Simon Fraser University Autism Lab

At the Autism and Developmental Disorders Lab at Simon Fraser University we are interested in the social development of individuals with an Autism Spectrum Disorder (ASD). The goal of our research is to understand more about social development in autism and to inform treatment and intervention.

A few words from the Director, Dr. Grace Iarocci

I am an associate professor of Developmental and Clinical Psychology in the department of psychology at SFU and I work closely with the government and community agencies in BC to provide research information on Autism Spectrum Disorders (ASD).

At the ADDL, we investigate the basic processes of attention and perception that are involved in the social-cognitive development of individuals with and without ASD. More recently, we have also started to investigate issues in adolescents and adults with ASD. Specifically, we are interested in how adults with ASD view themselves and their future. The majority of research has focused on childhood; however, ASD is a life long condition that also greatly affects adolescents and adults.

We are committed to learning more about individuals with ASD across the life-span (see pg. 5). We thank the Social Sciences and Humanities Research Council (SSHRC), the Michael Smith Foundation for Health Research (MSFHR), and the Canadian Institutes for Health Research (CIHR), and the Laurel Foundation for supporting our work.

Did you know?!?

The ADDL is now on Facebook! Be sure to “like” us on Facebook and share with your friends.

Just search for “ADDL” and you will be able to view our page. Upcoming events and news will also be posted here and on our ADDL website!

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Thank You!

We would like to thank all the parents, children, adolescents and adults who have participated in research at the ADDL lab! On the following pages we outline some of the research studies and findings that were made possible by your participation. We appreciate your contribution to autism research and invite you to participate in our new studies!

Learn more about us at:
http://autismlab.psyc.sfu.ca
Research Results

Spontaneous Gaze Following within a Naturalistic Social Setting
by Elina Birmingham, Krista Johnston, Grace Iarocci, and Collaborators

A core clinical characteristic of autism is reduced social attention, in particular reduced “gaze following”. There is a lack of research on gaze following in older children and adults when the gaze cue occurs in a natural social situation. For this study, participants played a card and board game with an experimenter who would give planned head turns when the participant was not directly attending to the experimenter. The experimenter held this cue for about 10 seconds or until the participant followed her gaze. There were 4 head turns delivered in each game for a total of 8 head turn cues. We also manipulated the following factors: emotional expression (Neutral vs. Smiling) and target of experimenters gaze (Object vs. Person, i.e. another experimenter). Using a portable eye tracker and analysis of video observations, we examined the participant’s frequency of gaze following.

Overall, there were no significant differences between the groups (ASD and TD) in terms of frequency of gaze following. However, in the Smiling Cue condition, the group with ASD was slower than the TD group to follow the experimenter’s gaze when the target was a person (i.e., another experimenter).

There are two possible reasons for this: 1) participants with ASD may be less interested in the social attention behavior of others, 2) participants with ASD may take longer to process and integrate social cues such as facial expressions.

This data is preliminary and data collection is still in progress. These preliminary results were presented at IMFAR 2012.

The Autism Quotient has Convergent Validity with the Social Responsiveness Scale
by Kimberly Armstrong & Grace Iarocci

The Autism Quotient (AQ; Baron-Cohen et al., 2001) is a continuous, quantitative measure of traits associated with ASD. It is free of charge, and often used as a tool to measure autism symptoms and screening for the disorder in research. The Social Responsiveness Scale (SRS; Constantine & Gruber, 2005) is another brief measure which can be used to measure ASD symptoms, and has well-established reliability and validity (Brooker & Starling, 2011) but can be quite costly. The objective of this study was to examine the convergent validity of the AQ using another common screening measure of autism: the SRS.

Participants with ASD were administered the AQ and the SRS, and it was found that the AQ and SRS were highly correlated. This study provides evidence for convergent validity of the AQ with the SRS, an already well-validated screening tool for ASD. Implications are that research can be conducted in a more cost-efficient way, employing the use of the AQ for screening ASD symptoms. This study was presented at IMFAR 2012 and is in press to be published.

