

ELLA Newsletter

May 2022



Kia Ora Families!

Welcome to our ELLA update which is where we express our gratitude to all of you by sharing what we have been up to since our last update in early 2021. We continue to be grateful to the families who have participated in our studies, and those who have expressed interest in our research. Your continued support is particularly valued given the prolonged challenges that the COVID-19 pandemic has placed on all of our lives. We recognize that the pandemic continues to force families to adapt quickly to a different home life - one that involves balancing working from home and childcare, facilitating online learning for your children, and dealing with a host of new stressors. We applaud your perseverance, and want to thank you and your children for continuing to support our research efforts and adapting seamlessly to our health and safety protocols.

We are also proud of ELLA's resilience and teamwork, which continues to allow our team to achieve a great deal despite pandemic-related barriers and challenges. In 2021, our research was presented virtually at two international conferences and within the University. We look forward to sharing that progress with you in this newsletter, which presents an update of some of our current and upcoming research projects. We hope you enjoy it!

As always, none of this would be possible without your continued support. Thank you!

The ELLA Lab



Want to hear more from our research?



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<https://www.facebook.com/EarlyLearningLab>

Since January 2021

- Data collection happened for **4** projects.
- This involved a total of **136** families visiting our centre.
- **Nichole Breeland** successfully completed her PhD, with the excellence of her thesis recognised by being placed on the Dean's List.
- **76** new families asked to learn more about our child development research.
- All this despite Auckland's 107-day lockdown and several changes in alert levels.

Here are summaries of the projects that many of you and your children have recently been a part of...



The Origins of Cooperative Action Longitudinal Study - Examining How Social Skills Develop Across Early Childhood

Children played with

Jess, Sina, Kristina

Overview

Another big year for our longitudinal study which started in 2012! In this study, we examine how cooperation, which is a fundamental human skill crucial for societal and individual functioning, develops. Especially during the current pandemic, we realize how relevant studying this topic is as COVID-19 shows us how much of our well-being depends on the cooperation of all.

Despite the ups and downs of data collection due to COVID-19, we have managed to see 135 children and finish the 7th phase when children were around 5 years old! We are currently seeing children for their 8th visit (6.5 - 7.5 years old), which marks the final stage of data collection for this groundbreaking project.

We have also been busy coding the sessions, analysing the data and presenting our findings at virtual conferences. Here are some of our recent findings:

Initial Interactions Matter.

Social interactions do not exist in a vacuum. Instead, behaviours and interactions in one context shape those in the next, like ripples in a pond. In this project, we explored how the quality of 2-year-old children's social interactions with one another during a free play activity related to their ability to later work together to make a "robot dance".

We found that children who tended to help out by cleaning up more toys at the conclusion of the free play activity were more likely to respond to their social partner's actions during the cooperative game. Further, children who were more friendly or positive to their social partner upon first meeting them were more motivated to cooperate with them later on. These findings suggest that toddlers' initial interactions influence their later cooperative performance, and in doing so, highlight the importance of considering children's social interactions as they emerge holistically, rather than in isolated situations. This project was recently published in the *Journal of Experimental Child Psychology* (you can check out a pre-print [here](#)).

Inside the Shoes of Another: The Development of Empathy in Toddlers.

Empathy, which is the ability of people to understand what another person is thinking or feeling and share these emotions, is fundamental to human development. This project examined the development of empathy across early childhood, and the role that parents' values and expectations and children's interactions with peers play in shaping its development.

When children in our longitudinal study were 2 and 3 years old we measured their expression of empathic concern towards an experimenter in need. Parents' other-oriented values and expectations were collected in a survey during the first session of this longitudinal study when the child participants were 9 months old.

Children's empathy increased from 2 to 3 years old, suggesting a developmental progression in empathy across early childhood. To our surprise however, neither parents' values nor their expectations assessed when their child was an infant, predicted that child's later empathy. Interestingly, the more frequently 2-year-olds interacted with their peers, the less empathic concern they displayed on some of our helping tasks at 3 years old. This surprising finding suggests that interacting with other children at 2 years of age may not necessarily promote empathy development. We will continue to examine how children's experiences with peers influences their empathy and social development.



