

# EARLY DEVELOPMENT RESEARCH GROUP

## 2018 NEWSLETTER

### WHAT IS THE EDRG?

Since 2004, the Early Development Research Group has been advancing knowledge of how language, learning, and social understanding develop in infants and children. We're composed of six research centers in UBC's Department of Psychology, and in ongoing studies, we are trying to answer many fascinating questions about how children learn at different stages of development.

### A TYPICAL VISIT

Participating in a study typically involves a one-time visit to UBC of about 30 minutes. The studies themselves are quite short (5 to 10 minutes) and usually involve watching a video or a puppet show for infants, and playing games for older children. At the end of your visit, your child will receive a UBC degree certificate and a gift from a selection of UBC infant and child scientist merchandise! We also provide free parking or compass tickets for our families.

### EXCITING NEWS!



#### Robert E. Knox Master Teaching Award

Dr. Darko Odic, Director of the Centre for Cognitive Development, was one of two recipients of the 2017 Robert E. Knox Master Teaching Award. This award celebrates psychology faculty whose teaching practices are both exemplary and inspiring, and who demonstrate an exceptional commitment to the education of students.



#### Officer of the Order of Canada

Dr. Janet Werker, Director of the Infant Studies Centre, was named Officer of the Order of Canada on December 29, 2017. Janet was appointed in recognition of her pioneering research discoveries on language development in infancy, and her dedication to sharing her work and its implications with broader scientific and public audiences. The Order of Canada is one of the nation's highest civilian honours; it recognizes "outstanding achievement, dedication to the community, and service to the nation". Please join us in congratulating Janet on this extraordinary achievement!



**WOULD YOU AND YOUR CHILDREN LIKE TO PARTICIPATE IN OUR STUDIES?**

**CALL US**  
**(604) 822-9540**

**OR**

**SIGN UP ONLINE**  
**EDRG.PSYCH.UBC.CA**

## INFANT STUDIES CENTRE

We at the Infant Studies Centre, led by Dr. Janet Werker, explore how babies perceive speech and acquire language in the first few years of life.

We recently completed a study – designed and run by our postdoctoral fellow, Dr. Erica Wojcik – investigating whether, like adults, two-year-olds organize their knowledge of nouns by linking together those that are semantically related (e.g. dog is linked to kitty). To answer this question, we conducted a behavioural study with both monolingual toddlers (those hearing only English at home) and bilingual toddlers (those hearing both English and a second language at home). We measured toddlers' looking time behaviour while they listened to pairs of nouns that were either related or unrelated. We found that monolingual (e.g. English-only) toddlers' productive vocabulary size was correlated with their listening behaviour: only high-vocabulary toddlers listened significantly longer to the unrelated pairs. For the bilingual toddlers, we found that their percent exposure to English was correlated with their listening behavior: only toddlers with high exposure to English listened significantly longer to unrelated pairs. We interpret these findings to mean that indeed, two-year-olds are already linking together words that are related, but they only begin to do so once they have sufficient experience with the words. After completing this study at our Centre, we are very pleased to say that Erica became Assistant Professor at Skidmore College; she will continue to investigate language acquisition and early word learning in her new lab, "The Early Learning Lab" in New York!



## CENTRE FOR INFANT COGNITION

The Centre for Infant Cognition, directed by Dr. Kiley Hamlin, studies infants', toddlers', and young children's emerging understanding of the social and moral world.

Previous research has found that, when evaluating helpers and harmers, young children tend to focus on the outcomes they cause rather than their intentions. In a recent study we presented 10-month olds with a series of puppet shows where puppets either intentionally or accidentally helped or hindered a fellow puppet. We found that infants at this age, unlike older children in previous work, appear to evaluate others based on intention. For example, infants preferred those who helped intentionally over accidentally, but preferred those who harmed accidentally over intentionally. This suggests that infants' social evaluations are quite complex!

The CIC has also been interested in how evaluations present in preverbal infants translate into childhood. Studies with three- to five-year-olds have shown that young children readily interpret helping and hindering actions as moral: They say that helpers are "nicer" than hinderers but that hinderers deserve punishment.

This year, we have also been incorporating new psychophysiological equipment in our studies. Our new equipment allows us to measure babies' physiological responses in a totally non-invasive way, through painless sensors placed on the skin. We can now measure responses such as heart rate, sweating, and facial expressions. As a result, we hope to further explore infants' reactions in an objective manner!



## SOCIAL COGNITIVE DEVELOPMENT CENTRE

The Social Cognitive Development Lab located on campus at UBC and the Living Lab located at Telus Science World are directed by Dr. Andrew Baron. This year, Dr. Baron's lab continues to focus on studying how infants and young children categorize and evaluate social groups.

