May 2015

Language & Learning Lab

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Dear Parents,

Thank you for participating with your child in our projects! Over the past few months, the Language and Learning Lab has completed 4 exciting projects and we couldn't have done it without your help! Three of the studies were recently presented at a major conference for studies in infant and child psychology in Philadelphia, PA. In this newsletter we will review what children did, and share with you what we found and what children learned.

You'll also find information about our ongoing studies. (If your child participated in a project that is not listed here we may still be looking for more children to complete the study). If you would like to update your contact information with us or tell us about any new siblings, please visit our website and fill out the form linked under 'For Parents'.

If you know of any friends or families that you think might be interested in participating, please pass our information on. We are always looking for new 'child scientists' to help us with our studies and could not do this important work without the generous support of parents like you!

Sincerely,

The University of Toronto
Language and Learning Lab

Lab News: Our lab has relocated a few blocks away to the OISE bulding at 252 Bloor Street West, above the St. George TTC station. We've also started running our projects in KidSpark at the Ontario Science Centre some weekends. Please stop by and visit us in either location!

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When Do Toddlers Interpret Statements from Another Perspective?

The ability to learn from language alone is a valuable tool. Previous research has shown that by 23 months of age, children can rely on what other people tell them (e.g., "The toy is in the drawer") to figure out where an object was moved. Around this age, children are also learning that other people's experiences and perspectives may differ from their own. In this study, we wanted to know whether toddlers between 17 and 25 months use information about another person's perspective to interpret something they hear.

The ball goes into the box..

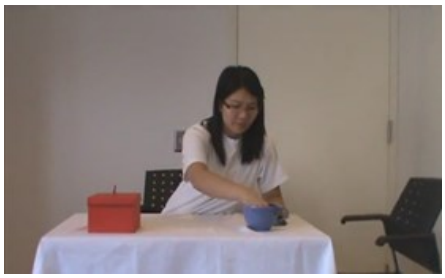
Children watched a short video of a girl repeatedly placing a ball into a box before leaving the room. Her friend moved the ball from the box to a cup while she was outside of the room. Children then saw the friend say, "The ball is in the cup!" either *before* or *after* the girl returned.

Where will the girl in white look for the ball?

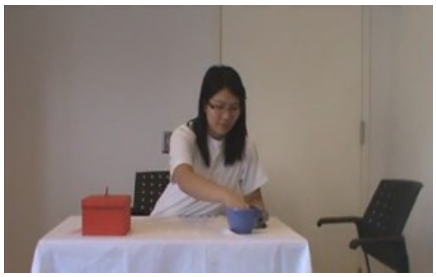
OR

Generally, infants look longer when they are surprised and less when events are expected.

Expected Outcome



Surprising Outcome



In this study, children 21 months and older expected the girl to search based on her knowledge, and looked longer when she didn't. Younger children didn't seem to consider the girl's viewpoint. They looked longer when she searched in the box regardless of when the statement was made. Before 21 months, toddlers may have used their own perspective instead: they knew where the ball really was!

We also wanted to know whether children's memory abilities were related to their perspective-taking, so children played a memory game that involved looking for toys underneath different cups. Memory was not found to be related to children's performance on the perspective-taking task.

Children over 21 months understand that others' knowledge differs from their own.

What Do Toddlers Learn from People About Objects Out of View?

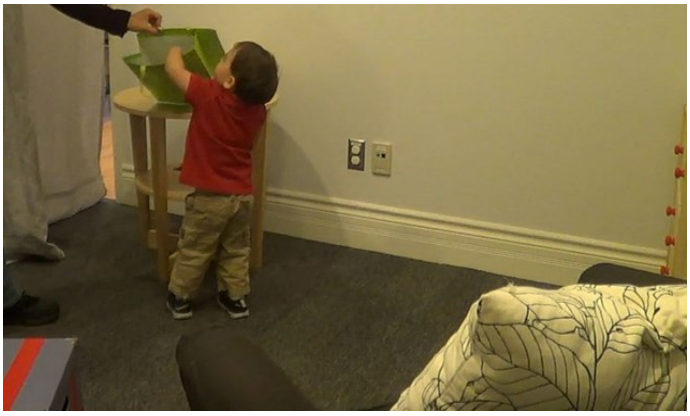
Before their second birthday, children start communicating about objects and people that are not present. For example, when asked "Where is your teddy bear?", children go to their bedroom to get it, or point to their father's shoe and say "daddy" even when he is not home.

In this study we were interested in how toddlers adjust what they know about an object that is not present when they are given new information about it. We played two games in which we gave children information about a toy in another room.

