

31ST ANNUAL
JOSEPH R. ROYCE
PSYCHOLOGY CONFERENCE
MARCH 23 & 24, 2017 ECHA L1-190

THURSDAY, MARCH 23 | 3:30 – 5:30 PM

Opening Address

Dr. Lloyd “Chip” Taylor, Citadel, the Military College of S. Carolina

Undergraduate Research Showcase & Reception

FRIDAY, MARCH 24 | 8:45 AM – 5:30 PM

Keynote Address

Dr. Tony Volk, Brock University

Invited Internal Address

Dr. Nancy Galambos

Invited Symposium: Outliers as Information

Chaired by Dr. Elena Nicoladis

Scientific Café

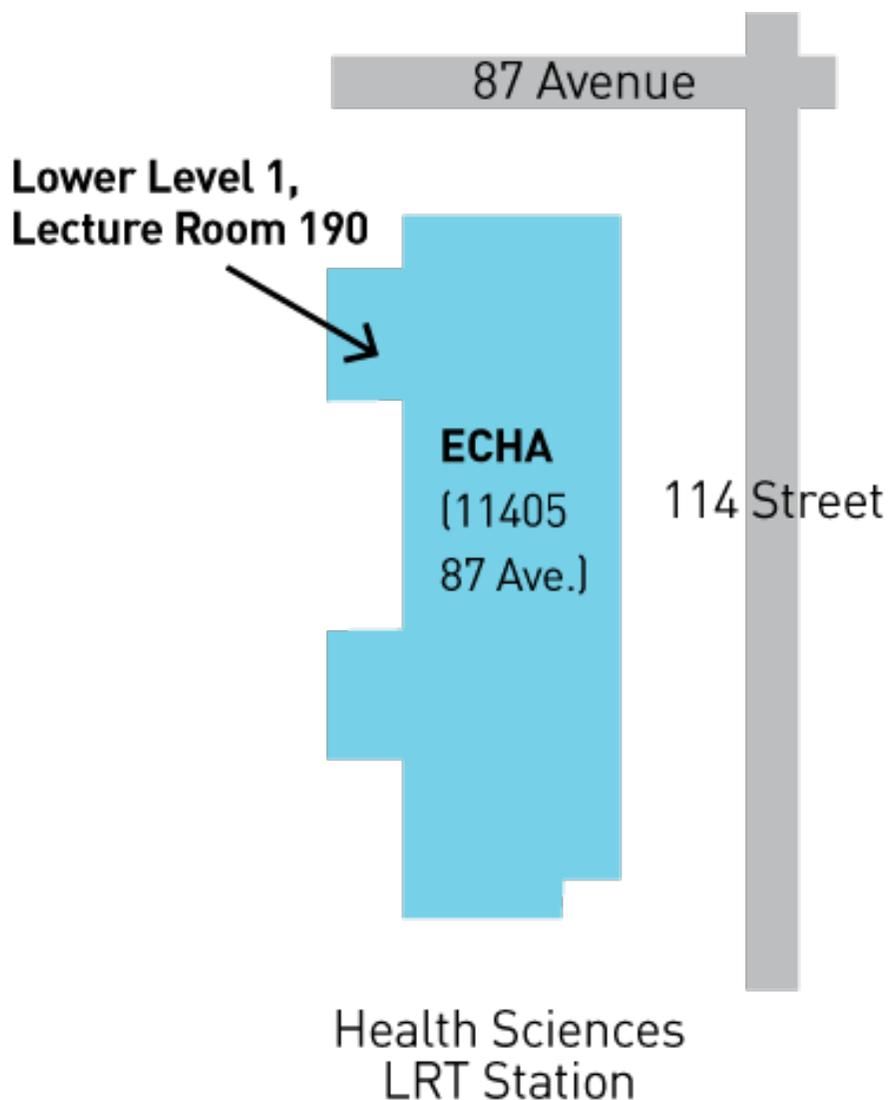


VENUE

The street address for the Edmonton Clinic Health Academy (ECHA) is 11405 - 87 avenue NW.

The nearest LRT station is Health Sciences/Jubilee.

ECHA L1-190 is a lecture room on the lower level, closest to the north entrance.



SCHEDULE IN BRIEF

THURSDAY, MARCH 23

- 2:30 PM** ▶ Undergraduate Poster Setup & Preview
- 3:30 PM** ▶ OPENING ADDRESS
Dr. Lloyd “Chip” Taylor
- 4:30 PM** ▶ UNDERGRADUATE RESEARCH SHOWCASE

FRIDAY, MARCH 24

- 8:00 AM** ▶ Poster Setup & Coffee
- 8:45 AM** ▶ Welcome & Introduction
- 9:00 AM** ▶ INVITED INTERNAL ADDRESS
Dr. Nancy Galambos
- 9:30 AM** ▶ ORAL PRESENTATIONS Session 1
- 10:30 AM** ▶ POSTER PRESENTATIONS & Coffee
- 11:00 AM** ▶ ORAL PRESENTATIONS Session 2
- 11:45 AM** ▶ POSTER PRESENTATIONS & Lunch
- 12:45 PM** ▶ SCIENTIFIC CAFE
- 2:00 PM** ▶ INVITED SYMPOSIUM: Outliers as Information
Chair: Dr. Elena Nicoladis
- 3:30 PM** ▶ POSTER PRESENTATIONS & Coffee
- 3:45 PM** ▶ KEYNOTE ADDRESS
Dr. Tony Volk

OPENING ADDRESS

Knowledge and Resilience as Protective Factors for Bullying and Ostracism among Children and Adolescents with ADHD



Dr. Lloyd "Chip" Taylor
Psychology, Citadel: The Military College of S. Carolina

This talk will review ADHD in the context of childhood development, social and environmental demands, and family systems, discuss current medical approach in USA for treatment and diagnosis and discuss impact of ADHD on bullying and ostracism.

Dr. Taylor is currently a Fulbright Canada-Palix Foundation Distinguished Research Chair for 2016-2017.

KEYNOTE ADDRESS

Bullying: A Multidisciplinary Viewpoint



Dr. Tony Volk
Child and Youth Studies, Brock University

Humans have evolved large brains to deal with complex social problems. It is therefore not surprising that bullying is a persistent, complex social problem that has proven challenging to understand. In order to try and study this complex problem I have adopted a multidisciplinary approach that involves evolutionary, cross-cultural, social, and developmental perspectives. I will discuss the value of a multidisciplinary perspective along with the results that I have obtained by combining different disciplinary tools and perspectives.

INVITED INTERNAL ADDRESS

Highlights from the Edmonton Transitions Study: The Long and Short of It



The Edmonton Transitions Study tracked a sample of Class of 1985 high school graduates for 25 years. This presentation will provide an overview of select findings at the intersection of mental health, family, and work, illustrating the value of longitudinal research for understanding developmental pathways from late adolescence to midlife.

Dr. Nancy Galambos
Department of Psychology, University of Alberta

INVITED SYMPOSIUM

Outliers as Information

Have you ever been annoyed by that nasty data point seventeen standard deviations away from the mean? And then realized that actually that outlier was telling you something important?

Undergraduate Research Showcase

P1 Self-Regulation Development in Early Childhood

A. Mclvor

P2 Peer Victimization and Peer Acceptance in Early Childhood

D. Linkiewich

P3 Rejecting People-First Language: Predictors and Causes of the Use of Noun-Based Mental Disorder Labels

D. J. Krzyzanowski

P4 Associations between physical activity, effortful control, and response inhibition in early childhood

L. Hood

P5 The Effect of Language Mindsets on Language Anxiety in Immigrants and International Students Interacting with English-speaking European Canadians

B. Ongaro

P6 Parental Discipline, Parent-Child Attachment, and Child Internalizing Problems

N. Lei

P7 Parent Discipline and Emotional Regulation in Early Childhood

S. Poirier

P8 Keep your co-nationals close, but your host-nationals closer: comparing cases of language confidence among study abroad students

S. Suresh

P9 An investigation of the word-imageability effects on association-memory-related ERPs

H. Warawa

P10 Cognition in Real-World Contexts: The P2 in Visually Complex Environments

T. K. McLean

P11 Sex-related differences in the acoustics of the chick-a-dee calls of the black-capped chickadee (*Poecile atricapillus*): Somatic influences

R. Q. Gastrock

P12 The effect of English proficiency and interaction on Chinese immigrants' identities in Canada

Q. Xue & Z. Zeng

P13 A time and place for everything: Longevity of massed and spaced training regimes using the Morris water maze

Nguyen, S. L.

P14 Multimodal and spectral degradation effects on speech and emotion recognition

C. Ritter

P15 Incremental mindsets influence non-native English speakers' willingness to communicate in English

B. Park

P16 School climate and adolescent internalizing problems

T. J. L. Pidner

P17 The Influence of School Climate on Cyber Victimization and Cyber Aggression

K. J. Gordon

P18 Information and Resources; Culture and Community Supervision

W. I. Glaseman

P19 Black-capped chickadee behavioural responses to mammalian and avian predators of varying threat levels

A. M. M. Skurdal

P20 Friendship Quality, Peer Aggression, and Aggressive Social-Cognitions in Children

B. Sereda

P21 Getting schooled in relationships: Examining changes in ITRs and conflict styles before and after an interpersonal relationships class

L. J. Brunner

P22 A review of measurement issues in HIV-associated neurocognitive disorders

D. Nielsen

P23 Gestures Can Indicate Language Dominance Before a Child Begins to Speak

J. Gonzalez

P24 Influence of rehabilitation duration on behavioural recovery and hematoma volume after intracerebral hemorrhage

L. J. Liddle

P25 Alexithymia and Eye-tracking of Visual Attention to Ambiguous Emotional Faces

M. Mohamud & G. Sidhu

P26 The Road to Mobile and Affordable EEG Experimentation

G. D. Splinter

P27 Security values bridge anti-muslim views for Americans with a southern identity

S. Keats

P28 Subjective Cognitive Decline in Non-Demented Aging: Exploring Multidimensionality, Group Differences, Longitudinal Changes

S. X. Fu

P29 Beyond vocabulary: Bilingual preschoolers creatively compensate for unknown words on narrative tasks

E. N. Iwaniuk

P30 Effect of linguistic factors on the processing speed of pseudo-compound words

A. Sidhu & L. Weshah

P31 Enhancing International Students' Experiences through Community Engagement

E.R. Worman

P32 Limitations of Imitation

A. Besoi

P33 Candy Crush addiction - measurement and scale improvement

A. Porthukaran

P34 Science Internship Program: Minecraft in the Classroom

E. Berglund

P35 Investigating blood-brain barrier hyperpermeability after experimental intracerebral hemorrhage

C. M. Wilkinson

P36 Portrayal of ASD in Canadian Media: A Framing Analysis

S. Chiu

P37 Children's Internalizing Problems and Teacher-Child Relationship Quality: The Role of Classroom Emotional Support

S. Markandu

P38 Generating music by predicting notes from Bach's Inventions

J. Han

P39 The Influence of Yoga on Emotion Regulation Development in Children

L. Hood & K. Yamada

P40 Case Management Strategies for Sex Offenders in Community Corrections: Focus on Risk-Need-Responsivity and Good Lives Models

K. Kobasiuk

P41 Generational and Cultural-Ideological associations with Bicultural Identity Orientations

L. Edmondstone

P42 Do early childhood learning programs that integrate emergent curriculum and philosophy (such as the Reggio Emilia approach) enhance children's prosocial behaviors in kindergarten?

C. Clarke

P43 Examining the relations between parenting styles and response inhibition: the moderating effect of gender

A. Rajaram

P44 Judgment of Relative Recency: An ERP Analysis

A. Wattoo

P45 The effect of stereotype threat on undergraduate males' sense of belonging and language aptitude

S. Tahir

P46 Alexithymia impairs speeded emotional face recognition: Role of eye movements

E. Stolz & M. Napierala

P47 Does teacher-child relationship quality mediate the association between externalizing problems and school engagement?

D. Feng

P48 Peer Sociability, Peer Communication and School Engagement in Preschool

R. Gibson

Main Poster Session

P49 Effect of hyperoxia on resting state oscillatory states in humans

S. A. D. Kizuk

P50 Processing Metaphoric and Literal Language

T. Robinson

P51 The relationship between eye-movement patterns in RAN and text reading in university students with and without dyslexia

K.-L. Turgeon

P52 A Work in Progress: Graduate Students' Understanding of Professional Identity

A. Dam, A. Flanagan, M. Khan, E. Li, D. Mattson, L. Nadon, & V. Oslie

P53 Neurocognitive Impairment Profiles in HIV infection

D. Gomez

P54 Prolongation of Estimated Cultural Longevity After Mortality Salience

A. Scott

P55 Identifying Cognitive Differences Following Exposure to Nature or Urban Scenes

J. W. P. Kuziek

P56 The influence of varying D note number and duty cycle on ZENK expression in black-capped chickadees (*Poecile atricapillus*)

B. C. Schuldhaus

P57 The ecological cocktail party: Measuring brain activity while filtering out background noise

J. E. M. Scanlon

P58 Impact of care recipient cognitive status on perceptions of conflicts during care

R. E. Runac

P59 Family size and positioning are predictors of semantic transparency

G. Lee, B. Rubio, & B. Sereda

P60 Parental influences on executive functions in early childhood: Differential effects of harsh and sensitive parenting

D.M. Vrantsidis

P61 Exploring performance, structure, and de/differentiation in executive functions across an 80-year band of adulthood

H. S. Caballero

P62 Using Clinical Markers and Measures to Distinguish Typically Developing and Language Impaired Bilingual Children

K. Farooq

P63 No jittering with Latte Panda: Comparing EEG data collection methods on the road to mobilization

E. Redman

P64 Attentional Differences in the Presence of Cigarette Cues among Smokers, Ex-smokers, and Non-smokers

D. Robles

P65 Multilingual language learners' motivation towards learning English and Turkish

A. Dincer

P66 Parenting Practices and Children's Behavioural Self-Regulation in Preschool

K. Burke

P67 L2 Motivation, L2 Anxiety and L2 Selves: A Quantitative Study

Marta del Pozo Beamud

ORAL PRESENTATIONS

9:30 AM ► Oral Session 1

T1 Differences between female and male university students in growth mindset

M. Cutumisu

T2 Habenular Asymmetry - a MRI study

B. G. Cioceanu

T3 Role of the nonapeptides, arginine vasotocin and isotocin, in social behaviour of male *Pelvicachromis pulcher*

J. Hoang

T4 Teacher-child relationship quality and children's internalizing problems across preschool

B. Zatto

11:00 AM ► Oral Session 2

T5 Challenging stereotypes of math giftedness and math disability in students with Autism Spectrum Disorder

H. M. Brown

T6 Female choice for alternative male morphs in the *kribensis* cichlid

N. B. Brandwein

T7 Personality variations in stress coping style after developmental stress

B. V. Hope

SCIENTIFIC CAFÉ

12:45 PM - 1:45 PM

C1 Room: L1-220

A neural marker of visual expertise for ECGs and Chest X-rays.

Liam Rourke

C2 Room: L1-220

PIQ/VIQ Discrepancies as Correlated with Personality Disorders

Noemi LoPinto

C3 Room: L1-140

Incremental Theories of Depression Predict Greater Endorsement of Psychotherapies

Karlen R. Hutlet

C4 Room: L1-140

Une langue moins masculine: Effects of masculinity threat on learning French

J. W. Katz

C5 Room: L1-140

Attending to the eyes does not help alexithymics decipher facial emotions

Alex K. MacRae-Korobkov

C6 Room: L1-150

Does Classroom Climate Buffer the Associations between Peer Victimization and Internalizing Problems?

John, S.

C7 Room: L1-150

Do Children Actually Think Dogs Are Animals? A Comparison of Child and Adult Responses on a Semantic Fluency Task.

R.L. Enns

C8 Room: L1-150

Do exogenous oscillations in brain activity influence perception?

Sheldon SS.

C9 Room: L1-150

A review of best practices for the treatment of children aged 0-6 years with complex social-emotional developmental needs.