In a recent study, we found that one- year- old infants positively evaluate speakers of their native tongue, and expect them to perform helpful actions. Importantly, however, infants did not negatively evaluate unfamiliar language speakers. This suggests that positive and negative attitudes may develop independently. While we might be born with an innate tendency to view our own group or familiar group positively, negative attitudes towards groups that are different from our own might be learned later on in life.

In another study with children age 6-13 years old, we examined the gender differences in communal values (importance on caring, nurturing, and togetherness) and agentic values (importance on independence, status and winning). We found that boys, compared to girls in this age group, endorse communal values less and that this gender difference relates to why boys are more career- and less family-oriented than girls. These results showed that gender differences in basic values emerge early in development, and can predict children's expectations well before they make decisions about adopting adult roles in their own families.

## K.I.D. STUDIES CENTRE

The Knowledge, Imagination, and Development (K.I.D.) Studies Centre, directed by Dr. Susan Birch, currently explores two main streams of interest: social perspective taking and selective social learning in children.

One concept of interest that we study in our lab is the "curse of knowledge", the tendency to be biased by one's own knowledge when reasoning about a less informed perspective. A previous study we conducted with preschool aged children (3-5 years old) examined whether children reasoned more accurately about others' mental states and perspectives when this "curse" is lifted. Children were presented with stories where the protagonist places an object in one of four coloured boxes and leaves the room. While this character is gone, a second character then moves the object to a different spot. Children were either told where the object has been moved to, or that the object's location is unknown, and then asked questions about what they think the protagonist thinks and believes about the object's whereabouts. We found that when young children were told that the location of the object is unknown (not cursed), they were better able to reason about others perspectives compared to when the outcome of the moved object was known (cursed). Thus, the curse of knowledge bias may play a role in hindering children's ability to accurately reason about others' mental states.

Previous research has shown that children are sensitive to credibility cues and prefer to learn from teachers who are confident and have a prior history of accuracy. In another study investigating selective social learning, we presented children with videos of actors that were either confident or hesitant, and knowledgeable or not knowledgeable in answering simple questions. We found that children were skeptical of an unjustifiably confident actor and instead preferred to learn from an actor whose confidence was justified. This suggests that children show a preference to learn from teachers that are well calibrated (e.g., their level of confidence properly reflects their underlying knowledge).

## CENTRE FOR COGNITIVE DEVELOPMENT

The Centre for Cognitive Development, directed by Dr. Darko Odic, studies how children intuitively represent the world, especially how they reason about number, time, and space, and how the acquisition of language enriches these representations to allow children to learn advanced concept, such as mathematics and science.

This year, we have completed a number of studies that we are excited to share with you. Previously our lab has shown that children have a highly robust and intuitive sense of number: given a choice of two plates of cookies, children will be able to tell which one has more (provided, of course, that the numbers are far enough apart). However, this sense of number could easily be confounded with the sense of size, and children could be reasoning about the size of the cookies rather than their number. In a recently completed study, we compared and contrasted children's ability to intuitively represent five dimensions: number, size, length, density, and time. We found that children's sense of number develops and peaks until around age 16, but importantly does so independently of their sense of other dimensions. In other words, we find that children really do have a sense of number.

In another study, we tested how children reason about the trust they put into others in simple number games. Children were introduced to two puppets who enjoy playing number games, except that while one of them is excellent at numbers the other is quite poor. Children were then allowed to chose which problem each puppet would be given to solve. Children were not only very sensitive to the difficulty of the problem itself, but also matched it to the puppet: the better they believed the puppet to be, the more difficult a problem they have them, and vice-versa.

## LANGUAGE DEVELOPMENT CENTRE

The Language Development Centre, directed by Dr. Geoffrey Hall, studies how infants and young children learn the meanings of words in their native language.

Knowing a language involves the ability to learn words from different lexical categories with distinct types of meanings. For instance, English learners must come to understand that common nouns (like "dog") should extend to all objects of a given kind (to all dogs), but that proper names (like "Fido") should be restricted to individual objects (to just one dog, Fido). Learners must also be able to acquire multiple words from different lexical categories for the same object (a single dog can be labeled both "dog" and "Fido"). Although both common nouns and proper names appear very early in infants' vocabulary, it is not clear whether they extend these words appropriately. It is also unknown when infants first show the ability to learn multiple words from different lexical categories for the same object.

In a recent study, we have been trying to answer these questions by examining infants' understanding of familiar words for their own family pet (dog or cat). For example, do infants with a dog at home understand both a common noun for it (e.g., that the word "dog" can be extended to their own dog and other dogs) and a proper name for it (e.g., that the word "Fido" can be extended only to their own dog)? We have found that infants have this sophisticated knowledge at the remarkably young age of 12 months – about the time they typically produce their first word. These results provide new insight into early language development by showing that one-year-olds have the ability to learn words from two different lexical categories, along with the mental flexibility to learn them for the same object.

## THANK YOU FAMILIES!

We would like to thank the many parents and children that continue to support our research through their participation. Our research is not possible without you!