Princeton Baby Lab

2020-2021 Newsletter

Dear Baby Lab Families,

Unsurprisingly,the Princeton Baby Lab has been closed since March 2020. The COVID-19 pandemic has dramatically affected behavioral and neuroscientific research throughout the world. Some of our studies have been put on pause but—thanks to our amazing post-docs, graduate students, undergraduates, and staff—we moved many of our studies online and reshaped them to be accessible from home. These studies have helped us gain new insights into the way children of all ages learn about the world around them. This newsletter contains summaries of just some of the studies we conducted this year.

None of this research would have been possible without the participation of families like yours. If you're receiving this newsletter, you probably contributed your time and effort to support our science. THANK YOU! We greatly appreciate your patience, willingness, and generosity.

Developmental research is expanding at Princeton with the addition of new faculty. Last year, the Department of Psychology welcomed Professor Kristina Olson, who studies how children think about themselves and other people around them, with a particular focus on gender development. We continued to expand the Princeton Big Kid Lab, our group of scientists studying older children and adolescents.

We do not know the timeline for reopening the lab, but for now we will continue to conduct all of our studies virtually. We would love it if you could spread the word about the Princeton Baby Lab and Big Kid Lab! If you know someone new to town with children, please send them to our website! If you have a new addition to the family, we'd love to study how they are learning and developing.

We look forward to eventually bringing families back to the lab. You and your Tiny Tiger make our work possible, and we're very grateful to you for helping us during this challenging year. We hope you enjoy reading about our recent and ongoing science!

Dr. Lauren Emberson and Dr. Casey Lew-Williams
Co-directors
Princeton Baby Lab




New addition to the family?
Have friends with babies?
Never been to the Baby Lab?

We're always excited to have new participants and families in to see us!

If you're interested in visiting the Baby Lab, please email us at babylab@princeton.edu, call us at 609-258-6577 or sign up on our website at babylab.princeton.edu

Get to know our researchers!

"What has been your favorite movie or show to watch in quarantine?"


Sagi Jaffe Dax
Postdoc
"1917."

Jessica Kosie
Postdoc
"My favorite TV show was The Tunnel which isn't actually from 2020, but it was new to me!"



Yaelan Jung
Postdoc
"Normal People, Unorthodox or Snowpiercer but I can't think of any movies!"

Martin Zettersten
Postdoc
"I haven't found a way to see it yet, but I'm pretty confident that The Truffle Hunters will become my favorite movie of 2020. Other than that, probably A Portrait of a Lady on Fire."



Sammy Floyd
Graduate Student
"My favorite movie was Nomadland."

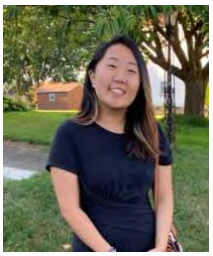
Asana Okocha
Graduate student
“My favorite show to watch was Last Chance U and favorite movie was Parasite which technically came out in 2019, but oh well.”

Benny deMayo
Graduate student
“I have to say Schitt's Creek!”

Sori Baek
Graduate Student
“Definitely New Girl!”

Mira Nancheva
Graduate Student
“I'd have to say The Good Place.”

Crystal Lee
Graduate Student
“The Good Place!"





Anna Herbolzheimer
Research Specialist
“My favorite movie was Hamilton. I was very behind on this trend.”

Taylor Martinez
Lab Manager
“This is so hard, I have to say The Queen's Gambit or Insecure for TV and Booksmart for movie.”



Annie Schwartzstein
Lab Manager
“My favorite movie was Soul and my favorite show was The Crown.”

What have we learned from your visits to the Baby Lab?

Whenever you and your Tiny Tigers participate with the lab, our researchers collect valuable data that they then use to answer big questions about childhood learning.

Because of your incredible support and commitment, we've been able to get a little further in answering the following questions this year!

Age Range: 6-12 months old

Why are infants more interested in some things than others? Infant attention around the world.

Jessica Kosie, Martin Zettersten, Casey Lew-Williams, and the ManyBabies5 team

One of the key ways we learn about what infants know is through their eyes: by measuring what infants prefer to look at, we can figure out how they are experiencing the world around them. In this project, we are interested in understanding some of the fundamentals of infant looking, namely what leads infants to be more interested in attending to one thing versus another. Are infants more likely to get interested in seeing something new the longer they look at the same thing? Do infants get bored looking at a familiar object more quickly as they get older? By gaining a better understanding of some of the basics of what drives infant attention, we are hoping to sharpen one of the most important tools in an infant researcher's toolbox: inferring what infants know from where they prefer to look.

