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 a 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 processes that are involved in the development of social competence in individuals with and without ASD. We have engaged in a variety of research that spans more basic issues such as attention and perception to cognition and interest development in the individual. However, we realize that ASD has effects beyond the individual and have begun to examine family and societal issues.

We are committed to learning more about individuals with ASD across the life-span as well as how ASD impacts relations with others and society at large. We thank the Social Sciences and Humanities Research Council (SSHRC), the Michael Smith Foundation for Health Research (MSFHR), 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 lab” and you will be able to view our page. Upcoming events and news will also be posted here and on our ADDL website!

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 that was 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

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by Grace Iarocci, Sarah Hutchison and Gillian O'Toole

Parents and professionals are concerned that second language exposure may delay communication in children with ASD. In this study 174 youth (6-16 years) with and without ASD, exposed to a second language, were compared on executive function (EF) and functional communication (FC) with their peers without exposure. There were no significant differences between groups on age, IQ, and socioeconomic status. Parents reported on language exposure and rated EF and FC skills. The findings indicated that second language exposure in children with ASD is not associated with delay in cognitive and functional communication skills rather there was evidence of a reduced clinical impact as indexed by a lower percentage of children whose FC and EF ratings fell within the clinical range.

This paper is submitted to the Journal of Autism and Developmental Disorder and will be published soon.

Are Generalized Anxiety and Depression Symptoms Associated With Social Competence in Children With and Without Autism Spectrum Disorder?

by Krista Johnston and Grace Iarocci

Generalized anxiety and depression symptoms may be associated with poorer social outcomes among children with Autism Spectrum Disorder (ASD) without intellectual disability. The goal of this study was to examine whether generalized anxiety and depression symptoms were associated with social competence after accounting for IQ, age, and gender in typically developing children and in children with ASD. Results indicated that for the TD group, generalized anxiety and depression accounted for 38% of the variance in social competence and for children with ASD, they accounted for 29% of the variance in social competence. However, only depression accounted for a significant amount of the variance. The findings underscore the importance of assessing the social impact of internalizing symptoms in children with ASD.

This paper was published in the Journal of Autism and Developmental Disorders and it is available online:
http://link.springer.com/article/10.1007%2Fs10803-017-3056-x

Spontaneous Gaze Selection and Following during Naturalistic Social Interactions in School-Aged Children and Adolescents with Autism Spectrum Disorder

by Elina Birmingham, Krista Johnston and Grace Iarocci

Using a novel naturalistic paradigm allowing participants the freedom to spontaneously select and follow gaze cues in their environment, this study extends previous research conducted with younger children to determine whether school-aged children with autism spectrum disorder (ASD, n=17) demonstrate abnormal gaze following relative to typically developing (TD, n=15) children. The participant and experimenter played a series of games, during which the experimenter pseudorandomly averted her gaze towards a social target (person) or a nonsocial target (object). A significant finding was that, relative to TD children, children with ASD were slower to follow the experimenter's gaze relative to the start of the trial (social targets d = -.93 [-1.70, -.16], nonsocial targets d = -1.05 [-1.88, -.20]). When we analyzed the duration of glances to the experimenter, we found that the ASD group made longer glances relative to TD children, but only in the nonsocial target condition (social targets d = -.01 [-.68, .71], nonsocial targets d = -.81 [-1.53, -.08]). Other analyses revealed patterns of gaze selection and following that may help interpret the main findings. Despite the differences in the timing of gaze selection and following, the most common type of responder in both groups was one who followed the experimenter's gaze on over half of the trials. This pattern of results argues against a clear deficit in social attention in school-aged children with ASD and underscores the importance of measuring both the timing of distinct mechanisms of social attention and the context in which these behaviours occur. The findings will be published in the Canadian Journal of Experimental Psychology in 2017.
Quality of Life in Families of Children with Autism Spectrum Disorder
by Emily Gardiner and Grace Iarocci

