

Cognitive Development Labs at Wesleyan University



Yellow Lab 2018-2019



Blue Lab 2018-2019

The Cognitive Development Labs at Wesleyan University explore how children think about math and numbers, space and time, language, and people. Through short, fun games, we investigate how kids learn about the world around them.

The Labs include the Yellow Lab, directed by Dr. Hilary Barth, and the Blue Lab, directed by Dr. Anna Shusterman. Both of the Cognitive Development Labs are located in Judd Hall on Wesleyan University's campus.

Our research would not be possible without the support of local schools, daycares, and families. If you have a child under the age of 12 and are interested in having your child participate in one of our studies, please contact us at **860-685-3588** or sign up online at www.wesleyan.edu/cdl.

Lab Members 2018-2019

Directors

Hilary Barth (Yellow Lab)
Anna Shusterman (Blue Lab)

Postdoctoral Fellows

Chenmu (Julia) Xing
(Yellow Lab)

Lab Coordinators

Kaila Scott-Charles (Blue Lab)
Katie Williams (Yellow Lab)

Research Assistants

Yellow Lab

Lauren Barragan, Esha Bhandari, Kerry Brew, Sophie Charles, Jenny Chelmow, Taylar Clark, Amanda Fiorentino, Maya Layne, Caro Montano, Sarah Ohiomah, Katie Vasquez

Blue Lab

Kendall Carr, Josie Catalano, Niko Christian, Claudia Ferrara, Danielle Gozzo, Rebecca Houston-Read, Mary McAllister, Lydia Paddock, Hannah Ratner, Kaila Scott-Charles, Emma Trapani

News 2018-2019

We are very excited to share with you what we've been working on this year!

Kerry Brew B.A. '18, M.A. '19, completed her Master's thesis project on minimal ingroup bias in children. Congratulations and well done, Kerry! Thank you to the many children and their families who helped make this study possible!

Congratulations to our graduating seniors Jenny Chelmow, Taylar Clark, Kendall Carr, Rebecca Houston-Read, and Kaila Scott-Charles, and to Jenny and Kaila on completing their senior theses!

Our postdoctoral fellow Dr. Chenmu (Julia) Xing will be leaving us this summer to join the faculty at Minot State University. Congratulations, Julia!

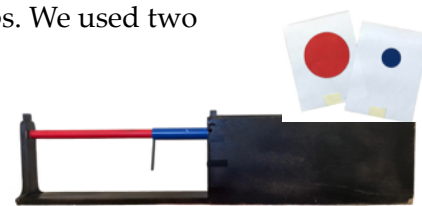
This year the labs presented research at the 2018 Annual Meeting of the Psychonomic Society in New Orleans, LA; the 2019 Biennial Meeting of the Society for Research in Child Development (SRCD) in Baltimore, MA; the 2019 Annual Meeting of the Eastern Psychological Association (EPA) in New York City; and the 2019 Annual Meeting of the Mathematical Cognition and Learning Society (MCLS) in Ottawa, Ontario, Canada.

Additionally, we joined some local community events. Lab members attended the Halloween Downtown Trick or Treat and Fall Festival in Middletown. We also shared games from our Preschool Math Curriculum with families at Preschool Math Night in Cromwell, hosted by the Cromwell Early Childhood/School Readiness Council. We always have a wonderful time meeting local families and sharing our research with the community!

Yellow Lab Studies

Early intuitions about fractions and proportions

Although children often learn formal proportional reasoning later in elementary school, even very young children may have an intuitive understanding of proportional relationships. We used two games to explore children's early intuitive ability to reproduce proportions. In these games, they saw (for example) a circle that was $\frac{1}{4}$ blue and $\frac{3}{4}$ red, and were asked to create the same proportional relationship using a different blue and red shape. Preschoolers with no formal knowledge of fractions or proportions were able to succeed. Our ongoing work continues to explore the early development of intuitive proportional thinking.



Number line estimation

Number lines can tell us a lot about what children do and do not understand about numbers and their magnitudes. We have found that estimates of where numbers should go on a number line are heavily influenced by leftmost digits. For example, when placing numbers on a line labeled "0" at the left end and "1000" at the right end, "599" is placed much farther to the left than "602" even though they belong in almost the same place. This is true for children and even for adults! We are currently exploring what this "left digit effect" means for number understanding, and how it might be related to other verbal and math skills.

Thinking about quantities: time, space, and number

We are interested in discovering more about how our brains keep track of quantities like time (duration), space (distance), and number (how many). Previous research suggests that people's perceptions of quantities may be influenced by the contexts in which they appear. For example, the same time interval can seem longer when it is presented in one context, and shorter in another context. In ongoing studies, we are working to understand how our brains keep track of durations, distances, and numbers, how context can shape our judgments about quantities, and how these patterns might change over development.

