



Emory Infant and Child
Development Research Laboratory
Newsletter
Summer 2016

Letter to Parents:

Article by: Philippe Rochat Ph.D.
Head of the Emory Infant and Child Lab

Yet another productive and busy year here at the Emory Infant and Child Lab. We could not do our work without the joint effort of many individuals: the diligent care and supervision of our Lab Coordinator Theresa Nettles, all the good work from our visiting scholars, graduate, as well as volunteering undergraduate students. More importantly, thanks to the parents and children who came to visit the Lab and participated in our studies over the past year. As always, the goal of the Infant and Child Lab is to contribute to the scientific understanding of how the minds of children grow. We could not do it without you.

Let me mention a few cardinal moments from the past year at the Lab. We welcomed a new doctoral graduate student, Maria Jones, National Science Foundation fellow. Maria is starting her dissertation work at the Lab on the emergence of racial bias and stereotype threat by majority and minority children and adults, using innovative experimental paradigms (see her article). We continue to complete the work started in collaboration with Laurent Cordonier, a visiting Swiss research scientist and Ph.D. student from Lausanne, conducting a study on social conformity in 3 to 7 year-olds in collaboration and with the help of Theresa Nettles (See pg. 2). We have analyzed the results, suggesting that by 5 years of age children intuitively anticipate that someone would forget about what is true and pretend otherwise to align with a majority opinion to gain friendship and affiliation. We are about to show that by 5 years of age, and not prior, children become strategic in understanding the value of compromise and belief

adjustment to fulfill basic affiliation needs. In collaboration with yet another Swiss scholar who visited the Lab over the past year, Amélie Deschenaux, we continue to collect data on how infants perceive and young children understand imitation, in particular the role of imitation in forging close social affiliation.

Otherwise, the paperback edition of my book on the "Origins of Possession: Owning and sharing in development" published by Cambridge University Press came out at the beginning of the year. Our cross-cultural study on sharing by Tibetan preschoolers attending a traditional Buddhist school in Dharamsala, India, where the Dalai Lama resides was published, in the Journal of Cross-Cultural Psychology. The study was run by one of our former Honors undergraduate students, Steven Starr, who finished his thesis on the effect of short-term compassion training by elementary school children in an Atlanta school. More publications of our work in the past year can be viewed and downloaded from the Lab Website. Finally, and not the least, we received a University grant that allowed us to purchase a state of the art TOBII eye tracking machine that we started to use in various projects testing 2-12 month-old infants' perception of faces and the detection of social affiliation. Busy year indeed! Notwithstanding the fact that some of us are about to leave for the South Pacific to conduct more cross-cultural studies on infants and children living in villages of remote islands in Polynesia and Melanesia (Samoa and Vanuatu). More comparisons to be made with our US kids!

Once again, to all the parents and children who came or are planning to come to the Lab: thank you for all your help. Do not hesitate to contact us for any further input or information. We hope you will enjoy the newsletter. As usual, please circulate and spread the word...

Meet the Lab: Philippe Rochat

Philippe Rochat was born and raised in Geneva, Switzerland. He was trained by Jean Piaget and his close collaborators, and received his Ph.D. from the University of Geneva, Switzerland in 1984. He then began a series of Post Doctoral internships at Brown University, the University of Pennsylvania, and Johns Hopkins. The main focus of his research is the early sense of self, emergence of self-concept, the development of social cognition and relatedness, and the emergence of a moral sense during the preschool years in children from all over the world. His research emphasizes differences in populations growing up in highly contrasted cultural environments, as well as highly contrasted socio-economic circumstances.



Development of Friendship in 3 to 5 year olds

Article by Theresa Nettles

In the past few years, we have explored the idea of friendship in several ways. We wanted to explore whether children conform to the opinions of their peers to enhance social integration. Is conformity a type of social affiliation and do children understand that it can be used as a means to gain social affiliation? Also, we wanted to explore a different kind of expression of friendship mimicry. Children naturally mimic friends from a young age; however, at what point do children recognize mimicry as a sign of friendship? These are some of the questions that we asked.

For the conformity experiment, we originally ran two sets of participants (ages 3-5 years of age) with only a slight difference between the two experiments. In both experiments, the child was shown a group of three puppet "friends" and one puppet who was not friends (lets refer to him as "other") with the three. The "other" puppet really wanted to be included in the games that they were playing, but the "friend" puppets did not want him to. Next we explained that the "friends" went on a treasure hunt and found a box. When asked what "others" would say is in the box, would the child if he either knew or did not know what was in the box, change his answer dependent on what the "friends" said?