This image shows one of our helping tasks in which a child is passing a blanket to the experimenter.

Prosocial behaviour at 3 years of age predicts children's socio-emotional and behavioural outcomes at age 4.5.

Children display prosocial behaviour from a very young age. In this project, we examined whether children's early cooperation and helping behaviours (at 3 years of age) were associated with later socio-emotional and behavioural outcomes (at 4.5 years of age). Our analyses revealed that cooperative interaction quality, but not cooperative ability, was associated with later behavioural outcomes. Specifically, children who were more affiliative towards the experimenter during one of the cooperative games at 3 years were less likely to be reported as having problems with hyperactivity at 4.5 years. However, affiliation towards a peer during a peer cooperation game was associated with higher levels of hyperactivity. We also found that children who showed antagonism towards the experimenter during a cooperative activity were more likely to be reported as having conduct problems later in development. With respect to helping behaviour, we found that children who were more likely to help an experimenter in need were less likely to be reported as having emotional problems, but children who displayed higher levels of empathy towards the experimenter were more likely to be reported as having emotional problems at 4.5 years of age.

Overall, we found that cooperation quality (affiliation and antagonism) and helping behaviour (helping and empathy) at 3 years of age were associated with later parent-reported behavioural outcomes. However, the direction of these associations depended on the specific activity and social partner, suggesting that associations between prosocial behaviour measures at 3 years of age and later socio-emotional and behavioural outcomes are quite nuanced. The findings provide initial insights into how specific aspects of prosocial behaviours such as the quality of the children's interactions with social partners, helping, and empathy may be targeted to enhance developmental outcomes for children.



This image shows one of our cooperative tasks where the child and the experimenter work together to reach a common goal.



This image features one of our helping tasks in which the experimenter received a sad phone call and starts to cry. The child is handling the experimenter their favourite toy.

"Can you help me?" Preschoolers' helping behaviour depends on social context.

Children as young as 14-months show helping behaviours such as picking up a peg to help an adult hang up washing. From around 30-months, children begin to help others who are showing distress or discomfort such as passing a blanket to an adult who is shivering. However, the term helping is a broad term describing a variety of behaviours that can occur across social contexts such as fulfilling a goal for someone (e.g., picking up a peg), comforting someone in distress (e.g., handing a blanket to someone who is cold), and handing one's own possession to someone in distress (e.g., handing one's own blanket to someone who is cold). This project examined how different social contexts influence preschooler's helping behaviour.

When children came in for their 4th (2-years), 5th (3-years), and 6th (4-years) visits, they completed an activity in which they could help an experimenter across a variety of different contexts (e.g., goal-based tasks, comforting tasks, and costly helping tasks). Children's helping was measured on how spontaneously they provided help.

As predicted, older children were quicker to help than younger children. However, another important factor influencing children's helping was social context. For example, children more readily passed their own blanket to an experimenter who is cold compared to passing their own favourite toy to an experimenter who is showing distress (e.g., crying). Thus, besides socio-cognitive skills that increase across development, the contextual costs associated with helping influence children's motivation to help. Studying the contextual factors associated with helping enables us to understand what motivates children to help and can aid caregivers and educators when guiding children through the process of building and maintaining social relationships.

Deconstructing Early Communication Study

Children played with

Alecia, Aastha, Naisargi and Issy

Overview

We completed data collection on this comprehensive study on parent-infant interactions with over 100 parents and their 1.5 to 2 year old children. The overall aim of this project is to capture how varied interactive contexts influence the responsive, turn-taking, dance-like nature of caregiver-infant communication.

Despite decades of research examining parent-infant interactions in face-to-face contexts, much less is known about how 2D screen media impacts caregiver-infant interactions. As screen media such as television, tablets and video chat continue to be commonplace in the lives of infants and young children, it is crucial to ask how screens impact the dynamic structure of parent-infant interactions, learning, and development. By addressing these questions, we can learn not only about social interactions in the digital space, but also about these developmental processes more generally.