V. Oslie

2:00 PM ▶ Outliers as Information

Chaired by **Dr. Elena Nicoladis**

S1 *J.K. Brinker. Outliers in psychotherapy outcome research*

S2 *Chris Westbury. Extreme abstraction: How outliers on two other dimensions cast abstract/concrete word access effects into doubt*

S3 *C.A. Nadeau Variability in intracerebral hemorrhage research*

S4 *C. Piatt . From Emerging to Expert Number-Line Estimation: How Two Outliers Led to New Theoretical and Empirical Approaches of Number-Line Estimation*

POSTER PROGRAM

Undergraduate Research Showcase

P1 Self-Regulation Development in Early Childhood

A. Mclvor (Faculty of Science, University of Alberta), D. Linkiewich (Faculty of Arts, University of Alberta), S. John & W. Hoglund (Department of Psychology, University of Alberta)

The Early Experiences Project, in collaboration with ABC Head Start, investigated children's social-emotional adjustment across preschool and kindergarten. Participants included 435 preschool children, their parents, and their teachers. Data were collected in the fall and spring of preschool and kindergarten. A newsletter was created for the families involved in the study, our community partners, and the participating schools. It was created as a means to distribute our findings to those involved in the study. This presentation focused on our findings on children's self-regulation in fall and spring of preschool. Self-regulation is the ability to control behaviours, manage emotions and maintain attention (Gillespie & Seibel, 2006). We measured children's behavioural regulation using the Head-Knees-Shoulders-Toes task (Ponitz, McClelland, Matthews & Morrison, 2009) and attention regulation using the Dimensional Change Card Sort task (Doebel & Zelazo, 2015). Teachers reported on children's emotional regulation skills. We found that children's behavioural regulation skills were moderate and improved from fall to spring of preschool. Children's attention regulation was also moderate but did not change across preschool. Children's emotional regulation skills were high in the fall and spring of preschool, with girls showing better emotional regulation than boys. It is important to share these findings with the participating families, community partners, and schools so they can learn how they may play a role in children's self-regulation development.

P2 Peer Victimization and Peer Acceptance in Early Childhood

D. Linkiewich (Faculty of Arts, University of Alberta), A. Mclvor (Faculty of Science, University of Alberta), S. John & W. Hoglund (Psychology Department, University of Alberta)

The Early Experiences Project is a collaboration with ABC Headstart which is investigating how young children's experiences in the classroom and at home support their social and emotional skills and behaviours across preschool and kindergarten. Participants in the project include 435 children and their parents. The children were followed from the fall of preschool to spring of kindergarten. We created a newsletter for the families involved in the study, our community partners, and the participating schools to share some of our findings. The newsletter highlighted our findings on these children's skills and behaviours that were found in their first year of preschool. This presentation will present some of our findings on peer victimization and peer likability. Peer victimization is when a child is the victim of repeated physical, verbal, or relational attacks by peers (Wu, Zhang, Su, & Hu, 2015). Peer acceptance is the extent to which a child is socially accepted by their peers (Beazidou & Botsoglou, 2016). In the fall and spring of the preschool year the teachers rated how often children had been relationally and physically victimized by their peers and how often children seemed to be well liked by others in the classroom. We found that peer victimization was low and peer acceptance was high in the fall and spring of preschool. It is important to share findings with the participating families, schools, and the community partners so they can learn how they can play a role in preventing peer victimization and promoting peer likability.

P3 Rejecting People-First Language: Predictors and Causes of the Use of Noun-Based Mental Disorder Labels

D. J. Krzyzanowski, A. J. Howell (Psychology Department, MacEwan University), & H. A. Passmore (Psychology Department, University of British Columbia Okanagan)

Psychiatric noun labels such as 'schizophrenic' carry with them a host of negative beliefs, attitudes and assumptions, but no research to date has demonstrated a causal link between negative portrayals of a person with mental illness and the tendency to describe such an individual with a noun. The current research investigated (1) whether depicted violence increases the use of noun labels to describe an individual with a psychological disorder, and (2) whether dehumanization processes and/or perceived threat of the target person mediate this relationship. University undergraduates (N = 313) read two mock newspaper stories in counterbalanced order: one depicting a man with schizophrenia committing a nonviolent crime and one depicting a man with schizophrenia committing a highly violent crime. Participants completed measures of dehumanization and perceived threat in relation to the target individual in each scenario. Respondents were then tasked with selecting seven headlines for each of the two news stories, in each case choosing between headlines employing either a noun label (e.g., Schizophrenic Snaps) or a possessive label (e.g., Person with Schizophrenia Snaps). As predicted, violent depictions of a person with schizophrenia increased the use of noun label headlines, and dehumanization processes were found to mediate this relationship. Several implications of these findings are discussed.

P4 Associations between physical activity, effortful control, and response inhibition in early childhood

L. Hood., A. Abdul Rahman., V. Carson. & S. A. Wiebe (Psychology Department, University of Alberta)

Effortful control and response inhibition are two related self-regulatory skills that emerge in early childhood and predict outcomes later in life. Previous research from middle childhood through adulthood has found that higher levels of physical activity are associated with better self-regulation. In this study, we investigated how both of these abilities are associated with physical activity levels in preschool children. To assess response inhibition, children completed a preschool Go/No-go task, and to assess effortful control, parents completed the Child Behaviour Questionnaire. To assess physical activity, children wore an Actigraph accelerometer for one week, and we calculated time spent in sedentary behaviour (<25 counts/15-sec), light-intensity physical activity (LPA; 25 to <420 counts/15-sec), and moderate- to vigorous-intensity physical activity (MVPA; >420 counts/15-sec). Data from 55 children (20 boys, 35 girls) aged 30 – 60 months (M = 46, SD = 9) was used to assess correlations between physical activity, response inhibition (d-prime) and effortful control while controlling for age. No correlations between physical activity measures and response inhibition were significant. Furthermore, higher levels of MVPA were associated with lower effortful control ($r = .33, p < .05$). Better Go/No-go performance was associated with higher effortful control ($r = .33, p < .05$). These results suggest that associations between physical activity and self-regulation in early childhood may differ from findings in older children and adults.

P5 The Effect of Language Mindsets on Language Anxiety in Immigrants and International Students Interacting with English-speaking European Canadians

B. Ongaro, M. Cselinacz, N. M. Lou, & K. Noels (Psychology Department, University of Alberta)

Previous research shows that incremental language mindsets (i.e., belief that language intelligence can be improved) leads to resilience in the face of failure, whereas entity mindsets (i.e. belief that language intelligence is fixed) leads to a fear of failure. The purpose of this study was to understand whether

English-as-a-second-language (ESL) students' language mindsets influence their language anxiety in social interactions with Canadian English speakers. We hypothesized that ESL students primed with entity mindsets would exhibit higher levels of language anxiety when interacting with an English-speaking Canadian compared to those primed with incremental mind sets. Participants (N = 62) filled out a questionnaire regarding their personality and expectation of rejection in the conversation, and then read an article that primed either an entity or incremental mindset. Afterwards, the participant and a confederate engaged in a structured conversation with a confederate and then filled out a questionnaire, including measures of their approach and avoidance behaviours, negative affect, and willingness to interact with the confederate. The results suggested that negative expectations of the participants predicted their self-report avoidance behaviours, less willingness to interact with the confederate in the future, and worsened cultural adjustment, but only for those in the entity condition. These findings suggest that encouraging ESL students to adopt an incremental mindset can attenuate the detrimental consequences of negative expectation that lead to a self-fulfilling prophecy. Individuals who adopt an incremental mindset will also most likely benefit by experiencing better cultural adjustment and more positive social interactions with English speaking Canadians overall.

P6 Parental Discipline, Parent-Child Attachment, and Child Internalizing Problems

N. Lei, S. John, & W. L. G. Hoglund (Psychology Department, University of Alberta)

The prevalence of internalizing problems (including symptoms of depression, anxiety, and somatization) is estimated at 10-15% for preschool children (Briggs-Gowan et al., 2004). Research indicates that parenting behaviors such as parental discipline and parent-child attachment are key predictors of internalizing problems in childhood (Otto et al., 2016; Brumariu & Kerns, 2010). However, few studies have assessed the additive effects of parental discipline and parent-child attachment on internalizing problems in young children. The current study investigates parental discipline and parent-child attachment as predictors of child internalizing problems from preschool to kindergarten. This study also tests whether parent-child attachment mediates the association between parental discipline and internalizing problems. Participants included 231 low-income, ethnically diverse children in preschool who were followed over a two-year period from the fall of preschool year to the spring of kindergarten. Parents reported on parental discipline and parent-child attachment (Reynolds & Kamphaus, 2006). Teachers reported on child symptoms of depression, anxiety, and somatization (Reynolds & Kamphaus, 2004). Latent growth models assessed parental discipline and parent-child attachment as predictors of change in child depressive symptoms, anxiety, and somatization. Results indicate that although depression tended to decrease over the school year, more parental discipline predicted slower decreases in depressive symptoms. Parent-child attachment predicted initial levels of depressive and anxiety symptoms but did not predict change in depression, anxiety, or somatization from preschool to kindergarten. These results suggest that parental discipline might make children feel more inhibited in their expressions of sadness, which may contribute to slower decreasing rates of depression.

P7 Parent Discipline and Emotional Regulation in Early Childhood

S. Poirier, S. John & W. L. G. Hoglund (Psychology Department, University of Alberta)

Emotional regulation involves unconscious and conscious efforts to modulate emotional responses and expression. Emotional regulation abilities develop during childhood (Gross & Thompson, 2007). Through social interactions with parents, children learn how to interpret their feelings, learn strategies for emotion management, and understand the expectations for appropriate emotional responses (Gross & Thompson, 2007). These social interactions include parent discipline practices, such as the reinforcement of children's desirable behaviors and punishment of inappropriate behaviors (Calkins, 1994). Parent discipline may be one way that parents influence children's emotional regulation skills

(Calkins, 1994). The present study examined how children's emotional regulation changes from preschool to kindergarten and tested whether parent discipline predicts levels and change in children's emotional regulation. Gender differences in the association between parent discipline and child emotional regulation were also examined. Participants included 231 low-income, ethnically diverse children, who were followed from fall of preschool to spring of kindergarten. Parents self reported on their parenting behaviors (e.g., "I punish my child when he or she misbehaves"; Kamphaus & Reynolds, 2006). Teachers reported on the children's emotional regulation (e.g., "[this child is] easily frustrated"; Shield & Cicchetti, 1997). It was found that children's emotional regulation showed a linear increase across the two years; girls had higher initial levels of emotional regulation, as did older children. Parent discipline positively predicted levels emotional regulation in fall of preschool for girls and not for boys, but did not predict change in emotional regulation from preschool to kindergarten. This study will add to the understanding of parent discipline as a role that provides structure and feedback for negative behaviors, which can help children better regulate their emotions at the start of preschool.

P8 Keep your co-nationals close, but your host-nationals closer: comparing cases of language confidence among study abroad students

S. Suresh, K. Kieu, G. L. Diniz & K. Noels (Psychology Department, University of Alberta).

This case study focuses on two university students participating in 6-month study abroad (SA) programs in Brazil. It analyses how their perceived confidence in Portuguese is influenced by the composition of host-nationals, co-nationals and multi-nationals within their social networks. Maria (German) and Aaron (American) began their SA with similar language competencies in Portuguese. Both participants completed questionnaires during the beginning (t1), middle (t2) and end (t3) of their program, and participated in semi-structured interviews after t3. Maria and Aaron differed in the type and closeness of their contacts, which was related to their perceived language competence. Throughout the semester, Maria mostly communicated with her contacts in either German or English. Her closeness with co-nationals like her boyfriend and parents remained consistently high, but her closeness with host-nationals showed a general decrease. Aaron had a varied composition of host-, co- and multi-nationals in his social network and maintained high closeness rating with his contacts while speaking both English and Portuguese with them. Although Maria's questionnaires indicated an increasing confidence in spoken Portuguese, she implied multiple times during the interview that learning Portuguese would only be useful for learning Spanish or travelling in the future. She also extensively discussed the importance of English. Alternatively, Aaron's confidence in Portuguese showed an increase in both the questionnaire and interview data. Aaron communicated his desire to strengthen his Portuguese skills and to live in Brazil in the future. Results support previous research showing that motivation, language learning and social network composition are closely interrelated.

P9 An investigation of the word-imageability effects on association-memory-related ERPs

H. Warawa (Department of Psychology, University of Alberta), Y. Y. Chen (Neuroscience and Mental Health Institute, University of Alberta), J. B. Caplan (Department of Psychology and Neuroscience and Mental Health Institute, University of Alberta)

It is well supported that the word-imageability has a large influence on association memory tested by cued recall. Pairs of high imageability, or a greater ability to form a mental image of items, leads to higher accuracy during recall. However, the neural mechanisms behind the successful association of high-imageability pairs are unclear. We examined the electroencephalographic (EEG) correlates of association-memory at encoding with the influence of word-imageability. We asked if the two most replicated event-related potentials (ERPs), the Late Positive Component (LPC) and the Slow Wave, would contribute differently to increased successful encoding of high-imageability pairs. As previously

found, the LPC is mainly responsible for item memory and successful encoding, while the Slow Wave is thought to reflect the encoding of associations. Thus, we hypothesized the presence of a larger LPC and Slow Wave in high-imageability pairs compared to low. Preliminary findings replicate prior behavioural results, with higher accuracy during recall of high-imageability pairs versus lower imageability pairs. ERP preliminary results show a significant difference in the voltage of the Slow Wave for high-imageability compared to low-imageability pairs at electrode Fz, suggesting that the associative-encoding function of this Slow Wave may contribute to the imageability-advantage in cued recall.

P10 Cognition in Real-World Contexts: The P2 in Visually Complex Environments

T. K. McLean, J. E. M. Scanlon, A. Singhal & K. E. Mathewson (Department of Psychology, Faculty of Science, University of Alberta; Neuroscience and Mental Health Institute, Faculty of Medicine and Dentistry, University of Alberta)

Recent advances in electroencephalogram (EEG) equipment and analysis have allowed cognitive neuroscience research to extend beyond the lab, and begin studying the human brain in more complex, ecologically valid environments. Previous work in our lab has shown that event-related potentials (ERPs) show distinct P2 component reduction when an oddball task is performed outside while cycling on a street, compared to when inside a laboratory environment. A subsequent experiment demonstrated that this P2 effect could be replicated inside the laboratory when participants are exposed to complex auditory stimuli such as traffic. These findings have led to a hypothesis that the P2 component may be involved in stimulus filtering in complex environments. Our current experiment aims to determine if this modulatory effect of complex sensory backgrounds on the P2 component is multimodal, and occurs in a visual domain in addition to the previously studied auditory domain. Visual oddball tasks are performed with one of three distinct visual backgrounds: first-person video of cycling through traffic, a static background, or a traditional gray background. Specifically, we hypothesize that the P2 will be significantly reduced with the added complexity of traffic present in the visual environment, compared to more traditional stimulus backgrounds. This research will test our current hypothesis of the role of the P2 in filtering stimuli, and will contribute to the ongoing efforts to understand human cognition in complex, real-world environments.

P11 Sex-related differences in the acoustics of the chick-a-dee calls of the black-capped chickadee (*Poecile atricapillus*): Somatic influences

R. Q. Gastrock, K.A. Campbell (University of Alberta), A. H. Hahn (University of Wisconsin-Madison), & C. B. Sturdy (University of Alberta)

Black-capped chickadees (*Poecile atricapillus*) are songbird species found across most of North America. Songbirds, including chickadees, produce both songs and calls which serve important and variable functions for interactions both within and between species. Previous research has identified acoustic properties of the black-capped chickadee fee-bee song that are produced differently by the two sexes (Hahn, Kryslar, & Sturdy, 2013). Similar analyses of chick-a-dee calls have failed to determine the acoustic features that differ between sexes (Campbell, Hahn, Congdon, & Sturdy, 2016). There is some indication, however, that one candidate sex-specific feature is the starting frequency of the A note. This is a likely candidate, since A notes are common to almost all chick-a-dee calls produced by both males and females. In many other songbird species, vocalization pitch (i.e. frequency) is negatively correlated with body size. In black-capped chickadees, males are generally larger than females and would be predicted to possess lower frequency parameters than females. In this study, we analyze the effects of body size and sex of a call producer on the frequency of the starting notes of produced chick-a-dee calls. We used tarsus measurements as a proxy for body size and measures of the start, peak, and end frequencies as a simplified descriptor of A notes. The results from this study will help develop a better

understanding of the communication system of chickadees, and their perception of different signals.