Unhappy (and unhappy) in their own way: A developmental psychopathology perspective on quality of life for families with developmental disabilities with and without autism
by Emily Gardiner & Grace Iarocci

This paper was published in RIDD (see right) and provides a literature review of how the Family Quality of Life concept has been defined, measured, and presented previous research findings. The paper also made suggestions for how future studies must acknowledge the unique circumstances that exist for families of children with autism, and therefore must devote special attention to this group.

Emily will be exploring this topic for her dissertation and will be conducting an online study on Family Quality of Life in British Columbia.
Preliminary Results from Executive Function Study using Computer-Based Tasks
by Emily Gardiner, Sarah Hutchison, Grace Iarocci, Ulrich Mueller, & Kimberly Kerns

Thank you to the children and families who have participated in the ‘Executive Function’ study! We have had so much fun doing this project, and we hope you did too. Executive functions are capacities that allow one to accurately evaluate a situation and develop an appropriate response. This may involve self-awareness, monitoring and planning, organization, flexibility, inhibition, and working memory. Previous research tells us that some people with ASD demonstrate difficulty on tasks measuring executive function abilities when compared to typically developing individuals, but that such difficulties may not be present in young children. Preliminary findings from this research support this, as we found no differences in executive function ability across the two groups.

This research was presented at two conferences this summer: The International Meeting for Autism Research (IMFAR) in Toronto and the NorthWest Cognition and Memory (NOWCAM) Conference that took place at SFU! Information from the children without ASD was presented at the Jean Piaget Society Annual Meeting in Toronto. We are currently developing a manuscript to prepare for publication.

Electrophysiological correlates of emotional face processing in typically developing adults and adults with high functioning Autism
by Jennifer Barrie, Mario Liotti, & Grace Iarocci

Emotional expressions have been found to affect various event-related potentials (ERPs). Furthermore, socio-emotional functioning is altered in individuals with autism, and a growing body of neuroimaging and electrophysiological evidence substantiates underlying neural differences for face processing in this population. This study examined how implicit (not the intended focus of attention) versus explicit (the intended focus of attention) presentations of emotion differentially influenced the processing of fearful, sad, and happy facial expressions relative to neutral expressions.

Study 1 was conducted in a sample of typically developing (TD) young adults. Study 2 compared a group of high-functioning young adults with autism to a new group of age-, gender-, and IQ-matched TD controls. Results showed that in individuals with autism, sad faces did not elicit distinctive effects. Rather, happy faces uniquely modulated early and late ERP effects over the frontal lobes, suggesting that this positive social emotion was most salient to adults with autism. However, sad faces, which may communicate a social error message and elicit empathy, were most salient to TD adults. Both experiments provide support for a neural network that is sensitive to socially relevant information and provide important clues for underlying neural differences that may contribute to difficulties with socio-emotional functioning so commonly reported in autism.

This study was undertaken as partial fulfillment of Dr. Barrie’s dissertation and a manuscript is in preparation to be published.

Preliminary Results from SFU Social Science Camp Data
by Emily Gardiner, Sarah Hutchison, Grace Iarocci, & Kimberly Kerns

When your child participated in our Social Science Camp, you completed a number of questionnaires. One of these forms asked questions about different areas of day-to-day life with your child. This measure, called the Behavior Assessment System for Children, contains an index called the Executive Function content scale. This is a measure of executive function within everyday settings. We used your responses, as well as those of other participants, to compare executive function between typically developing children and those with ASD.

Our results indicated that parents of children with ASD reported that their children experienced greater executive function difficulties. This represents a new way for us to examine these abilities, from the unique perspective of the parent, and provides an indication of how children might behave outside of the lab. We have submitted a proposal to present these findings at the 2013 International Meeting for Autism Research (IMFAR) Conference in Spain!
Understanding Social Competence in Autism Spectrum Disorders
by Jodi Yager & Grace Iarocci

There is great variability in the types of social interaction difficulties that are shown in individuals with autism. For instance, some individuals with ASD seem very interested in interacting with others but have trouble applying their knowledge of social situations. Other appear relatively content to be alone and do not seem as interested to be around other people. Such differences in social presentation might have important implications for developing appropriate social skills treatments. At the moment, clinicians and researchers do not have standardized tools to help them identify which areas an individual struggles with most.