The second aim of this project is to deepen our understanding of early communication in order to inform and build a 'model' of infant communicative development. Models allow researchers to test and validate psychological theories. To learn more about this aspect of the project, click [here](#).

With the completion of data collection, our focus has shifted to coding and analysing the data. Although we are only partially through this process, please enjoy reading about some of our early findings below.

SPECIFIC PROJECTS

Working together in a digital space: Parent-infant cooperation in face-to-face and video chat contexts.

Cooperation is an essential skill for successfully participating in our social world that emerges early in life. Parent-infant cooperation involves working together in a timely and dynamic manner towards a common goal. These early interactions increasingly involve screen media, such as television and touchscreens, and infants are more frequently engaging with loved ones via video chat as a means of developing and maintaining relationships with those far away. However, little is known about how parents and infants cooperate in digital settings. This project examined how cooperation between the parents and infants differed across our two contexts: (1) the parent and infant sitting face-to-face playing an interactive social game on a shared tablet and (2) the parent and infant dyad playing the same game via a video-chat context on separate devices. The social game, a block building task, consisted of two phases. In the first phase, parents were instructed to "Play with the blocks" and then given a more structured explicit goal, to "Build a tower together", in the second phase. We then coded how well the parent and infant dyad coordinated their visual attention, communication, and actions within each phase. We also coded the extent to which each social partner individually dominated the interaction during each phase

Greater cooperation between parents and their infants was found during the first phase with the less structured goal, in dyads with older infants, and in the

face-to-face context compared to the video-chat context. We also found that interactions in which parents dominated hindered cooperation, while interactions where infants took a more prominent role saw greater cooperation. Difficulties with the degraded social cues, parental scaffolding, digital device novelty, and inexperience with interacting via video chat may have contributed to poorer cooperation in the video chat condition. Parents and caregivers may benefit from receiving greater aid with learning how to interact with their infants when using novel toys to effectively scaffold their infant's learning and cooperative and communicative abilities.



On the left, you can see a parent and child playing one of our social games, peek-a-boo, on a shared tablet. On the right is an image featuring a parent helping their child interact in a video-chat setting.

Parents and infants change the way they talk during peekaboo in video chat

Social routines provide repetition and patterns for children to follow. Through routines, children learn how to take turns, talk, pause, and learn important social skills in relation to other partners. In this study, we examined parents' and infants' speech when they played peek-a-boo in a face-to-face interaction with a blank tablet present, or through a screen like in a video-chat.

Firstly, we investigated the acoustic features in the speech of parents and infants. When talking to their kids face-to-face, parents often switch to a specific communicative mode known as infant-directed speech. This speech contains a higher pitch, a slower speech rate, a wider pitch range and a more dynamic intonation. In our preliminary results, we found that parents use higher pitch and a slower speech rate when talking to their infants in the video chat. However, parents' appeared to narrow their pitch range and show less dynamic intonation in the video-chat, suggesting that the screen may have made it more challenging for parents to maintain the game-like play of peek-a-boo. On the other hand, infants showed frequent pitch movement, indicating that they were eager to get more social cues from their parents.

Secondly, we analysed the quantity and diversity of speech, which are often associated with infants' language development. Our preliminary results suggest that (1) parents' speech quantity and diversity did not differ much across contexts and (2) infants spoke less and produced a greater number of unclear sentences in the video chat context suggesting that the video chat context was particularly challenging for infants. Our future work will look into the dynamics of parent-infant peek-a-boo play across different modalities, including gestures, facial expressions and body posture so that we will have a greater understanding of the nature of turn-taking in social gameplay across digital environments.

Virtual Picture Book Reading Study (ViPR)



Overview

The pandemic has encouraged us to find new ways to conduct our research. At the end of 2021, we began our very first “Online”, Virtual Picture Book Reading (ViPR) study for which families complete from the comfort of their own home!

