



THE UNIVERSITY
OF BRITISH COLUMBIA

Department of Psychology
Faculty of Arts



Early Development Research Group

Newsletter | 2024



ABOUT US

WHO WE ARE

Since 2004, the UBC Early Development Research Group (EDRG) has been advancing knowledge of how language, learning, and social understanding develop in infants and children. We're composed of seven research centres in the University of British Columbia's Department of Psychology, all studying different aspects of early development. In our ongoing studies, we are trying to answer many fascinating questions about how children learn at different stages of development.



HOW DO YOU PARTICIPATE?

First, we will add your information to our confidential database to best match your little one(s) to a study. Once we find a time that works best for you, we'll invite you to take part in our exciting studies, ranging from puppet shows, fun videos and/or questionnaires. You may choose which studies you would like to participate in. We provide both online and in-person studies at UBC.

Sign Up Today!



<https://bit.ly/UBCEDRG>

A TYPICAL VISIT



Participating in a study with the EDRG involves either a one-time visit to one of our centres or on a computer at your home where you can access our online platforms. Studies range in length from 15 minutes to 1 hour and generally involve your child watching a video, puppet show, or playing a game with our researchers. At the end of your visit, your child will receive an honorary UBC degree certificate, as well as a gift (in-person studies) or gift card (online studies). For our in-person studies, we also provide reserved parking at UBC or compass tickets.

STUDY METHODS

Some of our studies at the EDRG involve the use of neuroimaging techniques (such as fNIRS or EEG methods). This is a non-invasive and infant-friendly way of looking at brain activity — and is typically conducted by having infants wear a cap while they sit in their parent's laps!



The Infant Studies Centre



Dr. Janet Werker

The UBC Infant Studies Centre, directed by **Dr. Janet F. Werker**, focuses on the exciting process of language acquisition and speech perception across the first years of life.

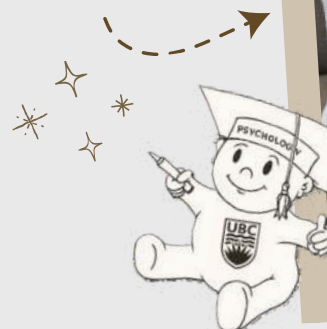
This year, Dr. Xin Sun, working as a postdoctoral fellow with Dr. Werker, is leading a research project on how bilingual and monolingual children process the **meanings of words and word units**. Research has suggested that reader-age children who are bilingual process words differently depending on their first language. We are looking to see what brain processes are involved in this and if this effect can also be found in pre-reader children. We are examining brain activity while kids play a word-matching game. We are using a safe and non-invasive neuroimaging method called functional near-infrared spectroscopy (fNIRS) to reveal changes in blood flow in the brain as an index of brain activity. If you are interested in participating, we are still looking for kids aged 4 to 6 to join our study!

We are also starting a new study led by Dr. Sachiyo Kajikawa, who is a visiting professor from the Tamagawa University in Japan. During the first year of life, babies are rapidly learning their primary language(s), and one aspect of their language learning is sharpening discrimination of speech sounds used in the native language, with a concurrent decline in sensitivity to nonnative sounds.

In the current study, we are playing babies music from their home culture or a different culture, and asking whether there is an influence from the music they listen to, on babies' **ability to discriminate language-specific speech sounds**. If you are interested in participating, we are currently still looking for babies to join our study!

If you would like to learn more about these and our other studies make sure to check out our website: <https://infantstudies.psych.ubc.ca/>. We are excited to welcome you to our centre soon!

Check out
some of the
ISC's
merch!



The Centre for Cognitive Development



Dr. Darko Odic

The Centre for Cognitive Development, directed by **Dr. Darko Odic**, studies how children intuitively represent the world around them. Specifically, how they reason about concepts such as number, time, and space, and how the acquisition of language enriches these representations.

In a recent study, we explored whether children's **intuitions about number** would help them in early math. We asked 5- to 8-year-olds to catch mistakes made by a little puppet while it answered math questions, then to answer the same questions themselves. Our results suggest that children are capable of reliably detecting mistakes in math made by others even before they are able to answer the questions themselves. We also noticed that children with stronger number intuitions detected mistakes more accurately. Detecting mistakes seems to be one of the ways in which we learn and develop stronger math abilities in early childhood.

In another study, we aimed to understand the effects of **different kinds of instruction on exploratory behaviours** in young children. Participants were presented with an iPad application resembling a toy with many distinct functions and features (e.g., a button that emits a light), and received either vague or specific instructions on how to interact with the toy. We found that children who received vaguer instructions played with the application for longer

and discovered more features than children who received more specific instructions. We hope to clarify how certain modes and deliveries of instruction may generate environments that allow for positive learning outcomes in the future.



Check out some of the CCD's merch!



The Centre for Infant Cognition



Dr. Kiley Hamlin

The Centre for Infant Cognition, directed by **Dr. Kiley Hamlin**, explores the origins of social and moral thought from a developmental perspective. Specifically, we explore infants, toddlers, and preschoolers' tendency to judge actions as good or bad, as deserving of reward or punishment, and as morally praiseworthy or blameworthy.