P12 The effect of English proficiency and interaction on Chinese immigrants' identities in Canada

Q. Xue, Z. Zeng, & K. A. Noels (Psychology Department, University of Alberta)

Previous research shows that there are interconnection amongst Chinese immigrants' self-perception of English proficiency, the frequency of engaging in interactions with English native speakers, and ethnic identities in English-speaking situations. For example, a positive attitude toward native speakers of a target language is associated with higher attainment in the language (Oller, Jr., Hudson, & Liu, 1977). Moreover, interactions between immigrants and members of the host community play an essential role in developing immigrants' ethnic identities (Schimmele and Wu, 2015). This study utilizes a qualitative approach involving interviews with six participants recruited from Chinese community organizations. The participants were divided into two groups on the basis of participants' time length since immigration: (a) Chinese immigrants in Canada for no more than 6 months; (b) Chinese immigrants who have been residing in Canada for 3 to 4 years. In our model, immigrants' self-perception of English proficiency can affect their engagement of communicating with English native speakers, whereas the frequency of communication has an impact on the development of immigrants' ethnic identities. In addition, the length of time in Canada imposes restrictions to the chance of interacting with English native speakers, in turn on immigrants' identities. This study helps us to understand the development on Chinese immigrants' acculturation and integration process within the Canadian cultural context

P13 A time and place for everything: Longevity of massed and spaced training regimes using the Morris water maze

Nguyen, S. L., Shienh, A., & Dickson, C. T. (Department of Psychology, University of Alberta)

It has long been known that spaced training strengthens the engram (Ebbinghaus, 1885/1913). Information is less quickly forgotten when the same number of learning trials are distributed over a long time period, rather than when they are condensed or "massed" together in a short time period. Although the spacing effect is robust in cognitive and educational psychology (Pyc & Rawson, 2009; Cepeda et al., 2008), it has only recently been investigated using a spatial memory paradigm in rats (Sisti et al., 2007; da Silva et al., 2013). Here, we trained rats over 8 trials and tested for memory 4h or 24h later. Training was spaced over a 5-min interblock interval (semi-massed), a 5-min intertrial interval (spaced), or with a 1-min intertrial interval (massed). Unfortunately, our spatial memory measure tested at 4h and 24h post-training was negligible and was not significantly different between massed and spaced groups. In addition to the spacing manipulation, we incorporated pretraining, entry into a novel context for the spacing, a rising platform, and the delayed-matching-to-sample paradigm to enhance retention for all groups. The changes only slightly improved memory contrary to previous evidence (Bolding & Rudy, 2006; Spooner et al., 1994; da Silva et al., 2013) and did not highlight a spacing effect. Performance may have been hindered by an inadequate number of training trials such that rats did not maximize their learning enough to remember 4h or 24h later. Our findings lead us to wonder 1) if memory would be robust at 1h or 2h and 2) suggest a relation between the amount of time spent learning and temporally-graded memory decay.

P14 Multimodal and spectral degradation effects on speech and emotion recognition

C. Ritter & T. Vongpaisal (Department of Psychology, MacEwan University)

Research has shown that individuals with severe hearing loss demonstrate considerable adaptation to hearing input from their cochlear implants (CIs), especially when implanted at younger ages. Despite

these gains, hearing restoration with sensory prostheses does not match that of normal acoustic hearing. Limitations are especially apparent in complex listening situations. CIs retain important timing information, but discard fine pitch details that are informative to voice quality and music. We examined how speech and emotion recognition can be improved for CI listeners by the addition of informative multimodal (auditory and visual) cues. We created conditions that simulate the hearing experiences of CI listeners using a vocoder, which reduced the fine pitch information. In the unimodal auditory condition, hearing adult participants listened to sentence-length vocoded speech created with 4, 8, 16, and 32 bands that contained increasing amounts of spectral (pitch) detail, respectively. In the multimodal condition, the vocoded speech was superimposed to videos of the talker speaking the sentence. Our results show that listeners capitalized on informative visual cues that complemented the acoustic information and improved their speech and emotion recognition accuracies. The multimodal benefit was greater under the most difficult listening conditions; that is, 4 and 8 bands. Our findings also show that the addition of visual information benefited emotion recognition more greatly, where spectral degradation hampered the perception of important prosodic detail that cue emotion in voice. The present findings can be used to inform rehabilitative practices by incorporating informative multimodal cues to improve communication outcomes of CI listeners.

P15 Incremental mindsets influence non-native English speakers' willingness to communicate in English

B. Park, A. Yu, N. M. Lou, & K. Noels (Department of Psychology, University of Alberta)

International students and immigrants from non-English speaking countries may tend to avoid communicating in English because they feel uncomfortable when communicating in English. This study examines whether students' beliefs about language intelligence affects their willingness to communicate with an English speaker, as well as their actual communication. We hypothesize that adopting an incremental mindset (the belief that language intelligence can change and improve) will improve undergraduate students' willingness to engage in interactions involving English communication and thus improve their language ability. Undergraduate students with English as a second language (N = 73) were randomly assigned into two groups. Those in the experimental group read an article that primed them with incremental mindsets, and others in the control group read an article that was not relevant to language mindsets. Both groups had conversations with a Canadian-born, native English-speaking confederate, and filled out a questionnaire about their interaction. We found that participants in the incremental condition were generally more willing to engage in and to seek English interactions than participants in control condition. Moreover, participants' rejection expectations negatively predicted the duration of the conversation in the control condition, but not in the incremental condition, suggesting that incremental beliefs buffered the negative effects of rejection expectation on the length of the conversation. The findings suggest that adopting an incremental mindset may help non-native speakers, especially those who are less competent and more anxious, to become more willing to have English interactions and thereby improve their language ability.

P16 School climate and adolescent internalizing problems

T. J. L. Pidner, S. John, & W. L. G. Hoglund (Psychology Department, University of Alberta)

Depression and anxiety, whose symptoms are collectively defined as internalizing problems, are highly prevalent in adolescence, occurring in over 35% of this population (Tandon, Cardeli, & Luby, 2009; Merikangas et al., 2010). As school occupies a significant portion of adolescents' time school climate, which incorporates perceptions of school safety and bullying in the school, has significant opportunity to influence the potential development of internalizing problems among adolescents (e.g., Somersalo, Solantaus & Almqvist, 2002). An unexplored factor in the association between school climate and

adolescents' internalizing problems is the effect of informant discrepancies in perceptions of school climate between individual adolescents and overall aggregate perceptions. We investigate whether adolescent school climate ratings, as well as discrepancies in school climate ratings between individual and aggregate adolescent perceptions, predict adolescents' internalizing problems across two school years. Participants included 1765 adolescents in grades 7 to 10 in 8 junior high schools. Adolescents reported on their internalizing problems (Bevins, Diamond, & Levey, 2012) and school climate (Bear & Yang, 2012; Troop-Gordon & Ladd, 2010). Adolescents completed their surveys in the fall and spring of two school years. Hierarchical linear modeling will be used to assess individual adolescents' perceptions of school climate as a time-varying covariate of change in adolescents' internalizing problems and to test whether aggregate perceptions of school climate moderate this covariation. If an association is found, then discrepant individual climate perceptions could be further investigated as a target for preventative internalizing problems interventions.

P17 The Influence of School Climate on Cyber Victimization and Cyber Aggression

K. J. Gordon., B. Zatto., S. John., W. L. G. Hoglund (Psychology Department, University of Alberta)

Bullying, or peer aggression and peer victimization have significant negative consequences on adolescents' well-being including, poor scholastic achievement, decreased satisfaction and commitment to school, and depression (Schneider, O'Donnell, Stueve, & Coulter, 2012). As adolescents' spend more time on social media, cyber aggression and cyber victimization is a growing concern. "Prevnet" (n.d.) indicated 4-18% of youth perpetuate online aggression, 7-35% are victims, and 50% report knowing someone who is a victim of online aggression. 57% of adolescents' also reported knowing the perpetrator from school (Smith et al. 2008). Interactions between cyber aggression/cyber victimization and school are significant, particularly because positive school climate may buffer negative effects of peer aggression by decreasing risky behaviours, increasing academic achievement, and boosting positive emotional and health outcomes (Klein, Cornell, & Konold, 2012). However, because aggression and victimization are relatively new, the effects are not well known. This study examines the relationships between cyber aggression, cyber victimization, and four different aspects of school climate (teacher-student relations, student-student relations, school safety, and bullying school-wide). Differences based on both age and gender, were also explored. Data was gathered from youth reports across two years. Participants were from seven different schools, all participating in an evaluation of the Canadian Red Cross's Beyond the Hurt Bullying Prevention Program. Knowledge from this study will expand our understanding of the role school climate plays in cyber aggression and cyber victimization, and enable a better understanding of how to address the potential negative effects on adolescents'.

P18 Information and Resources; Culture and Community Supervision

W. I. Glaseman (Department of Psychology, University of Alberta)

This project was created for Community Corrections staff with the Government of Alberta. It provides a comprehensive breakdown of culturally tailored resources as well as information regarding compounding barriers faced by recently immigrated Canadians and Aboriginal Canadians supervised in the community by the Criminal Justice System. It is presented in three broad categories: Immigration, Aboriginal Canadians, and Language. This tool is important due to the highly multicultural population.

P19 Black-capped chickadee behavioural responses to mammalian and avian predators of varying threat levels

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C. A. Paszkowski (Department of Biological Sciences, University of Alberta), & Sturdy, C. B. (Department of Psychology, University of Alberta)

Several chickadees species are known to modify both behavioural and vocal responses to a predator depending on the level of threat it imposes. However, most research has used avian predators; consequently, how chickadees respond to mammalian predators of various threat levels is not well understood. To investigate behavioural responses of chickadees to mammalian predators, black-capped chickadees (*Poecile atricapillus*) were exposed to high threat, low threat, and control (non-threat) mammalian predator mounts. Chickadees were also exposed to avian mounts of the same varying threat levels to determine if responses between mammalian and avian predators differed. A previous study has shown that black-capped chickadees respond with the same call type to both mammalian and avian predators, however, chickadees modify components of their call depending on threat level. We predicted that the behavioural responses of chickadees would resemble these vocal responses; specifically, that chickadees would respond in a similar manner to mammalian and avian predators, but would have a greater response (e.g., larger change in the frequency of approach and avoidance behaviours compared to baseline) to avian predators as they are generally more of a threat. We predicted that chickadees would freeze when presented with a predator, as freezing is an antipredator response noted in field observations. We also predicted that chickadees would increase avoidance and decrease approach behaviours as predator threat increases (i.e., higher/lower frequency respectively for avian and high threat predators). Our results provide insight concerning chickadee antipredator responses to varying levels and types of posed threat.

P20 Friendship Quality, Peer Aggression, and Aggressive Social-Cognitions in Children

B. Sereda, W. L. G. Hoglund & S. John (Psychology Department, University of Alberta)

Friendships in childhood are typically beneficial and promote children's healthy social development (Berndt, 2002). However, research has shown that friendship quality is also related to peer aggression (acts of intentional harm towards towards peers; Brendgen et al., 2002). Although friendship quality and aggression are negatively related (Salvas et al., 2011), limited research has focused associations between friendship quality and sub types of peer aggression (physical versus relational aggression). As well, few studies have elucidated the mechanisms through which friendship quality and aggression are associated negatively. The present study aims to investigate the directional associations between friendship quality and separate dimensions of peer aggression over the course of a school term, and whether these relationships are mediated or initiated by children's aggressive social cognitions (i.e., assigning hostile intentions to infractions from peers). Participants included 461 ethnically and racially diverse children in grades K-3 from 10 public schools. Data were collected in January, March and June during which children completed surveys rating their friendship quality (closeness and conflict; Parker & Asher, 1993), peer aggression (physical, relational; Crick & Grotpeter, 1995) and aggressive social cognitions (hostile attribution biases; Crick et al., 2002). This study will allow us to examine the relationship direction and potential mediators of friendship quality and peer aggression.

P21 Getting schooled in relationships: Examining changes in ITRs and conflict styles before and after an interpersonal relationships class

L. J. Brunner (Psychology Department, University of Alberta)

Individuals who possess unrealistic beliefs about love and behave destructively in conflict are at risk for dissatisfaction and dissolution of their relationships. The current study examined how 67 students taking an interpersonal relationships course (compared to 71 students in a control course) reduced their maladaptive implicit theories of relationships and increased constructive styles of conflict. In

particular, the current research examined whether taking an interpersonal relationships course was associated with an increase in cultivation orientation (higher growth beliefs, lower destiny beliefs) and a reduction in evaluation orientation (higher destiny beliefs, lower growth beliefs). Moreover, I examined if this mirrored changes in conflict styles, whereby cultivation oriented individuals would engage in more compromise and evaluation oriented individuals would be more likely to use maladaptive conflict styles: avoidance, separation, domination, submission and interactional reactivity. To assess these effects, the study implemented a longitudinal, correlational design and collected three waves of data over a period of nine months.

P22 A review of measurement issues in HIV-associated neurocognitive disorders

D. Nielsen (Dept. of Biological Sciences, University of Alberta), E. Dorri, & E. Fujiwara (Dept. of Psychiatry, University of Alberta)

The human immunodeficiency virus (HIV) is now a chronic disorder with a life-long treatment course. We know little about long-term consequences of living with HIV, especially with regard to cognitive changes. Although many individuals living with HIV do well today, some will develop cognitive deficits. Consensus criteria from 2007 are commonly used to stage the presence and severity of HIV-associated neurocognitive disorders (HAND). However, prevalence rates for HAND, especially in milder forms, vary widely across published cohorts. There are many possible reasons for this variability, including patient sampling methods, comorbidities, and demographic differences between cohorts. However, different rates of HAND may also be a result of different methods that are used to determine neurocognitive deficits in HIV, and not a result of the underlying pathology. This review highlights some of these measurement issues. Common inconsistencies across the reviewed papers include the inconsistent application of the consensus criteria for HAND, pronounced differences in the number of neurocognitive tests and number of cognitive domains into which the tests are grouped, the presence or absence of appropriate normative reference populations, and the statistical methods of determining classifications of 'impairment'. Of these, methods used to apply the criteria and those to derive cognitive status are particularly difficult to discern due to incomplete reporting.

P23 Gestures Can Indicate Language Dominance Before a Child Begins to Speak

J. Gonzalez & E. Nicoladis (Psychology Department, University of Alberta)

Language dominance happens when bilinguals can speak one language better than the other. Therefore, can language dominance be observed, before a bilingual child begins to speak? This was a case study of a Spanish-English bilingual dominant toddler. The study started when he was 11 months of age to 15 months of age, and he was followed for three sessions in English and Spanish. The toddler was a late speaker. The purpose of this study was to observe whether gestures could be used as an indicator for language dominance. To address this question, we analyzed: 1) gesture frequency and 2) the type of gestures used. We predicted he would use more gestures and more representational gestures. Previous research has shown that the use of representational gestures increases with increasing language knowledge in children. The results corresponded to the predictions. While this was a case study, the results are suggestive that language dominance can be predicted before a child produces words from either language.

P24 Influence of rehabilitation duration on behavioural recovery and hematoma volume after intracerebral hemorrhage

J. R. Aziz, C. A. Nadeau, L. J. Liddle, & F. Colbourne (Psychology Department, University of Alberta)

Intracerebral hemorrhage (ICH) is a stroke subtype with high rates of death and disability, for which

there are no medical or pharmaceutical treatments. After ICH, toxic blood products (e.g., hemoglobin, iron) contribute to tissue loss and behavioural deficits as blood degrades in the brain. Rehabilitation can lessen disability, but the timing and mechanisms of rehabilitative recovery are poorly understood. Our laboratory has previously shown that rehabilitation may provide benefit by accelerating hematoma clearance (reducing blood volume in the brain) after ICH. In this study, we investigated the effects of rehabilitation duration on blood volume and behavioural recovery after ICH. We hypothesized that rehabilitation would attenuate skilled-reaching impairments and reduce hemorrhaged blood in the brain tissue after ICH, with greatest recovery being positively associated with amount of rehabilitation received. Four weeks prior to ICH, rats were trained twice daily on a skilled-reaching task. After training, we induced ICH in the striatum of rats, which creates skilled-reaching deficits. After ICH, rats were randomly assigned to one of three groups: control or rehabilitation (7 or 14 days) with a modified skilled-reaching apparatus, and housed in an enriched environment; control animals received similar reinforcement and handling, with no environmental enrichment nor rehabilitation. Behavioural recovery was assessed via skilled-reaching performance, after which rats were euthanized to examine the effects of rehabilitation on blood volume. Although both durations of rehabilitation reduced skilled-reaching deficits, rehabilitation did not reduce blood volume. This study furthers our knowledge of therapeutic timing after ICH as well as mechanisms of rehabilitative recovery.

