



Fall 2013



The University of Michigan Conceptual Development Lab

Dear Parents,

We wish to thank you for supporting our research at the University of Michigan Conceptual Development Lab by participating in our studies! The knowledge and insight that you and your children contribute are what make our research successful. Without the help from wonderful families like yours, our work would not be possible.

This newsletter describes some of the studies we are currently working on or recently completed. For example, pages 3 and 4 describe our work on children's understanding of ownership. "A change of heart" (p. 2) summarizes our recent study of how people would feel about receiving a heart transplant from different types of donors. This article was recently covered by NPR. We are engaged in a variety of other projects as well.

We hope you enjoyed your visit(s) to our lab. Once again, we are extremely grateful for your continued support!

Susan A. Gelman

Heinz Werner Distinguished University Professor

Interim Dean of the College of Literature, Science, and the Arts



In this Newsletter

- | | |
|-----------------------|-----------|
| * Recent Studies | pages 2-5 |
| * Ongoing Studies | pages 6-9 |
| * Contact Information | page 10 |
| * Recent Publications | page 11 |
| * Lab Staff | page 12 |

Recent Studies

A Change of Heart

If you needed a heart transplant, would it make you uncomfortable to know that your new heart was going to come from a criminal? In a study conducted on adults with Dr. Sarah-Jane Leslie (Princeton University), we found that people are often very alarmed by this imagined scenario, and report the fear that their new heart might make them more violent or dishonest. This type of thinking indicates that people often “essentialize” certain forms of behavior; that is, people assume that something internal, stable, and transferrable is responsible for people’s outward characteristics.

Do children also show this kind of “essentialist” reasoning when thinking about the consequences of transplants? Of course, we would not want to ask children about criminals, as we did with adults. Instead, we asked 4- to 7-year-old children whether a heart transplant would make them take on some of the personality of a donor: a mean child, a nice child, a smart child, or a not-so-smart child. We also asked a separate group of children the same questions about trading a quarter, which adults believe would not lead to any change. Data indicate that older children endorse the possibility that a heart transplant will lead the recipient to become more like the donor, and deny that trading a quarter could have the same result. Younger children, however, do not show a difference between their responses on the heart vs. money questions. We are excited about following up on this result to determine what this indicates about children’s essentialist reasoning.

[See an overview of the scholarly article](#)

[See the NPR article](#)

Pedagogical Language

Have you ever wondered how children learn? Have you ever wondered how they transmit this information to others, including their siblings? To explore these questions, we designed a study to investigate how children’s interactions differ when teaching an older vs. a younger sibling.

In this single visit study, three siblings (an older sibling, a middle sibling, and a younger sibling) were asked to play with one another in groups of two. The middle child played separately with the older child and then later played separately with the younger child. In each situation, the middle child was asked to tell the sibling about a series of pictures in a book. The book, then, would serve as a ‘learning opportunity’ between siblings.

We found there were major differences between the conversations that middle children have with siblings of different ages. When discussing the book with a younger sibling, middle children use more ‘teaching’ phrases, whereas when discussing the book with an older sibling, they concentrate on describing a picture’s appearance. It seems that siblings adjust their ‘teaching approaches’ based on the age of their sibling.



Recent Studies

(Continued)

Keeping Track of Owned Objects

For adults, ownership is special and linked to an object's history. We form a sentimental attachment to objects once owned by a loved one, such as one's grandmother's wedding ring. Objects once owned by famous people are placed on display (for example, Albert Einstein's pipe can be found at the Smithsonian). Even objects with only minimal ownership history are deemed more valuable (objects are priced higher when for sale than for purchase).

In this study, we wished to explore whether children search for traces of an object's ownership history. To do so, we played a game where 3- and 4-year-old children were shown a set of two toys and told one toy belongs to them. The researcher marked the toy that belonged to the child in each trial. The 'mark' was then placed out of view and both toys were jumbled up in a covered spinner. The child was then asked to find the toy that belonged to him or her.

