Dear Parents,

We are writing to describe ongoing research projects at the Conceptual Development lab at the University of Michigan. In our studies, we examine children’s early language and concepts. Childhood is a period of remarkable learning and growth, and the ages from toddlerhood through early elementary school involve particularly exciting changes, for children and their families! During this period of development, children are learning words, organizing experiences into categories, and forming intuitive “theories” about the world around them.

If you have previously participated in our research, we are very grateful for your help! Thanks to your participation, we are constantly making new discoveries about the nature of children’s thinking. We also wish to thank the National Institutes of Child Health and Human Development, the national Science Foundation, and the University of Michigan, which help support this work.

This newsletter describes some of the studies we are currently working on or recently completed. We hope that you and your child enjoy your visit(s) to our lab!

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Understanding Value

At what age do children start to understand the value of objects? How does the historical context of an object, or its relationship to someone famous, affect its worth in the eyes of a child?

In this study, children in two different groups (4½ -5½ years and 6 -7 years), as well as U-M college undergraduates were asked to make judgments about the monetary value of paired pictures of objects. The picture pairings included either an item of famous association (such as “Harry Potter’s glasses”) alongside a similar item of personal ownership (such as “my dad’s glasses”) or original creations (the very first Candy-Land game that was ever made) alongside a brand new version of the item (a brand-new Candy-Land game). Participants were asked which item people would pay more money for, as well as how much money they thought people would pay.

We found that an object’s history (whether it is tied to someone famous, someone familiar, or has historical value) does influence children’s judgments of monetary value. However, this understanding emerges at different points in development depending on the item type. For example, children understand the monetary value of famous associations by the age of 7, but do not comprehend the monetary value of original creations until adulthood. We also found that when a famous association is personally relevant (such as an item belonging to a character earlier identified as the participant’s favorite), the understanding of that item’s value emerges earlier (by the age of 4)!

Learning About Categories

One important task that children need to accomplish early on is the ability to flexibly categorize objects. Objects may be categorized at the basic level (e.g., dog), and the non-basic level (e.g., animal). Depending on the type of information the child hears (specific or generic), the category level may or may not be important. The level of the label used in specific statements does not affect the interpretation of the sentence, for these labels simply mark a specific instance (e.g., “This dog is thirsty” is equivalent to “This animal is thirsty” and both may be used for the same purpose). However, in generic sentences, the level of the label used denotes the scope of the category to which the information applies. Therefore, the sentence “Dogs are warm-blooded” does not convey the same meaning as the sentence “Animals are warm-blooded.” Thus, we wanted to see whether young children are sensitive to how the importance of labels differs in specific and general information.

For this study, preschoolers and college students (as a comparison group) were asked to look at some pictures of either animals or people, and remember the novel facts they heard about each picture. The facts they heard were either specific or generic, and the category labels presented in each sentence were either basic level or non-basic level. We expected that, if children are aware of the differing roles of labels in specific and generic language, then they should show better recall for the label level in sentences given in generic than in specific.

We found that children have a very strong bias for basic level labels, regardless of whether it is generic or specific knowledge. This suggests that, when young children are taught generic information about non-basic categories (e.g., “Animals like to play jimjam”), they tend to misremember them as pertaining to a salient basic category (e.g., “Dogs like to play jimjam.”). While we found that adults show better recall for labels in generic than in specific sentences, preschoolers do not yet show this sensitivity. Follow-up research continues on understanding when and why developmental difference emerges.
Where do you draw the line?

People use metaphors so frequently and naturally that they aren’t even aware of using them. For example, he’s a warm person, we’re close friends, these are weighty matters, and so on. In one line of research, we are examining whether “drawing a line” between two things would highlight the distinction between them and focus people’s attention on their differences. Our initial studies tested this hypothesis among college students.

We found, for example, that when participants were asked to list some features of law school students and business school students, they focused on differences between the two groups if there was a line between the lists (Study 1). Similarly, after seeing several vertical lines, participants were more likely to say that objects on different sides of where the lines had appeared belonged to different categories (Study 2). We are currently exploring the same phenomenon among children to see if seeing visual boundaries before their eyes would highlight conceptual boundaries in their minds.