P25 Alexithymia and Eye-tracking of Visual Attention to Ambiguous Emotional Faces

M. Mohamud, G. Sidhu, A. Kisana (Department of Psychology, University of Alberta), A. K. Macrae-Korobkov (Neuroscience and Mental Health Institute, University of Alberta), & E. Fujiwara (Department of Psychiatry, University of Alberta)

Alexithymia is a personality trait characterized by difficulties with identifying and describing emotions in one-self and others. Alexithymia is usually assessed with a questionnaire, most commonly the Toronto Alexithymia Scale (TAS). Asking people who have difficulties with their emotions to report on such difficulties in a questionnaire is problematic and more objective emotion processing measures may be useful. Our lab recently found people with high alexithymia (HA) attended relatively less to the eye region of faces showing mixed emotional expressions, compared to people with low alexithymia (LA). Importantly, eye-preference reduced performance accuracy in HA while it increased performance in LA. The current study is a follow-up experiment with a few critical changes: Trial numbers are 2.5 times higher, maximally ambiguous faces (showing 50% of two emotions) and neutral faces are included, and the face photos were enlarged to allow more precise eye-movement measures within different facial areas of interest (like eyes, mouth, nose, etc.). Subjects were undergraduate student participants selected to be HA or LA. Preliminary analyses showed that participants are less accurate and take longer when they judge ambiguous faces (25%, 50%, 75% of one emotion), as opposed to clear faces (100% one emotion). We expect to further replicate our previous findings, including the reduction in eye-preference in HA. Furthermore, we will test if neutral faces are particularly difficult to judge and show the strongest reduction of an eye-preference for HA.

P26 The Road to Mobile and Affordable EEG Experimentation

G. D. Splinter, A. Rajaram, J. W. P. Kuziek (Department of Psychology, Faculty of Science, University of Alberta), & K. E. Mathewson (Department of Psychology, Faculty of Science, University of Alberta, Neuroscience and Mental Health Institute, Faculty of Medicine and Dentistry, University of Alberta)

Electroencephalography (EEG) is often used to measure brain activity in laboratory settings. However, results from these experiments often lack external validity, as the laboratory is isolated from electrical and auditory noise, and movement is reduced during experiments. Considering this, alternatives to classical data collection have been tested: The Muse headband and Raspberry Pi 2. Together, we hope

these devices will allow accurate measurement of brain activity during mobile experiments. The Pi 2 is a small, low-cost computer. Previous research compared it to a traditional desktop PC for stimulus presentation. Comparable EEG activity was derived from stimuli presented by the Pi 2, suggesting it can be a viable replacement for traditional desktop systems in terms of stimulus presentation. Our current research aims to determine if the Muse, a relatively inexpensive EEG headband from InteraXon, can collect reliable and accurate EEG data that is comparable to more expensive commercial EEG amplifier systems. To compare the two systems, participants will complete auditory and visual oddball tasks while EEG is recorded. Event related potentials (ERPs) are then derived from the EEG data. The P3 ERP, which is observed following presentation of rare stimuli, will be used to compare the effectiveness of the systems. We predict that the ERPs derived using the Muse and the commercial amplifier will be comparable, making the Muse a low-cost, portable alternative for EEG data collection. When combined with the effectiveness of the Pi 2 in presenting stimuli, the Muse will improve the affordability, portability and generalizability of EEG experiments.

P27 Security values bridge anti-muslim views for Americans with a southern identity

S. Keats (University of Alberta), D. Rast (University of Alberta), J. Hackett (California University of Pennsylvania), Z. Hohman (Texas Tech University), & D. Blaacker (California University of Pennsylvania).

Recent attacks have re-ignited debates about the use of confederate imagery in government buildings and public places. The debates centered on the relationship between these images and southern identification versus a more progressive response to America's past. We examined southern identification and its relationship to several constructs. A significant interaction between southern identification, living in the south, and anti-Muslim Beliefs emerged, $B = .20$. The relationship between southern identification and anti-Muslim Beliefs is significantly stronger for southerners ($B = .36$) as compared to northerners ($B = .15$). Moderated mediation analyses were conducted to examine the conditional indirect effect of security values on the interaction of southern identification and living in the south on anti-Muslim beliefs. The conditional indirect effect of security values between the interaction of southern identification and living in the south on anti-Muslim beliefs was statistically significant ($CIE = .0206$, $SE = .0146$). The conditional indirect effect of security values on anti-Muslim beliefs remained significant for southern identification for southerners ($IE = .0242$, $SE = .0141$), whereas it was not significant for northerners ($IE = -.0035$, $SE = .0086$). Security values mediated the interactive effect of southern identification and living in the south on Muslim beliefs.

P28 Subjective Cognitive Decline in Non-Demented Aging: Exploring Multidimensionality, Group Differences, Longitudinal Changes

S. X. Fu, R. A. Dixon, & G. P. McFall (Psychology Department, University of Alberta)

Among early markers of preclinical Alzheimer's disease (AD) are objective mild cognitive impairment (MCI) and subjective cognitive decline (SCD). SCD is the self-perception of memory decline with aging. Ongoing research investigates (1) SCD dimensionality, (2) group differences and longitudinal change, and (3) associations with actual memory decline and clinical outcomes (MCI, AD). We examine four SCD dimensions: (1) subjective memory decline, (2) memory decline concerns (SCD-C), (3) self-efficacy regarding memory aging (SCD-SE), and (4) use of memory compensation techniques (SCD-COM). Data from Victoria Longitudinal Study archives included $n=591$ adults ($M_{age}=70.3$; $SD=8.6$; $Range=53-95$; $\%Female=65$) measured on three waves (9 years). This abstract reports age (Young-Old, 53-74.9; Old-Old, 75-95) and gender differences for each SCD dimension. Bivariate correlations at baseline revealed that worse SCD correlated with greater concern (-0.35), more compensatory efforts (-0.42), and lower memory self-efficacy (0.24). Two-way ANOVAs showed several main effects and interactions. At

baseline, Young-Old were more concerned but reported greater SCD-SE than Old-Old adults. Women had higher self-efficacy and used compensation techniques more than men. At Wave 2, an interaction indicated that Young-Old women reported fewer memory problems than Young-Old men, but older groups had the opposite pattern. An interaction for SCD-COM showed that only in the oldest group did women use more compensation techniques than old men. SCD as a potential marker of early (pre-MCI) risk for AD may vary by age, gender, and dimension. Further longitudinal and other analyses are underway.

P29 Beyond vocabulary: Bilingual preschoolers creatively compensate for unknown words on narrative tasks

E. N. Iwaniuk & E. Nicoladis (Gesture and Language Development Laboratory, Psychology Department, University of Alberta)

On storytelling tasks, bilingual children tend to produce narratives that are just as long and varied as those produced by age-matched monolingual children, even though bilingual scores on vocabulary tests are generally significantly lower (Barbosa, Nicoladis, & Keith, 2016). The question then arises: how can bilingual children compensate for their decreased vocabularies on narrative tasks? To test this, we compared the narrative performance of English monolingual and French-English bilingual children under the age of six. We hypothesized that bilingual ability was due to a higher capacity for flexible word choice, possibly because of increased verbal short term or working memory abilities (Chuneyeva, 2008). This flexible word choice ability would allow bilingual children to replace unknown words with functionally equivalent ones to still effectively communicate their story in the absence of complete vocabularies. Each participant was presented with a Pink Panther cartoon and then asked to retell the story in their own words. Measures of vocabulary, verbal working, and short term memory were also recorded. The word types, tokens, and gesture rates from each story were then transcribed. The results were as predicted: bilinguals told stories that were just as long and varied as monolingual stories, despite having significantly lower English vocabulary scores. However, no significant correlation was found between word type or token production and verbal working or short term memory scores in bilinguals. These results show that the compensatory mechanism responsible for bilingual narrative performance may be explained by cognitive abilities other than verbal working or short term memory.

P30 Effect of linguistic factors on the processing speed of pseudo-compound words

A. Sidhu, L. Weshah, C. Gagné, & T. Spalding (Psychology Department, University of Alberta)

Pseudo-compound words differ from compound words in that their apparent constituents do not contribute to the meaning of the whole word. For example, “season” is a monomorphemic pseudo-compound and “seashore” is a compound where the meaning of each constituent, “sea” and “shore” contributes to its meaning. Presently, much of the literature is concerned with the processing of compounds rather than pseudo-compounds. Thus, our aim is to examine various linguistic factors that may influence the processing time of these words, which can ultimately provide insight on the pseudo-compound processing mechanism. A regression analysis was performed using a compilation of previous experiments’ results to see how various predictor variables, both individually and through their interaction(s) relate to reaction times of lexical decision and word naming. Such variables included bigram frequency based on a Facebook corpus, word length, snaut (similarity in meaning), Latent Semantic Analysis (LSA), constituent and morphological family size. Preliminary results suggest that bigram frequency has a negative association with lexical decision time ($p=0.04$) but not with naming time. Snaut of both constituents did not influence lexical decision reaction time; however, it did produce higher naming accuracy ($p < .001$). Additionally, the snaut between either constituent and the word itself had negative associations with lexical decision time ($p < .001, p = .002$). LSA was negatively associated

with lexical decision time ($p=0.02$). As well, family size and the interactions between constituent family sizes showed no effect. Therefore, the influence of these factors on processing speed varies depending on the processing task (naming or lexical decision).

P31 Enhancing International Students' Experiences through Community Engagement

E.R. Worman (Sociology Undergraduate, University of Alberta), Z. E. Hamm (Ph.D., Adult Education Specialization, Educational Policy Studies)

As post-secondary institutions vie for placement and recruitment in a global society, it becomes more pressing to investigate how recruitment and retention of students from abroad can be facilitated in a more effective manner. The purpose of my research is to question in what ways visiting students' experiences of community engagement at the University of Alberta can lead to greater well-being and impact desires to stay longer or immigrate. This project will utilize qualitative surveying to determine if these factors (staying in Canada and well-being) are linked with heightened engagement. Research regarding community engagement and service-learning indicates that participatory behaviors (such as volunteering) increases many positive indicators that would build affinity and investment felt toward that community, as well as factors that would impact an individual's well-being such as happiness and utility from a community. However this rarely discusses international students' experiences and is often focused at levels of community leagues and similar bodies.

P32 Limitations of Imitation

A. Besoi, & E. Nicoladis (Psychology Department, University of Alberta)

Imitation, defined as the "copying of a behaviour" (Zentall, 2006, p.335) consists of the observation of another person's behaviour as a mechanism of learning. Although it is easily observed that imitation is used by children, adults, non-human primates and other animals (Meltzoff, 1998 as cited in Zentall, 2006, p. 335)), it is unclear whether imitation can be considered exclusively positive, or if it has the potential to become negative in perception by the person being imitated. Everything has the potential, if used excessively or improperly, to instigate the opposite of its original function. It is often most useful to combine a variety of social learning components in new situations in order to fulfill all novel situations. I predict that the overuse of imitation in social situations can arouse negative reactions from the "imitatee" due to an attempt by the imitator to gain "in group" status that they were not granted. As well, this effect may be exacerbated by the role in the relationship (e.g.: student vs teacher). These predictions are tested using a series of 5 short videos highlighting scenarios of high imitation and low imitation by the teacher vs the student as well as one video without any imitation. My perspective is that there are limitations to everything, and knowing these limitations allows us to function most appropriately in society. Through this research I am hoping to highlight the limitations to imitation since, like all learning tools, it can be overused.

P33 Candy Crush addiction - measurement and scale improvement

A. Porthukaran, B. Schuldaus, S. Chakravarty, J. B. Caplan, & E. Fujiwara (Department of Psychiatry, University of Alberta)

We know little about mobile games as a potential source of addictive behaviours. Candy Crush (CC) is an example of a popular mobile game. In this study, we aimed to test the prevalence of CC use and addiction in a Canadian undergraduate student population, using a recently developed CC addiction questionnaire (CCQ) from Hong Kong (Cheng & Luong, 2016). Addiction in the CCQ had been found to relate to loneliness and leisurely boredom, but has unknown ties to mental health. Methods: 781 student participants completed the CCQ. Divergent and convergent validity of the CCQ were evaluated

with questionnaires assessing problem gambling (PGSI), impulsivity (BIS-11), dysfunctional gambling-related attitudes and beliefs (GABS-23) and mental health variables known to covary with other addictions: trait-anxiety (STAI-T) and alexithymia (TAS-20). Results: Cronbach's alpha for the CCQ was 0.74, with item-total correlations around 0.4. Adding an additional new item increased alpha to 0.76. The CCQ total score was significantly higher in female than male students. CC addiction (CCQ-score of 5 or more points) was found in 33 (4.2%) participants. The CCQ total score showed the expected relationships to all personality and mental health variables, including group difference in those with CC-addiction. Conclusions: Internal consistency of the CCQ was borderline acceptable, and may be increased by adding additional questions. 'Addiction' to CC is rare in this cohort, given the recommended cut-off. CC addicted also showed higher rates of problem gambling. The CCQ is related to personality and mental health indicators known to play a role in other addictions.

P34 Science Internship Program: Minecraft in the Classroom

E. Berglund (Psychology Department, University of Alberta)

As part of Science Internship Program, I completed a personal research project that would benefit the place of employment and was of personal interest. With assistance from employees at Technologies in Education, a workshop was designed to show Faculty of Education students that games, specifically MinecraftEdu, could be used to teach a variety of subjects and grade levels. Once signed up, the participants would then answer a short pre-workshop survey to gauge what kind of audience was signing up. Students would come in 2 at a time to participate in the workshop and play through 2 or 3 worlds that related to either their ideal teaching level and/or subject area. During the workshop, I would also be in the world with them to answer questions and show them features of MinecraftEdu. The participants would also take turns being in the "teacher" role to experience what it would be like in an actual classroom setting. Once the workshop concluded, the participants would then fill out a short post-workshop survey about their experience and rate the worlds they played to help improve the worlds for future workshop sessions. A short Minecraft themed 3D printed key chain token was given to the participants as they left as a thank you for attending.

P35 Investigating blood-brain barrier hyperpermeability after experimental intracerebral hemorrhage

C. A. Nadeau, C. M. Wilkinson, & F. Colbourne (Psychology Department, University of Alberta)

Bleeding in the parenchyma during intracerebral hemorrhage (ICH) induces damage to the blood-brain barrier (BBB). This leads to edema and brain injury, which prevents the BBB from protecting the brain from harmful environmental influences. Currently, there is limited knowledge of the time course of BBB damage after ICH. We compared BBB permeability in rats after collagenase infusion, an ICH model that degrades blood vessels. The rats were randomized to either a collagenase or a sham surgery and to three, seven, or fourteen day survival times. Evan's Blue, a dye, was then injected intravenously and allowed to circulate for two hours. This allows the dye to cross the BBB where there is damage. In a healthy BBB, the dye would not be able to enter the brain. Following perfusion, the animal's brains were analyzed using spectrophotometry to assess the amount of Evan's Blue extravasation. The results show that BBB permeability is initially much higher than the sham control group and decreases over time, with the highest permeability occurring on day three. However, there is a subset of animals that have hyperpermeability on all days. Surprisingly, the hemisphere contralateral to the ICH exhibits increased permeability on all days. A small group of animals experiences continued hyperpermeability which could indicate the occurrence of rebleeding after the initial ICH. Contralateral hyperpermeability could be attributed to the brain's repair process and increased angiogenesis. Future studies in our lab will examine the spatial resolution of BBB damage.

P36 Portrayal of ASD in Canadian Media: A Framing Analysis

S. Chiu (Faculty of Science, University of Alberta) & S. Hodgetts (Department of Occupational Therapy, University of Alberta)

Mass media is a popular means by which the public learns about current health and science issues. However, the tendency of media to frame news stories can significantly shape societal attitudes, influence health service demands, shape health care and education related decisions, and inform policy. In previous framing analyses from the United States, United Kingdom, Australia, and China, media representations of ASD were often inaccurate and negative in focus, perpetuating misconceptions and stereotypes of ASD. Since Canada is recognized as being relatively well resourced for health care services for people with ASD and their families, the Canadian media may portray ASD differently, leading to different perceptions of ASD in Canada than in other countries. The goal of this study is to reveal how ASD is portrayed in Canadian newspapers and what common themes exist in those media reports. Frame analysis was used to evaluate the main issues, the sources behind the information, positive or negative presentation, and whether human interest, science, or policy topics were included. Compared to previous analyses from other countries, Canadian portrayal of ASD in newspapers was more neutral or positive. However, even in positively framed articles, there was frequent use of the words suffer and burden. There was also more frequent discussion on infrastructure compared to other countries. Similar to previous studies, the voices of people with ASD remain largely unheard. Increased understanding of media portrayal of ASD can provide context for societal understanding of ASD, challenge stigma and discrimination, and improve acceptance and inclusion.