We found that children are highly responsive to ownership cues. Children reliably searched for the hidden marking that indicated the object was 'theirs' and correctly chose these objects. This result indicates that children, from a very young age, are invested in tracking objects based on their ownership.



Inferences from Categories: Ziblets and Flurps

A classic puzzle in developmental psychology concerns when children are able to consider more than outward appearances, in evaluating and classifying the world around them. We designed a series of experiments to examine this question, by testing when and how children generalize new facts: do they use outward appearance alone, or do they understand that sometimes other cues are more important?

In the current study, introduced preschool children to two novel categories, ziblets and flurps, so that past knowledge of the categories would not affect their inferences. Based on outward appearances alone, it was difficult to determine whether an item was a ziblet or a flurp. However, we taught children to attend to a special cue (involving the marking on the antennae) to correctly classify these items.

Our results showed that children were able to pay attention to the special cue, and use it to make appropriate inferences, when the categories were meaningfully different from one another. For example, when children learned that ziblets and flurps were two kinds of animals with different habitats and different diets, they easily focused on the special differentiating cue. However, when ziblets and flurps were not meaningfully different, then children ignored the special cue and focused on outward appearances alone.

These findings demonstrate that children are capable of looking "beyond appearances" when reasoning about the categories in their environment. At the same time, if categories are not meaningfully different, then children fall back on overall appearances.

[Gelman, S. A., & Davidson, N. S. \(2013\). Conceptual influences on category-based induction. *Cognitive Psychology*, 66, 327-353.](#)

Recent Studies

(Continued)

Ownership with Labels

Mine, mine, mine!

If you've ever watched two children play with toys together, then you know that they really care about keeping track of what is "mine." It is possible that children simply recognize their own unique property and keep track of it - for example, the Barbie with the red hat - but children actually do something much more interesting and complicated. By age three, they are keeping track of the historical relationships between people and property without any prompting from adults. In fact, hearing this information makes a toy particularly memorable. So, in our research, we have found that 3-year-old children remember and keep track of a toy that is given to them (this one is yours) better than they remember and keep track of a toy that is given non-ownership information (this one is a blicket). This ability is the beginning of children's ability to think in mature terms about the relationships between people and things.

Gelman, S.A., Noles, N.S., & Stillwell, S. (in press).
Tracking the actions and possessions of agents.
Topics in Cognitive Sciences.



The Ownership Book

Very early in life children start using the word "Mine!", but the thoughts and intuitions behind this word are both powerful and complex. The goal of this study is to determine how children learn about ownership by carefully observing how parents and children talk about ownership with one another.

In this single visit study, 2-year-old and 4-year-old children and their parents read a book together about preschool children and toys they owned. In each story, the main character had to decide how to respond to another child with regard to a toy the child owned. For example, in one story, the character swapped a toy with another child. The parent and child discussed the stories to decide what the main character should do in each situation. Their discussions help us to assess the child's current understanding of ownership and to help us to learn about how families talk about ownership and property.

We are currently coding the transcripts from this study, and we are finding rich, interesting conversations about ownership. For example, some children decide that the character in the story should share their toy and in others they think the character should keep the toy as their own. We will code the themes that are discussed, how parents and children resolve disagreements, and how younger versus older children talk about the stories.



Recent Studies

(Continued)

Does Furby want to play?

With the increasing entry of robotics into our everyday lives, now young children more frequently encounter objects that seem to blur the living / non-living distinction. In addition to interacting with stuffed animals that are made to look realistic, children now grow to be familiar with robotic and digital creatures that are programmed to interact with people in a life-like fashion. How does our increased experience with artificial intelligence reflect on children's concepts of living and non-living things? How do children learn about this distinction when the boundaries are increasingly blurry?

To better understand how children learn about living and non-living things, we invited preschoolers and their parents to our lab, and observed them interact with six items that straddle the boundaries between living and non-living things: two live animals (a degu, a starfish), a robotic dog, a computer box that responds to movement, a meerkat puppet, and a toy car. Afterwards, we interviewed parents and children separately regarding what they thought of the items in terms of their biological, psychological, and physical properties.

