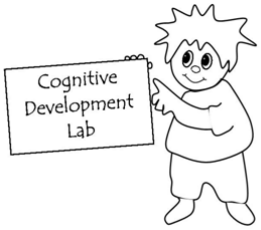
Cognitive Development Lab

Newsletter, Vol. 2



From left to right: Randall gillis, Tracy Mewhort-Buist, Dr. Elizabeth Nilsen, Anisha Varghese, Megan Smith and Vanessa Huyder

Greetings from all of us at the lab!

We've seen a number of you recently, but for others it might have been some time since your son or daughter has participated in one of our studies (in the lab or at their school). We hope you are doing well. This newsletter is to share what's been going on in the lab.

The overall goal of the research we conduct is to understand how children learn to be the sophisticated social beings they are. In the past year we've looked at topics such as how children learn to cooperate and how they are selective with how they learn from others.

One of our goals for the upcoming years is to increase the dialogue with members of our community on topics involving children's communication development. One exciting project we are working on is developing a system by which parents can ask general questions about children's communication and a member of our lab will research this area and provide an answer. We hope to have this up and running by the end of the summer.

Special points of interest:

- ☺ Find out about upcoming research!
- ☺ Find out the results of the study your child participated in
- ☺ Learn about "Ask a Researcher!"

Interested in becoming involved again?

We are always looking for families to volunteer to participate, and would be thrilled to have you visit our lab again! Here are some studies that are being run right now:

Current Studies

Speech Disfluency Study: This study examines children's sensitivity to disfluency (e.g., "ummmm") in speech. We are looking for children ages 3 to 5 to participate. This study is a one time visit of 45 minutes.

Communication in youth Study: This study examines communication in youth with and without ADHD. We are looking for youth between the ages 15 to 19 and a parent to participate. This study takes 2.5 hours to complete and free parking is provided. Youth will receive community service hours and $15 as a thank you for participating.

Upcoming Studies

This summer Tracy, a Ph.D. student, will be running a study looking at how children view the appropriateness of sarcasm based on the characteristics of the recipient. Children (ages 9-12) will be tested in groups. Please visit our website for more information.

Inside this issue:

What's New in the Cognitive Development Lab?

It's been another busy year at the CDL! In addition to welcoming two new babies in our lab, since our last newsletter (Summer 2012) we have had 466 families visit our research lab, 684 children tested in schools, and 900 parents complete studies on-line. Through the generous support of our community, we have completed a number of studies, which will be shared with you in this newsletter.

We have a new lab coordinator, Megan, who has been working in the lab as a research assistant for two years. If you came into the lab you may have already met her. We are welcoming a new graduate student, Sarah this fall.

Two of our researchers have almost completed their graduate training and will be completing a residency year in hospital settings. We were excited to receive 4 more years of funding from SSHRC to investigate children's ability to pay attention to the perspective of their conversational partners.

CDL in the News

We were pleased that two of our studies gained international media attention recently (http://www.sciencenewsline.com/articles/2014012917060032.html). Our work on the communication skills of children and adults highlighted that, in the context of a communicative exchange, ADHD symptoms affect individuals' ability to attend to a conversational partner's perspective. Our work on the communication skills of individuals with ADHD has been followed-up in a study examining the interaction patterns between mothers and their children. In this study we found that higher levels of ADHD symptomatology in the child was related to a more uninhibited communication style and that one person (mother or child) lead to less friendliness on the part of the other person. We are also currently conducting a study looking at the social skills of youth (ages 15 – 19) in relation to ADHD symptoms. If you know anyone who might be interested (they don't need to have ADHD to participate), we would love for them to contact us!

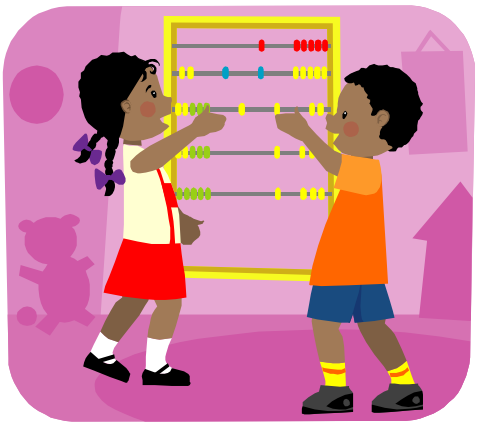
Ask a Researcher!

We are excited to announce that the CDL is adding a new way for families to get involved and stay connected with us. This summer we are launching our "Ask a Researcher" project where parents can submit general questions about children's communication. A member of our lab will review current research and provide an answer to your question.

You can visit **https://uwaterloo.ca/cognitive-development-lab/ask-researcher** to submit your question or drop it off in our question box during your next visit. Here is an example:

Question: When can I expect my child to start cooperating with others?

