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June, 2009

Dear Parents and Teachers,

We are writing this letter to express our gratitude for your involvement in our research. The Infant and Child Development Lab at Brock University is committed to learning more about how children process their social world. During the past year we completed three studies and initiated several others. Students in the Infant and Child Development lab presented their data at conferences in Naples, Florida and in Denver, Colorado. Several manuscripts have been published about the work that we have done with your children. I will outline the three studies that we recently completed here. Without your cooperation it would not be possible to conduct our work!

In the first study *The Development of Face Prototypes* we extended our previous work investigating whether young children form a face prototype (i.e., an average face) and whether that average influences their perceptions of attractiveness. Two years ago we discovered that 8-year-old children form a face prototype and that their prototype can be altered by exposure to a new set of faces. In the context of a storybook about a birthday party we asked children to rate five faces on attractiveness. One face was unaltered, two had features that were compressed towards the center of the face, and two had features that were expanded towards the edge of the face. We then read the child a storybook about a boy who was preparing a surprise birthday party for his friend Dan. All of the faces in the storybook had either compressed (for some participants) or expanded (for other participants) features. In the storybook Dan gets lost; he is eventually found but just as he is about to open his presents, five new children arrive. Their faces are like those rated prior to the story. Like adults, 8-year-olds' ratings of faces at the end of the story were influenced by the kinds of faces to which they were adapted in the storybook. Before the story, children rated unaltered faces as most attractive presumably because these are the faces they see each day. After the story children who saw compressed faces in the storybook rated compressed faces higher than unaltered faces; children who saw expanded faces in the storybook rated expanded faces higher. These results suggest that children do form a face prototype and that they update that prototype each time they encounter a new face. Moreover, like adults, they rate faces near the prototype as more attractive than faces that are far away. These data were recently published in the prestigious journal, *Child Development*. During the past year we tested 5-year-old children on a slightly modified version of the same task. We were surprised to find that 5-year-old children performed just like adults and 8-year-old children! This is very interesting because 5 year olds make a lot of errors when asked to recognize faces, but now we know that this is not because they fail to encode new faces relative to a prototype.

In a related study, we tested adults and 8-year-old children on a more complicated version of the task described above. Previous research has shown that adults use different prototypes for different face categories (e.g., male/female; Caucasian/Chinese). We know this because if they are adapted (via prolonged viewing) to faces from two face categories that are distorted in opposite directions (e.g., Caucasian faces with expanded features and Chinese faces with compressed features) their attractiveness ratings for these two face categories shift in opposite directions. To see whether children also have category-specific face prototypes, we read adults and 8-year-old children a storybook about two groups of children. One group of children (e.g., Caucasian) had expanded facial features and the other group of children (e.g., Chinese) had compressed facial features. Both adults and 8-year-old children showed the

same pattern of results: After reading the storybook they rated Caucasian faces with expanded features and Chinese faces with compressed features as more attractive than their undistorted versions. These results provide the first evidence that children have category-specific face prototypes. A very intriguing result from this study was that adults and children only showed this effect when they read a version of the storybook in which Caucasian and Chinese children attended separate birthday parties. They did not show the effect when they read a different version of the storybook in which the two groups of children were portrayed as friends attending the same birthday party! These very interesting results form the basis of Alex Hatry's MA thesis and have been presented at two international conferences. They suggest that the social context in which we see faces influences whether our brain processes them as belonging to one or two perceptual categories—a result that has important implications in our multi-ethnic society.

In the third study *Sensitivity to Posed and Genuine Facial Expressions* we wanted to know whether children are able to tell the difference between genuine smiles (i.e., smiles shown when someone is really feeling happy) and posed smiles (i.e., smiles shown when someone is only pretending to be happy). We know that adults are sensitive to this difference. When asked whether a model is *feeling* happy they say 'yes' almost all of the time when the smile is genuine and only about 50% of the time when the model is only posing happy. We also know that adults rate objects more favourably when they are paired with genuine smiles (e.g., a t-shirt is worn by a model with a genuine smile) than when they are paired with posed smiles (e.g., a t-shirt is worn by a model showing a posed smile). Being sensitive to posed facial expressions is important; it helps us to avoid being duped by the people around us. Little is known about when this sensitivity develops. We showed 7- and 9-year-old children pictures of models with posed smiles, genuine smiles and neutral expressions. When asked whether or not the models were *feeling happy*, children almost always said 'yes' when the smiles were genuine, but they made more errors than adults when the expression was posed (i.e., they said that a model with a posed smile was really *feeling happy* about 70% of the time). We also showed children a model displaying posed smiles, genuine smiles and neutral expressions while holding 6 different beach balls. Like adults, children rated beach balls paired with genuine smiles more favourably than beach balls paired with posed smiles. This is in contrast to a study we completed two years ago in which children's ratings were not affected by facial expression. What caused the difference? This year we covered the beach balls for a moment to ensure that children looked at the faces prior to seeing the beach balls. This has important implications for people creating advertisements for children: Make sure your actor looks genuinely happy, unless your product is so exciting that children won't even look at the actor's face.

Several other projects are ongoing, but as of today we do not have enough data to draw conclusions. Again, we thank you very much for allowing your children to participate. We invite you to learn more about our work by visiting our WEB page: <http://www.psyc.brocku.ca/research/infantchildlab>. (A virtual lab tour is now available.) If you are interested in visiting our new lab at Brock University with your children you may sign-up through the WEB page or by calling us at (905) 688-5550, x4944.

Sincerely,

Cathy Mondloch  
Associate Professor