We found that 5 year olds, but not 3 year olds, did in fact change their answers to go along with the group. This year we ran a control to the original study to confirm these findings in 5 year olds. We are currently analyzing and writing the manuscript. We hope to have it published by the end of this



year. As young as 5 years old, children do recognize the need to conform to fit in with a group when friendship is desired.

The study about mimicry in friendship also used puppets to tell a child a story. However, in this experiment, the child was to infer about friendship dependent only on the movement of the puppets in short clips. "Moving together" includes different kinds of behaviors such as imitation, emulation, synchrony or mimicry. Actually, evidence shows that such behaviors may have an affiliative effect in several ways and at various levels.

In the original study, children were asked to identify which puppets on the screen were friends dependent solely on movement. In each screen children were asked to pick which two were best friends. Again, we found more striking results with 5 to 6 year old children and not younger children. Children older than the age of 5 statistically chose the two puppets whose movements were more alike. Over the last year we have run two additional controls to confirm what we captured in the original study.

The first control was with younger children. Children as young as three do spontaneously mimic the behaviors of children who are considered their friends. Our results however indicated that they did not recognize such movements as a sign of friendship. In this control we only asked the younger children to tell us which puppets were most alike. In the second control, we have asked older children to pick out which two puppets were the "best drawers." This type of control is to measure the amount of randomness that typically happens with this age group.

This study is also currently being finished and analyzed. We are confident that our findings will continue to tell the story, but we need to wait for the numbers.

Meet the Lab: Theresa Nettles

Theresa Nettles has been the Lab Coordinator at the Infant and Child Lab for 6 years. She received her Master's In Experimental Psychology from the University of Texas at Arlington in 2009 and joined the lab shortly after.

Theresa is mainly involved in overseeing the administrative duties of the lab. This includes scheduling participants, coordination of studies, website maintenance and newsletter editing. She has run several studies including the Friendship Studies.

Besides her duties in the lab she currently teaches Introduction to Psychology, Abnormal Psychology and Human Development at Chattahoochee Technical College. This is Theresa's last year at the lab. In August of this year she will join CTC's full-time faculty. She will miss the lab and the many children who she has watched grow before her eyes.



Can you identify which faces are real? Your Baby can!

Article by ShenSheng Wang

Faces are crucial social stimuli for people to interact with each other. Preference for face-like stimuli is present among newborn infants.

The preference for faces over non-faces has been found in various visual stimuli, including veridical faces, schematic faces and geometric face-like patterns. Among these face-like stimuli, however, the extent to which infants perceive their realism or human likeness is less known.

To bridge this gap in the literature, I conducted an eye-tracking study examining how 6-12 months old infants perceive human and artificial faces (e.g., androids, dolls, wax figures, and mannequins), which were previously judged by adult participants as comfortable and uncomfortable, respectively.

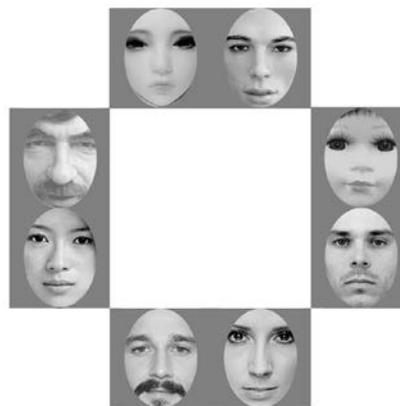
Using a modified visual searching paradigm, 8 faces (4 human and 4 artificial) were simultaneously presented on a wheel display on an eye-tracker screen. Infants sat on their moms' laps and freely looked at the 8 faces while their eye movements were recorded. The results showed that infants discriminated between human and artificial faces, and spent a larger proportion of time looking toward human than artificial faces. These findings suggest that young infants not only distinguish faces on the dimension of realism but also demonstrate real face preference.