ViPR examines how digital interactions with 22- to 26-month-old infants are shaped by their interactive partner. In this study, we ask parents to attend a virtual (Zoom) appointment, during which they are asked to read a picture book to their own or an unfamiliar child (please refer to images A and B below). Examining how parent-infant interactions differ across social partners will tell us about the patterns of communication that are, and are not, unique to own parent-infant dyads. We also hope that our findings will inform interventions and policy

regarding early parent-child digital interactions and their potential in influencing children’s social development.

We are continuing with this study in collaboration with researchers at the University of Otago. With the aim of conducting a large study across Auckland and Dunedin, we encourage any families that with a 22- to 26-month-old who is exposed to at least 70% English to take part in this study. Please register your interest and we will then contact you to tell you more about this study.

Register your interests via the following link:
<https://www.earlylearning.ac.nz/participate/>



Image A: Parent interacting with their own child over the picture book reading task.

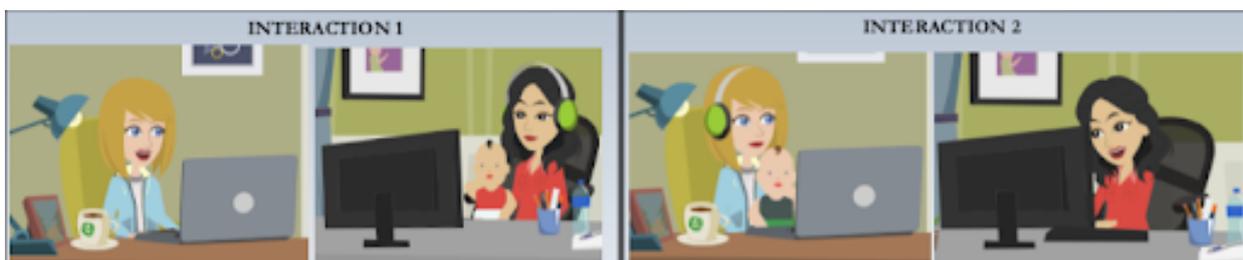


Image B: Parent interacting with an unfamiliar child over the picture book reading task.

Moving onto their next chapters...



Jess Aitken
Research Fellow

Jess joined ELLA in February 2019 as coordinator of the Origins of Cooperative Action Study. During her time in the lab, Jess helped with data collection for the 6th, 7th, and 8th visits of this extensive project. She has loved getting to know our participant families and watching the children grow and develop over the past three years. Jess's research interests lay in the area of social and moral development. After seven years conducting research in the field of developmental psychology, she has recently accepted a role managing a research project with Greenpeace Aotearoa. She's excited about this opportunity to combine her love of psychology and concern for the environment, but will miss working with the ELLA team and amazing participating families!

Old faces, New Roles



Yimei Chuah, Research Assistant

Yimei completed her Honours year with ELLA under the Deconstructing Early Communication Study in 2021 and is continuing her work with the lab. Her research interests lay in the development of cooperation in children, factors which can influence this, and their outcomes on children.



Shirley Chen, Master Student

Shirley has recently completed her Honours degree with the Early Learning Lab. Following a fruitful year at the lab, she will continue with a masters research project exploring developmental changes in children's perceptions and expectations of fairness. Shirley is incredibly excited for the year ahead, particularly getting involved in the data collection process!



Simran Kaur, MSc

Simran completed her Honours year with ELLA under the Origins of Cooperative Action Study in 2020. In 2021 she completed her masters looking at how prosocial behaviour in children may be associated with later socio-emotional or behavioural outcomes.

Where are they now?



In July 2021 prior ELLA PhD student Nichole joined Exponent's Phoenix User Research Center (PURC) as a Scientist in the Human Factors Practice (Phoenix, Arizona, USA). As a Scientist, she conducts user experience (UX) studies, product and usability testing, and safety evaluations with virtual reality products and medical devices. In addition to conducting UX studies, Nichole prepares comprehensive literature reviews on topics ranging from social issues to health and safety to further provide unique solutions to clients' most complex user research questions.