The goal of this research was to gain a better understanding of what contributes to Quality of Life among families of children with ASD. We examined what places strain on families, such as high levels of child behavior problems, as well as how the family can be protected from adversity through open and positive communication, for example. We also asked families to share their experiences with the British Columbia model of ASD service delivery, and how this impacted their Family Quality of Life. We presented these findings at the Autism Community Training Focus on Research Conference in April, and will also be presenting them at the International Meeting for Autism Research in May. We have published a paper about the research project in SAGE Research Methods Cases, which is available online: http://www.sciencedirect.com/science/article/pii/S089142221200162X

Examining Executive Function in Young Children with Autism Using Computer-Based Tasks – Update!
by Emily Gardiner, Sarah Hutchison, and Grace Iarocci

Thank you to the children and families who participated in the ‘Executive Function’ study! Together with colleagues Drs. Ulrich Müller and Kimberly Kerns at the University of Victoria, this study looked at differences in how children with and without ASD evaluate situations and respond. We were interested in abilities such as self-awareness, organization, flexibility, and planning. The study findings indicate that young children with ASD experience the greatest difficulties when required to coordinate executive function-related abilities in complex and unstructured settings.

The article can be found at this link: http://www.tandfonline.com/eprint/4yCTIHje5uXPC3AQUXh6/full

Emotion Regulation in High Functioning Children with Autism Spectrum Disorder: Links to Symptom Severity and Executive Functions
by Mandeep Gurm and Grace Iarocci

For this study we were interested in how symptoms of Autism Spectrum Disorder (ASD) and executive functions (processes such as inhibiting behavior and shifting behavior depending on the situation) were related to a child’s emotion regulation. Past research has found links between ASD symptom severity and emotion regulation, but no study has examined these characteristics in relation to executive functions in a school-aged group of children with ASD. The current study examined these associations using data collected at previous years of our Social Sciences Camp.

We found that parent-reported ASD symptom severity, executive functions and emotion regulation were all related to one another. Our study also found an added benefit of using executive functions to predict a child’s emotion regulation. This study added to the growing literature on emotion regulation in children with ASD and underscores the importance of considering a child’s executive function abilities when examining emotion regulation.

These findings were presented at Canadian Psychological Association’s Annual Convention in June 2016.
Sibling Status (TD or ASD) Is Associated with Parent Reports of Adaptive Skills in Children with ASD
by Reyhane Bakhtiari, Brittni Tompson, and Grace Iarocci

Previous research has focused on the impact of having a sibling with autism spectrum disorder (ASD) on typically developing (TD) children. Findings suggest that having an ASD sibling is associated with increased adjustment problems, peer problems, internalizing and externalizing behaviours and less prosocial behaviour in TD children. However, we do not know the effect siblings have on the behaviour of children with ASD. In the current study we examined adaptive skills of children with ASD who had a TD sibling vs. a sibling with ASD. We found that in children with ASD, having a TD sibling is a significant predictor of higher scores on Adaptive Skills including Adaptability, Activities of Daily Living and Functional Communication. These results suggest that TD siblings may have an important role to play in the daily functioning of children with ASD. Having a TD sibling may provide opportunities for modelling of adaptive behaviour in children with ASD and sibling mediated interventions may be a potentially powerful tool for teaching adaptive skills to children with ASD.

These findings will be Presented at International Meeting for Autism Research (IMFAR) in May 2017.