We are currently analyzing the results. However, initial findings suggest that parents often imply that non-living items are alive. For example, they often refer to the robotic dog or the meerkat puppet using gender pronouns ("He moves a little bit like your dinosaur at home, doesn't he?"), talk or ask about their psychological states (desires and beliefs), or even talk for the items ("I didn't like it under the couch, it was too dark!").

We look forward to finding out more about whether and how parents' conversation styles about these items influence their children's understanding of the living and non-living distinction.

Numbers with Mr. Squirrel

How do quantifiers (such as 'some') affect children's memory for new information? How about use of numbers (such as 'four')? In this study, children played a fun game with a stuffed animal named Mr. Squirrel. The games were designed to assess children's memory for numbers and quantifiers, and also to assess children's knowledge of numbers (for example, by asking the child to feed Mr. Squirrel varied numbers of acorns).

So far, we have found that children tend to remember generic sentences (e.g., Elephants eat hay) better than sentences with quantifiers or numbers (e.g., Some elephants eat hay; Four elephants eat hay). A child's memory often defaults to generics even when the sentence was presented with either a quantifier or number. Generics seem to be central to how we store information in memory.



Ongoing Studies

A number of studies are currently ongoing, with children at a range of ages. Here are descriptions of some of the studies we are currently conducting.

If you would like to participate in these or other studies, please call us at (734) 647-2589 or e-mail conceptlab@umich.edu . Thank you!

Blankie Study

Some children have an attachment object that helps to soothe them, such as a blanket, stuffed animal, or other soft object. Attachment objects are called many different names, such as “lovey,” “blankie,” “cuddly,” etc.

But not all children have an attachment object. In previous research, Hood & Bloom (2008) found that preschoolers who have an attachment object show a stronger preference for their own toy than do children who do not have an attachment object.

We have designed a study aiming to better understand the relationship between attachment objects and young children. In this single visit study, children will be shown various toys and asked to make choices based on their preference for these different toys.

If your child is between the ages of 2 and 4 years, and you would like to have him or her participate in this study, please contact us for more information. Your child can participate, whether or not they have an attachment object!



Ongoing Studies

(continued)

Memory for details: What does language have to do with it?

How do the words that we use influence what we remember? Children hear a variety of information from their parents and teachers, both generic information (e.g., Cats run fast) and specific information about individual referents (e.g., These cats are running fast). We hypothesized that, if a set of items are discussed with specific information, that may help us remember more about the particular items, in the future. In contrast, if the same items are discussed with generic information, that may lead us to remember less about the particular items.

In this brief, single visit study, children (ages 3-5 years old) will be shown pictures of a series of animals along with information about them, such as “Dogs chew on bones” or “These dogs chew on bones.” Children will be then shown pictures of new animals, as well as the previously seen animals, and asked which they remember seeing before. We will be interested to determine if children remember the animals better when they hear something specific about them, versus something general about the category that they belong to. We will also measure how long it takes for children to respond to these memory questions. We hypothesize that children may be faster to respond after hearing specific vs. general information.

This study will add to our knowledge of how language affects everyday thought.

Biracial Categories

From an early age, young children begin to classify other people on the basis of different social dimensions, including gender, age, ethnicity, and race. However, despite our increasingly multiracial society, little is known about how children think about individuals with multiple racial backgrounds. When do children first show the capacity to understand multiracialism? How do children classify individuals from a variety of racial backgrounds? Also, how do children make use of information about race to make social judgments? Are children from different racial backgrounds likely to reason about multiracial people differently?

In this single visit study, children (ages 4 – 13 years old) are shown images of children from different racial backgrounds. Children are asked to match the pictures based on perceived similarities, specific features, or social relationships. Parents are asked to complete a brief questionnaire about their child's experiences with race.

We hope to learn how judgments about race change and develop over time.

