

SUMMER
2014

FACEBLIND KIDS NEWSLETTER

Dear members of the Faceblind Kids Research list, A lot of good things have happened recently, so we are particularly excited to send this research update.



RECENT UPDATES

We have a new website!

We recently launched a website about developmental prosopagnosia in childhood. This website is designed to provide general information about face blindness in kids, and to keep you up-to-date on our research on a more regular basis. It also includes firsthand accounts from some families regarding what it's like to live with faceblindness. Visit the site at http://www.faceblind.org/social_perception/dpkids/dpkids.html

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We are publishing!

We recently published some key studies on faceblindness in kids, including a study of the psychosocial impact of developmental prosopagnosia on children and their families, and on the developmental trajectory of faceblindness (how do kids with faceblindness become adults with faceblindness? See p.3). In addition, a new issue of the Encyclopedia of Neurological Disorders was released in March, which includes a chapter on prosopagnosia. You can download copies of the above publications from our websites:

www.faceblind.org/social_perception/dpkids/resources.html

www.faceblind.org/social_perception/Kirsten.html

I have moved (again)!

I am still at the Institute of Child Development at the University of Minnesota, but I am now working in the E-Lab with Dr. Jed Elison, an expert in social neurodevelopment. Teaming up with Dr. Elison has allowed me to gain expertise in infant and child neurodevelopment, and the E-Lab's focus on the social brain has allowed me to fit right in and ask new and interesting research questions relevant to faceblindness in kids.



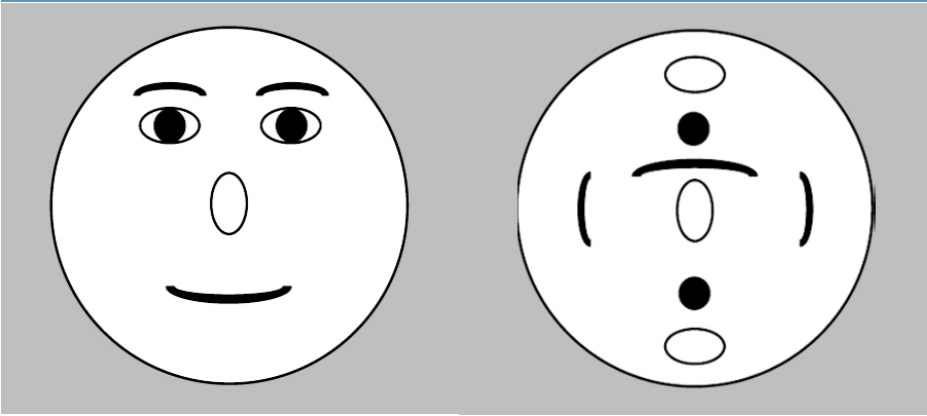


Figure 1. Face and non-face stimuli from our infant eye-tracking study.

WORKS IN PROGRESS

We have a lot on the go! We are still in the process of writing up results from our work on prosopagnosia in children, with three more papers in progress. These papers examine possible causes of prosopagnosia, face-specificity in prosopagnosia (i.e. does it only affect faces, or is object recognition affected as well?), and the challenges of identifying prosopagnosia in children. In addition, we are conducting new studies aimed at testing the ability of individuals with prosopagnosia to pay attention to faces in a normal way (i.e. do faces catch their attention in the same way that they do for typically developing kids?). We have also started a study looking at the roles of the left versus right hemisphere in the development of normal face recognition (Fig. 1). This study involves testing infants between the ages of 3-6 months to examine



their preferences for face versus non-face stimuli. We are tracking their eye movements to determine what they like to look at. Based on their looking behaviour, we will make inferences about the brain pathways involved in developing an expertise for face processing.

RELEVANT RESEARCH

A 2014 publication in the journal *Cortex* by our colleagues in the UK reports that, “Intranasal inhalation of oxytocin improves face processing in developmental prosopagnosia”. Oxytocin is a hormone involved in the regulation of basic social and reproductive behaviours. The researchers administered oxytocin to 10 adults with developmental prosopagnosia (DP). Oxytocin temporarily improved face recognition in the group of developmental prosopagnosics, but not in a group of control subjects. The authors speculate on the neural underpinnings of the effect and ultimately conclude that, “while the current study examined the influence of a single dose of oxytocin in bringing about a temporary improvement in face processing in DP, further work might also consider the therapeutic value of repetitive inhalation of oxytocin in this condition and the sustainability of any improvements.” You can learn more about this research at: prosopagnosiaresearch.org

Quotes from kids

"Mom, I think Aurora has facial recognition problems- she thought I was Cinderella just because we had the same dress and the same color hair."

