

ELLA

2020 Newsletter



Kia Ora Families!

Welcome to our ELLA update which is where we take the opportunity to express our gratitude to all of you by sharing what we were up to in 2020 and will be up to in 2021. We continue to be very grateful to the parents and children who have participated in our studies, and those who have expressed interest in our research. 2020 marked our 10-year anniversary and what a year it was!! Your participation and support in 2020 was particularly valued given the challenging year that it was. We recognize that the ongoing COVID-19 pandemic continues to force many of our 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 has allowed us to achieve a great deal despite the COVID-19 related challenges we continue to face. In 2020, our research was presented virtually at 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!

For families who may not have been in our studies (yet!), we are located in the School of Psychology at the University of Auckland, City Campus. The Early Learning Lab, ELLA for short, was founded by Associate Professor Annette Henderson in 2010 and has been dedicated to furthering our understanding of several aspects of development, particularly communication, cooperation and learning, through the use of interactive research designed for children and parents. Our studies use techniques and activities designed to encourage children to engage and have fun on their way to becoming little scientists.

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

The ELLA Lab

In 2020

ELLA Celebrated its 10th Anniversary!

- Data collection happened for **4** projects.
- This involved a total of **209** families visiting our centre.
- **Two** new collaborations with researchers outside of the University of Auckland, including researchers from the University of Otago and Soul Machines.
- **105** new families asked to learn more about our child development research.
- All this despite two mandatory lockdowns and changes in alert levels.

Here are summaries of the projects that many of you and your children were a part of this year...



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

Children played with

Jess, Sina, Kristina, Brian, Debbie, Livia, and Nichole

Overview

It was a landmark year for our longest running study, which started in 2012. Children were just 9 months old when they first came to our lab, and we are currently seeing children for their 7th (at around 5 years old) and 8th/final visits (around 6-8 years old). Despite delays due to the lockdowns, we still managed to see over 130 children for this study in 2020. We're excited to be entering the final phase of this ambitious project!

Studying how cooperation develops (and how we can encourage it) has always been important, as it is an essential skill for an individual's social success and the functioning of society as a whole. This research was more relevant than ever in 2020, as the world was faced with a global pandemic and cooperation between individuals, communities and nations was essential in attempts to manage this situation.

Besides data collection, we've been busy coding, analysing and presenting our findings at virtual conferences. Here is a summary on two big questions we began to explore in 2020:

How does temperament in infancy affect children's later cooperative ability?

Children who tend to experience a lot of negative emotions (an aspect of temperament called negative affectivity) and have difficulty regulating their emotions (unsurprisingly referred to as emotion regulation) may find cooperative tasks more challenging. Temperament also influences how preschoolers behave towards their cooperative partner during a cooperative task, suggesting temperament may influence cooperative success through the quality of the interaction.

Using data from the 1st, 3rd and 4th visits, we have taken a detailed look at how aspects of temperament at 10 months of age may influence children's social behaviours during cooperative tasks (e.g., getting angry at a cooperative partner, or offering words of support), and how these social behaviours may, in turn, influence children's ability to achieve a cooperative goal.

We found that the way temperament influences cooperative ability differs for boys and girls. For boys, lower negative affectivity was linked to children being more socially engaged with their partner, which was linked to increased ability to



This image features one of our cooperative tasks where two children work together to reach a common goal.

coordinate their physical actions. But this effect was not seen in girls. Our next step is examining whether parents' expectations about boys' and girls' behaviour explain these gender differences. Understanding these complex relationships will help parents and teachers support cooperative development in a way which suits the individual child.

Does empathy motivate children's helping behaviour, and does fairness sensitivity motivate children's sharing behaviour?

Helping behaviours are one of the earliest forms of prosocial behaviours to emerge in young children. In contrast, children typically find it more difficult to share, as they have to overcome the desire to keep the resources for themselves. This project examined how empathy, sensitivity to fairness, and Theory of Mind (the ability to consider others' perspectives) shapes preschool-aged children's helping and sharing behaviour.