In the following study, I examine the cognitive mechanism whereby this human face preference emerges. Possible mechanisms include face form and face animacy perception (Looser, Guntupalli, & Wheatley, 2013). Face form perception is based on detection of global face configuration which is shared among all types of facial stimuli, including human, monkey, and artificial faces. In contrast, face animacy perception relies on the detection

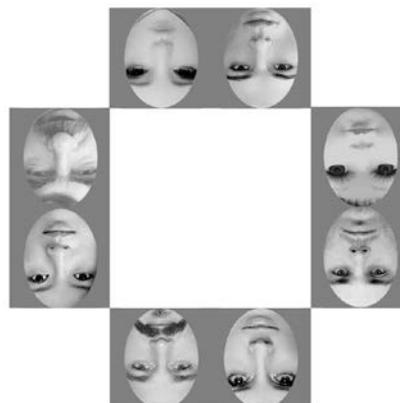
of life or the human mind unique in human faces. Testing these two tentative explanations could lead to deeper understandings of the role of face perception in social interaction: What do people see in faces?

In addition to the ongoing study on infant face perception, I study Schadenfreude, a prevalent social and/or moral emotion that has not received much attention in the literature. I am interested in the cognitive underpinnings of Schadenfreude, its developments in children, its cultural variations, and its social implications.

Upright faces



Inverted Faces



Meet the Lab: ShenSheng Wang

Shensheng Wang was born and raised in Tianjin, China. He came to Emory with a Bachelor of Science degree in Psychology from Nankai University (Tianjin) in fall 2012. Since then, he has been studying face perception in infants as well as adults under the supervision of Dr. Philippe Rochat.

ShenSheng received his Master's Degree in the Spring of 2014. He is now working on his PhD and continuing his work discovering the complexities of Shedenfrued.

In his spare time, he enjoys music and sports. In college, he was a member of the Student Choir and participated in numerous choir competitions and performances worldwide. At Emory, he joined the GSPN and serves as the coordinator of "Thinking Thursday," an event for promoting intellectual conversation in the psychology community.



Sharing in Tibetan Children

Article by: Steven Starr

Back in December, Erin, Philippe, and I had the honor of publishing a paper in the Journal of Cross-Cultural Psychology entitled Fairness and Distributive Justice by 3- to 5-Year-Old Tibetan Children.

Continuing a cross-cultural investigation of early childhood 'fairness' development, this study built upon previous research looking at sharing patterns of young children from the U.S., Brazil, China, Fiji, and Peru, but this time with Tibetan children in the Tibetan exile community of Dharamsala, India. While a universal trend had been found before in that children, regardless of culture, become significantly more pro-social from 3 to 5 years old, it was still wondered by some--including the Dalai Lama--would children raised in a culture purportedly bereft of greediness and deceit and that extols selflessness and compassion (e.g. Tibetan Buddhist culture) defy ever showing selfish, hoarding behaviors?

Interestingly, it was found that the 3 year old Tibetan children demonstrated the exact same self-maximizing behavior as the other children across the globe, while at 5 they were showing to make equalitarian shares of treats between themselves, the experimenter, and third-party toys. This result reaffirmed the universal trend in fairness development where children between 3 and 5 years of age become increasingly aware and concerned about fairness and pro-social sharing.

This progression seems to reflect same-age advances in social cognition such as theory of mind, demonstrating the predominance of human nature in this early childhood development. Though I must say from my experience living in the Tibetan community and meeting some of the most generous and gracious people, I have to believe that after a certain early period, the effect of culture and nurture really starts to imprint upon our underlying nature.

Spotlight on the Students:

Steven Starr

Steven Starr was born and raised in Charlotte, NC. He recently graduated from Emory University. He was taken into the Rochat lab last year before going abroad to Dharamsala, India where he helped conduct a fairness development study with 3- and 5-year-old Tibetan children.

Since graduation, Steven worked at a behavioral treatment program for K-1st graders in Miami, Florida, at a mindfulness psychotherapy clinic in Portland, Oregon, and now back in Atlanta, on a project using compassion training with combat veterans as well as helping lead an afterschool program for elementary school students that focuses on teaching Social and Emotional Learning. He has just now accepted a research position in the Behavioral Immunology Program at Emory.

Welcome to the Lab: Natalie Eldred



This year our Lab Coordinator, Theresa Nettles will be leaving to pursue a full-time faculty position. However, we are excited to welcome Natalie Eldred, a rising senior here at Emory University majoring in Psychology with a minor in Jewish studies. Natalie started working under Theresa as an RA in spring of this year. Her dedication and commitment to the lab was impressive to say the least and she is a natural replacement.