Atypical Anxiety in Children and Adolescents with Autism Spectrum Disorder
by Krista Johnston and Grace Iarocci

Prevalence rates of anxiety in children with Autism Spectrum Disorder (ASD) are as high as 84% (White et al., 2009) yet there is a lack of well-validated measures to assess anxiety in ASD. Many factors complicate the measurement of anxiety in this population such as symptom overlap and atypical presentation (e.g., unusual fears, behavioural dysregulation that masks anxiety symptoms). Experts (Kerns & Kendall, 2012) suspect that there may be two separate tracks of anxiety in ASD (i.e., traditional anxiety and atypical anxiety influenced by ASD symptoms). Characterizing atypical anxiety presentation in children with ASD, especially with clinically anxious children, is an important next-step in developing valid anxiety measures for this population. In the current study, we examined atypical anxiety presentations in 30 high-functioning (IQ>85) children with ASD (25 males, 5 females) aged 8-12 who were attending a hospital-based cognitive behavioural therapy group treatment for anxiety disorders. Anxiety disorders and phobias were assessed using the Anxiety Disorders Interview Schedule parent version and the Spence Children’s Anxiety Parent Scale. Our findings support the two track model of anxiety proposed by Kerns and Kendal (2012); both traditional anxiety disorders (e.g., Panic Disorder) and atypical fears (e.g., facial hair) were described and categorized in this sample.

This poster was presented at the Canadian Psychological Association Conference in Victoria in June 2016.
**Association between Face-Specific Visual Abilities and Social Competence in Autism Spectrum Disorder**
By Fakhri Shafai, Kimberly Armstrong, Grace Iarocci, Ipek Oruc

This study examined the question “Do ASD symptom severity and social competence correlate with measures of face perception and memory?” Participants with ASD showed poorer results in both measures of face ability and poorer social competence scores. There was no correlation between social competence and face abilities in the large group of participants. The participants with ASD with highest symptom severity had better face memory and perception, suggesting two independent processes differentially interacting with social competence. People with ASD seem to use their superior detail processing to process faces in a piecemeal fashion rather than the typical holistic processing of faces.

*Findings of this study were presented at Vision Sciences Society conference 2016.*

**Alexithymia, but not Autism Spectrum Disorder, May Be Related to the Production of Emotional Facial Expressions**
by Dominic Trevisan, Elina Birmingham and Marleis Bowering

Some children with ASD have difficulties expressing emotions with their faces. For example, they may display confusing facial expressions in which it is difficult for others to understand, or they may be generally non-expressive in which they rarely express any emotions at all. Children with ASD are also more likely to have high levels of “alexithymia,” characterized by difficulties understanding and describing their own emotions. For this study, we showed children with and without ASD video clips from children’s movies that contained emotional content, while we simultaneously recorded their facial expressions. Parents completed a questionnaire to measure alexithymia. We found that children with ASD had on average much higher levels of alexithymia than the children without ASD. We also found that children with higher levels of alexithymia displayed less intense facial expressions in response to the videos. These results indicate that children who have difficulties understanding their own emotions are less able to communicate their emotions nonverbally.

*This study was presented at the International Meeting for Autism Research in May of 2016, and published in Molecular Autism in November 2016.*

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

SFU Parent-Child Study, Now Actively Recruiting Participants!

Who we need? The Autism and Developmental Disorders Lab invites parents and children age 7-12 with or without ASD to participate in research.

What you will do? We are interested in learning more about how children develop social skills for communication and interaction. Parents and children will work together on fun and interactive activities. Parents will also be asked to complete a series of questionnaires, and children will also work one-on-one with a researcher. Parents receive $30 and parking remuneration in thanks for participating in the 3 hour study. Please contact addl@sfu.ca for more information, or call 778-782-6746.

When: We can schedule appointments for whatever works best for your family. We have availability on evenings, weekends, and during school holidays.

SFU & UBC Study on Visual Perception

What do we want to know? The overall goal of this study is to gain a better understanding of how visual perception in people with ASD differ from people without ASD, and if so in what way. This research will help us identify areas of strengths and those in need of support for adults with ASD.