In this study, a new parent questionnaire called the “Multidimensional Social Competence Scale” (MSCS) was developed and evaluated. Results from this study indicated the items on the MSCS could be grouped into 7 areas that are relevant to social skills including: Social Motivation (interest in spending time with other people); Social Inferencing (reading social cues); Demonstrating Empathetic Concern (showing appropriate concern when others are hurt/upset); Social Knowledge (general knowledge of day to day social interactions); Verbal Conversation Skills (ability to have a back and forth conversation); Nonverbal Skills (nonverbal body language); and Emotion Regulation (ability to control emotional reactions).

The ultimate goal for the use of the scale may help to further refine and develop social skills interventions. This study was undertaken as partial fulfillment of Dr. Yarger’s dissertation and has been submitted to be published.

Thanks to all our participants and lab volunteers for making these studies possible!

Current Research Projects

Quality of Life in Families of Children with ASD: From Diagnosis to Adulthood (Online Study)

What do we want to know? The overall goal of this study is to gain a better understanding of how family quality of life may change across the lifespan of individuals with autism, and to identify the domains that contribute most positively to families’ quality of life as well as those from which families derive the least satisfaction.

Who are we looking for? We are looking for any caregiver of a child with autism. The main caregiver may be a parent, a sibling, a spouse, a life partner, or other family member.

About the study: Participants will complete a phone screen, and an online survey. The total time commitment is approximately 90-120 minutes. For this study only, an amazon.ca gift card will be provided.
Current Research Projects

How Young People View Themselves and Their Future (Online Study)

What do we want to know? We are investigating how young people define themselves in relation to their personal future. We call this identity. The study will also help us to find out if identity is in any way related to young people's well-being such as their mood.

Who we are looking for? Young people both WITH and WITHOUT Autism between 13-21 years of age, who live in Canada.

About the study: Participants will complete an online survey that will take approximately 10 minutes. Parents of participants will also complete a separate online survey that will take between 5-40 minutes. For this study only, an iTunes gift card will be provided. ** Data collection for this project will be end soon, so contact us as soon as possible!

Special Interests in Trains Among Children and Youth

What do we want to know: Many children with autism are fascinated by trains. The goal of this study is to understand how special interests develop in youth with and without autism. We are examining how a special interest in trains from a young age influences learning about trains vs. learning about social stimuli. For example, do children recognize trains as easily as we recognize faces?

Who are we looking for? Children and youth WITH and WITHOUT autism between 6-19 years of age, and their parents. We are looking both for children who have an intense interest in trains, and children who do not.

**If your child has an intense interest in something other than trains (e.g., dinosaurs, trucks, etc.), we would love to hear from you!

About the study: This research will take place at our lab at SFU, Burnaby campus. You will be asked to fill out questionnaires and your child will be involved in computer tasks.

TBA: An upcoming study will be investigating contributing factors to social integration and outcomes in adults with ASD (17 and older). This study is in collaboration with UBC, and will take place at Vancouver General Hospital. Stay tuned via our website for more details!

To sign up for any study, email addl@sfu.ca

How do youth with Autism Explore Faces?

What do we want to know? The goal of our research is to understand how face processing might be different in people with autism. We want to know how children with and without autism explore faces.

Who are we looking for? Youth WITH and WITHOUT autism between 5-24 years of age, and their parents. Youth with autism should be high functioning (i.e. IQs in the average to above average range). All youth should have normal (or corrected to normal) vision and hearing.

About the study: Participants will be scheduled at their convenience and may be asked to come in for 1-2 hours (including breaks). The child will take part in computer tasks that involves determining a face’s emotions and identifying faces. His or her eye movements may also be monitored so we can assess where he/she is looking while completing the task.
ADDL News

We are pleased to announce that Dr. Jodi Yager successfully defended her dissertation on June 25, 2012. The title of her thesis was: “Understanding Social Competence in Autism Spectrum Disorders: The Development of a Standardized Measure”.

