



UNIVERSITY of TORONTO
MISSISSAUGA



Infant & Child Studies Newsletter

Winter/Fall 2014 Newsletter

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About Us

The Infant and Child Studies Lab at the University of Toronto Mississauga (UTM) was established in 1973 for the purpose of studying children's perception of speech and music. Every year since then, hundreds of families from the surrounding communities have visited the campus to participate in our studies. While infants and children engage in game-like tasks at our state-of-the-art facility, we gather valuable information about the early development of listening skills. Over the past few years, our research has been presented at numerous prestigious conferences throughout North America and Europe.



At the Infant & Child Studies Centre...

- Congratulations to Dr. Elizabeth Johnson for being awarded a Canada Research Chair in Spoken Language Acquisition!
- We welcome Dr. Helen Buckler who recently completed her Ph.D. at the Max Planck Institute for Psycholinguistics in The Netherlands. She will be joining the Johnson Lab as a postdoctoral fellow in February of 2014.
- We congratulate Dr. Katie Corrigan, a former postdoctoral fellow at the Schellenberg Lab who is now a Professor in the Psychology Department at MacEwan University in Edmonton, Alberta!
- We welcome Dr. Inge Alferink who will be joining the Trehub lab as a postdoctoral fellow in the spring of 2014.

How do I participate?

For more information on how your child can become a junior scientist, call us at (905) 828 5446 or visit us online at:

www.utm.utoronto.ca/infant-child-centre



How much do babies really understand?

Children clearly understand many words before they begin to speak, but did you realize that some infants begin comprehending words as early as 3 to 6 months before their first birthday? At Dr. Johnson's Infant Language & Speech Lab, we are currently investigating whether the number of words children understand at 6 to 9 months predicts how many words children can say at 15 months. Our initial results suggest this is indeed the case! We will continue observing children longitudinally to determine whether word comprehension at 6 months predicts language development into the toddler years. We also have started a related line of work investigating how well 6-month-olds understand words. For example, do infants with a dog at home know that the word "dog" refers to dogs but not cats or horses? And that "Fido" refers to a particular dog but not all dogs?



That word sounds funny!

A child might pronounce "ducky" as "duddie" but does this mean they can't hear the difference between "ducky" and "duddie"? In the Johnson lab, we have been asking how sensitive 2-year-olds are to subtle mispronunciations of words. We showed 2-year-olds familiar objects on a screen (for example, a duck and a book) and then asked them to look at one of the objects. When object's name was correctly pronounced children had no problem looking at the correct object. However, when the name contained a subtle mispronunciation they looked less reliably at the object. This is exciting evidence that toddlers know how words are supposed to sound even though they might not be able to pronounce them yet!



Vocal melodies are special

Work by the Schellenberg and Trehub labs has found that adults and older children remember melodies better when they are presented vocally (sung to *la la*) rather than instrumentally (piano, banjo, or marimba). After 5- to 8-year-olds listened to 16 melodies, half vocal and half piano, they judged which of 32 melodies (half old, half new) they had heard before. The 7- and 8-year-olds showed better memory than younger children, and they remembered more vocal than piano melodies. The younger children did not show a vocal memory advantage, mostly because they tended to consider vocal melodies as familiar even if they had never heard them before. So vocal melodies are special in different ways at different ages.



Sights and sounds of maternal speech and singing

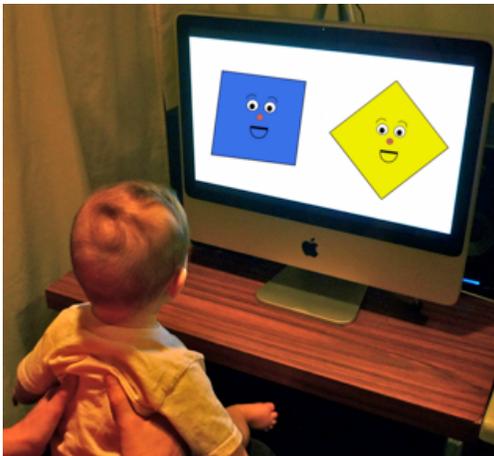
Maternal speech and singing, which are highly engaging to infants, commonly occur in face-to-face contexts that include visual gestures and movement. Researchers in Dr. Trehub's lab gave some 6-month-olds the choice of listening to happy-sounding speech and singing and other 6-month-olds the choice of watching silent videos of such speech and singing. Infants listened equally long to the speech and singing samples, but they spent more time watching the silent singing than the silent speech. An analysis of maternal facial expressions revealed that mothers smiled much more frequently while they sang than while they spoke. So when 6-month-olds have a choice, they choose the sights or sounds that express more positive emotions.

The auditory "guess who" game

Even newborns can recognize the sound of their own mother's voice, but how good are young infants at telling apart other less familiar speakers in their environment? For example, how good are infants at recognizing new acquaintances? Do young infants use the same acoustic cues to identify highly familiar speakers (e.g., their own mother and father) as they do less familiar speakers (e.g., the cashier at the grocery store)? Does language experience change the way infants identify voices? These are just a few of the questions currently under study in the Johnson lab. Stay tuned to learn more about how you and your child can help us with this line of research!

I don't like the tone of your voice! When is a question a question?

Do babies judge the likeability of adults in their environment by attending to the tone of their voice? To test this, the Johnson lab presented 10-month-olds with one speaker that sounded happy and another that sounded irritated. Then they examined infants preference for these same speakers' neutral voices. Babies preferred the neutral voice that had previously been speaking in a happy tone over the neutral voice that had previously been speaking in an irritated tone. This suggests infants do judge others based on the tone of voice. We are currently testing to see whether babies will prefer playing with a puppet that previously spoke in a positive tone over a puppet that previously spoke in a negative tone.



Questions typically begin with question words like *what, how, when, and why*. Questions marked only by their intonation (e.g., *He's watching TV.* versus *He's watching TV?*) can be challenging for young children. Researcher's at Dr. Schellenberg and Dr. Trehub lab asked adults and 7- to 10-year-old children to judge whether utterances were statements or questions after hearing one word, two words, three words, four words, or all five words. Adults correctly identified a statement or question after hearing only three words; 9- and 10-year-olds needed four words; and 7- and 8-year-olds needed all five words. In short, experienced listeners recognize such questions well before they hear the final pitch rise.

Thank You!

We thank all of the families that have participated in our studies! We also thank the Peel Regional Health Unit, Credit Valley Hospital, Trillium Hospital, and the Ontario Early Years Centres for helping us reach out to families in the local community. If you know anyone who would be interested in participating in our studies, please pass on this newsletter as we are always looking for more junior scientists!

Thank you to the National Sciences and Engineering Research Council of Canada (NSERC), the Canadian Institutes of Health Research (CIHR), the Social Sciences and Humanities Research Council of Canada (SSHRC), and the National Science Foundation in the US (NSF) for continued funding of our research.

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