Who are we looking for? Adults (18+) with a diagnosis of ASD

About the study: The appointment will take place at the Blusson Building (ICORD) at Vancouver General Hospital. Adults with ASD will complete a brief eye exam and some computer tasks. This will take about 4-5 hours. Participants will be paid $80 cash for their participation in the study.
Validation of the Multidimensional Social Competence Scale

What do we want to know? The overall goal of the study is to validate the newly-developed Multidimensional Social Competence Scale (MSCS), to determine the reliability of the MSCS in a sample of educators, and to examine the relations between ratings on the MSCS and indicators of social competence (e.g., friendships and peer acceptance). The proposed research will focus on the measurement of social competence and its potential application to a multitude of research and educational goals in the areas of promotion of prosocial behaviour, prevention of bullying and social conflict, and intervention to address social disabilities.

Who are we looking for? Adults (19+ years old), caregivers and teachers of youth (8-18 years old) with or without a diagnosis of ASD.

About the study: The study involves the completion of two questionnaires (the MSCS and demographics) which will take approximately 30-60 minutes to complete. Participation may be online or in person at the ADDL SFU Burnaby campus.

To sign up for any study, email addl@sfu.ca
New ADDL Lab Manager, Gisella La Madrid

Gisella La Madrid is the new lab manager for the ADDL. She has experience working with children and families facing disabilities and developmental disorders. She is a registered clinical counselor working both in the clinical and research field. She enjoys working with children and families and her experience centers around developmental disorders and disability in the family. She holds a Master’s degree from Adler University and she graduated with a thesis project named “Family Resilience with Families of Children with ASD”. She has always been interested in Autism Spectrum Disorders and that is how she started volunteering at the ADDL in 2011. Both her clinical and research interests include developmental disorders (such as ASD, ADHD and FASD), and family dynamics (including family quality of life, family resilience, and family-centered practice).

New ADDL Research Assistant Troy Boucher

Troy Boucher is a new member of the ADDL team. He works part time as a research assistant in the lab. He is an undergraduate student pursuing an Honours degree in Psychology. Troy has volunteered with the Edmonton Public School Board, where he started a music program for children, and currently serves as a peer tutor at Simon Fraser University. Troy is also a member of the SFU Men's Lacrosse Team. Troy’s research interests are: Early intervention for ASD, and behavioral interventions and positive outcomes for youth with ADHD and other developmental disorders.

Update on the ADDL PhD Student Krista Johnston’s Studies

Krista has completed her data collection for her PhD dissertation. She is now completing a one year Clinical Psychology Doctoral Residency position at BC Children's Hospital.

Update on the ADDL PhD Student Mandeep Gurm’s Dissertation

Mandeep has just begun collecting data for her PhD dissertation. In this project she is interested in learning more about how children develop social skills for communication and interaction (please see page 6 for more information about participation in this study).
Dr. Iarocci’s Presentation at the 2016 Annual Convention of the Canadian Psychological Association, Victoria, British Columbia, a Grant from SSHRC

In June 2016, Georgeson and Iarocci presented a round table discussion titled “A critical analysis of research on females with Autism Spectrum Disorders: Low prevalence or high negligence?” at the 2016 Annual Convention of the Canadian Psychological Association, Victoria, British Columbia. This round table discussed about the legitimate challenge of conducting research with females with Autism, and argued that it is not a legitimate excuse for ASD researchers to continue to disregard females through exclusion criteria in their studies, or failing to probe for gender differences. In this critical review, we examined the extant research on gender differences in ASD using an analytical lens. Our overarching goal was to identify common problems and creative solutions. We explored the possibility that the lack of female ASD diagnoses is a reflection of our biases, or of the representativeness heuristic, citing research that suggests a failure to recognize ASD in females because they are female. We briefly discussed a more nuanced approach to the gender issue: a female subtype of ASD.