WHAT DOES 2022 HAVE IN STORE FOR ELLA?

Are children just like their parents?

A parent-only extension of our longitudinal study on social development to examine if and how parents' social decision making relates to children's social decision making.

One key element of our longitudinal study on children's social development is examining the ways in which children's developing social behaviour, values, and expectations are related to their parents' behaviour, values and expectations. At the end of 2021 we teamed up with our colleagues, Prof Quentin Atkinson and Dr Scott Claessens, to develop an online parent-only extension of the study that the parents of the children in our study could complete from home. Parents were invited via email to participate in this study in December and, again, in February.

If you are participating in the ORCA longitudinal study and have NOT yet completed the parent extension, we still need more participants and would LOVE it if you would be willing to complete this online 30-minute study. You should have received an email from us with the study information, but if you cannot find it or would like us to send it again, email us at: earlylearning.nz@gmail.com

BabyX & The Deconstructing and Reconstructing Early Communication Study

Our lab director Associate Professor Annette Henderson and Dr Mark Sagar, co-founder of the spin-out company, **Soul Machines**, embarked on a collaborative multi-study project several years ago on the development of early communication. The Deconstructing Early Communication study featured above is the second in this series of studies!

One of the objectives of this project is to use the data we have collected of parent and infant interactions with digital technologies to inform the development of a brain-behaviour model and virtual simulation of early communication, called BabyX. You may have seen her featured at **Ted x Auckland**, **Ted x Christchurch**, and on **The Curious Mind**.

This year we are looking forward to starting the next study in this series featuring BabyX. In this study, we will continue to observe parent-infant interactions while also inviting parents to interact with BabyX. These interactions will be critical for testing models of early communication, cooperation and learning.

Many Babies 4: International Study Examining Infants' Preferences for Prosocial Individuals

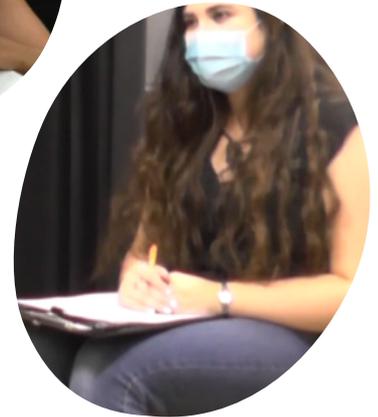
After pandemic-related delays, we plan to start data collection for the large scale, multisite, international replication study called Many Babies 4 (MB4). We will be inviting parents and their 5- to 10-month-old infants to participate in this study, which examines infants' preferences for prosocial individuals. Prior research has shown that babies as young as 5 months of age choose to interact with an individual who helped another individual over an individual who hindered another individual's goal attainment. This original finding raises important questions about the origins of morality. To test the strength of this effect, researchers across the globe are working together to conduct a large study to replicate the original findings. ELLA is proud to be part of this massive effort. We look forward to inviting families with 5- to 10-month-old babies to ELLA to take part in this groundbreaking study.

ELLA's Response to COVID-19

Although many of ELLA team members have been working mostly from home throughout the year, we stayed connected over Zoom coffee breaks, meetings, and of course, happy hours from the comfort of our couch. During these times, we have been able to focus our attention on aspects of research besides data collection, including processing data for coding, doing behavioural coding, conducting analysis, preparing to speak at conferences, and writing papers where we publish our findings.