P37 Children's Internalizing Problems and Teacher-Child Relationship Quality: The Role of Classroom Emotional Support

S. Markandu, B. Zatto, S. John, & W. L. G. Hoglund (Psychology Department, University of Alberta)

Close, supportive relationships between children and their teachers can reduce children's risks for internalizing problems. (e.g., symptoms of depression and anxiety) (Murray & Murray, 2004). On the other hand, children who experience more internalizing problems may develop more conflictual or dependent relationships with their teachers (Mejia & Hoglund, 2016). Beyond children's dyadic relationships with their teacher, the overall emotional support in the classroom may reduce children's risks for internalizing problems (Griggs et al., 2016). This study investigated how teacher-child relationship quality co-varies with children's internalizing problems across one school year and tests whether classroom emotional support moderates this association. Participants included 506 ethnically diverse children in grade 1 to 4 from 10 high-needs schools in Western Canada. Data were collected in October of 2010 and March and June of 2011. Children's internalizing problems were assessed using child-reports and teacher-reports (Reynolds & Kamphaus, 2004). Teacher-child relationship quality was assessed using child-reports (Blankemeyer et al., 2002) and teacher-reports (Pianta, 2001). Classroom emotional support was assessed using structured observations conducted by trained research assistants (Pianta et al., 2008). Implications of this study provided a better understanding of the role of classroom emotional support on the association between children's internalizing problems and teacher-child relationship quality.

P38 Generating music by predicting notes from Bach's Inventions

J. Han and M. R.W. Dawson (Biological Computation Project, University of Alberta)

The purpose of this study was to explore the ability of artificial neural networks to learn sequences of notes in a musical composition, and to then generate new compositions from this knowledge. For simplicity, networks were trained on Bach's 5 major mode Inventions (C, D, E, F, and G), and only

learned the melody of these pieces. Pilot studies indicated that networks whose output and hidden units used Gaussian activation functions were better at learning the melodies in comparison to networks that used logistic activation functions. Simulation studies revealed that a network that used exact pitch representation, and which used the previous two notes to predict the current note, was best able to learn the inventions. After training, we used the network to map out probabilities of note occurrences for all possible predicting pitches. We then used these probabilities to generate new compositions. In some cases, when we began this composition process with two 'seed notes' found in the training stimuli, the network's knowledge then produced a composition that was very similar in structure to an actual Bach invention. Interestingly, when two notes that were not used by Bach seeded the composition, the network knowledge produced a Bach-like melody, but one that included novel pitches. These results suggest that Gaussian networks can learn the probabilistic structure of musical melodies.

P39 The Influence of Yoga on Emotion Regulation Development in Children

L. Hood, K. Yamada, S. John, & W. Hoglund (Psychology Department, University of Alberta)

Development of emotion regulation (ER), or the ability to shift and manage an emotional experience, is a key step of a child's overall emotional competence development (Sena Moore & Hanson-Abromeit, 2015). There are many strategies for facilitating ER development that has been investigated, including yoga and mindfulness. However, previous research has focused on the effectiveness of these strategies with adults, not children. As well, the limited research with children has focused on specific components of ER, not overall ER. We observed how participation in a yoga program predicted ER in children over the span of 1 month. Participants were children aged 1.6 to 5.5 years, enrolled in an Early Learning Program, and participated in yoga lessons. Data were collected in October - November 2016. ER was measured through behavioral observations during yoga lessons (e.g., can adjust emotion according to teacher's instruction). Observations of ER were averaged for the class and scaled (e.g., low regulation, moderate regulation, high regulation). Observations of children's ER across the one month were compared to teacher-reported ER in children from Dr. Hoglund's Early Experiences Project. The data suggest children who participate in yoga lessons showed greater gains in ER across the one month. This study suggests that yoga and mindfulness practice may foster ER in children.

P40 Case Management Strategies for Sex Offenders in Community Corrections: Focus on Risk-Need-Responsivity and Good Lives Models

K. Kobasiuk (Psychology Department, University of Alberta)

There has been an enduring conflict in probation between protecting the community and rehabilitating offenders (Skeem & Manchak, 2008). Probation officers often find themselves alternating between conflicting roles of therapist and policeman. The ability to find a compromise between dual roles while maintaining effective case management strategies is challenging, even for established probation officers. Despite the significant role probation officers play, they tend to underestimate the power they have to make an impact in offenders' lives (Purvis, Ward, & Willis, 2011). Case management strategies set the foundation for what goals the probation officer and client will work towards achieving during supervision. Emerging evidence of recidivism reduction techniques has created new demands of probation officers (Bourgon, 2013). The literature proposes Good Lives and Risk-Need-Responsivity models are complementary and by emphasizing qualities of both models, offender wellbeing is maximized, recidivism is reduced, and community safety is improved (Wilson & Yates, 2009). This project was completed as a requirement of the Internship Program in Psychology.

P41 Generational and Cultural-Ideological associations with Bicultural Identity Orientations

L. Edmondstone, J. Kaskurski, N. M. Lou, & K. Noels (Psychology Department, University of Alberta)

Past research identified five identity orientations that immigrants used to manage their bicultural identities: a hybrid orientation blends two identities, whilst an alternating identity switches between the two. A conflicted orientation focuses on the divide between cultural identities, whereas a monocultural orientation involves identifying singularly with one of the two. Finally, a complementarity orientation recognizes the difference between identities but concedes that they are compatible. This study examines whether these five orientations differ across immigrants' generation, and their links with multicultural, polycultural, or colour-blind cultural ideologies. Participants were 1019 undergraduate students who were international students (IS), first-generation immigrants who had moved to Canada after age 11 (G1), immigrants who had moved to Canada before the age of 11 (G1.5), second-generation immigrants whose parents were born outside Canada (G2), and second-generation immigrants who have one Canadian-born parent and one foreign-born parent (G2.5). IS, G1 and G1.5 groups more strongly endorsed a monocultural strategy compared to G2 and G2.5 groups. In contrast, G2 participants favored a hybrid and compatibility bicultural identification strategy compared to IS and G1 participants. Moreover, polycultural and multicultural ideologies positively predicted compatible, hybrid, and alternate identity strategies and negatively predicted monocultural and conflict strategies, whilst colour-blind ideology predicted a monocultural and conflict identity strategies. The results provide insight into understanding the complexity of bicultural identities and the role of cultural ideologies in the acculturation processes across generations.

P42 Do early childhood learning programs that integrate emergent curriculum and philosophy (such as the Reggio Emilia approach) enhance children's prosocial behaviors in kindergarten?

C. Clarke, D. Johnson, & S. Oliver (Psychology Department, University of Alberta)

Research has shown that children are affected by their learning environments they encounter in early childhood, which can shape how they approach and engage socially within the classroom setting. Throughout the Fall 2016 semester, we observed the Reggio Emilia program, at the Garneau Learning Centre, to understand how it may promote the participation of prosocial behaviours and compared it with research data collected from the Early Experiences Project (EEXP) done through Dr. Wendy Hoglund's PEERS Lab at the University of Alberta. Current research findings indicate that a proficiency in prosocial skills as one leaves kindergarten can have a positive impact in later years and protect against development of internalizing behaviours in middle childhood.

P43 Examining the relations between parenting styles and response inhibition: the moderating effect of gender

A. Rajaram, D. Vratsidis, N. Ali, M. Khoei, & S. A. Wiebe (Psychology Department, University of Alberta)

There is growing evidence that parenting and the home environment contribute to the development of children's executive function skills. In this study, we investigated the relationship between parenting styles and response inhibition, a component of executive function. We hypothesized that positive parenting would be associated with better response inhibition, and harsh or negative parenting would be associated with poorer response inhibition. We also explored whether these associations differed between boys and girls. The sample included 192 children between the ages of 4 and 7 years. Children completed the Simon Task, a measure of response inhibition, as part of a larger battery of executive function tasks, and parents completed the Robinson Parenting Questionnaire, which included subscales measuring positive parenting (Warmth/Involvement and Reasoning/Induction) as well as negative parenting (Nonreasoning/Punitive Strategy). Multiple regression was used to examine the effects of parenting style, gender, and their interaction on response inhibition. The best-fitting regression model included Gender, Nonreasoning/Punitive parenting, and their interaction, where only the interaction

term was statistically significant. Follow-up analyses revealed that Nonreasoning/Punitive parenting was associated with poorer response inhibition for boys, but not for girls. These findings contribute to our understanding of the moderating effect of gender on the association between parenting behaviours and children's executive function.

P44 Judgment of Relative Recency: An ERP Analysis

A. Wattoo, M. Chan, Y. Liu, N. Ikuta and J. B. Caplan (Psychology Department, University of Alberta)

Order memory is an important component of life; our job, education and day to day performance rely on it. For example, to remember a recipe or an experimental procedure. The Judgment of Relative Recency (JOR) task has been used to assess memorization of an ordered list. This task presents participants with two items from a previously presented list and asks to judge which item came earlier or later. Results of analysis of the response times show participants are faster at making a judgement for the congruent condition than for the incongruent condition. Analyzing the electrical brain activity, the grand-averaged event related potentials (ERP's) did not indicate a difference in voltage between the congruent and incongruent conditions. Preliminary inspection of the ERP's suggests that within a given subject, there were large differences between congruent and incongruent probes. However, the direction of the effect, indicated by which condition had the more positive ERP voltage, varied across participants. This finding explains the lack of difference found in the grand-averaged ERP's as the effect was cancelled out by averaging the participants. These individual differences might reflect differences in strategy, which we will investigate in future analyses.

P45 The effect of stereotype threat on undergraduate males' sense of belonging and language aptitude

S. Tahir, K. E. Chaffee, & K. A. Noels (Psychology Department, University of Alberta)

Stereotype threat is the phenomenon in which individuals feel pressured to not confirm a negative stereotype about their group. This pressure negatively impacts performance, ultimately confirming the stereotype. This experiment examined whether stereotype threat affected male students' beliefs in language domains. The experimenter told approximately half of the participants (n = 53 undergraduate men) in the threat activated condition that females generally outperform males in languages. The non-threat (control) script, which did not mention gender differences, was verbally presented to 57 participants. This was followed by language aptitude tasks and a questionnaire for both groups. The results suggested that participants believed the stereotype threat manipulation. In turn, this influenced the participants to believe that there is an overall difference in language aptitude between males and females. This belief in gender differences resulted in the participants being less likely to feel competent in languages, as well as being less likely to feel like they belong in the larger language community. As a result, we were able to conclude that there is an indirect effect of stereotype threat on sense of belonging and competence, through the belief that females are better than males in language learning. These findings suggest that believing in gendered stereotypes about language may make men less inclined to learn languages because they feel less like they belong and can achieve in language classes.

P46 Alexithymia impairs speeded emotional face recognition: Role of eye movements

E. Stolz, M. Napierala* (Department of Psychology, University of Alberta), A. K. Macrae-Korobkov (Neuroscience and Mental Health Institute, University of Alberta), M. Xia (University of California, Berkeley), E. Fujiwara (Department of Psychiatry, University of Alberta)*

**equal contribution*

Alexithymia is a personality trait characterized by difficulties in expressing or perceiving emotions.

Although not a disorder, alexithymia is comorbid with many psychiatric and medical conditions, such as depression, disordered eating, and autism spectrum disorder. A handful of studies have explored visual attention underlying emotional face processing in alexithymia, but these have either included clinical cohorts where alexithymia was a control variable (e.g., alexithymia in eating disorders), or healthy individuals whose alexithymia scores were outside the clinically meaningful ranges. Based on this research, emotional face processing deficits in alexithymia are most likely when recognising the emotion is difficult such as in speeded tasks. We recorded eye-tracking during speeded emotional face processing in healthy people with clinically elevated (or low) alexithymia scores. A total of 182 low alexithymic [94 LA] or high alexithymic [88 HA] undergraduate participants were enrolled via clinical cut-off scores in the Toronto Alexithymia Scale [TAS]. Compared to LA, HA were less accurate and showed less of a viewing preference for the eye region of faces, especially for faces showing sadness. LA were more accurate when they fixated on the faces longer. HA were more accurate when they made fewer saccades inside the faces. Although performance and eye-preference in this task were lower in HA, they were unrelated. All results were most pronounced for the alexithymia dimension 'difficulties identifying emotions'. For HA, saccadic eye movements when viewing faces may represent continued (and unsuccessful) search for clues to the emotion.

P47 Does teacher-child relationship quality mediate the association between externalizing problems and school engagement?

D. Feng (University of Alberta), K. Burke (University of Alberta), S. John (University of Alberta), W. Hoglund (Psychology Department, University of Alberta)

This study examines the associations between teacher-child relationship quality, child externalizing problems, and child school engagement. Teachers are among the most common adult relationships young children form outside of their immediate family. Externalizing problems refer to children's aggression, hyperactivity, and attention problems. School engagement refers to children's goal-directed and enthusiastic participation in academic activities and includes emotional ("enjoyed learning new things in class") and behavioural ("pay attention in class") engagement. Participants included 506 low-income, ethnically diverse children in grade 1 to grade 4, assessed three times over one school term. This study tests the following research questions: 1) Do child externalizing problems predict prospective teacher-child relationship quality and school engagement across a school year? 2) Does teacher-child relationship quality predict child school engagement and mediate the association between externalizing problems and school engagement? Teachers reported on child externalizing problems (Reynolds & Kamphaus, 2004) and teacher-child relationship quality (Pianta, 2001). Children reported on their school engagement (Furrer & Skinner, 2003). This study will add to the knowledge of processes by which children's externalizing problems may undermine their school engagement.

P48 Peer Sociability, Peer Communication and School Engagement in Preschool

R. Gibson, S. John, & W. Hoglund (Psychology Department, University of Alberta)

Preschool is the period when children are initially encouraged to engage in school activities, such as showing attention, curiosity, optimism or interest in activities (Appleton et al., 2008; Baldanza, 2013). During this time, children also interact and socialize with peers. Peer sociability (e.g., ability to initiate and maintain interactions and engage in reciprocal peer interactions) is expected to promote higher levels of engagement in school activities (Coolahan, Fantuzzo, Mendez, & McDermott, 2000). Peer communication (e.g., initiation, maintenance and termination of communication between peers) might also predict children's school engagement because through increased use of language children tend to participate more in school activities (Fantuzzo & McWayne, 2002). This study examined how peer

sociability and peer communication relate to school engagement in preschool. Gender differences in these associations were also examined. The sample consisted of 231 ethnically diverse children in 23 preschool classrooms. Data were collected in the fall and spring of preschool. Peer sociability and communication were assessed from structured observations using the Individualized Classroom Assessment Scoring System in the fall and spring of preschool (inCLASS; Downer, Booren, Hamre, Pianta & Wilford, 2011). School engagement was assessed in the spring of preschool from teacher reports on the MacArthur Health and Behaviour Questionnaire (HBQ-T 1.0; Armstrong & Goldstein, 2003). The results indicated that peer sociability in fall of preschool and peer communication in spring of preschool positively predicted child school engagement. There were no gender differences in these associations.

