UNIVERSITY of TORONTO
MISSISSAUGA

Infant & Child Studies Newsletter

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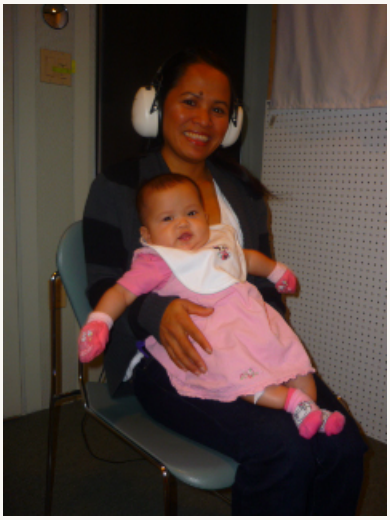
About Us

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 conferences throughout North America and Europe.

At the Infant & Child Studies Centre…



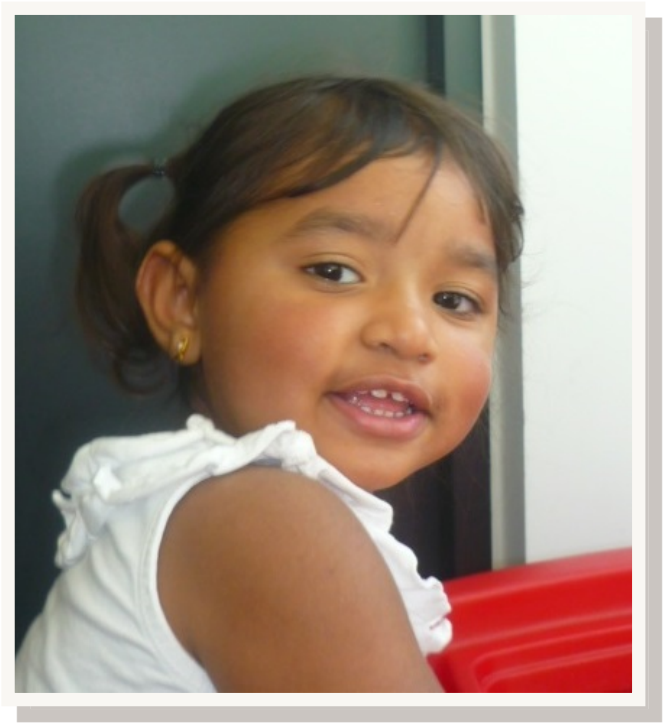
- We welcome Dr. Katie Corrigall as a postdoctoral fellow. She recently completed her PhD at McMaster University.
- Dr. Marieke van Heugten is now a postdoctoral fellow at the *LSCP* in Paris, France.
- Congratulations to graduate student Michael Weiss on the publication of his MA thesis in *Psychological Science*.

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:

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. We (Dr. Trehub's lab) gave some 6-month-olds the choice of listening to happy-sounding speech and singing (from an unfamiliar mother) and other 6-month-olds the choice of watching silent videos of such speech and singing (also from an unfamiliar mother). Infants listened equally long to the speech and singing samples, but they spent more time watching the silent singing. 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.



That word sounds funny!

We know that children sometimes make mistakes in their pronunciation of words, but this doesn't mean that they don't know how those words should sound. To test this we looked at whether children notice when someone else mispronounces a word. We showed 2-year-olds familiar objects on a screen (for example, a hat and a house) and then told 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 were slower and 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

Previously we (Schellenberg and Trehub labs) 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. They are remembered better by adults and by children 7 and older, and they sound familiar to 5- and 6-year-olds.

Can 6-month-olds recognize words?

We know that children are able to start understanding language long before they can begin to produce their very first words. After all, they are constantly being exposed to language in their surroundings, even before they are born. But just *how* early are children able to start understanding the words spoken to them? And how does their vocabulary develop as they grow? At Dr. Johnson's Infant Language & Speech Lab, we are currently investigating these questions by presenting children between the ages of 6-months and 2-years with a simple word-recognition task. The same children participate in our language task as they grow, providing us with a sense of how their vocabulary develops over time. Early results reveal that infants who demonstrated greater word-recognition early on had larger productive vocabularies later on. In other words, those infants who are better able to recognize our words at 6-months of age *also* produce more words at 15-months of age! We will continue observing children longitudinally to determine whether it can be possible to predict children's word comprehension later in their development from their early comprehension performance on our task.

I don't like the tone of your voice!

Can babies tell the difference between someone who speaks in a positive or a negative tone of voice? Findings from our lab indicate that in at least some circumstances they can. We wanted to see if kids judge someone as being socially desirable or undesirable based on the emotional tone in their voice. We presented infants with one speaker that was Happy and another than was stressed. Then we examined their preference for the speakers' neutral voices. We found that after hearing the two speakers, babies preferred to listen to the neutral voice of the speaker that was happy. We are currently testing to see whether babies will also choose to play with a puppet that they previously heard speaking in a positive or negative tone of voice.

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When is a Question a Question?

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. We (Schellenberg and Trehub labs) 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 the Peel Regional Health Unit, Credit Valley Hospital, Trillium Hospital, and the Ontario Early Years Centres for helping us reach out to families. We also thank all of the families that have participated in our studies! 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 (NSF) in the US for continued funding of our research.