When children were 4-years-old (4th visit), they helped an adult experimenter in a series of tasks. Empathic behaviour was measured focusing on the degree to which children showed levels of concern or distress after the experimenter demonstrated their need for help. Children's fairness-related speech was also measured during this visit by a cooperative task, in which pairs of children played a pulling game together (as pictured above). Following this game, children had the opportunity to share some stickers with the other child.

As predicted, displays of empathic concern were associated with faster, or more, helping. Fairness comments were also found to motivate children's sharing behaviour with both social partners having to make a fairness comment to increase the likelihood of sharing. Understanding what motivates children to be prosocial will be incredibly beneficial in assisting educators to find ways of encouraging prosocial acts to surface, within and beyond the classroom. In doing so, this will enable future generations of children to build and maintain social relationships that will have a lasting impact throughout their lifetime.

Deconstructing Early Communication Study

Children played with

Alecia, Aastha, Naisargi and Issy

Overview

Parents play a critical role in infants' acquisition of effective verbal (i.e., words) and nonverbal (i.e., gaze direction) communication. Communicative development enables infants to become active members of their social world and facilitates the ability to learn in a social context – a concept known as social learning.

Despite our understanding of communicative development and social learning in face-to-face contexts, little is known about how screen media impacts these processes. As screen media continues to significantly rise in popularity, especially in response to the COVID-19 pandemic, it is crucial to ask how screens impact the dynamic structure of parent-infant interactions, learning, and development.

Thus, one aim of this ongoing project is to investigate the ways in which parents and infants aged 1.5 and 2 years communicate in several contexts involving the use of screen media (such as video-chat and interactive touchscreen games) and in traditional face-to-face interactions with 3D toys.

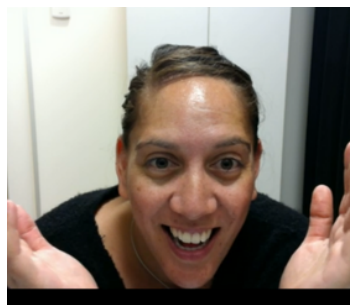
Another aim of this project is to deepen our understanding of early communication in order to inform and build a 'model' of early communication. Models allow researchers to test and validate psychological theories. To learn more about this aspect of the project, click [here](#).

We will be finished data collection soon and then we will be able to move forward with coding and analysing the data. Below are three initial questions we are exploring.

How does the social learning environment influence infants' novel word learning from 2D media?

Communicating and learning in the digital world is a global phenomenon among infants, despite evidence that they show deficits in learning from screens (relative to live interactions). This phenomenon has been dubbed the video deficit effect. The good news is that social partners, such as parents, can support children's learning in this more challenging context. Social partners provide attentional cues (e.g., calling child's name) and scaffolding cues (e.g., labelling objects) when learning from screen media. To examine learning in video contexts, our parents and infants participated in an object learning task. We asked parents to teach their infant about a novel object on screen in the two digital interactions (face-to-face with shared tablet, and video chat). The object was dynamic, so both parent and infant could move the object around.

Parent-infant interactions are often compared to a dance between partners. Thus, in addition to identifying the behaviours of the parent, we are also looking at how the infant responds to their parent and interacts with the media. The extent to which the bi-directional nature of parent and infant behaviours, labeling and engagement factors (e.g., object interaction), promote successful learning is underway!



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

How do parent-infant interactions relate to infants' development?

To answer this question, we ask parents to complete a language development questionnaire. This is because we are interested in how verbal interactions via digital and face-to-face contexts scaffold children's social understanding and correlate with children's vocabulary (two variables that are strongly correlated).

We are also interested in which interaction (face-to-face or video chat) yields a richer context for children's social development. We hypothesise that the face-to-face interaction will provide a richer context as children will have access to more relevant social cues (eye gaze) compared to video chat. Alternatively, parents and infants may be able to flexibly adapt to video chat in ways not yet realized, such as by exaggerating social cues that are available in this context.

The information we obtain may be useful for parents looking to optimize the use of digital technology at home, and has the potential to inform policy. It is also important to address as good quality parent-child interactions have been linked to more positive child outcomes in a range of areas including academia, pretend play, and critical thinking abilities.

Does parents' use of mobile technology impact parent-infant interactions?