Ongoing Studies

(continued)

Children and their Toys

This study examines the social aspects of ownership and children's interactions with toys that are either owned or possessed by one or more children. We want to see if and how children attempt to gain possession of another child's toy. We will also consider how differences in social dominance or ways that children interact with a toy may affect their desire for the toy. For example, under what circumstances do children tend to defend a toy that they own? And when do they tend to want a toy that another child owns?

This is a single visit study with two siblings between the ages of 3 and 6 years. The children are given toys that they play with for about 15 minutes. We will observe the way the children interact with the toys based on whether the children are told that they own the toys or that the toys belong to the lab.

Keeping Track

In an increasingly technologically-driven world, children and adults often interact with technology in various forms on a daily basis. Is all technology 'good' technology? Are there circumstances where technology may infringe on things we value, like our privacy? What do children think about this topic?

In this single visit study children ages 4 to 6 years of age are asked to think about devices people might use to keep track of their objects. Are all objects appropriate to track? Children will play a game with a researcher where they will look at pictures of objects and animals and then asked questions about tracking. If you are interested in participating, please contact us for additional information!



Ongoing Studies

(continued)

Understanding Villains

What do children understand about what it means to be a villain or an evil person? While young children do know what goes along with being mean, some research suggests that young children may not fully understand what it means to be evil, and why villains do certain bad things.

In the Living Lab at the Ann Arbor Hands-On Museum, we have been exploring this topic. We show children either a familiar villain (e.g., Captain Hook) or a novel villain, and children then make predictions about what these characters will do and feel.

For example, do children understand that true villains will use aggression when it is not necessary, and may even feel happy about doing so? Do children think that two villains will work together or compete? These are some of the questions we explore using stories on the computer.

So far, we're finding that even preschool-age children have a rather solid grasp of what evil is all about. However, predictions about evil characters become more consistent as children progress into elementary school. Further, younger children are less willing to predict wicked behavior in novel villains, compared to older children.

This research will help us understand how flexible trait understanding is in young children, and how this changes over the course of development. If you're at the Hands-On Museum, look for us on the first floor. We are looking for children ages 4-12 for this study. It's fun and takes about 10 minutes!

Saving and Spending Money

This new study explores how children think about spending and saving money:

- How do children vary in terms of their spending and saving habits?
- What predicts these differences? The influence of parents? Children's impulse control? Some other aspect of child temperament?
- Recent research shows that some adults feel bad after spending, while others regret saving when they could have spent. Do some children show these same patterns of money-related emotion?

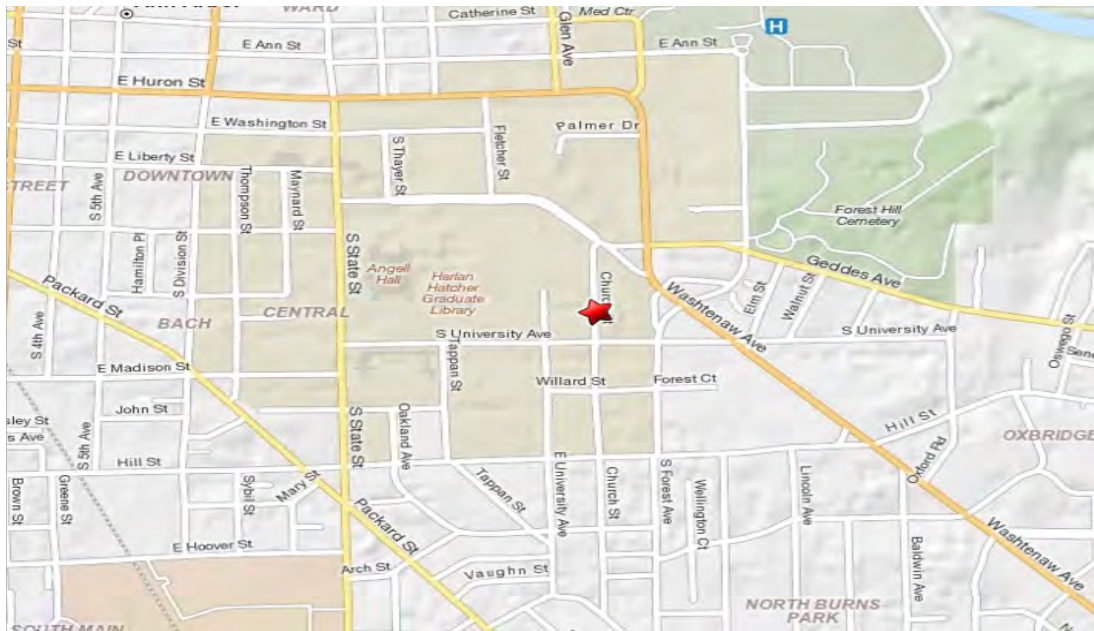
To explore these questions, children answer questions about their spending and saving habits, play an impulse-control game on the computer, and are given a dollar and have an in-the-moment chance to either spend it or save it. If you're at the Hands-On Museum, look for us on the first floor. We are looking for children ages 5-14 for this study. It's fun and takes about 10 minutes!