Dr. Yager was a graduate student in the Clinical Psychology program at SFU and was supervised by Dr. Grace Iarocci. She will continue to collaborate with the lab on the development of a clinical scale for assessing social competence for those with and without autism spectrum disorders.

Congratulations to Adrienne Rombough, a doctoral student, who was successfully matched to an accredited internship in Kingston, Ontario. This year-long predoctoral internship focuses on the identification and treatment of disabilities (both developmental and acquired) across the lifespan.

This year Krista was a recipient for the Canadian Institute for Health Research (CIHR) Health Professional Student Award and the Autism Research Training (ART) Program Studentship Award. Congratulations Krista on receiving this award!

Kimberly has recently received the Canadian Institute for Health Research (CIHR) Health Professional Award. Congratulations Kimberly!

Congratulations to our lab volunteers Donna Naghmeh Tafreshi (Left) and Gisella La Madrid (Below) for starting their respective graduate programs.

Donna is now a graduate student supervised by Dr. Tim Racine in the psychology department at Simon Frasier University.

Gisella is pursuing a Masters of Arts in Counselling in the Adler School of Professional Psychology.

Dr. Elina Birmingham (a former post-doc of Dr. Iarocci) has now formed the “Social Attention Research Group (SARG)” in the SFU Faculty of Education. Their research examines how children, adolescents, and adults attend to and interpret social information. In addition, they examine how mechanisms of social attention and perception operate differently in individuals with Autism Spectrum Disorders (ASD). Our lab will continue to collaborate with Dr. Birmingham’s lab on various research projects related to ASD. You can get more information about SARG by visiting their website: sarg.educ.sfu.ca/

Past Events

We had a great time with all the families who participated in this great event on April 1st! We had lots of kids stop by our table to try out our fun kids craft!
Past Events

On April 13th and 14th we attended ACT’s Focus on Research event. It was interesting to learn about the exciting developments in ASD research! Our lab will be presenting at this event next year, see our “Upcoming Events for 2013” listed in the newsletter.

The ADDL attended this event on April 15th on University of Victoria campus and it was a great success! We had lots of families sign up for our online research study and it was nice to meet with other ASD organizations on the island.

Café Scientifique Event on Bullying & ASD

On May 10th, the ADDL, together with the Canadian Institutes of Health Research (CIHR), hosted an event entitled "What about me? Reflections on autism and why bullying is so easy and acceptance so tough." This event was featured in the North Shore News (see above, right).

Our expert panel included both academic researchers, as well as those more personally connected with autism spectrum disorder. Both a mother and sister of a child with autism presented their personal experiences as related to bullying, and discussed opportunities for a more positive future. Our researchers presented facts from recent studies, and shared strategies that they implement within their clinical practice with individuals with ASD. The audience and panel members also participated in an engaging discussion. The audience included 45 individuals, including parents, university students, researchers, teachers, health care professionals, and individuals with ASD. Event feedback was very positive, and comments included:

“great panel, informative, opened discussion and gave direction, learned about SFU lab and this government support, wonderful discussion”; “Thank you to CIHR for helping fund this event. The money you contributed helped the audience members greatly in a very tangible manner! Thanks again.”; “Very outstanding, thorough, moving presentations!” *If you missed this event, you can watch the videos posted on the ADDL website.

SFU Social Science Camps

Thanks to all our families who participated in our day camps! The camp for children without autism was held on July 14th and the camp for children with autism was held on July 21st. Both camps were full and we will be making these camps an annual event. Here are a few comments from parents:

"Kudos and many thanks for your efforts!"; “Thank you for this worthwhile camp, my son enjoyed it immensely and would like to come again! Good luck with your research"; “the kids had a fantastic time!”; "Great work! My son really enjoyed the camp and asked me to sign him up next year"
Past Events

SFU Science Sociables

Our two sociables events held in November for adolescents and young adults with ASD were a great success!

We received many positive comments from participants and their parents and we look forward to hosting the next events in February 23rd and March 2nd. See below for more details.