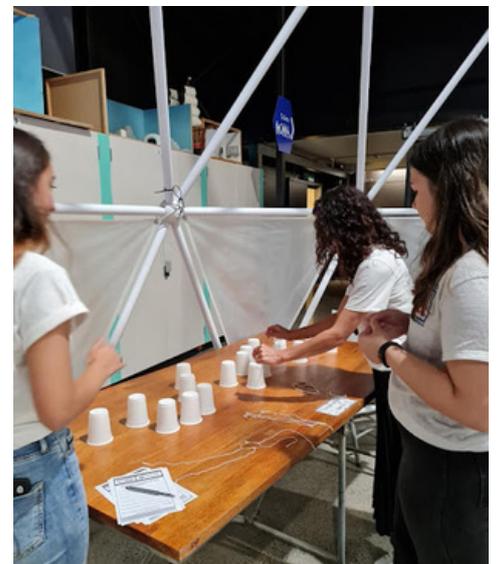
Although in-person data collection was not possible during Auckland's lockdown, we have been able to resume running in-person sessions in 2022 with enhanced health and safety protocols. These protocols include a pre-screening questionnaire, extensive cleaning procedures, and the use of PPE.

We feel privileged to be able to continue our in-person research safely, and are thrilled that our families looked forward to participating. All of these changes showcased the impressive ability that children, parents and our research team possesses to adapt to new contexts and protocol.



ELLA Out and About

Unfortunately the pandemic continues to thwart our ability to engage with the community in-person. However, we were fortunate to be able to attend "The Big Day of Happy" at MOTAT (see some pictures below!). We look forward to mid-2022 when hopefully we'll be able to take part in some community events like Auckland's BabyShow!



Recent publications involving ELLA team members

- Breeland, N., Henderson, A. M. E., & Low, R. (2022). Initial interactions matter : Warm-up play affects 2-year-olds ' cooperative ability with an unfamiliar same-aged peer. *Journal of Experimental Child Psychology*, 218, 105328. <https://doi.org/10.1016/j.jecp.2021.105328>
- Corkin, M. T., Henderson, A. M. E., Peterson, E. R., Kennedy- Costantini, S., Sharplin, H. S., & Morrison, S. (2021). Associations between technofence, quality of parent-infant interactions, and infants' vocabulary development. *Infant Behavior and Development*, 64, 101611. <https://doi.org/10.1016/j.infbeh.2021.101611>
- Corkin, M. T., Peterson, E. R., Henderson, A. M. E., Bird, A. L., Waldie, K. E., Reese, E., & Morton, S. M. B. (2021). The Predictors of Screen Time at Two Years in a Large Nationally Diverse Cohort. *Journal of Child and Family Studies*. <https://doi.org/10.1007/s10826-021-01985-5>
- Corkin, M. T., Peterson, E. R., Henderson, A. M. E., Waldie, K. E., Reese, E., & Morton, S. M. B. (2021). Preschool screen media exposure, executive functions and symptoms of inattention/hyperactivity. *Journal of Applied Developmental Psychology*, 73, 101237. <https://doi.org/10.1016/j.appdev.2020.101237>
- McRae, C. S., Overall, N. C., Henderson, A. M. E., Low, R. S. T., & Cross, E. J. (2021). Conflict-coparenting spillover: The role of actors' and partners' attachment insecurity and gender. *Journal of Family Psychology*, 35(7), 972–982. <https://doi.org/10.1037/fam0000884>
- McRae, C., Henderson, A., Low, R., Chang, V., & Overall, N. (2020). Parents' Distress and Poor Parenting during COVID-19: The Buffering Effects of Partner Support and Cooperative Coparenting. *Developmental Psychology*, 57(10), 1623–1632. <https://doi.org/10.1037/dev0001207>
- Morrison, S., Henderson, A. M. E., Sagar, M., Kennedy-Costantini, S., & Adams, J. (2021). Peek-a-who ? Exploring the dynamics of early communication with an interactive partner swap paradigm and state space grid visualization. *Infant Behavior and Development*, 64, 101576. <https://doi.org/10.1016/j.infbeh.2021.101576>
- Sagar, M., Moser, A., Henderson, A. M. E., Morrison, S., Pages, N., Nejati, A., Yeh, W. T., Conder, J., Knott, A., Jawed, K., & Takac, M. (2021). A platform for embodied models of infant cognition, and its use in a model of event perception. *IEEE International Conference on Development and Learning, ICDL 2021*. <https://doi.org/10.1109/ICDL49984.2021.9515612>
- Sagar, M., Henderson, A., Takac, M., Moser, A., Knott, A., Yeh, W., Morrison, S., Chuah, Y., Pages, N., & Jawed, K. (under review). Deconstructing and reconstructing turn-taking in caregiver-infant interactions: A platform for embodied models of early cooperation. *Journal of the Royal Society of New Zealand*.
- Stengelin, E., Toppe, T., Kansal, S., Tietz, L., Sürer, G., Henderson, A. M. E. & Haun, D. B. M. (2022). Priming third-party social exclusion does not elicit children's inclusion of out-group members. *Royal Society Open Science*, 9(1), 211281. <https://doi.org/10.1098/rsos.211281>