	Experimenter Said:	Children's Responses
Painted Toy	*"Guess what! I was painting and I painted Max all green! He is all green now!"*	Did children choose the unpainted duck they had seen previously, or the painted duck?
Hide-and-Seek	*"Guess what! I moved the alligator to the bag. He is in the bag now."*	Did the children return where they had seen the alligator last, or look for him in the bag?

Two-year-olds did a great job! They correctly found the alligator hiding in the bag 55% of the time and picked Max with green paint on him 71% of the time.

We were also interested in whether children's ability to choose the correct object was related to other skills such as keeping multiple things in mind or inhibiting their default behaviour. To measure these skills we played some other games in which we asked children to sort toys/cards into different boxes, point to some pictures, find toys/stickers hidden under different cups, and wait until we rang the bell before they could get a treat from under a transparent cup.



Children found the painted Max game easier and their performance was related to whether they were able to keep multiple things in mind.

The hide-and-seek game was a little bit harder for 2-year-olds and was more related to children's ability to resist prominent but outdated information.

Next, we want to further explore some features of these games that might help or hinder children in updating their knowledge about absent objects based upon what other people tell them.

When the object is not present, 2-year-olds better understand what people tell them about a change in what an object looks like than a change in where it is hidden.

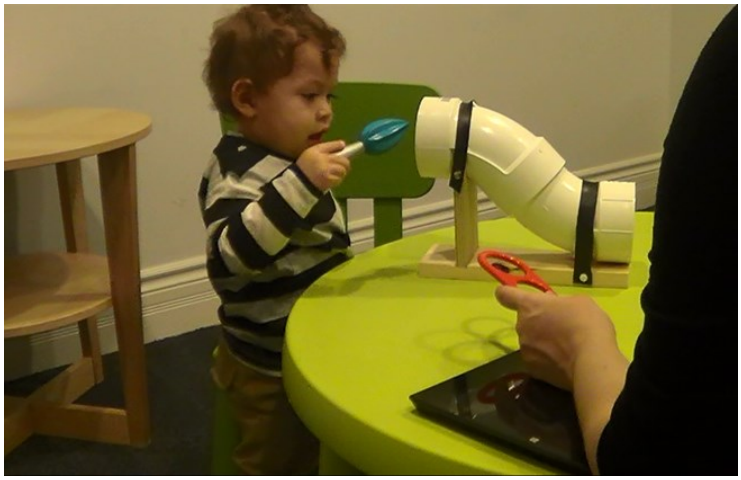
Do Infants and Toddlers Learn Words from Electronic Books?

In this study we were interested in whether infants and toddlers learn from touchscreen books as well as from picture books. We read infants a book featuring two new objects and repeatedly labelled one of them with a made-up word, "dax." Half the infants were read an electronic picture book, and half were read a traditional picture book. Then we asked children to choose the dax by pointing to it in both types of books and to apply their knowledge to real life by choosing the real dax and putting it in the slide.

Children in our younger group (17 to 23 months) were very successful when they were read the traditional format book: they correctly identified the dax in both types of books and chose the correct real objects. However those who were read the e-book were less successful: they could point out the dax on screen, but did not identify the real dax or the dax in the traditional format book. Their new knowledge of the "dax" didn't generalize outside of the screen.

Children in an older group (24 to 31 months) who were read the electronic book used the label for all versions of the dax.

Additionally, children whose primary experience with screens was watching videos were less successful than those who primarily used screens for other activities such as skyping with family members and playing interactive games.



Children find it easier to learn a word from a traditional book than an electronic one.

The electronic book used in this study was very basic. In our current follow-up study, we are changing the electronic book to see if we can support children's learning by building in positive feedback and contingent reactions to children's touches.

Please come visit us for a new **Electronic Book Study** (see page 6)!

Using Information from a Story to Guess What Will Happen Next

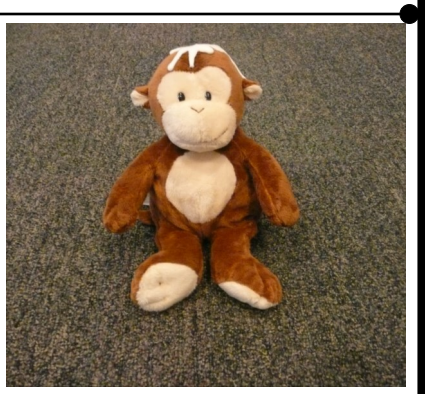
Can children use hints given in a story's pictures to help them imagine what happens next? Two-year-olds watched a short movie about a boy, Carl, who lost his balance while making a cake and tipped flour everywhere. All children heard the narrator say that "the flour is all over the kitchen now." While she said this, half the children saw a picture of flour escaping from a bag over the heads of Carl and his friend. The other half saw a less helpful picture: a close-up of the worried faces of the children, which was cropped from a picture they had already seen moments before. Then, we asked children to pick out Carl from the line-up on the screen.