Researcher Vanessa's Answer: By the second year of life, children begin to show pro-social or helping behaviours (e.g., sharing toys, cooperating with another person to perform a goal). Research has shown that, similar to adults, preschool children's cooperative behaviour is guided by three principles. Specifically, preschool children preferentially share resources with those who are of close relation (i.e., relatives, close friends), those who have helped one in the past (i.e., reciprocity), and those who have shown great helping or generosity to others (i.e., to oneself or another person).



Olson, K.R. & Spelke, E.S. (2008). Foundations of cooperation in young children. *Cognition*, 108, 222-231.

Our Studies

Does depression affect communication?

Although we typically look at communication in children, for this study we asked whether depression influences adults' ability to attend to and use the perspective of a conversational partner. We asked undergraduate students to take part in a computer task where they had to follow directions of a speaker. We found that the students who reported higher depressive symptoms were less likely to attend to the speaker's perspective. Thus, depressive symptoms may interfere with an individual's ability to use another person's perspective during conversations. This work was published in *Cognition & Emotion*.

Does motivation matter for children's communication?

There are decades of research looking at children's communication and yet, surprisingly, researchers have not investigated whether motivating children within the various tasks matters. We asked young children to describe pictures to a listener. Half of the children were told they would receive a sticker if the listener was able to identify what the child was referring to, whereas half were not. We found that the children who were promised the sticker did much better! Perhaps this finding is not too surprising for you parents, but it is an important research finding as it suggests that motivational (in addition to cognitive) limitations may account for children's challenges during communication. This study, run by Anisha, was published in *Cognitive Development*.

What skills help children figure out when a speaker is being unclear?

It is important for children to identify when utterances from others are vague or unclear (that's how they know to ask for clarification!). We looked at what skills do they use to identify this ambiguity in communication. We found that preschoolers who showed more flexibility in their thinking were better able to identify when a sentence was unclear. This suggests that flexible thinking is an important foundational skill for children's ability to detect ambiguous language. This study was published in *First Language*.

What type of speakers do children prefer to learn from?

Between 2012 and 2014, a series of 3 studies with children between 4 – 10 years of age were conducted by Randall (Ph.D., candidate) to examine children's preferences for learning new information from people that delivered information with consistent (e.g. a positive message in a positive tone of voice) or inconsistent communication cues (e.g. a positive statement said in a negative tone of voice, for example saying "I just won a prize in a sad voice). The results of these 3 studies showed that school-age, but not preschool-age, children preferred to learn new information from consistent speakers compared to inconsistent speakers. This study also demonstrated that school-age children take contextual information into account and will choose to learn from speakers that make a positive statement in a negative tone of voice, if it makes sense given the context (e.g., saying "I won a prize" in a sad voice makes sense if the prize is a year's supply of ice cream and the person is lactose intolerant). These results speak to the sophisticated way children identify who are good informational sources. Results were presented in 2014 at scientific conferences in Ottawa and San Francisco.

Are children sensitive to *HOW* words are said?

While much of the work in the lab has focused on how children tailor *what they say* for the listener (such as how much information they provide, for example), this study, run by Anisha (Ph.D., candidate) examined how well children tailor *how they speak* to their listeners. We looked at whether children aged 4- to 8-years could adjust their prosody (e.g., pitch, volume, and speech rate) for various listeners, including toddlers, and English-language learners. While children had difficulty adjusting their prosody, they were able to tell the researcher what they 'should' be doing to modify their language. Also, we found that children who had better inhibitory control, an important cognitive skill that allows individuals to suppress automatic responses, modified their pitch variability more. This might suggest that these changes to prosody might be effortful (as opposed to automatic). This work was presented at a scientific conference in San Francisco. Anisha has continued in this line of inquiry running two studies in local schools this past year.

Which cognitive skills help children cooperate?

We were interested in finding our which cognitive skills help children to be good cooperators at various developmental stages. This study was conducted by Vanessa (Ph.D. candidate), Megan, and Amanda in 2012-2013 at local elementary schools. Children (aged 5-8 and 9-12 years) were paired with a partner and asked to complete a pattern of colours using coloured blocks on wooden models in order to earn the most points for their team. Children also individually played some games looking at their cognitive abilities (e.g., inhibition, working memory, and planning), as well as, theory of mind and verbal skills. We also asked parent to fill in questionnaires on their children's social skills and disruptive behaviours. Children who scored higher on cognitive abilities displayed more appropriate social behaviours and these relations changed with age. Furthermore, cognitive abilities interacted with the presence of disruptive behaviours to affect social behaviours.

The Cognitive Development Lab

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Visit our website!

https://uwaterloo.ca/cognitive-development-lab

We are a group of researchers in the Psychology department at the University of Waterloo who are interested in finding out more about how children's thinking and communication skills develop. We conduct studies with preschool and school-age children in order to better understand how children learn to communicate and interact effectively with those around them. Our lab is a family-friendly environment where parents and children alike can feel comfortable, and all our studies are designed like games so children have fun participating! We hope to see you and your family again soon!