Parents' use of mobile technology may distract them when they are interacting with their children, which has been labelled as technoferece in prior research. One of our doctoral researchers, Maria Corkin considered whether there might be a carry-over effect, where the way parents interact with their infants might be affected by technoferece even when parents are not using their phones.

We looked at different forms of technoferece, including how long parents usually used their phones for per hour, how frequently they checked their phones for per hour, and how many audible notifications they received per hour. Interestingly, we found that there were differences in the way parents interacted with their infants depending on how many audible notifications they usually received. This finding is great news as it suggests that simply turning audible notifications off might help parents have better quality interactions with their infants.

Moving onto their next chapters...



Nichole Breeland
PhD Candidate

Since joining ELLA in September 2017, Nichole has enjoyed examining how parent characteristics, such as personality, and peer dynamics, such as positive social behaviours, impact children's ability to attain shared-goals (i.e., cooperate) with others. Her research has also focused on constructing an infant "cooperative phenotype" by identifying associations between two-year-olds' cooperative understanding, ability, motivation, and social behaviours. Nichole's favourite part about conducting research at ELLA has been creating cooperative games for studies and playing them with the participants and families. Nichole recently submitted her PhD, and has accepted a position as a User Research Scientist at Exponent, an engineering and scientific consulting firm in Phoenix, Arizona, where she will conduct usability testing for products such as virtual reality headsets. Congratulations Nichole, we will miss you!



Maria Corkin
PhD Candidate

Maria's research has focused on the role of media exposure in early childhood development and parental influence on children's screen exposure. For her, a highlight of her research is knowing that her findings could potentially help parents make decisions about their preschool children's screen time, something that she knows can be very difficult now that we are all surrounded with screen media. As she nears the end of her doctoral studies, she would like to express her gratitude to those parents and infants from the Deconstructing Early Communication Study whose data she has been privileged to use.

New faces

We have some new lab members since our last ELLA Update.



Sina Gihhardt, PhD Candidate

Sina started her PhD journey with us in February 2020 and has since been involved in the 7th and 8th data collection waves of our long-term cooperation study. Sina's research focuses on the development of prosocial emotions across early childhood. Specifically, how positive emotions motivate children to maintain and repair social relationships, and whether individual differences may be due to factors such as parenting style or temperament.



Wan-Ting Yeh (Tina), PhD Candidate

Wan-Ting (Tina) joined ELLA in October 2020 and has been involved in the Deconstructing Early Communication Study. Tina's research aims to understand the dynamic flow of parent-infant interactions in social play across two screen-based interactional contexts (face-to-face with shared tablet and video chat), focusing on how parents and children adjust their strategies to achieve mutually agreeable communication in different digital contexts.

BabyX & The Deconstructing and Reconstructing Early Communication Study

Our lab director Associate Professor Annette Henderson and Associate Professor Mark Sagar, Director of the Auckland Bioengineering Institute's Laboratory for Animate Technologies, embarked on a collaborative multi-study project several years ago on the development of early communication. The Deconstructing Early Communication study featured above is actually the second in this series of studies!

One of the research objectives in this study is to collect behavioural data from infants and parents communicating and interacting with digital technology in order to build a brain-behaviour model and virtual simulation of early communication, called BabyX. You may have seen her featured at TedxAuckland, TedxChristchurch, and more recently on The Curious Mind with Nigel Latta.

In 2016, Mark co-founded Soul Machines, a spin-out of the Laboratory of Animate Technologies, in line with his interest in research and discovery. This year we proposed a new project in the series; Deconstructing and Reconstructing Early Communication (DREC), which some of you may have already heard about. This study has welcomed new research team members from Soul Machines and the University of Otago. In this study, we will continue to observe infant interactions in a new series of social games and invite parents to interact with BabyX so that we can test the models that are currently under development. Stay tuned in 2021 for more information!

Virtual Picture Book Reading Study (VIPR)

Professor Ted Ruffman and his student, Aastha Puri (PhD candidate), have also joined ELLA as external collaborators from the University of Otago. Aastha is interested in how parents' talk influences children's social understanding and in turn, how children become skilled in social understanding, which is linked to positive outcomes across all life domains (e.g., academic competence, self-concept, and enhanced memory).