Preschoolers making choices

Sometimes the way a choice is set up can "nudge" people toward making one decision instead of another. For example, in a previous study in our lab, children played a game in which they handed out food to a set of animals, and the way they handed out the food was influenced by the way the animals were grouped. This tendency appears in adults too, and it can sometimes lead to decisions that are irrational or unwise. Our recent work investigates whether children show these grouping effects when they are selecting one item from a menu of options.



Belonging to social groups

Infants and very young children divide the world into categories based on social groups. Social categories influence children's behaviors and attitudes toward others. Even made-up social categories can shape children's behavior. For example, when children are assigned to a group that has no real-world meaning (for example, they are given a green t-shirt and told they are in the green group), they often prefer kids in their own meaningless group instead of kids in a different meaningless group. It is widely believed that merely belonging to a group, even if it is meaningless, changes the way people evaluate others who are group members or nonmembers. In our ongoing work we are investigating different explanations of this finding.



Blue Lab Studies

This year, we continued running studies on young children's understanding of number words, spatial navigation, and social reasoning, which you can read about in past newsletters. In this newsletter, we decided to highlight a new line of research to share with you. Kaila Scott-Charles, class of '19, was inspired by her study abroad experience, where she noticed many differences between American and Danish parents in how they talked about diversity, ethnicity, and related issues. For her senior thesis, she examined the ways that parents talk about race and ethnicity to their children, and how parent attitudes are reflected in what their children think and feel about people who look similar or different to them. Kaila is heading to a PhD program in Developmental Psychology at the University of Chicago, where she will continue studying these questions.



Parent and child attitudes about race and ethnicity

Kaila Scott-Charles, '19

Talking about issues of race and ethnicity can be difficult. Often with good intentions, people may say things like, "I don't see color" or "Race doesn't matter." However, we know from research that being colorblind or avoiding discussions about the importance of race in our society does not actually reduce racial prejudice, discrimination, or stereotypes. Studies suggest that these colorblind attitudes may prevent us from addressing unconscious *and* conscious racial bias.

Understandably, these topics may be especially difficult to engage in with children. Parents may find it hard to gauge their children's understanding of race and ethnicity. However, previous research shows that babies can distinguish between their own race and other race faces from as young as 3 months old. Children understand the concept of race and begin making judgements and decisions about others based on race and ethnicity between the ages of 3 and 5. With this knowledge, it is important that parents help their children think about race and ethnicity early on. Without any input from their parents, studies show that children may still be racially biased in their friendship preferences and evaluations of others even when their parents report unbiased attitudes. Luckily, children are very observant and curious from a young age and this can allow for great learning opportunities! Research-based tips about talking about race with children and even a list of children's books related to the topic can be found at embracepace.org.

In our recent study, we investigated the effects of parents' colorblind attitudes on their children's racial attitudes. We found several important results. First, in adults, greater colorblindness reflected greater expressed bias, consistent with past research. Second, parents' level of unconscious racial bias was related to children's explicit bias, which they showed by choosing a photograph of a same-race child to be their friend more times than choosing an other-race child. However, we did not find a relationship between parents' colorblindness and children's racial attitudes. We also know from past research that when people have more contact with people of different races, they generally show lower racial bias. So, we looked at the link between interracial contact and participants' racial attitudes. We found that parents who showed greater unconscious racial bias reported that their children had less contact with people of other races.

These studies help us to understand how parents' attitudes are transmitted to their children – even if parents don't choose to talk about issues of race and ethnicity at home. We look forward to being able to conduct more of this research, and we thank all of the families and participants who helped us with this first study!



Thank you to everyone who makes our research possible!

BASREP, Inc.

Bethany Lutheran Preschool

Bielefield Elementary School

Brewster Elementary School

Burr Elementary School

Carriage House Day Care

Center Congregational Preschool

Chester Child Center

Christ Lutheran Nursery School

Clarke Schools for Hearing and Speech

Connecticut Science Center

Discovery Center Preschool

Haddam Elementary School

Head Start

HK Recreation Department

Independent Day School

Island Avenue Elementary School

Jeffrey Elementary School

Kidcity Children's Museum

Killingworth Elementary School

KOCO Child Care Center

Korn Elementary School

Kovacs Family Day School

Lawrence Elementary School

Lyman Elementary School

Madison Beach & Rec Department

Macdonough Elementary School

Meriden YMCA

Middlefield Children's Center

Middletown Cooperative Preschool

Miss Joanne's Learning Center

Moody Elementary School

Neighborhood Preschool

Northwest Children's Center

Roberge Childcare Center

Russell Library

Ryerson Elementary School

SERC Family Resource Center

Snow Preschool and Elementary School

Southfield Children's Center

St. John Lutheran Preschool

Tender Care Learning Center

Town & Country Early Learning Center

Wallingford Community Day Care Center

...and to all the children and families who participated!

Interested in participating?

860-685-3588 | cdl@wesleyan.edu | www.wesleyan.edu/cdl



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