We have several exciting and innovative projects that we have expanded on throughout the year. We have continued to learn more about infants' brain activity while watching **prosocial and antisocial scenarios**. Previous behavioural studies showed that infants preferentially reached for the helpful over the hinderer character. But what is the nature of their preference? Does it reflect infants' genuine understanding of prosocial/antisocial events, or is it more influenced by specific physical features of the characters?

Graduate student, Zohreh Soleimani, explored this with 6-month-old infants via EEG (electroencephalography). Infants watched a character try to open a box but fail, who then is alternatively helped or hindered in opening the box lid. The results showed that infants' neural responses previously associated with social processing differentiate between helpful and hindering characters, suggesting that infants' preference for helpful over hinderer characters stems from their socially understanding of the events.

We have also continued to research what influences **infants and toddlers' social preferences**. Previous studies have found that infants selectively learn words from adults that label common objects correctly (e.g. calling a ball "ball"), but not from adults who label things incorrectly (e.g. calling a ball "duck"). Do infants use this kind of information to decide who they want to interact with socially? PhD student Francis Yuen asked this question by first showing 19-month-olds videos of two adults labeling common everyday objects, one always labeling accurately and one always labeling inaccurately. Then, both adults offer a toy to the toddlers, and toddlers get to choose from whom they want to accept the toy. Across two studies, he found that toddlers showed only a slight preference for the accurate labeler, suggesting that they might not evaluate social others based on their linguistic competence (i.e. I'll still play with you even though you don't know what things are called)!

Check out
some of
the CIC's
merch!



The Language Development Centre



Dr. Geoffrey Hall

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

This year, we started an exciting new project aimed at understanding **children's and adults' concepts of manufactured products** (e.g., a pair of sunglasses) **and works of art** (e.g., a painting). In this research, we are examining how children and adults evaluate original objects and later-made copies, which may include counterfeits or forgeries. In particular, we are exploring how children's and adults' judgments of a copy's value are affected by the history of its creation, including the identity of its maker and the maker's intention to copy the original.

In the study, we show participants pairs of manufactured products or works of art (i.e., an original and an identical-looking copy), and we ask them to evaluate the objects in each pair, by telling us which one they would pay more money for. We have found that adults state that they would pay more money for the original, when the copy has a different maker who intended to copy the original, especially when the copying occurred without the original maker's consent.

We have also found that adults' willingness to pay more for the original is more pronounced when the object is a work of art (i.e., an inherently unique

artifact) than when it is a manufactured product (i.e., an artifact that may copy a particular design). We are now beginning to study young children's **evaluations of original objects and copies**, in order to understand the origins of the preference for originals over copies.

DID YOU KNOW?

The more visits you and your family come in for, the higher the **honorary degree** your little one will receive.



The EDRG currently has over 5,801 baby PhD holders!



The Baby Learning Lab



Dr. Lauren Emberson

The UBC Baby Learning Lab, directed by **Dr. Lauren L. Emberson**, is interested in how babies learn and how learning from their experiences supports their early development.

This year, Dr. Sabrina Burr and colleagues, published a paper aimed at exploring the **developmental progression of social perception networks** in low- and middle-income infants aged 6 months and 24 months. Data was collected as part of the Bill and Melinda Gates Foundation funded Bangladesh Early Adversity Neuroimaging project. During the study, infants wore a functional near-infrared spectroscopy (fNIRS) headgear to record brain activity, which is infant-friendly and safe for infants to wear. To measure infants' social perception ideas, babies were presented with both social or non-social stimuli that they heard and saw. We found that early environmental factors impact the functional brain development of social perception. We are currently working on a new paper exploring the **development trajectory of the functional connectivity** between different brain regions during social cognition from 1 to 24 months. We are looking at data collected as part of the Bill and Melinda Gates Foundation funded Brain Imaging for Global Health (BRIGHT) project, which targets an under-represented population of families and infants in the Gambia.



We always need more families to come and participate so if you would be interested, please email babylearninglab@psych.ubc.ca for more information and consider sharing about our lab to your friends! If you are interested in learning more about these and the other studies we have in our centre, make sure to check out our website: <https://babylearninglab.psych.ubc.ca/>!

The K.I.D Studies Centre



Dr. Susan Birch

The K.I.D Studies Centre, led by **Dr. Susan Birch**, is dedicated to exploring how children learn and develop. Our main focus is understanding how children think about the thoughts and feelings of others.

We are currently examining what children understand about **vocal cues expressing disbelief, or skepticism**. In a recent study with over 60 participants, we presented children aged 6 to 8 with a series of stories. Our goal was to determine if children this age could detect someone's level of belief or disbelief based solely on the tone of a speaker's voice. Preliminary findings suggest that children in this age group are able to pick up on vocal cues indicating disbelief, solely relying on the speaker's tone of voice!

Expanding on these findings, we are actively working on another project investigating the link between children's **sensitivity to vocal cues and their level of anxiety** (vs. comfort) in social situations. Social anxiety, characterized by nervousness or fear of negative judgement in social situations, can significantly impact children's social skills and overall well-being. In this study, parents share insights into their children's level of social comfort vs social anxiety, while children answer questions about their feelings in social settings and complete games to assess their ability to recognize nonverbal emotional cues.