Two-year-olds used the visual hint! Those who saw the flour bag spill were better able to pick the flour-covered Carl.

Next, we wanted to see whether children found it easier to imagine what happened in the story or in a game of pretend.

Children watched a pretend scenario in which a bear puppet tipped some food into a container, and then naughtily tipped it over the head of another animal. Then, we asked children to point to what the animal looks like now and say what bear put on the animal's head.

Children find it easier to pick up a verbal hint from a pretend game than they do from a story.

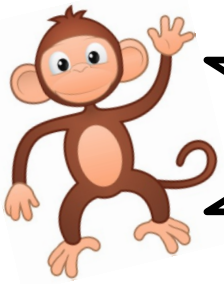


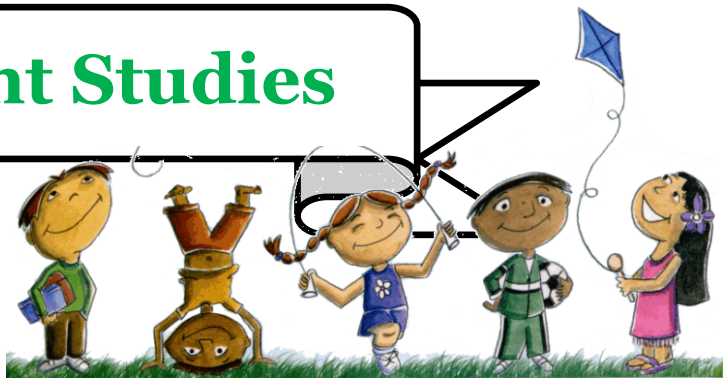
Two-year-olds did a great job imagining the spilled food -- 70% selected the correct picture or named what went onto the animal's head!

Which was harder? Without the helpful picture in the story task, children found it more difficult than the pretending task. Children who saw the helpful picture in the Carl story were just as good at both tasks.

Next, we want to know whether children use what they hear in stories to predict what comes next. Come visit us for the **Making Sense of Stories** study (see page 6)!

Current Studies





Electronic Book Study **19-23 months**

This study explores the features of electronic media that support learning. Your child will "read" an electronic picture book and play with some objects from the book. Your child will also play a game that involves waiting 20 seconds before retrieving a treat. The study involves one visit to the lab.

Learning About Absent Objects **21-25 months**

In this study we are interested in finding out how infants learn about absent objects through language. We will also explore how infants engage in basic forms of logical reasoning, for example deducing where an object could be based on knowing where it can't be. As language is such an important part of child development, this study will add insights into how children use verbal information to learn about objects they cannot see. This study involves one visit to the lab.

Learning Science from Picture Books **3 years**

This study explores how to best use examples in picture books. We will read a book with your child about animals, then ask questions about live animals in aquariums. Your child's language skills will also be informally assessed. The study involves 2 visits to the lab, no more than 1 week apart.

Learning Social Skills from Picture Books **4-7 years**

This study explores whether picture books can increase children's social skills and whether or not the book characters being animal or human affect their responses. We will read a picture book with your child with a pro-social theme. Your child will be given a few opportunities to act pro-socially, will play a short sorting game with animal and human characters, and we will also ask him or her a few comprehension questions based on the story. The study involves visit to the lab.

Making Sense of Stories **5 years**

This study explores how children make sense of stories by finding out what they pay attention to while they watch and listen. We will show your child some stories or sentences on a screen, while tracking his/her eye movements. (Eye-trackers use harmless near-infrared light, similar to the light that surrounds us every day). We will also ask your child to identify and describe some pictures, and invite him/her to play a fun game involving switching rules. The study involves one visit to the lab.

Learning Physics from Picture Books **5-6 years**

This study investigates how children learn a physics concept from different types of picture books. We will read either an informational or narrative book to your child and then ask them some questions. Your child's language skills will also be informally assessed. This study involves one visit to the lab.

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Visit us at the Ontario Science Centre!

We are excited to run some of our current projects in KidSpark at the Ontario Science Centre on weekends. Please stop by if you are in the area! Upcoming dates include:

Sunday May 3rd, 10th

Saturday May 16th, 23rd, 30th

Monday May 18th (Victoria Day)

We've moved!

We have recently moved to 252 Bloor Street West on the 9th floor. The building is located above the St. George TTC station and parking can be found under the building or a nearby Green P lot.

Thank you!

Our team is comprised of infant and child developmental researchers who work at the University of Toronto. Our research is funded by major federal research agencies and has been approved by the University of Toronto Research Ethics Committee.