Natalie is originally from California and hopes to pursue a graduate degree eventually. However, until that time she will be here at the lab. So far, Natalie has worked on several projects including Sara's masters and will be taking over the friendship studies. When not in the lab, she is the President of Emory's Gymnastics team and teaches gymnastics at the YMCA.



Emerging Sensitivity to an Evaluative Audience

Article by Sara Valencia Botto

The Social Psychology literature has consistently shown that the perceived presence of an audience (others watching) influences or modifies one's behavior. For instance, people are more likely to perform better, be more generous and conform to the majority when other people are watching. Such behavior modification suggests that we come to perceive others as evaluators. In other words, we assume that our behavior will be evaluated by others and thus modify our behavior when others are watching in order to maximize self-presentation.

While there is ample evidence that we come to perceive others as evaluators, little is known as to when this emerges in development. Specifically, when do children begin to systematically change their behavior when another is watching as an index of an emerging sensitivity to others' evaluation?

This is what the Audience Perception Study aims to find. In our first study, we recruited 14-24-month-olds to observe when children would begin to change their behavior depending on whether or not they were being watched. We chose this particular age group because around 18 months, children begin to both recognize themselves in the mirror as well as display embarrassment and coyness.

In the first study, infants were given two tasks in which the experimenter was either attentive (*audience condition*) or inattentive (*no audience condition*). We wanted to measure whether the presence or absence of an audience would affect the way children behaved. In this study, children were given the opportunity to

play with a remote that made a toy robot light up. Since no explicit instructions were given, we hypothesized that their behavior may change depending on whether or not the experimenter was watching. We found that children who can recognize themselves in the as indexed by the mirror mark test were also more likely to modify their behavior when the experimenter was watching. Further, children were displaying inhibition in the mirror mark test when the experimenter was watching, taking significantly longer to pass the mirror mark test in the *audience versus no audience condition*.

Our second study further probed why children were modifying their behavior in our first study. We tested another group of 14-24-month-olds and also had them do the mirror mark tests well as the robot task. However, this time, we gave the child the option to play with two remotes instead of one. Importantly, each remote was given a value by the experimenter at the beginning of the robot task. So for example, the experimenter would grab one remote and say "wow isn't that great?" which posited a positive value, and grab the other remote and say "Oh oh! Oops oh no!" which was the negative value. Our rationale behind this manipulation was that if children were truly considering others' evaluation, then they would be more likely to choose the positive remote when the experimenter was looking, but choose the negative remote when the experimenter was not looking. This would be consistent with past findings, which have found that both older children and adults choose to behave in ways that are consistent with what society

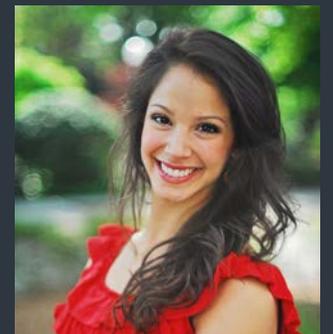
Meet the Lab:

Sara Valencia Botto

Sara joined the lab in the fall of 2014. She graduated from the University of Georgia with a BS in Psychology in May of 2014, and recently received her Master's degree this past Spring from Emory University.

While in graduate school, Sara plans to explore when and how we begin to be sensitive to how we are perceived and evaluated by others. Currently she is running the audience perceptions study that is the feature article of this page.

Sara is also passionate about encouraging young students to pursue careers in STEM by sharing her research in schools as well as participating in "Roots and Shoots," a program that teaches basic science to third graders.



values when they are being observed (i.e., share more and cheat less when being observed).

Interestingly, we indeed found that overall infants would play with the positive remote significantly more when the experimenter was attentive, but were more likely to play with the negative remote when the experimenter was inattentive. Importantly, we had a control group who also got to play with two remotes, but no values were given to either remote by the experimenter. In this context, infants did not choose one remote over the other like in the experimental

group, suggesting that infants in the experimental group were indeed being strategic in their remote choice depending on whether or not they were being watched.

Because in both of our studies infants were both inhibited when being watched, as well as considering the different values given by the experimenter on different remotes, we interpret these results as evidence that children begin to be sensitive to others' evaluation by their second birthday. We hope to continue exploring what contributes to such development as well as inter-individual differences.