A major goal of this project is to work together with a wide community of infant researchers to understand infant looking around the globe. We are partnering with the ManyBabies community of researchers (https://manybabies.github.io/) to test whether infant attention develops similarly across different countries, cultures, and contexts. So far, 122 infant research labs across 40 countries and 6 continents have signed on to participate in the project. We are excited to work with a broad community of wonderful researchers in coming years on what might become one of the largest cross-cultural experiments on infant attention ever!

Locations of labs from around the world participating in the project

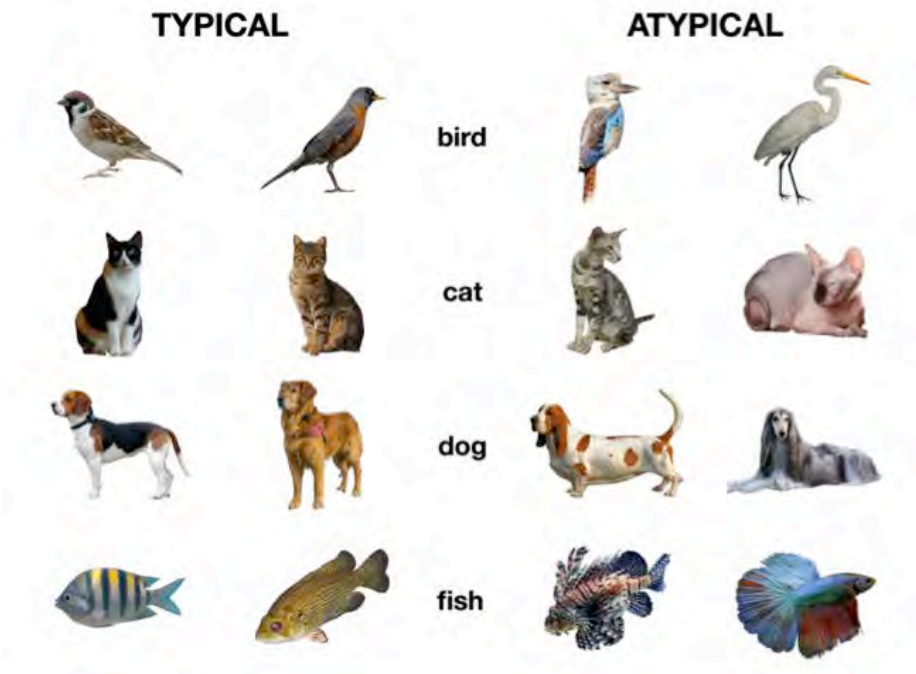
Age Range: 12-18 months old

How do babies become word meaning experts?

Martin Zettersten, Haley Weaver, Jenny Saffran

Over their first years of life, children become word meaning experts: not only do they learn thousands of words, they also understand that words can refer to broad categories. Children quickly learn that a word like dog can refer not only to their own dog, but also to the Labrador next door, the Dalmatian in their favorite TV show, or the Shiba Inu they just saw for the first time. How early do infants learn such general word meanings? And how do their early experiences with categories (e.g., the particular dogs they have seen) influence what infants think words mean?

In this study, we are testing whether infant's early word meanings are narrow, including only typical dogs (like a Golden Retriever), or more broad, also including atypical or unusual dogs (like a Basset Hound). To test this question, we presented infants between 12 and 18 months of age with pictures of both typical and atypical animals from categories with words familiar to young infants (dog, bird, cat, and fish). We then played infants a category name (e.g., "Look at the dog!") to see how quickly and accurately they would look to its matching picture, depending on whether the animals in the picture were typical or atypical.