Dr. Iarocci and Dr. Gardiner Published a Book Chapter on the Executive Function in Young Children with Autism

Dr. Iarocci and Dr. Gardiner published a book chapter based on the results of their study on the executive function in young children with autism using computer-based tasks. This chapter was published in Executive Functions in Children’s Everyday Lives: A Handbook for Professionals in Applied Psychology, for which Dr. Grace Iarocci was an Editor. This book will be available soon! Below is the citation for this chapter:

Dr. Iarocci and Dr. Gardiner Awarded Grant from Laurel Foundation for Family Quality of Life Work

Drs. Grace Iarocci and Emily Gardiner have been awarded a grant from the Laurel Foundation to continue their work on Family Quality of Life. Please check our website for updates about this research!
New Publications

Year 2016 was another productive year for the ADDL. Here is the summary of publications. We will post the details on our website after these works are published.

Book


Chapters


Articles


Past Events

Philosopher’s Café by Dr. Iarocci and Dr. Brennan at the Mount Pleasant Library

In April 14, 2016 Dr. Iarocci and Dr. Brennan hosted a public Philosopher’s Café’ at the Mount Pleasant Library to discuss about “Removing the Stigma Surrounding Autism Spectrum Disorders”. This event was an open discussion with public about the ways that we can encourage a better awareness and understanding of ASD including the many talents and diverse perspectives that people on the spectrum bring to our society.

5th Annual SFU Social Science Camps

The ADDL hosted our 5th Annual Social Science Camps in 2016, which was another great success! The camp for children (age 7-12) without ASD took place on Saturday, July 16th and the camp for children (age 7-12) with ASD took place on Saturday, July 23rd. In total, we had over seventy campers attend and all of them went home with a cool SFU Social Science Camp t-shirt and finished a stress-management balloon. Our theme for the camp was “Learning about Emotions”, which included watching part of the movie “Inside Out” and discussing emotions like anger and anxiety and learning tips on how to handle them. Feedback from children and parents was very positive and we hope to make our 6th annual camp even better!

SFU Social Science Camp Parent Workshops

After feedback from parents in 2014 and 2015, we hosted two workshops on both camp days. The morning workshop was facilitated by Katherine O'Donnell and Antonia Dangaltcheva, clinical psychology students at SFU trained on the Connect program, which focuses on the core components of secure attachment to promote children’s social, emotional and behavioral adjustment. After participating in the Connect group, parents have reported feeling less stressed and more effective in parenting as they see fewer behavioral problems and better social functioning in their children. The afternoon workshop was facilitated by Gisella La Madrid, clinical counsellor working with families and children with developmental disabilities and behavioural problems. Gisella provided parents with tips on managing behavioural difficulties, managing anxiety, and helping children better self-regulate. As part of the workshop she also guided parents’ discussion on topics of interest to them. Both workshops were attended by over 20 parents who told us they really appreciated that the ADDL had organized a way for parents to connect with each other on these topics. We hope to host more SFU Social Science Camp Workshops in 2017!
Dr. Iarocci and Krista Johnston’s Upcoming Talks at the ACT’s 13th Annual Focus on Research Conference, April 28-29

At the upcoming Autism Community Training conference, Focus on Research, in April 2017, Krista Johnston and Grace Iarocci will be presenting on “Implementing Modified Cognitive Behaviour Therapy (CBT) in a Group Format to Treat Anxiety in Children with ASD: Insights for Parents, Clinicians, and Researchers”. They will also have a talk entitled “Are Generalized Anxiety and Depression Symptoms Associated with Social Competence in Children with and without Autism Spectrum Disorder? “ For more information please see the ACT website: www.actcommunity.ca

6th Annual SFU Social Science Camp July 15 & 22, 2017

This is a FREE, fun, and educational camp for children and youth aged 7-12 with or without Autism Spectrum Disorders (ASD). The camp for individuals without ASD will take place on Saturday, July 15th and the camp for individuals with ASD will take place on Saturday, July 22nd. 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.

We are still developing our camp theme and camp workshops for 2017. We will email everyone when registration is available and announce it on our Facebook page!

** Additional events will be posted on our website and Facebook 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