– Claire (5-years-old), dressed as Cinderella and meeting Princess Aurora at Disney

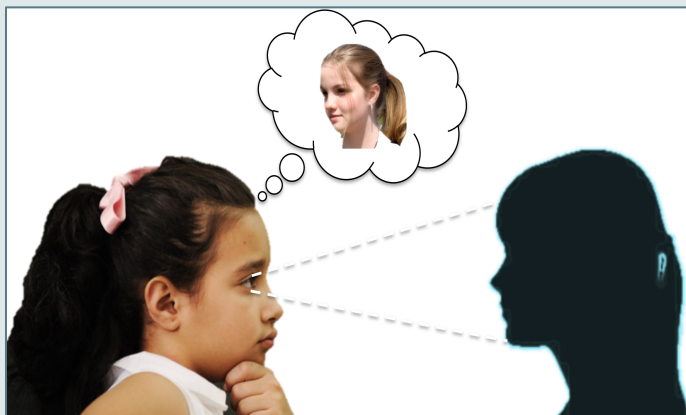
"All I do to find the right Holly is to look at both Hollys and say OK, so I want the one with a striped shirt, light colored skin, the hair like I have, and also no bracelets..."

– Charlotte (6-years-old)

FACE PERCEPTION AND FACE MEMORY IN CHILDREN VERSUS ADULTS WITH DEVELOPMENTAL FACEBLINDNESS

Scientific models propose that face recognition happens through a series of stages, including perceptual representation of a face, and encoding and retrieval of facial information. This suggests that impaired face recognition can result from failures of face *perception*, face *memory*, or both. We tested the face perception and face memory of children and adults with developmental faceblindness. By definition, face memory is impaired in faceblindness, so memory deficits existed in all participants. However, we found that all children, but only half of the adults had impaired face perception. Our findings raise the possibility that faceblindness is qualitatively different in childhood versus adulthood. This work is an important first step, but follow-up studies are necessary to better understand the developmental trajectory of face perception and face memory deficits in faceblindness.

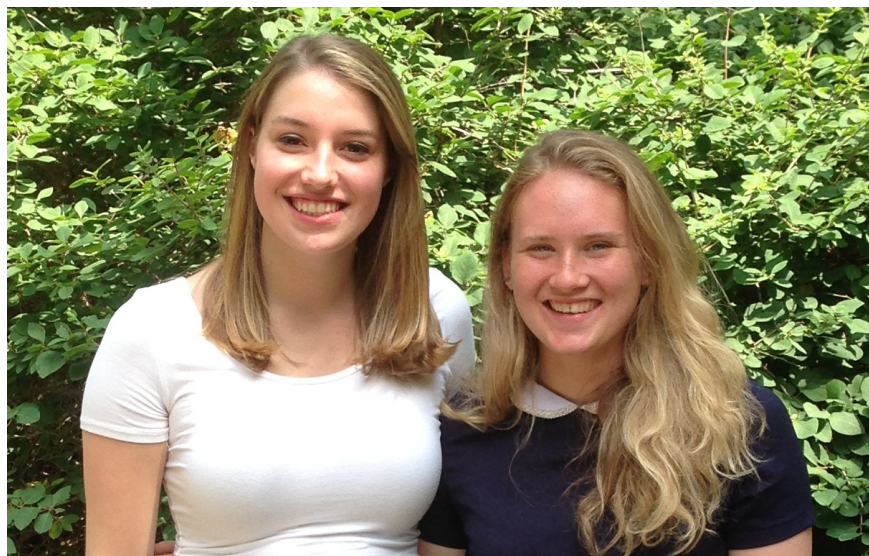
This work was conducted by Kirsten Dalrymple, Lucia Garrido, and Brad Duchaine and is currently in press in the *Journal of Developmental Cognitive Neuroscience*.



Face recognition involves perceiving a face, and then encoding it to memory. We must retrieve that memory and compare it to our perception of a face to determine whether the face is familiar or unfamiliar.

AMAZING RESEARCH STAFF

This summer we were fortunate to have two bright and dedicated research assistants to help collect data from over 125 typically developing infants and children. This data will be used to test hypotheses about the development of normal face processing, and as comparison data for children with suspected prosopagnosia. Anna Carlson (left) just graduated from high school and will be attending Barnard College in New York City in the fall, where she plans to continue studying psychology. In her spare time, she enjoys scrapbooking and competitive debate. Olivia Engel (right) is a rising senior at Southwest High School in Minneapolis, MN. She is interested in studying psychology when she attends college in the fall of 2015. In her spare time Olivia enjoys playing tennis and cross country skiing. Both girls have taken this opportunity to learn about the visual system, data analysis, research ethics, and eye tracking, and will no doubt become very skilled and accomplished research scientists.



AMERICA'S BEST FACES... ER, I MEAN TAILS!

One of our Proso Kids is a TV star! Madi and her service dog, Dutch, recently appeared on a program called, "America's Best Tails". Madi and her mother, Rebecca, explain how having a service dog to help Madi with her faceblindness has improved her confidence and independence. You can check out the video here:

<http://americasbesttails.com/index.php/abt-episodes/40-episode-6> or on our website.



THANK YOU

I hope that you are as excited about these announcements as I am. We are making great progress in our work and spreading the word about faceblindness and its impact on the lives of individuals around the world.

Special thanks to the families who have participated in our research. I hope you're pleased with the outcome of our work. Special thanks also to those of you who have reached out to share your experiences with myself and others. These anecdotes help us formulate research questions and design studies that may provide big breakthroughs in the study of developmental prosopagnosia in kids.

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