POSTER PROGRAM

Main Poster Session

P49 Effect of hyperoxia on resting state oscillatory states in humans

S. A. D. Kizuk (Neuroscience and Mental Health Institute, University of Alberta), W. Vuong (Department of Psychology, Faculty of Science, University of Alberta), C. T. Dickson (Neuroscience and Mental Health Institute, University of Alberta; Department of Psychology, Faculty of Science, University of Alberta; Department of Physiology, Faculty of Science, University of Alberta), & K. E. Mathewson (Neuroscience and Mental Health Institute, University of Alberta; Department of Psychology, Faculty of Science, University of Alberta)

Recently, it has been discovered that in anesthetized and sleeping rats, the routine administration of heightened levels of O₂ in the breathing environment (hyperoxia) dramatically effects the oscillatory brain states of sleep, increasing the amount of time spent in the deactivated (slow-wave) state. It is unknown if hyperoxic conditions similarly affect neural oscillations in the awake brain, and given the commercial trend of “oxygen bars”, which claim benefits of hyperoxia such as reduced jet-lag, increased wakefulness, and improved general attentiveness, an evaluation in humans is relevant. Our study used 32-channel electroencephalography (EEG) to measure neural oscillations while participants completed a resting-state task, consisting of sitting with the eyes opened or closed for 3 minutes, and while breathing either normal air or 100% oxygen through a gas mask. Our hypotheses were that hyperoxia would affect the natural oscillatory patterns of awake humans, and would also affect the transition from desynchronized activity to synchronized oscillations caused by closing the eyes. Our results show that hyperoxia decreased the power and the frequency of alpha and beta oscillations when the eyes were open, which is consistent with reduced drowsiness. Hyperoxia also produced more drastic differences between the eyes opened and the eyes closed oscillatory states. While this shows that hyperoxia does induce changes in waking brain activity, future research needs to assess if these changes lead to cognitive improvements in attention tasks. We are currently examining whether hyperoxia similarly affects sleep patterns and sleep-related oscillations in humans.

P50 Processing Metaphoric and Literal Language

T. Robinson, C. Gagne, & T. Spalding (Psychology Department, University of Alberta)

Metaphoric expressions are statements that provide a meaning beyond the literal interpretation of the phrase, although the literal meaning does not duplicate the metaphoric meaning. This discrepancy between meanings, although well studied, is not well understood. Current research on metaphors is divided between which properties become salient in metaphoric meaning and the cognitive framework involved in interpretation. Whereas some research suggests that literal and metaphoric meanings are processed similarly, most research supposes that metaphoric interpretations require a different cognitive process. However, research has not directly assessed the cognitive switch between metaphoric and literal comprehension. This study examines this gap in the literature by using a priming task to assess the changes in reaction time between a metaphor-to-metaphor interpretation compared to literal-to-metaphor interpretation. Participants respond either to a metaphor or literal statement and then to a subsequent metaphoric statement. The metaphoric target is matched to both the metaphor and literal primes that precede it, allowing for direct comparisons between the reaction times of literal-

to-metaphor and metaphor-to-metaphor responses. Assuming metaphoric interpretation involves different processes than literal, we predict longer reaction times for a literal-to-metaphoric switch. These results should provide a clearer distinction of the underlying cognitive processes between metaphoric and literal statement comprehension.

P51 The relationship between eye-movement patterns in RAN and text reading in university students with and without dyslexia

K.-L. Turgeon, A. Altani, & P. Eberharter (Department of Educational Psychology, University of Alberta)

The purpose of this study was two-fold: (a) to compare the performance of university students with dyslexia (DYS) against that of chronological-age controls (CA) on three forms of rapid automatized naming (RAN) tasks (standard, phonologically confusable and visually confusable) and text reading, and (b) to examine if eye-movement patterns predict text reading rate. Twenty university students with dyslexia and 27 controls were assessed on measures of sight word/nonword reading efficiency and on text reading. In addition their eye-movements on the three RAN tasks and on text reading were recorded. Mixed effects ANOVA (2 groups x 3 RAN cards) showed a significant main effect. Subsequent one-way ANOVAs showed that the eye movement patterns of the two groups were significantly different in all three RAN cards as well as in text reading. The average fixation duration was shorter for the CA group, who also completed the tasks with fewer fixations (i.e., fixations count) than the DYS group. In addition, the results of linear regression models showed that: (1) sight word reading efficiency and average fixation duration during the experimental text reading task were the main predictors of text reading rate, and (2) group, nonword reading efficiency and average fixation duration during RAN card 2 (i.e., phonologically confusing condition) were the main predictors of text reading rate. The findings indicate that eye movements during RAN (phonologically confusing condition) were highly predictive of text reading performance among university students with and without reading difficulties, beyond their decoding ability.

P52 A Work in Progress: Graduate Students' Understanding of Professional Identity

A. Dam, A. Flanagan, M. Khan, E. Li, D. Mattson, L. Nadon, & V. Oslie (Educational Psychology Department, University of Alberta)

Bruss and Kopala (1993) suggested that there are many parallels between early childhood development and the experience of graduate students entering professional programs. Both begin as dependent individuals with limited knowledge and skills, but with the appropriate support, can grow and thrive on their own. The purpose of this research is to explore the ongoing development of our professional identities, and the role that a supportive peer network has played in moulding them. Using photos alongside the qualitative method of Autoethnography, we discuss our expectations entering the School and Clinical Child Psychology program, the challenges we have faced, and how cohort cohesion has been the catalyst for both individual and group growth. By exploring our experiences in a cohort-based program, we hope to provide insight into the important role that peer support plays as we learn to thrive collaboratively and individually as students and emerging professionals.

P53 Neurocognitive Impairment Profiles in HIV infection

D. Gomez (Department of Psychiatry, University of Alberta), C. Power (Departments of Psychiatry and Medicine, University of Alberta), M. J. Gill (Department of Medicine, University of Calgary), & E. Fujiwara (Department of Psychiatry, University of Alberta)

Neurocognitive impairments (NCI) persist in HIV-infected individuals despite highly active combination antiretroviral medication (ART). Neurocognitive deficits observed in ART-treated populations are subtle,

and can differ between individuals. We used a Latent Profile Analysis (LPA) to uncover patterns of NCI in a large group of HIV-infected individuals. A multivariate analysis identified the demographic, disease-related, and medical predictors for each profile. Method: A total of 308 HIV-infected participants underwent multi-domain neuropsychological testing, and NCI was determined in 108 individuals using clinical rating criteria. Latent profile analysis (LPA) uncovered 3 different profiles of NCI within this subset of individuals. A multivariate Random Forest Analysis (RFA) identified predictors of profile membership. Results: LPA uncovered three profiles that differed in NCI severity: mild NCI (mNCI), attention/executive function impairment (ATT/EF), and severe overall impairment (Global). Important predictors differentiating mNCI from ATT/EF included: age, birth country, depressive symptoms, employment status, years of education, recent CD4, diabetes, and ART side-effects. Predictors differentiating mNCI from the Global profile were: birth country, gender, depressive symptoms, employment, years of education, HIV duration, nadir and recent CD4, CPE, psychiatric conditions, and diabetes. Conclusion: Through LPA, we uncovered distinct profiles of NCI within a large HIV-infected cohort. RFA results revealed that, although most predictors overlapped, age and cART side-effects were unique to predict attention/executive dysfunctions. Gender, psychiatric co-morbidities, and HIV duration uniquely distinguished the global deficit group from the mildly impaired. Future studies are warranted to explore the unique association between the highlighted predictors and HIV-related cognitive decline.

P54 Prolongation of Estimated Cultural Longevity After Mortality Salience

A. Scott & J. Schimel (University of Alberta, Department of Psychology)

Research in terror management theory (TMT) has provided strong support for the hypothesis that associating with and embedding oneself in a lasting culture and its associated worldview can be an effective way to combat death anxiety as it confers a sense of symbolic self-perpetuity. An untested assumption of TMT is that people are highly motivated to believe that their own culture will greatly outlast themselves, especially after being reminded of death. The present study investigated whether individuals would make larger cultural longevity estimates when mortality is made salient. Under the guise of a study investigating personality and scientific attitudes, sixty participants at the University of Alberta, wrote about either their own death (mortality salience) or dental pain (control condition) and then indicated how long they believed Canada would last as a nation. We predicted and found that participants made greater estimates of cultural longevity after being reminded of their own mortality (compared to the control condition). A second supported hypothesis was that this effect was most pronounced for those who most strongly identified as Canadian during mass testing.

P55 Identifying Cognitive Differences Following Exposure to Nature or Urban Scenes

J. W. P. Kuziek (Department of Psychology, Faculty of Science, University of Alberta) & K. E. Mathewson (Department of Psychology, Faculty of Science, University of Alberta, Neuroscience and Mental Health Institute, Faculty of Medicine and Dentistry, University of Alberta)

Many aspects of our environment place demands on our attention but these constant demands can fatigue and limit our ability to maintain focus. Studies suggest that attentional fatigue recovery is improved by being exposed to inherently fascinating environments. Natural environments are such an example and show an attentional benefit compared to urban, man-made environments. The P3 component of an event related potential (ERP) has been shown to be modulated by attentional demands and the goal of the current research was to understand the effects of nature and urban scene exposure in relation to P3 response magnitude. Participants completed an auditory oddball task while viewing images of nature scenes, urban scenes, or blank images. Following the presentation of each image, either a rare high-pitched tone or a more-frequent low-pitched tone was played. Participants were required to press a button each time a high tone was played and withhold responses to low tones.

Electroencephalogram (EEG) data was recorded to derive ERPs to each tone, with the P3 response typically larger after presentation of the high tone. Contrary to our predictions, we did not observe significant differences in the P3 response while viewing either nature or urban scenes. However, differences in earlier ERP components were observed along with differences in ERP activity following the presentation of the images themselves. These results suggest that scene viewing may not modulate attention via P3 magnitude, despite the P3 being influenced by attentional demands and nature scenes having been shown to facilitate recovery from fatigue.

P56 The influence of varying D note number and duty cycle on ZENK expression in black-capped chickadees (*Poecile atricapillus*)

B. C. Schuldhau (University of Alberta), E. N. Scully (University of Alberta), J. V. Congdon (University of Alberta), A. H. Hahn (University of Wisconsin, Madison), K. A. Campbell (University of Alberta), D. R. Wilson (Memorial University of Newfoundland), D. J. Mennill (University of Windsor), & C. B. Sturdy (University of Alberta).

Black-capped chickadees (*Poecile atricapillus*) use their namesake chick-a-dee call to communicate about various aspects of their environment (e.g., location of food, distress levels). Alterations in the fine structural components of the call (e.g., note type and frequency of notes) and duty cycle (the proportion per unit time that a call can be heard) can be used to convey dynamic changes in the environment. Wilson and Mennill (2011) found that chickadees respond more behaviourally (e.g., approach vocalizer) to higher duty cycles, but not to greater numbers of D notes. We presented male chickadees with chick-a-dee calls containing either 2 D notes with a low duty cycle, 2 D notes with a high duty cycle, 10 D notes with a high duty cycle, or 2 D notes with a high duty cycle but played in reverse. We then quantified the expression of an immediate early gene, ZENK, in forebrain auditory nuclei. Based on Wilson and Mennill (2011), we predicted the most gene expression in both forward playing high duty cycle conditions; we also predicted that out of these two conditions, the 10 D note/high duty cycle condition would show more ZENK expression. Data analysis is currently ongoing but preliminary analyses, surprisingly, and in contrast with previous research, revealed no difference in expression as a function of duty cycle or number of notes presented.

P57 The ecological cocktail party: Measuring brain activity while filtering out background noise

J. E. M. Scanlon (Psychology Department, Neuroscience and Mental Health Institute, University of Alberta), K. A. Townsend (Psychology Department, University of Alberta), D. L. Cormier (Psychology Department, University of Alberta), J. W. P. Kuziek (Psychology Department, Neuroscience and Mental Health Institute, University of Alberta), & K. E. Mathewson (Psychology Department, Neuroscience and Mental Health Institute, University of Alberta)

Most experiments using EEG recordings take place in highly isolated and restricted environments, limiting their applicability to real-life scenarios. New technologies for mobile EEG are changing this by allowing EEG recording to take place outside of the laboratory. However, before results from experiments performed outside the laboratory can be fully understood, the effects of ecological stimuli on brain activity during cognitive tasks must be examined. In the first experiment, participants performed an auditory oddball task while cycling outside and sitting in an isolated chamber inside the lab. Significantly increased N1 and decreased P2 amplitudes was observed evoked by both standards and targets during cycling outside. This is believed to be due to attentional processes filtering the overlapping sounds between the tones used and similar environmental frequencies. To test this conclusion, a second experiment was performed using sounds inside the lab. Participants performed an auditory oddball task while also listening to concurrent background noises of silence, white noise and outdoor ecological sounds. We replicated the previous effect, finding a significantly increased N1

and decreased P2 when participants performed the task with outdoor sounds and white noise in the background, with the largest differences in the outdoor sound condition. This led to the conclusion that these components related to a process of sensory filtering of background sounds, and that ecologically valid sounds require more filtering than synthetic sounds.

P58 Impact of care recipient cognitive status on perceptions of conflicts during care

R. E. Runac (Psychology Department, University of Alberta), S. T. Kwong See (Psychology Department, University of Alberta), & A. Choy (University of Calgary)

Young adults often believe cognitive and physical decline accompany normal aging (Kite & Johnson, 1988). Stereotypes also surround aging in the presence of dementia. Older people with dementia are thought to have decreased cognitive function, compared to normal aging, but maintain or even increase in physical strength (Rust & Kwong See, 2010). This study explored a link between these stereotypes and findings that older adults with dementia are more likely to experience abuse while in professional care (VandeWeerd & Paveza, 2006). In caregiving, individuals may alter their behavior and perceptions based on these notions. Beliefs about older adults with dementia may lead to assumptions that mistreatment in caregiving is acceptable because “you need to be forceful” or “she won’t remember it anyway.” The relationship between these stereotypes and perceptions of mistreatment was evaluated. Undergraduate students were shown a video of an actual interaction involving mistreatment of an older adult in a care facility. To evaluate effects of cognitive status on perceptions of caregiving, participants were told the older adult was suffering from diabetes (cognitively healthy) or Alzheimer’s dementia (cognitively unhealthy) before rating the caregiver and care recipient on benevolence, satisfaction, competence, nurturance, and respectfulness. The caregiver was perceived as more respectful, nurturing, competent, and benevolent when mistreatment was directed towards an older adult with dementia. For the care recipient, cognitive and physical competence was significantly lower with a dementia status. These findings illustrate how a dementia status can provide leniency for mistreatment in care.

P59 Family size and positioning are predictors of semantic transparency

G. Lee, B. Rubio, B. Sereda, C. Gagne, & T. Spalding (Psychology Department, University of Alberta)

Semantic transparency is the degree that the overall meaning of a compound word can be inferred from its constituents. Literature shows that compound words with higher semantic transparency are easier to process, especially if semantic transparency is higher in the head of the compound. Family size is the number of words that a base word appears in. Words with larger family sizes, such as “snow”, are easier to process relative to counterparts with smaller family sizes, such as “bobble”.. Currently, there is a gap in the literature on the impact family size on the semantic transparency of compound words. To examine the semantic transparency of compound words, we used a 2-part rating task to determine the predictability of a compound word from its constituents and how much meaning each constituent retains as part of the compound word. Preliminary results from this study suggest the first constituent is an indicator of semantic transparency for the whole compound. This will provide insight on the effect family size has on the semantic transparency of compound words and the function of the first constituent as an index of semantic transparency. Results should enable predictions in other measures such as response times in subsequent lexical decision tasks.

P60 Parental influences on executive functions in early childhood: Differential effects of harsh and sensitive parenting

D.M. Vrantsidis, A. Volk (Psychology Department, University of Alberta), E. Anderson, L. Wakschlag (Department of Medical Social Sciences, Northwestern University), & S. A. Wiebe (Psychology Department, University of Alberta)

Growing evidence links parenting to individual differences in children's executive functions (EFs), a set of cognitive abilities enabling goal-directed behaviour. Sensitive and harsh parenting are associated with children's "cool" EFs, used in motivationally or affectively neutral contexts. However, it is unclear how parenting affects "hot" EFs, used in motivationally or affectively charged contexts. Additionally, sensitive buffers the negative effect of harsh parenting on behaviour problems related to EFs. Consequently, this study explored whether sensitive and harsh parenting acted and interacted to affect cool and hot EFs in children. Participants were 144 36-month-old children and their mothers, drawn from the Midwestern Infant Development Study cohort. Children completed a battery of tasks assessing EFs. Mother-child dyads completed free play, structured play, and waiting tasks, which were videotaped and coded for maternal sensitivity and harshness using the Parent-Child Observational Coding Scheme. Analyses were conducted using structural equation modelling in MPlus. Children's sex, verbal ability, prenatal tobacco exposure status and household income-to-needs ratio were included as covariates in all analyses. Harsh parenting was associated with poorer cool EFs while the interaction between sensitive and harsh parenting had a marginally significant effect on children's hot EFs. For high sensitivity parents, harsh parenting was associated with better performance on hot EF tasks. Findings suggest that parenting plays a critical role in supporting or compromising children's developing EF skills and that harsh parenting may promote immediate compliance in early childhood. Thus, parenting may be a fruitful target for interventions.