A blog post written by our lab
director Annette Henderson on



COVID-19,
LOCKDOWNS &
INFANT
DEVELOPMENT

Read Here

Conferences Talks & Posters

Many of our students presented virtually at two online conferences in 2021: The Asia-Pacific Babylab Constellation (ABC) conference and the Australasian Human Development Association (AHDA).

Our newest PhD student, Tina, presented findings from the Deconstructing Early Communication Study at the ABC conference. Her presentation was on “Screen talk matters: A comparison of infant and and present verbal communication during social gameplay in face-to-face and video-chat context.”

In November 2021, several lab members presented at the AHDA 2021 Online Conference. Here is the list of presentations by ELLA members:

- Sina Gibhardt, Jess Aitken, Annette Henderson. Context Matters: A Longitudinal Analysis of Preschoolers' Goal-Based and Emotion-Based Helping.
- Nichole Breeland, Annette Henderson. The Cooperative Phenotype in Infancy.
- Simran Kaur, Annette Henderson. Does Early Cooperation at Age 3 Predict Later Behavioural Outcomes at Age 4?
- Anna M. Elisara, Jess Aitken, Annette Henderson. Parenting and Prosociality in Children: A Bidirectional Association Moderated by Parental Responsiveness.
- Shirley Chen, Annette Henderson. Inside the Shoes of Another: The Development of Empathy in Toddlers.
- Yimei Chuah, Alecia Moser, Kristina Wolsey, Annette Henderson. Parent-Infant Cooperation in Video Chat and Face-to-face Contexts.
- Maria Corkin, Elizabeth Peterson, Annette Henderson, Karen Waldie, Elaine Reese, Susan Morton. The Screen Time Inattention/Hyperactivity Controversy: Is There a Causal Link?
- Wan-Ting Yeh, Annette Henderson, Alecia Moser, Sam Morrison, Mark Sagar. Screen talk matters.

That's (nearly) all folks!

We hope that you have enjoyed reading about ELLA's recent adventures. Just before closing, we wanted to say thank you once again to you and your junior scientists (aka your children!) for participating in our research and/or expressing interest in getting involved in future studies. We know time is valuable and the fact that so many of you have shared your and your child's time with us, especially during uncertain and challenging times, has not gone unnoticed - You are amazing!

As 2022 progresses we will be developing new projects and will contact you when your child reaches the appropriate age range for one of our studies. Please don't forget to keep us updated on any new children joining your family or if your contact details have changed.

By contacting us, **you are not obliged to participate in our studies.** We will contact you when we have a study in your child's age range.

If you are interested in participating in the study, we know how busy you are, and so **we do our best to schedule at your convenience,** offering weekday and weekend appointments when available.

Studies are typically run in our centre on campus, a child-friendly space equipped with a playroom filled with toys and trained student researchers who are excellent with children.



- **Free Parking**
- **Siblings are welcome**
- **Children always receive a thank you gift**
- **Parents are entered into draws for gift vouchers**

If you are passing on our details to other people with children who may be interested in being involved in our research, please be sure to let them know these important pieces of information:

The Early Learning Lab was founded by Associate Professor Annette Henderson in 2010 and has been dedicated to furthering our understanding of early development, particularly communication, cooperation and learning, through the use of interactive research designed for children and parents.

New Baby?

[**sign-up now**](#)

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We look forward to having you and your family join us in the future!