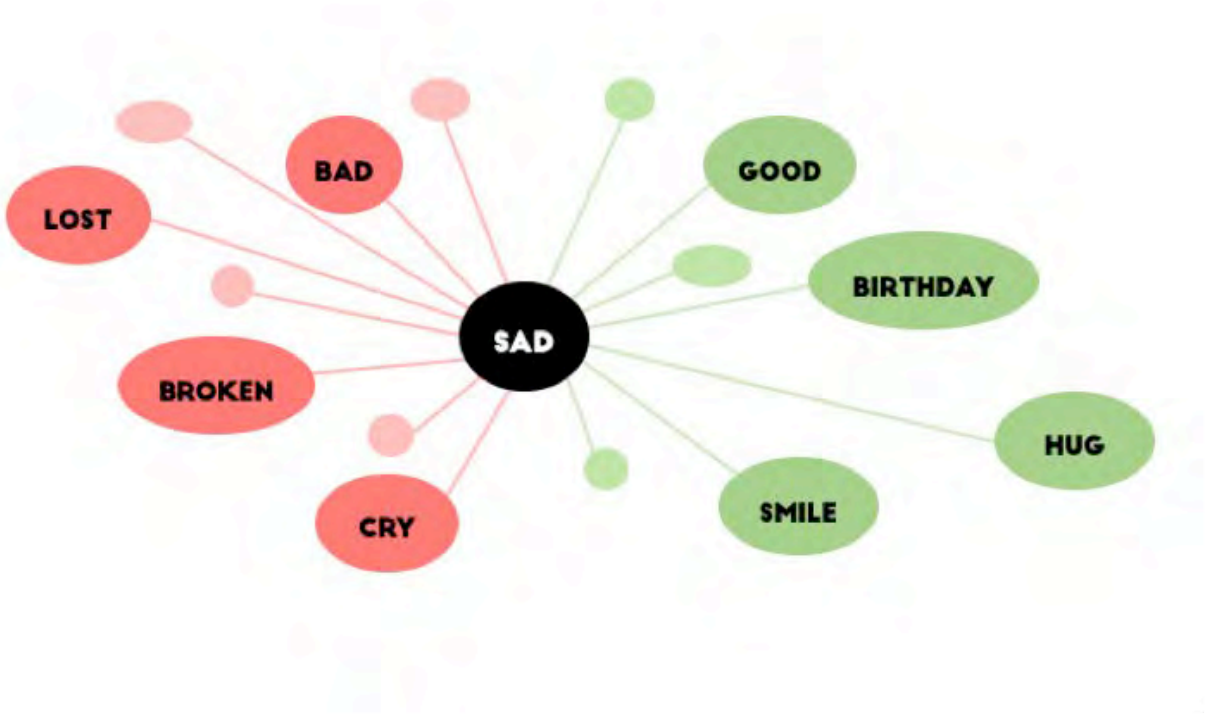
Since families were unable to visit labs in-person during the pandemic, we used the “Lookit” online child lab (https://lookit.mit.edu/) to invite families to participate in the study from home. Parents and their infants could view the study through a web browser, and we recorded where infants looked during the study through their webcam video. So far, our results suggest that infants realize that the word “dog” can refer not only to typical dogs, but also to unusual dogs. This study is a first step in a larger project that will investigate how infants’ different experiences with categories (e.g., having a particular dog as a pet) affect what they think a word means.

Age Range: 16-30 months old

How do children learn to name emotions?

Mira Nencheva, Diana Tamir, Casey Lew-Williams

How do we learn to talk about our emotions? In the past, scientists have focused on how we learn words that refer to objects (e.g. words like cup, and spoon). But there's no object we can point to when we name the emotion happy, even our facial expressions and actions are not always reliable (for example sometimes we cry when we are happy, other times we laugh), there are many specific contexts and situations that determine whether we are happy or not, and different people can feel different emotions in the same situation. Learning the words to name our emotions (e.g. happy, sad, angry) is quite complicated! So, we might need a slightly different toolbox to learn what emotion labels like happy and sad mean and we might use slightly different clues in our conversations. We focused specifically on one such clue – other related words.



First, we were interested to see if knowing other negative or positive words like bad, cry, and good, smile, hug respectively might help children in learning a new emotion label, like sad. We thought that these types of words can help children get the meaning of an emotion label from context, or serve as a comparison. We looked at vocabulary surveys filled out by parents for their toddlers (16 – 30 months) and we found that children who knew lots of words with a positive or a negative meaning were more likely to know the label for a given emotion!