P61 Exploring performance, structure, and de/differentiation in executive functions across an 80-year band of adulthood

H. S. Caballero (Neuroscience and Mental Health Institute, University of Alberta), G. P. McFall, S. A. Wiebe, & R. A. Dixon (Neuroscience and Mental Health Institute and Psychology Department, University of Alberta)

Background: Executive functions (EFs) are prefrontal-based cognitive control mechanisms for monitoring planning and action. In adulthood, EF performance (level) and change (decline) are linked to (a) white matter degradation, (b) genetic risk, and (c) poor vascular health. We explore the EF "dedifferentiation" theory across an 80-year band of adulthood. We test age- and sex-related performance differences, structural dimensionality, and biomarker predictors. Method: The sample (N=1223; 64.9% female) produced four groups: young (18-29 years; n=228), middle aged (30-50 years; n=127), young-old (54-72 years; n=448), and old-old (73-95 years; n=420) adults. Two EF dimensions were measured (Inhibition [Hayling, Stroop] and Shifting [Brixton, Color Trails]). The Mini-Mental Status Exam (MMSE) was a proxy for higher/lower cognitive status effects. We used 2-way ANOVAs (SPSS), factor structure analyses (MPlus 7.0) and biomarker prediction models (Random forest analyses). Results: Basic EF results showed both younger groups performing better than the older groups (old-old group lowest). Sex differences were minimal with no Age x Sex interaction. EF factor structure results indicated two-factor solutions (differentiated) for the two younger groups and one-factor solutions (dedifferentiated) for the two older groups. Old-old females selectively retained a two-factor structure. Cognitive status effects for older adults revealed higher MMSE performers selectively producing a two-factor solution. Analyses of biomarker (genetic, functional, vascular) predictions are underway. Conclusion: Preliminary results suggest that age, sex, and cognitive status moderate EF performance and de/differentiation across adulthood, with brain mechanisms to be determined. This data set is unique in its nearly 80-year age range and size.

P62 Using Clinical Markers and Measures to Distinguish Typically Developing and Language Impaired Bilingual Children

K. Farooq, M. Manna, K. J. Montano, D. C. Wong (Department of Communication Sciences and Disorders, University of Alberta), E. Nicoladis (Department of Psychology, University of Alberta), & K. Pollock

Distinguishing between language impairment (LI) and typical language learning in bilingual children is difficult as their profiles on language assessments can be similar. Past research has found that there are certain morphological clinical markers for LI. Bilingual children may have difficulty using these markers but this may not be suggestive of LI but rather that they need more time to master a weaker language. In the present study, we set out to determine if there was a specific cut-off score on tests of language and cognition that could be used in a clinical setting to distinguish LI children from bilingual children. 113 preschool children, both monolingual (English) and bilingual (French/ English and Chinese/English), told a narrative in English. The language in the narrative was coded for use of past tense –ed and use of bare verbs (clinical markers of LI) and these markers were then compared to their scores on several cognitive and language measures (e.g., vocabulary, Corsi Blocks). We found that vocabulary scores were related to children's use of past tense and particularly bare verbs, with notable changes around scores of 50- 60. These results suggest that when bilingual children show low scores on vocabulary, clinicians may not be able to distinguish between LI and typical development of a weaker language. These results contribute to research informing clinical practice with children who are at risk of falsely being labeled impaired.

P63 No jittering with Latte Panda: Comparing EEG data collection methods on the road to mobilization

E. Redman, G. Splinter, J. W. P. Kuziek (Department of Psychology, Faculty of Science, University of Alberta), & K. E. Mathewson (Department of Psychology, Faculty of Science, University of Alberta, Neuroscience and Mental Health Institute, Faculty of Medicine and Dentistry, University of Alberta)

Electroencephalography (EEG) is typically conducted in a highly controlled laboratory setting. However, this limits the generalizability of results to real-world situations. Previous research has shown that alternative, more portable means of stimulus presentation have yielded results comparable to traditional methods and may allow for more mobile EEG experimentation. By comparison, EEG data collection typically relies on the use of desktop or laptop PCs. To further increase the portability of EEG experiments, we are exploring the use of a Latte Panda, a compact and relatively inexpensive Windows PC board, in the collection of EEG data. To assess data quality between a Latte Panda and Windows laptop, we are comparing the P3 and MMN waveforms elicited during an auditory oddball task. In this task, participants listen to either high-pitched or low-pitched tones and must press a button each time a high tone is presented, with low tones being played 80% of the time and high tones only 20%. The MMN waveform is a negative deflection following the presentation of the rare tone whereas the P3 waveform is a positive deflection following the rare tone. Currently, results suggest that EEG data collection is comparable between the laptop and Latte Panda even though some differences exist between both conditions. Further analysis will help to explain these differences but our results suggest that the Latte Panda can serve as a reliable replacement to a laptop regarding EEG data collection. Such results will allow for more portable, and affordable, EEG experimentation.

P64 Attentional Differences in the Presence of Cigarette Cues among Smokers, Ex-smokers, and Non-smokers

D. Robles (Psychology Department, The City College of New York), A. Shevorykin (Psychology Department, Pace University), R. D. Melara (Psychology Department, The City College of New York)

Understanding behavioral and attentional mechanisms in the cigarette abusing population is a critical step towards a better intervention and prevention of this long identified public health issue. Studying differences in attentional response to substance abuse stimuli can further enhance our understanding

of attentional mechanisms that can exacerbate the course of addiction. For instance, cue reactivity; reactions to drug stimuli are associated with craving and substance seeking behavior. Behavioral Data were analyzed from an attentional EEG study examining the physiology of cue reactivity. A total of 31 participants (16 smokers, 8 ex-smokers and 7 non-smokers) matched in age, education and gender completed a Flanker Visual Attention Task, which measured their ability of attending to and ignoring smoking and neutral stimuli on a computer. From the difference in performance (using correct overall reaction time) on incongruent and congruent trials we calculated the stroop effect which evaluates conflict resolution. A repeated-measures ANOVA showed that the amount of stroop interference in smokers was significantly greater in smoking images than in neutral images; however ex-smokers displayed a similar but substantially reduced stroop effect while controls showed no difference between the two stimuli. This analysis suggests that smokers are more affected by smoking images than neutral images whereas ex-smokers are also affected by smoking images but not to the extent of smokers. The effect found in ex-smokers could be explained by the time frame of abstinence: after at least one year of total abstinence ex-smokers show decreased attentional deficits in the presence of smoking-related stimuli.

P65 Multilingual language learners' motivation towards learning English and Turkish

A. Dincer (Department of Foreign Languages, Erzincan University-Turkey)

Several recent studies have reported that multilingualism plays an effective role in learning additional languages, since multilingual learners have greater linguistic knowledge and more mnemonic strategies than monolingual students, which they are able to transfer to learning additional languages. In view of this, it is aimed to investigate multilingual learners' motivational orientations and strength to learn different languages and their anxiety levels in each language course. The participants of the study were 105 multilingual from different countries who take both English and Turkish language courses in a Turkish state university for educational purposes. The data were collected with a survey form including subscales about intrinsic, extrinsic, instrumental motivation, motivational strength and language learning anxiety in both languages. The results showed that multilingual learners had common and distinct features in terms of constructs as mentioned earlier. That is, although the learners' intrinsic and extrinsic motivation towards learning languages and their anxiety in English and Turkish courses were statistically differentiated, their integrative reasons and motivational strength to continue their education showed similarities. The results were discussed in light of the background of the learners and the role of these distinct languages in worldwide.

P66 Parenting Practices and Children's Behavioural Self-Regulation in Preschool

K. Burke & W. L. G. Hoglund (Psychology Department, University of Alberta)

An increasing number of children are being expelled from preschool due to disruptive behaviours (Perry et al., 2008). This may indicate preschoolers' difficulties in regulating their behaviour. Behavioural self-regulation is a key developmental task of early childhood that refers to children's ability to pay attention, remember rules, and inhibit impulsive responses (Blair & Raver, 2015). Young children's overall self-regulation has been linked to broad indicators of parenting practices (Eisenberg et al., 2004). Parenting practices include positive parenting (e.g., praise for good behaviour; Shelton et al., 1996), discipline (e.g., enforcing rules; Kamphaus & Reynolds, 2006), and relational frustration (e.g., losing patience; Kamphaus & Reynolds, 2006). There is little information on how these parenting practices are associated with children's behavioural self-regulation in preschool. The current study examined whether these parenting practices predicted children's behavioural self-regulation across the preschool year or whether children's behavioural self-regulation predicted these parenting practices across the preschool year. Gender differences were examined as a moderator in these associations.

Participants were 435 children in 23 preschool classrooms located in nine early learning centres that serve low-income families. Data were collected in the fall and spring of preschool. Children's behavioural self-regulation was assessed using the Head-Toes- Knees-Shoulders task (Pointz et. al., 2008) and a standardized observational measure (Downer et al., 2012). Parents reported on their positive parenting (Shelton et al., 1996), discipline (Kamphaus & Reynolds, 2006), and relational frustration (Kamphaus & Reynolds, 2006). This study will add to understanding of associations between parenting practices and children's behavioural self-regulation in preschool.

P67 L2 Motivation, L2 Anxiety and L2 Selves: A Quantitative Study

Marta del Pozo Beamud (Second Languages Department, University of Castilla-La Mancha, Spain)

The main aim of this exploratory study was to examine whether Elementary school children (ranging from 11 to 12 years old), who attended a Second Language Immersion Program, experienced a significant increase in their levels of extrinsic/intrinsic motivation at the end of the week, whether their levels of L2 anxiety decreased and, also, whether they started being more aware of the presence of their L2 Selves. The participants comprised a total of 462 students from different schools in Castilla-La Mancha that took part in a Second Language Immersion Programme during the past academic year (2015/2016). Students were asked to complete a pre-test at the beginning and a post-test when they were about to finish. The tests consisted of a 5-Likert scale questionnaire made up of four constructs (extrinsic motivation, intrinsic motivation, L2 anxiety and the L2 Selves) along with background questions. Thus, questions like gender differences, type of school they attend (bilingual, non-bilingual program) could be also tackled. The results suggest that having attended the immersion program, the students' levels of intrinsic motivation increased, whereas their levels of extrinsic motivation decreased. The results also indicate that students' levels of FL anxiety increased, as did their perception about their L2 Selves. When background variables such as gender differences are examined, it is notable how girls excel in the four constructs. With regard to the remaining background variables, they have not yet been analysed.

ORAL PRESENTATIONS

9:30 AM ► Oral Session 1

T1 Differences between female and male university students in growth mindset

M. Cutumisu (Department of Educational Psychology, University of Alberta)

It is estimated that Canada requires 182,000 additional IT professionals by 2019 (ICTC, 2016) and that only 14.1% of North American computer science bachelor's degree graduates are female (Zweben et al., 2015). Research indicates that attitudes toward achievement rather than achievement outcomes appear to affect women's decisions regarding science, technology, engineering, and mathematics (STEM) fields (Ehrlinger & Dunning, 2003). Understanding the factors that may affect these decisions warrants investigation. This study examines students' growth mindset defined as the belief that ability can be improved with effort, aiming to identify the factors that support women in succeeding and reduce the attrition of females in STEM disciplines, especially in computing science. This study employs the non-parametric Mann-Whitney U test to assess whether females ($n = 19$) and males ($n = 14$) differ in terms of their growth mindset about their abilities to design digital posters in a sample of $n = 33$ post-secondary students aged 20 to 38 (Mean age = 25.06, SD = 5.05) at a Western Canadian university. Results yield a Z value of -2.46 with a significance level of $p = .014$, indicating that females exhibit significantly higher growth mindset scores (Mean rank = 20.21, $n = 19$) than males (Mean rank = 12.64, $n = 14$). In the future, a follow-up study with computing science university students will be conducted to enhance the understanding of how mindset may influence students' attitudes towards male-dominated fields such as computing science.

T2 Habenular Asymmetry - a MRI study

B. G. Cioceanu (Dept. of Psychology, University of Alberta), P. L. Hurd (Dept. of Psychology, Centre for Neuroscience, University of Alberta), C. A. Boliek (Department of Rehab. Medicine, University of Alberta), & J. Cummine (Dept. of Rehab. Medicine, University of Alberta)

This habenula is a component of a highly-conserved pathway belonging to the limbic system, connecting the forebrain with the ventral midbrain. The habenula is one of the most well-known asymmetrical structures in the brain, but remains relatively understudied in humans. Previous work in fish has demonstrated habenular asymmetry to be generally lateralized in one direction per species, but individual variation can show sex differences or correlations with behavior. Here, I investigate habenular asymmetry in humans using diffuse tensor imaging (DTI) and white matter intensity (WMI). I find that individuals tend to be rightward biased in terms of habenular tract integrity, whereas individuals tend to be leftward biased in terms of WMI. Evidence of sex differences will be discussed.

T3 Role of the nonapeptides, arginine vasotocin and isotocin, in social behaviour of male *Pelvicachromis pulcher*

J. Hoang, C. Seaver, & P. Hurd (Psychology Department, University of Alberta)

Pelvicachromis pulcher is a cichlid fish native to Nigerian freshwater bodies. Male *P. pulcher* display at least three alternative male phenotypes (red, yellow, and blue), each strongly linked with alternative mating tactics. The red morph males will tend towards harem breeding, while yellow morph males

tend towards monogamous breeding or functioning as satellite males. The current experiment looks at the relationship between the male morphs, the expression of sex typical male behavioural traits, and endogenous levels of nonapeptides, arginine vasopressin and isotocin, two hormones known to influence adult social behaviour networks in the pre-optic area of the hypothalamus.

T4 Teacher-child relationship quality and children's internalizing problems across preschool

B. Zatto & W. Hoglund (Psychology Department, University of Alberta)

Entrance into preschool can be an exciting experience for some children. However, children with high levels of internalizing problems (depression, anxiety, somatization) can have difficulties with this transition (Olson & Rosenblum, 1998; Sabol & Pianta, 2012). The teacher is a central figure in the preschool environment (Denham et al., 2012). The quality of the relationship between child and teacher may play a role in children's internalizing problems (Sabol & Pianta, 2012). Conversely, research shows children with high levels of internalizing problems often experience more negative relationships with teachers (Hamre & Pianta, 2001). Overall, there are mixed findings on the directional association between teacher-child relationship quality and children's internalizing problems. Therefore, the primary goal of this study is to test three conceptual models of directional association between teacher-child relationship quality and children's internalizing problems. The relationship-driven model tests the hypothesis that teacher-child relationship quality at school entry predicts children's internalizing problems across preschool. The child-driven model tests whether children's internalizing problems at school entry predict later teacher-child relationship quality. The transactional model hypothesizes the association is bidirectional. Gender differences in the directional associations are also tested. Participants included 435 ethnically diverse children in high-needs preschools; assessments occurred in the fall and spring of preschool. Teacher-reports (STRS; Pianta, 2001) and observations (inCLASS; Downer et al., 2011) were used to measure teacher-child relationship quality. Teachers reported on children's internalizing problems (BASC-II; Reynolds & Kamphaus, 2004). Results will offer better understanding of the association between teacher-child relationship quality and children's internalizing problems across preschool.

11:00 AM ► Oral Session 2

T5 Challenging stereotypes of math giftedness and math disability in students with Autism Spectrum Disorder

H. M. Brown, A. Altani, N. Ansell, K. Chorneyko (Dept of Educational Psychology, University of Alberta), & J. MacCormack (Educational Psychology and Inclusion, University of Lethbridge)

Pop culture has long presented images of people with Autism Spectrum Disorder (ASD) as being exceptionally gifted in mathematics, from Dustin Hoffman's character in the film, Rain Man, to the socially-graceless, physics-genius Sheldon Cooper on Big Bang Theory. However, if the dominant attitude of society is that students with ASD excel at math, then there may be few government-funded educational supports available for students with ASD who also struggle with math. We aim to challenge this stereotyped view head-on by using meta-analytic technique to examine the rates of math giftedness and disability in the ASD population. Objectives: 1. To determine the size of the difference (standardized mean difference) between individuals with ASD and their peers on two measures of math ability—arithmetic and math problem solving (Ps). 2. To examine the rates of math giftedness and disability in this population. Across 35 studies, data on 1056 children and adolescents with ASD was collected. Our meta-analytic models demonstrated that students with ASD performed significantly lower ($g =$

-0.5) than their non-disabled peers in both arithmetic and Ps. We also found up to 46% of samples of students with ASD are categorized by math disability and up to 34% categorized by math giftedness. Our findings reject the stereotype of mathematical prowess among individuals with autism, as their average performance was lower than their TD peers. As well, the range of the prediction intervals were wide, but positively skewed, indicating that students with ASD were more likely to struggle in math than to excel.