Facial Perception in Infants

Article by: Maria Jones

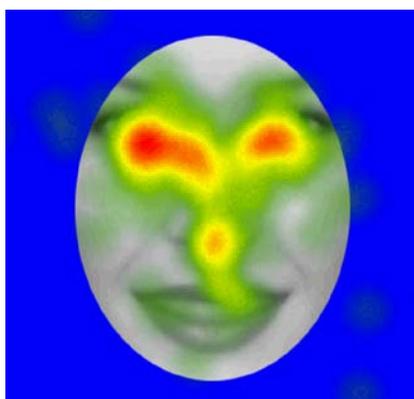
For the past few months we have investigated how 6-12 month-old infants process faces. Specifically, we wanted to probe the theory of Face Space which says that there is a universal average and that a person's facial features (e.g., size of nose, eye shape, mouth width etc.) determines their distance from this average face. If a certain configuration of facial features could create a normal face (e.g. Catherine Zeta Jones) then using the Face Space theory, one could invert those features to create the exact geometric opposite of that face known as the anti-face (e.g., Anti Catherine Zeta Jones). The question remains how young children become sensitive to these differences in facial configuration. Answering this question will allow us to determine how early in childhood infants become sensitive to facial features that are critical for facial recognition in everyday life.

To test these questions, we would measure an infant's gaze using a sophisticated piece of equipment called the Tobii Eye Tracker. The Eye Tracker presents images on a computer monitor and then uses infrared light and cameras to track where on the monitor an infant looks, and for how long. The data looks like a "hot spot" or Doppler radar map this tells us where infants were directing the most attention. (See Picture)

In this study, infants were presented with adult female faces in a series of 6 at a time followed by two faces presented at the same time. One of these faces was completely new to the infant and the other face was an "average face" or an "anti face". We were interested in seeing if there was a difference in how long the infants looked at each of these faces.

The study is on-going, but to date our data suggest that even very young infants are systematic about how they explore faces. Overall, infants prefer to visually explore the more unique face when presented with 2 options. They prefer to explore the anti-faces over the average or normal face and the average over the normal face.

We are excited to present these projects at the International Conference on Infant Studies in Minneapolis, Minnesota this summer.

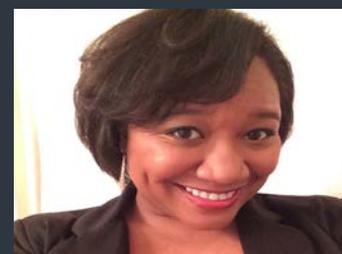


Meet the Lab: Maria Jones

Maria is originally from Washing DC. She received her Bachelor of Arts Degree in Psychology with Honors from Spelman College in 2011. She has been a graduate student here since. She recently moved to the Rochat Lab in 2015.

She is broadly interested in the relations between the development of race, space, and memory. Specifically, I am interested in determining the mechanism by which children learn and process implicit racial bias and the ways in which this interacts with the development of spatial perception and memory abilities.

She was awarded the National Science Foundation graduate research fellowship and regularly provides guidance to those applying for the award each year as a NSF ambassador.



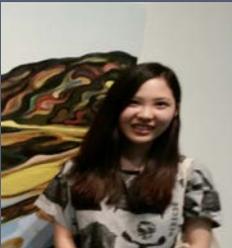
Student Research Assistants



Arianna Arias- Class of 2016
Psychology/Creative Writing
Florida



Monisha Rallapalli- Class of 2018
Psychology-Women's Studies
Georgia



Jeong Eun Cheon- Class of 2017
Psychology
South Korea



Jinyi Zhang-Class of 2017
Psychology
China



Alexandra Harris- Class of 2018
Psychology
Florida



Catherine Choi- Class of 2017
Psychology
South Korea



So Jeong Kim-Class of 2018
Psychology
South Korea



Sundus Tameez-Class of 2017
Psychology
Tennessee

We couldn't do this without you:

You are receiving this newsletter because you and your child have participated in one of our studies or have expressed interest in taking part in one. We invite you to involve yourself in our current studies. If your child is under the age of 10, and you would like to be contacted about our studies, please call or email us at:

(404) 727-6199 or
Infant.and.child.lab@gmail.com

Your visit will take less than half an hour, and your child will be given a small token of appreciation at the end. Thank you again; we cannot do it without you!

We are located on the Emory Campus, near Druid Hills, Decatur, Candler Park and other nearby Atlanta Neighborhoods.

36 Eagle Row,
Atlanta, GA 30322

Free Parking is available. Check our website for directions:

www.psychology.emory.edu/cognition/rochat/lab