Vancouver Autism Speaks Walk

Congratulation to one of our volunteers, Lizzie Goldstone, for raising $375 for Autism Speaks! This organization raises money for vital research, family services programs and to increase heighten awareness about autism.

The ADDL looks forward to attending this event again next year!

Dr. Iarocci and Krista Johnston’s Presentation to the 2012 Vancouver Island Autism & Associated Conditions Conference

Dr. Iarocci and Krista gave a presentation entitled: “Anxiety in Youth with ASD” in May 2012. The talk included applied strategies for dealing with anxiety.

Dr. Iarocci’s Presentation for EduTalk

Dr. Iarocci gave a presentation on November 29th. The audience consisted a mixture of families and professionals and she discussed the manifestations of anxiety in individuals with ASD. She also discussed treatment approaches using a variety of case examples.

Dr. Iarocci and Emily, Kimberly, and Krista’s Presentation to “I Step Ahead”

Dr. Iarocci and a few of her graduate students gave a presentation entitled: “Anxiety, Social Competence, and Family Well-being Among Children with ASD” to a group of professionals who provide Applied Behavior Analysis (ABA) to children with ASD.

Upcoming Events for 2013

SFU Science Sociables

This is a FREE and fun event for adolescents and young adults aged 13-21 with Autism Spectrum Disorders (ASD). Drinks and light refreshments will be provided for parents, teens, and young adults. Events will last approximately 2-2.5 hours and take place at SFU Burnaby campus. One part of the event involves your child participating in a research study. The research study requires minimal participation; the majority of the event is devoted to interactive game activities (e.g. Wii tournament, board games, etc). For more information and sign up, please visit our website.

Saturday, Feb. 23 at 1pm or 3:30pm; Saturday, Mar. 2 at 1pm or 3:30pm
Upcoming Events for 2013

Friday, April 5 from 7pm - 9pm

Families and ASD: Looking to the Future

We will be co-hosting a FREE event with the support of the Laurel Foundation. The goal is to discuss quality of life among families of individuals with autism spectrum disorder. We are delighted to present a diverse panel that includes researchers, clinicians, service providers, and Ministry of Children and Family representatives. Please join us and bring your questions, ideas, and comments to what is sure to be a lively discussion! This event is open to the public and will take place in the Strategy Room (420) at the Morris J Wosk Centre for Dialogue Simon Fraser University (580 W Hastings St, Vancouver). Light refreshments will be provided and spots are limited, to RSVP email asdandfamilies@gmail.com

Friday, April 19th & Saturday, April 20th

9th Annual Focus on Research- Building Community Capacity Across the Rockies

This conference will feature some 20 researchers from across B.C. and Alberta. The focus is on research taking place in the two provinces that has practical implications for those working with children and adults with ASD in their homes, schools and worksites. This event is sponsored by Autism Speaks Canada and will include a presentation by Dr. Grace Iarocci and Emily Gardiner titled, “Quality of Life Among Families Living with ASD”. To register and for more information, please visit the Autism Community Training (ACT) website.

Saturday, May 25 & Saturday, June 1st

SFU Science & Train Camp

This is a FREE and fun event for children and youth (age 6-19) who have a special interest in trains. One part of the event involves your child participating in a research study by playing a computer game with trains. The other part of the event will be participating in a workshop on model trains with a local train expert. For more information and sign up, please visit our website.

Saturday, July 13 and Saturday, July 20th

2nd Annual SFU Social Science Camp

This is a FREE, fun, and educational camp for children and youth with or without Autism Spectrum Disorders (ASD). The camp for individuals without ASD will take place on Saturday, July 13, 2012 and the camp for individuals with ASD will take place on Saturday, July 21, 2012. All campers will receive a cool SFU Social Science Camp T-shirt! Part of the camp involves research participation; the majority of the day is devoted to fun crafts and interactive game activities. For more information and to sign up, please see our website.

** Additional events will be posted on our website as they develop!

We hope you have enjoyed reading our annual newsletter! We would love to hear from you so feel free to contact us with questions, comments or suggestions via phone (778-782-6746) or email: addl@sfu.ca