Language and Memory for Pictures

How does language affect memory? This study aims to examine the influence of general versus specific language upon a child’s memory for pictures. Children ages 4 and 5, as well as U-M undergraduates, are shown a series of cat pictures. Each picture is presented with a fact that is attributed to either the whole category (e.g., “Cats have 230 bones”) or a specific individual (e.g., “This cat has 230 bones”). Participants are then asked to look at a new set of cat pictures and identify which cats they originally saw. We predict that participants’ memory may be influenced by the language that they hear. For example, specific language may encourage children to focus on each individual cat picture, and therefore remember them better. If this result is obtained, it will have important implications for how the language that children hear influences their perception and memory of the world around them.

The data collection is still ongoing; results will be in the next newsletter!

Reading Together!

Story time is a great opportunity for parents to talk with their children about the different ideas and themes presented in books. When examining the parent-child interaction of reading together, we were interested in the ways parents help children understand the authenticity of items across contexts.

In this single visit study, parents and children (ages 3 ½ to 4 ½ and 5 ½ to 6 ½ ) read a series of three books together. Each book asked the child to help the story’s protagonist decide between a series of similar paired items across different contexts (for example a museum setting, or a home setting during clean-up time). When asked questions such as, “Which items should Jesse (the story’s protagonist) keep?” or “Which item should Jesse pick for the museum?”, we were interested in how parents express the concepts of authenticity to their children. Parents were also asked to complete questionnaires to assess their attitudes toward everyday objects, to determine if parental beliefs are reflected in how parents talk to their children.

So far we have only begun to code and analyze the results. However, preliminary analyses suggest that the younger children focused more on the visual properties of items (placing greater value on new objects, for example), whereas older children have started to appreciate that an object’s history can add to its value (for example, an object owned by a historical figure might be more valuable). It will therefore be especially interesting to learn how parents discuss authenticity with children at different ages.

Look for further results in the next newsletter!
Learning About Causes

How do children think about causal relationships (for example, pushing a button on a remote control to make a toy car move)? Can the kind of language we use to talk about an event change the way children evaluate cause and effect? This study looks at how children evaluate different statements in the context of a causal event. We are also interested in how children determine the accuracy and trustworthiness of the speaker who provides the statements.

In this single visit study, children (ages 3.5 to 5.0) play a short game with a researcher. This game involves watching as different types of blocks are placed on a special music machine, sometimes causing it to activate and play music. A puppet provides information about the blocks. Children are asked to guess which blocks will make the machine “go”, and how knowledgeable the puppet is about the machine. Results from this study will allow us to learn more about language affects children’s causal reasoning.

Results from this study will be published in a future newsletter.

Letting Hands Do the Talking

Young children learn a lot from interactions with adults, especially their parents. Previous research from our lab and others suggests that parents’ use of “generic” language—language that refers to kinds of things rather than specific instances—is an especially important source of knowledge about the world in general. For instance, hearing the generic sentence “Birds lay eggs” tells children a general fact about the bird category and conveys that this fact is stable and common to the category.

Although much of what children learn comes from the language that parents use, there are a lot of other sources of information in conversations as well, including nonverbal cues like gesture. We looked at the kinds of gestures that parents typically use to accompany language that is generic (e.g., Birds lay eggs) vs. specific (e.g., This bird lays eggs) to see if gestural cues differed and if these gestures are informative. Parents talked about a series of toy animals with their two-year-olds, and we counted the number of times they made gestures toward the animals when they were talking about the animal as a kind in comparison to that specific animal. We found that parents are more likely to make gestures toward objects when they're talking about that specific object. For example, parents are more likely to point to a dog and say, "This dog has four legs," in comparison to the generic "Dogs have four legs."

In the next part of the study, we selected short video clips of the parents talking about generic vs. specific referents, and we removed the sound. Then we showed the clips to a group of University of Michigan undergraduates and asked them to guess what parents were saying. Undergraduates were more accurate in guessing conversation topics for clips showing parents talking about specific instances, presumably because there was more nonverbal information in the form of gesture in these clips.

