Hall of Science



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