In 2021, Aastha will be leading a Virtual (Zoom) study examining parent interactions with their own 22- to 26-month-old and an unfamiliar infant during a picture book reading task. The VIPR (Virtual Picturebook Reading) Study will enable families to participate from the convenience of their home (a COVID-19 adaptation). The goal of this study is to examine early interactions via technology as they occur and across interactive partners and development. Our findings will be instrumental toward informing interventions and policies on how children and caregiver interactions via technology can influence children's social development.



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

We hope to be starting data collection for the large scale, multisite, international replication study called Many Babies 4 (MB4) in 2021. 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 one of the original members of this massive effort, which we anticipate will begin data collection this year. We look forward to inviting families with 5- to 10-month-old babies to ELLA to take part in this groundbreaking study.

The Research Community's Response to COVID-19 & Educational Resources

This year we were challenged on a community, national and global scale following the COVID-19 outbreak. Medical researchers raced to understand the virus, determine the risk factors, trace and genome-sequence the variants, and of course, create an effective vaccine. It was an impressive feat!

At the same time, psychological researchers made strides in trying to understand the influence of the pandemic on mental health, behaviour and well-being. Parents had a unique experience, with many juggling childcare duties, working from home, helping their children transition to online learning and maintaining their own well-being. We know this was not easy in the slightest!

As researchers interested in children's social development and well-being, we learned some effects of the pandemic on development that may be of interest to you. First, there are ways in which caregivers can promote resilience and this should give us some hope that parents, family and friends can protect children from the negative impact of the pandemic. Some interventions include communicating about the pandemic with your children, facilitating social interactions and connection through video chat, establishing routines and promoting good sleep habits. For a list of helpful interventions, see this article.

ELLA also sought to determine how the COVID-19 pandemic impacted our families. For that reason, parents who have come into our centre since the first lockdown in NZ may have been asked about the impact of COVID-19 on their daily lives, and in some cases, were asked about any changes in screen media use in the home. Unsurprisingly, many parents report that children's use of screen media increased in response to the pandemic, particularly during the lockdown periods. This trend has been shown

HIGHLIGHTS & ACHIEVEMENTS

elsewhere and is an inevitable by-product of the pandemic. We understand that parents may be feeling guilty and uneasy about this, so let us try to ease your mind with some recent research on the topic.

During these times, children use digital technology to **stay connected to family and friends** and research has focused on how parents can **mitigate the risks of increased media use**. For younger children, parents are encouraged to watch programs with their child, ask questions, discuss the content and generally make television/media viewing interactive and engaging. For more information on children's media use, check out **this link**, and for specific resources about distance learning, see this **parenting page**.

ELLA's Response to COVID-19

During the lockdowns, our lab made the transition to working from home. Although physically isolated, we stayed connected over Zoom coffee breaks, meetings, and of course, happy hours from the comfort of our couch. We were 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.

As we prepared to come out of the first lockdown, the University of Auckland gave us new health and safety protocols for running sessions at Level 1 and 2. These protocols include a pre-screening questionnaire, extensive cleaning procedures, and, at level 2, 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 protocols. We continue to be very appreciative of your continued support of our research efforts!



Study Completions!

We are excited to announce that we completed the 6th phase of the Origins of Cooperative Action Longitudinal Study. Between February 2018 and February 2020, we saw over 170 pairs of 4-year-olds for this phase. This preschool visit will be vital in helping us understand how children's social behaviour changes as they transition to the school environment.

ELLA Out and About

Although there were fewer ELLA outings, community outreach and recruitment events this year, we did get together a few times to celebrate the achievements of our graduating lab members and the hard work of our amazing team of volunteers. Our volunteers are critical to our work, assisting with data collection, data processing and entry, behavioural coding and more. If you've participated before, you may remember them helping run the study or play and entertain a sibling who came along for the session.

Below captures some post-lockdown moments, including our trip to mini-golf. Can you spot Brian?