Taken together, we interpret these results to mean that parents make a lot of effort to mark sentences that are about specific instances, because children are already really good at thinking about the world in terms of general kinds. That is, children are easily able to learn about properties of kinds of things, so parents tailor their conversations, in both language and gesture, to make sure that children can tell the difference between things that are generally true and things that only apply to select individuals.
What’s the Point?

By three years of age, children frequently refer to general kinds of things as well as specific instances. For instance, a child might say that she "likes cookies" (meaning that she likes the kind of dessert called a cookie) but also that she "ate a cookie" (meaning that she ate a specific cookie in the past). Children at this age also can gesture as a way of referring to things, for example pointing to various objects or people. In a different study (described in this newsletter), we found that adults are more likely to use gestures to refer to specific instances rather than kinds of things. In this study, we asked whether children would do the same thing.

To look at this question, we showed three- to six-year-old children pictures of animals and taught them something about either the kind of animal or that specific animal (For example, we showed a picture of a camel and said either Camels run or This camel runs). Then, we asked them to convey that fact back to a puppet, "Mr. Bear". When children told Mr. Bear about the specific animal in the picture, they also tended to show Mr. Bear the animal by pointing to it. In contrast, when they told him a fact about the general kind, they very rarely pointed to the example.

In a second part of the study, we provided children with more than one picture of the animal kind, but only during the period of time when they reported their fact back to Mr. Bear. Like before, if children told Mr. Bear a general fact (Camels run), they rarely pointed. However, if children told Mr. Bear a specific fact (This camel runs), they were even more likely to use gesture to specify which animal they were talking about. The results from this study suggest that children have a very early-developed ability to differentiate between general and specific reference, and they coordinate non-verbal and verbal communicative skills to convey this distinction to others in adult-like ways.

Making Inferences

Preschool children are very attentive to similarities and differences between objects. They easily notice when two objects look alike, like two poodles, when they have a similar property, such as “curly hair,” and when objects are labeled the same, such as “dogs.” Children are attuned to the properties of categories of objects, especially categories of natural things such as animals and plants. Furthermore, children believe that members of the same category share properties in common. Children will generalize properties for one member of a category to another member of the same category, even if the property is one that they can’t even see. For example, preschool children will usually agree that if one dog feeds its babies milk, then another dog is also likely to feed its babies milk.

In this Study, we examine whether children generalize properties in a similar way even when the category is new to them. We teach children about two new categories of bug-like creatures – ziblets and flurps. We teach them a property of one of the categories and then examine how they generalize that property to other creatures. For example, will children choose to generalize the property to a creature that is in the same category (the ziblet) or to a creature that has the same appearance? This study will help us to understand children’s earliest beliefs about categories and their properties.
On-Going 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 running. If you would like to participate in these or other studies, please call us at (734) 647-2589 or email conceptlab@umich.edu

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. Young children often believe that a person who is holding an object is the owner of the object; only later do they understand the differences between temporarily holding an object and owning it. Also, children often confuse wanting an object with owning it. This confusion will sometimes lead children to say that they own an object that they really like.

The goal of this study is to examine how children think about ownership. In this single visit study, children ages 2 ½ to 3 and 4 ½ to 5 and their parent read a book together and answer questions that assess their understanding of ownership and help us to learn about how families talk about ownership and property.

Understanding Ownership

Giving and receiving gifts is a very natural experience for most children, but how does giving and receiving objects change the way that people feel about them? The goal of this study is to learn what children think about property that they give away and that they receive.

In this single visit study, children ages 3 to 5 are asked to assign objects to different people. They are also asked to identify who owns what, and make judgments about how people feel about different kinds of objects that are provided as gifts.

If you schedule a lab visit to participate in one of these studies, we provide free on-campus parking for the session, and your child receives a small gift for participating. You will also be compensated $10 for your time. 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.

Visit us on the web at http://sitemaker.umich.edu/gelman.lab/home
Recent Publications


Contact Us!

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

We would like to extend a thank you to all of our Researchers for their hard work and dedication in making our research possible!

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