But how do children learn that words like bad and cry are related to emotions like sad? We analyzed many parent-child interactions to look at what parents were talking about in the moments before they labeled a given emotion. We found that caregivers tended to talk about positive things, and using more positive words like good, hug and smile in the moments leading up to a positive emotion label like happy. Similarly, they were talking about more negative things and using more negative words like cry, bad and broken before negative emotion labels like sad. Perhaps by hearing these words close to each other in time, children are forming links between them!

We found that the more parents provided these kinds of cues to how positive or negative the emotion is by using other related words when labeling it, the more children used the appropriate emotion label in a situation (e.g. using a negative emotion label like sad when talking about a negative situation or using a positive emotion label like happy when talking about a positive situation). The words that parents naturally use when talking about emotions may help their children learn the names of different emotions!

Age Range: 18-24 months old

What kind of verbal and non-verbal communication happens naturally during play?

Jessica Kosie, Ella Whitfield, & Casey Lew-Williams

Interactions between infants and their caregivers provide rich opportunities for learning. For example, even without the explicit intention to teach, caregivers naturally talk about things that are occurring, use exaggerated facial expressions of emotion, gesture to help point out objects, and demonstrate new actions to infants. We're interested in how these cues might shape infants' attention and behavior during play.

To learn more, we recorded caregivers and infants playing together via online video chat. We then looked at when these different cues were occurring as well as infants' behavior throughout the play session (e.g., what they were paying attention to, when they vocalized or pointed). So far, we see that a lot of speech and vocalization occurs in almost all interactions. This is what we'd expect given the results of previous research, most of which has focused primarily on speech. However, our study extends beyond speech to look at non-verbal behaviors (like emotion, gesture, action, and touch) that occur during natural play. We find a lot more variability here than in speech alone. For example, some caregivers use a lot of gestures while others use a lot of facial expressions, and some use a lot of both. The next step in this ongoing work is to examine how these non-verbal cues influence infants' behaviors.

So far, we are finding that there are lots of different ways that caregivers and infants play together, and infants have lots of opportunities to learn from everyday play. Thank you to all of the families that helped us make the project possible! Keep playing together and having fun!

Age Range: 18-24 months old

When watching a screen, do children explore similarly to how they explore in real life?

Annie Schwartzstein, Sammy Floyd, and Lauren Emberson

Often, when children aren't playing in real life, they are exploring scenes on a screen. But scientists don't know if children look at or explore things the same way through screens. In this eye tracking study, we tried to find out if kids explored objects on screens in a similar way to how they explore them in real life.

So far, we have found that toddlers look at objects in similar ways on screens to how they would visually attend to objects in real life! This is exciting for researchers, because it means we might be able to study natural exploration in the lab through eye tracking on a screen. However, further work is needed to understand if children are learning from what they see in the same way!

Age Range: 3-5 years old

How do children use social cues to learn new words during discourse?

Crystal Lee & Casey Lew-Williams

Children are very sensitive to different behavioral cues like eye-movements and pointing, and they can use these cues as hints to word meanings. In this project, we examine how children can use these cues to learn word meanings over complex linguistic input, such as over a discourse (e.g., “This is a dog. He is spotted. His name is Fluffy”). On an iPad study, we taught 3 to 5-year-olds new, made-up words. We varied when social cues were given over a discourse surrounding these new words. So far, we have found that children are better at learning these new words when social cues align with naming events (e.g., this is a blicket), even if they are presented over an extensive discourse!

Can you touch the blicket?

Age Range: 3-10 years old

How do the things we see impact how we feel?

Yaelan Jung, Annie Schwartzstein, and Lauren Emberson

Have you ever looked at something and thought, “That is so pretty, it makes me happy!” Maybe it was a beautiful sunrise, or a peaceful ocean. Also, have you ever seen something and immediately felt scared? Maybe it was a scary animal or an angry face.

From past research, as well as our own experiences, we know that adults are sensitive to simple visual features – such as the length of lines that make up a scene – when they make a judgment on whether they like certain images or dislike (feel threatened by) them.

However, something we don’t know is if adults have these feelings about the visual elements because our brain is evolved to be alert at certain visual cues and detect a threat (nature) or if it’s something they’ve learned from our daily experiences as we grow up (nurture). We are testing to see if young kids make similar emotional judgments on simple visual features just like adults, to learn more!

Thank you for supporting our research!