Publications involving ELLA team members

- Breeland, N., & Henderson, A. M. E. (under review). First Impressions Matter: Warm-up Play Impacts Children's Cooperative Ability with an Unfamiliar Same-aged Peer. Preprint <https://psyarxiv.com/rge3x/>
- 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>
- Cross, E. J., Overall, N. C., Low, R. S. T., & Henderson, A. M. E. (2020). Relationship problems, agreement and bias in perceptions of partners' parental responsiveness, and family functioning. *Journal of Family Psychology*, <https://doi.org/10.1037/fam0000812>
- Krogh-Jespersen, S., Henderson, A. M. E., & Woodward, A. L. (2020). Let's get it together: Infants generate visual predictions based on collaborative goals. *Infant Behavior and Development*, 59, 101446. <https://doi.org/10.1016/j.infbeh.2020.101446>
- Overall, N.C., Chang, V.T., Cross, E.J., Low, S.T., & Henderson, A.M.E. (in press). Sexist attitudes predict family-based aggression during a COVID-19 lockdown. *Journal of Family Psychology*. Preprint <https://psyarxiv.com/p23bv/>
- Overall, N., Chang, V., Pietromonaco, P. R., Low, R. S. T., & Henderson, A. M. E. (2021). Partners' Attachment Insecurity and Stress Predict Poorer Relationship Functioning during COVID-19 Quarantines. *Social Psychological and Personality Science*, 1-14. <https://doi.org/10.1177/1948550621992973>

- Waddell, N., Overall, N.C., Chang, V.T., & Hammond, M. D. (in press). Gendered division of labor during a nationwide COVID-19 lockdown: Implications for relationship problems and satisfaction. *Journal of Social and Personal Relationships*. Preprint <https://psyarxiv.com/kqb9m/>
- Wang, Y., Park, Y. H., Itakura, S., Henderson, A. M. E., Kanda, T., Furuhashi, N., & Ishiguro, H. (2020). Infants' perceptions of cooperation between a human and robot. *Infant and Child Development*, 29(2), e2161. <https://doi.org/10.1002/icd.2161>

Conferences Talks & Posters

In July 2020, Dr. Jess Aitken presented findings from the Origins of Cooperative Action Study at the biennial meeting of the International Congress of Infant Studies (ICIS). This conference was intended to be held in Glasgow, Scotland, but COVID-19 travel restrictions meant it was taken online – no easy task for an international conference with over 500 attendees!

In October 2020, several lab members presented at the Australasian Human Development Association (AHDA) 2020 Online Conference. This biennial meeting was held online due to COVID-19 restrictions, with the ELLA team pleased to play a key role in planning the two-day event. With the conference theme, Breaking the isolation barrier: Reconnecting through research on human development across the lifespan, researchers across Australasia met to share their findings regarding human development in our part of the world. Below, we have provided a few snapshots of presentations and sessions from the conference.

Presentations by ELLA members at AHDA Online 2020

- Jess Aitken. Temperament and Cooperative Ability in Infancy: Are Effects of Temperament Mediated by Children's Social Behaviour During Cooperative Tasks?
- Nichole Breeland. First impressions matter: Warm up play impacts toddlers' cooperative ability with a same-aged peer.
- Samantha Gibb. Does Parental Responsiveness Predict Child Cooperative Engagement?
- Sina Gibhardt. The ontogeny of prosocial emotions: An investigation of proximate mechanisms underlying altruistic helping in preschoolers.
- Simran Kaur. Do early social cognitive abilities predict later cooperative behaviours?
- Alecia Moser. How the complex and dynamic social learning environment influences infants' novel word learning from 2D media.

- Livia MacPhedran. Attention to detail: a functional relationship between the CHNRA4 gene and joint coordinated attention during a cooperative task.
- Hedieh Tavazo. Maternal Instructional Styles While Teaching Cooperative Tasks: A Cross-Cultural Study



That's (nearly) all folks!

We hope that you have enjoyed reading about ELLA's 2020 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!

We have also been busy 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.

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:

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.

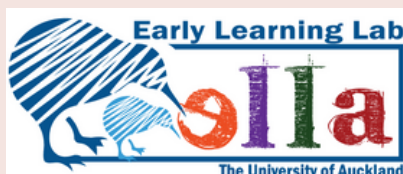
If you are interested in participating in the study, we know how busy you are, and so **we do our best to schedule at your convenience**, offering weekday and weekend appointments when available.

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**

New parent?

[sign up to participate here!](#)



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