Our main goal is to see if there is an association between a child's level of social comfort (vs. anxiety) and their sensitivity to other people's nonverbal cues. This research is important for understanding social anxiety and ultimately developing targeted strategies to support children and improve their social skills and well-being.

We are actively recruiting participants Ages 6-12 for this study. If you are interested in having your child participate, please email Kid.Studies@psych.ubc.ca. Your involvement will help advance our understanding of children's social development!

DID YOU KNOW?

As of 2023, we have about **55,000 families & 70,000 babies** in our EDRG database!



The Social Cognitive Development Lab



Dr. Andrew Baron

Under the direction of **Dr. Andrew Baron**, the Social Cognitive Development Lab at UBC and the Living Lab at Science World explores how infants and children think about social groups. Currently, all of our research is conducted at Science World.

This year, we continued investigating when in development children begin to internalize **gender stereotypes about math and science**, and how these stereotypes influence their interest in these subjects. We hope our research will inform the development of strategies to increase children's engagement in STEM. To find out more about this initiative, please check out <http://successinstem.ca>.

We also continued exploring how children **reason about structural inequalities**. We presented 3 to 8-year-old children with a structurally unfair game, where one team has an easy task to win a prize and another team has a more difficult task to win the same prize. Children are invited to share their thoughts about why one team won more prizes than the other. Since this project is still ongoing, we don't have results we can share just yet. However, we are excited to learn at what age children can notice simple forms of inequality and their influence on disparate outcomes between groups.

In another line of research at the Living Lab, we are trying to better understand **children's reasoning about leadership** as past studies show children think



a person who is stronger or more prestigious is more likely to be “in charge.”

In our research, we asked 3 to 8-year-old children to pick a leader for different activities (e.g. picking a captain for a sports team, picking a leader for a science club). We are interested in understanding by what age children develop beliefs that certain attributes (e.g., physical strength) might be better suited for specific forms of leadership (e.g., captain of a sports team). This project is also ongoing but we hope to share results very soon.

We look forward to continuing our research in partnership with Science World and hope to share more discoveries about children's social beliefs in the following newsletter, so stay tuned!

EVENT HIGHLIGHTS

Fun in the Sun with UBC

On August 6th, 2023, the EDRG held our first ever outdoor summer event in collaboration with **Gymboree Play and Music, Vancouver!** Our event surrounded fun family-friendly activities — including sports and games, arts and crafts, storytelling, parachute time, a jungle themed photo booth, and more.

We had an amazing time getting to reconnect with families who have been supporting our research, and meeting new families as well!



Vancouver Baby Show

For a second year in a row, the EDRG attended **The Baby Show** — Vancouver's annual premium early parenting event!

As show exhibitors, we got to share insights and information about our research and interact with so many lovely families. We also had so much fun with the activities at our booth - like beanbag toss and spinning the wheel for some prizes!



STUDY HIGHLIGHTS

Sprinkles

UBC Baby Learning Lab:

We've been conducting a study led by graduate student, Zahra Abolghasem, to explore how experiences influence babies' visual perception. Babies have access to all their senses, but their perceptual system is, initially, only able to make limited sense of their world. Their perceptual system develops gradually because of their sensory experiences. It used to be thought that perceptual changes happened very slowly and needed a lot of experience.

Our team has recently found that actually infant perceptual systems can change quickly and are very flexible. We're currently working to reproduce or "replicate" this finding in our new lab. The study is called Sprinkles because we ask infants to watch multicolored moving dots that look a little like sprinkles. We find that their perception of these moving changes when they learn and can expect which direction they will move. We have had 47 families contribute to this study so far! In the upcoming months, we are hoping to explore how long these changes last and what we can do to increase infant's memory of them!



500 Babies Project

Centre for Infant Cognition (CIC):

This year, we've continued to meet with families enrolled in the 500 babies project, a long term project that follows infants' social and moral development from birth to preschool. We now have over 500 families participating and several 3 year olds have graduated!

The 500 babies project looks at the relationships between infants' evaluations of helpful/unhelpful characters and several other aspects of their social and moral development, including the ability to mentalize about others' thoughts, feelings and goals, their expectations for equal and equitable allocations of goods, and prosocial behaviours like helping and sharing. We are currently working towards two publications using data from this ongoing project and the preliminary results are very interesting! First, we've found that 12-month-olds' who expect equal distributions of cookies also expect goods to be distributed according to merit later in toddlerhood. Second, we've found that toddlers' sympathy, empathy and helping behaviours are related facets of development.

Seeing our participants grow over the last four years has been the most gratifying experience and we can't wait to catch up with them at our sister centers when they come for more fun studies!



THANK YOU, FAMILIES!



We would like to take this opportunity to thank all of the wonderful families that have participated in our research throughout the years!

Our research would not be possible without the continuous support from our community.

We hope to see you again sometime this year!

FOLLOW US ONLINE!



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