<http://www.aahom.org/experience/events/living-lab-research-project>



Contact Us!

If you'd like more information about our studies, or to participate in a study, please contact Megan Martinez or Natalie Davidson at conceptlab@umich.edu or call (734) 647-2589. We are located in B464 East Hall at 530 Church Street, Ann Arbor, MI 48109.



If you schedule a lab visit to participate in one of our studies, we provide free on-campus parking for the day, and your child receives a small gift for participating. You will also be compensated \$10. Additionally, any other siblings are more than welcome to come along during your visit! Our research staff are happy to play with your other children in our playroom while your child completes the study.

Recent Publications

Brandone, A. C., Cimpian, A., Leslie, S.-J., Gelman, S. A. (in press). Do lions have manes? For children, generics are about kinds rather than quantities. *Child Development*.

Brandone, A. C., & Gelman, S. A. (in press). Generic language use reveals domain differences in children's expectations about animal and artifact categories. *Cognitive Development*.

Gelman, S. A., Frazier, B., Noles, N. S., Manczak, E. M., & Stilwell, S. (in press). How much are Harry Potter's glasses worth? Children's monetary evaluation of authentic objects. *Journal of Cognition and Development*.

[Gelman, S. A., & Davidson, N. S. \(2013\). Conceptual influences on category-based induction. *Cognitive Psychology*, 66, 327-353.](#)

Gelman, S. A., Ware, E. A., Kleinberg, F., Manczak, E. M., & Stilwell, S. (in press). Individual differences in children's and parents' generic language. *Child Development*.

Gelman, S. A., Ware, E. A., Manczak, E. M., & Graham, S. A. (in press). Children's sensitivity to the knowledge expressed in pedagogical and non-pedagogical contexts. *Developmental Psychology*.

Lane, J. D., Wellman, H. M., & Gelman, S. A. (in press). Informants' traits weigh heavily in young children's trust in testimony and in their epistemic inferences. *Child Development*.

Ware, E. A., & Gelman, S. A. (in press). You get what you need: An examination of purpose-based inheritance reasoning in undergraduates, pre-schoolers, and biological experts. *Cognitive Science*.

Ware, E. A., Gelman, S. A., & Kleinberg, F. (in press). The medium is the message: Pictures and objects evoke distinct conceptual relations in parent-child conversations. *Merrill-Palmer Quarterly*.

Thanks!



We would like to thank all of our wonderful Undergraduate Research Assistants and Research Staff for their hard work and dedication in making our research possible!

Maria Arredondo, Bryana Bayly, Cara Brennan, Chhavi Chaudhry, Lisa Chen, Natalie Davidson, Natalie DeLave, Laura Distel, Melanie Greenspan, Selin Gülgöz, Megan Helfand, Courtney Hsing, Katie Levan, Mariana Kaps, Christina Koch, Taryn Konevich, Dayana Kupisk, Hailey MacVicar, Megan Martinez, Meredith Meyer, Nicholas Noles, Natalie Paulson, Steven Roberts, Ingrid Sánchez, Craig Smith, Sarah Stilwell, Margaux Stanton, Alexandra Was