T6 Female choice for alternative male morphs in the kribensis cichlid

N. B. Brandwein & P. L. Hurd (Psychology Department, University of Alberta)

While a great deal of research has examined Darwin's theory of sexual selection through female choice for secondary sexual characteristics, most of this work has focused on traits which vary continuously among males of a single morph, or type. Relatively little attention has been given to female choice for alternative male morphs. Males of the African cichlid fish *Pelvicachromis pulcher* exist in one of four different morphs, commonly distinguished by differences in the colour of their opercula (at the base of the head). The two most common morphs, "red" and "yellow" show differences in reproductive strategy. Given how *P. pulcher* have easily observable colour differences, studying female trait preference can help us understand why sexually-selected phenotypes are distributed within a species. In our study, we presented females with the choice of associating with either red or yellow males in a dichotomous mate choice task. We found a significant preference for yellow over red males, and no preference for larger males. We also found a preference for males with more tail spots, with yellow males having more spots than reds. Interestingly, male morph seemed to be the key factor driving female choice, not tail spot number. This is significant, as it means females have a proclivity for males of the less aggressive, more monogamous-breeding morph (i.e. yellow), and use detectable differences in morphology to discriminate and select mates. Future research should investigate female choice for the rarer blue and green male morphs, as well as mate choice by "red" morph females.

T7 Personality variations in stress coping style after developmental stress

B. V. Hope (Neuroscience and Mental Health Institute, University of Alberta), K. L. Fjellner (Department of Psychology, University of Alberta), S. C. P. Renn (Department of Biology, Reed College), P. L. Hurd (Department of Psychology, University of Alberta)

Non-human animal personality research can be important for studying aspects of human personality that may be difficult to investigate, such as stress coping styles. Behavioural stress responses may be assessed using personality dimensions such as boldness and anxiety. Anxiety is indicated by freezing and hiding behaviour, while ambulatory behaviour indicates a lack of anxiety. Moderate stress exposure during development can result in stress resilience, such that individuals display more proactive coping styles compared to those without stress exposure. Proactive coping styles include active behavioural responses to novel environments, while reactive coping styles include inactive behavioural responses. This study investigates how developmental stress exposure affects adult stress coping styles in the convict cichlid (*Amatitlania nigrofasciata*) using net chasing as a stressor to explore possible stress inoculation effects on behavioural and physiological responses to stress. Fish were net chased for two minutes a day for two weeks immediately after becoming free-swimming and their behavioural and physiological responses to stress were assessed at nine months of age. Behavioural assessments include exploration patterns in novel environments (emerge latency task, open field task, and plus maze task) and physiological assessments include cortisol levels in urine.

SCIENTIFIC CAFÉ

12:45 PM - 1:45 PM

C1 Room: L1-220

A neural marker of visual expertise for ECGs and Chest X-rays.

L. Rourke (Department of Medicine, University of Alberta) & A. Singhal (Department of Psychology, University of Alberta)

Researchers have identified a component of the EEG that discriminates visual experts from novices. The marker indexes a comprehensive model of visual processing, and if it is apparent in physicians, it could be used to investigate the development of their visual expertise. The purpose of this study was to determine whether a neural marker of visual expertise—the enhanced N170 event-related potential—is apparent in the EEGs of physicians as they interpret diagnostic images. We conducted a controlled trial with 10 cardiologists and 9 pulmonologists. Each participant completed 520 trials of a standard visual processing task involving the rapid evaluation of EKGs and CXRs-indicating-lung-disease. Ostensibly, each participant is expert with one type of image and competent with the other. We collected behavioral data on the participants' expertise with EKGs and CXRs and electrophysiological data on the magnitude, latency, and scalp location of their N170 ERPs as they interpreted the two types of images. Cardiologists demonstrated significantly more expertise with EKGs than CXRs, and this was reflected in an increased amplitude of their N170 ERPs while reading EKGs compared to CXRs. Pulmonologists demonstrated equal expertise with both types of images, and this was reflected in equal N170 ERP amplitudes for EKGs and CXRs. The results suggest provisionally that visual expertise has a similar substrate in medical practice as it does in other domains that have been studied extensively. This provides support for applying a sophisticated body of literature to questions about training and assessment of visual expertise among physicians.

C2 Room: L1-220

PIQ/VIQ Discrepancies as Correlated with Personality Disorders

N. LoPinto & Y. Wong (Concordia)

The DSM-V classifies psychopathology on the basis of assessments and observations that presume normative IQ Discrepancy (IQD). Autism, Asperger's, ADHD and other cognitive disorders are defined by discrepancies in aspects of performance and other standardized measures. Recent research seems to indicate that IQDs in one or more specific domains, even by up to 2 standard deviations, is fairly common. Most studies of juvenile or adult criminal offenders do indicate a negative association between antisocial behavior and IQ, despite many confounds. Many older studies found a pattern of higher Performance IQ (PIQ) to Verbal IQ (VIQ) ratio in adolescent delinquents, whereas "neurotics" and schizophrenics generally had a higher VIQ to PIQ ratio. These discrepancies continue to be weakly correlated with personality disorders (PDs). My hypothesis is that unusually high IQD of more than 2-4 SDs among the adult population might correlate positively with personality disorders, or their markers, such as narcissism, borderline personality features and lack of empathy. If this can be shown, it may be of assistance to psychologists for diagnostic and predictive purposes. This would contribute to our developing understanding of the borders of between variations in forms and patterns of intelligence, and certain forms of psychopathology.

C3 Room: L1-140

Incremental Theories of Depression Predict Greater Endorsement of Psychotherapies

K. R. Hutlet & A. J. Howell (Psychology Department, MacEwan University)

The current studies investigated whether beliefs in the malleability or immutability of depression (i.e., incremental and entity implicit theories of depression, respectively) are predictive of a greater endorsement of interventions for depression. Study 1 (N = 235) assessed implicit theories of depression and the endorsement of therapeutic lifestyle changes and of validated psychotherapies for depression. Regression analyses showed that incremental beliefs regarding depression significantly predicted the endorsement of therapeutic lifestyle changes and psychotherapies for depression. Study 2 (N = 193) sought to replicate associations between trait differences regarding implicit theories of depression and psychotherapy endorsement; it also manipulated state differences in incremental theories of depression (versus athleticism). Regression analyses showed that trait differences on incremental theories of depression predicted psychotherapy endorsement, as in Study 1. Participants exposed to arguments in favour of a malleable view of depression increased their incremental beliefs regarding depression, but did not endorse psychotherapies more than control participants. Therefore, individual differences regarding implicit theories of depression are predictive of the endorsement of psychotherapies for depression. Future research should attend to trait differences on implicit theories of depression as a potential predictor of amenability to interventions for depression.

C4 Room: L1-140

Une langue moins masculine: Effects of masculinity threat on learning French

J. W. Katz, K. E. Chaffee, & K. A. Noels (Psychology Department, University of Alberta)

Men who value their masculinity but feel it is threatened prefer to disassociate themselves from perceived feminine tasks. Second language learning is widely perceived as a feminine task, and accordingly, could be viewed more negatively by adult men who feel that their sense of masculinity is in question. Past research has demonstrated that English-speaking secondary students perceive French as particularly feminine and “uncool” for boys to take (Williams, Burden, & Lanvers, 2002). We provided 159 male university students (M = 19.07, SD = 2.77) with fictitious feedback, stating that they rated either about average or below average in masculinity. We predicted that men who had their masculinity threatened would claim disinterest and inadequacy at a number of second language-related tasks, but only if the participant in question placed importance on his gender identity. The results showed that this hypothesis was partially supported for French; we found main effects such that threats to participants’ masculinity decreased self-reported future likelihood to take French, and that those participants who placed less importance on masculinity stated more interest in French, regardless of condition. No such significant main effects or interactions were found for other romance languages, including Spanish and Italian. These findings suggest that more masculine-identified men may attempt to disassociate themselves from select languages in response to masculinity threat, which might partly explain the lower enrolment of men in some language programs.

C5 Room: L1-140

Attending to the eyes does not help alexithymics decipher facial emotions

A. K. MacRae-Korobkov & E. Fujiwara (Dept. of Psychiatry, University of Alberta)

Alexithymia is a personality trait where people have difficulties in identifying and describing emotions in themselves and others. A variety of mental health conditions are accompanied by high alexithymia as well as objective emotion recognition problems, e.g., in facial expressions. A handful of studies have explored visual attention patterns underlying emotional face processing in alexithymia, but these have

either included clinical cohorts where alexithymia was a control variable (e.g., alexithymia in eating disorders, schizophrenia, etc.), or healthy individuals whose alexithymia ranges were outside the clinically meaningful ranges. Based on this research, emotional face processing deficits in alexithymia are most likely when recognizing the emotion is difficult (speeded tasks, noise, ambiguous emotions). We recorded eye-tracking during emotional face processing in healthy people with clinically elevated (or low) alexithymia scores. A total of 149 participants were tested (76 low alexithymics [LA] according to the Toronto Alexithymia Scale; and 73 high alexithymics [HA]) while they judged the mixture of two emotions in faces. Accuracy to judge the mixtures was not different between groups, but HA attended to the eye regions of the faces less than LA. Furthermore, eye-preference had the opposite effect on accuracy in LA than HA: While attending to the eyes helped LA judge emotions correctly, it reduced accuracy in HA. Looking someone in the eyes has been linked to increases in arousal. In people with high alexithymia, eye preference may lead to unmanageable increases in arousal that will interfere with correctly judging the facial emotion.

C6 Room: L1-150

Does Classroom Climate Buffer the Associations between Peer Victimization and Internalizing Problems?

S. John, K. Burke, B. Zatto, & W. L. G. Hoglund (Psychology Department, University of Alberta)

Peer victimization is a common experience for many children, particularly for children who also experience internalizing problems (Reijntjes et al., 2010). Peer victimization tends to occur in settings such as the classroom. Classroom climate (e.g., emotional support and organization) may play a role in buffering or accentuating the co-variation between victimization and internalizing problems. However, there is little evidence whether the classroom climate moderates the co-variation between peer victimization and internalizing problems in the early elementary grades. This study examines how (1) peer relational and physical victimization co-vary with internalizing problems over two school years, and (2) classroom climate moderates the co-variation between peer victimization and internalizing problems. Participants included 503 children in kindergarten to grade 3 in 10 elementary schools. Data were collected on six occasions across two school years: winter, early spring, and late spring of year 1, and fall, winter, and spring of year 2. Peer relational and physical victimization (Crick & Grotpeter, 1996) and internalizing problems (Reynolds & Kamphaus, 2004) were rated by children at each wave. Classroom climate was assessed via structured classroom observations of emotional support, instructional support and classroom organization at the start of year 1 and year 2 (CLASS; Pianta et al., 2008). Results indicated that children who experienced more internalizing problems showed greater initial decreases in relational victimization in more supportive and organized classrooms. These findings draw attention to the buffering role of supportive and organized classroom settings on the coupling between relational victimization and internalizing problems.

C7 Room: L1-150

Do Children Actually Think Dogs Are Animals? A Comparison of Child and Adult Responses on a Semantic Fluency Task.

R. L. Enns & E. Nicoladis (Psychology Department, University of Alberta)

Children are known to give more “exotic” responses on semantic fluency tasks, especially if the children are bilingual (Peña et al., 2002). Since these tasks are said to reveal a person’s semantic organization (Jarrold et al., 2000; Lee & Binder, 2014), it is possible that children are organizing their semantic categories in a way that differs from adults. We compared the English semantic fluency responses of 29 bilingual children and 8 bilingual adults. While 100% of the adults listed the words “dog” and “cat”, only 10.3% of the children said “dog” and 17.2% said “cat”. Also, the responses most likely to be given

first by children were more exotic animals such as giraffe and elephant (both 10.3%), while the adults all listed more common animals (dog=50%, cat=25%, mouse=12.5%, and human=12.5%). Children were also less likely to give overlapping responses. Giraffe was the response the children gave the most often at 34.5%, while the adults had four responses with 87.5% or more overlap. We conclude that children are still in the process of developing their semantic categories, and could be placing animals that are commonly pets into some other category such as “family” or “home”. We will also be comparing the number of exotic and common animals from both the responses from the children and from the adults.

C8 Room: L1-150

Do exogenous oscillations in brain activity influence perception?

S. S. Sheldon & K. E. Mathewson (Psychology Department, University of Alberta)

Alpha (7-12 Hz) brain oscillations have been associated with many different behaviours including perception, meditation, and attention. The phase of endogenous alpha oscillations influences perception. Previous work has demonstrated that endogenous brain oscillations can be modulated by oscillating transcranial current stimulation (otCS). The purpose of the current study is to establish the efficacy of otCS for modulation of ongoing alpha brain oscillations and associated behavior, allowing for modulation of individuals visual processing. To test this, participants performed a target detection task during two conditions: sham and otCS. In both conditions, small square sponges were placed on the participant’s head with the anode electrode at Cz and the cathode electrode at Oz. In the otCS condition, a 0.5 mV current was applied every 100 ms (10 Hz frequency) from the cathode electrode. In the sham condition, the same current and frequency was applied for the first 30 s, after which the current decreased to 0 over the next 90 s. If exogenous oscillations influence perception, we expect the target detection rates in the otCS condition to vary as a function of the latency between an otCS stimulation pulse and the presentation of a target. In comparison, we expect target detection rates to be unrelated to the latency between a sham non-stimulation pulse and the target presentation. In follow up studies, EEG will be recorded simultaneously to further establish modulation of endogenous alpha oscillations by otCS.

C9 Room: L1-150

A review of best practices for the treatment of children aged 0-6 years with complex social-emotional developmental needs.

V. Oslie & V. Smith (Educational Psychology Department, University of Alberta)

The present literature review examines social-emotional development, with a focus on best practices for the treatment of children aged zero to six years with complex social-emotional developmental needs. This review was conducted for Edmonton’s Glenrose Rehabilitation Hospital’s (GRH) Tertiary Social Emotional Early Childhood Advisory Committee (TSEEC) in response to the revision of two GRH programs, 123 GO and PLAI. Best practices identified were the importance of a nurturing environment, building caregiver skills, and clear goals in supporting social-emotional development. Furthermore, the review identified both effective group-based programs and individualised interventions for children with social-emotional needs. Several recommendations were provided including establishing universal best practices by means of the Teaching Pyramid Model, exploring LEAP as a model of a group-based program targeting children with social-emotional needs, utilising positive behavioural supports as individualised interventions, and exploring Parent Child Interaction Therapy as a parent training approach.

2:00 PM ► **Outliers as Information**

Chaired by **Dr. Elena Nicoladis**

S1 Outliers in psychotherapy outcome research

J.K. Brinker (Psychology Department, University of Alberta)

Evidence-based psychotherapeutic treatments are evaluated on a hierarchy of evidence, at the top of which sit randomized controlled trials (RCTs) or meta-analyses of the same. While RCTs have excellent internal validity, clinicians argue that conclusions based on means provide no information for addressing variations in individuals seen in practice. Knowing a particular treatment produced statistically significant symptom changes compared to a control group tells us nothing about those participants whose changes were not statistically significant, nothing about the statistical outliers—the non-responders and super-responders—and ultimately nothing about why a particular client is not responding to an evidence-based treatment. Researchers argue that the application of group probabilities to individual clients is reasonable and relevant for work with individuals, and many clinicians would also agree that in the absence of other information, group probability is a potential guide. The problem lies in the idea of absence of other information. Mixed methods designs with both RCTs and detailed case studies of therapy outliers would allow for a description of client characteristics, symptomology, contextual factors, and process factors and how these variables may be related to their response to treatment. This information could be then be used as a reference for practitioners working with clients who are not making progress in their treatment. Ways of creating and disseminated this information are discussed.

S2 Extreme abstraction: How outliers on two other dimensions cast abstract/concrete word access effects into doubt

Chris Westbury

The construct of imageability refers to the extent to which a word evokes a tangible sensation. We argue that a word's imageability effects can be largely or wholly explained by two objective constructs, contextual density (how tight a word's neighbours are) and estimated affect (whether a word has a negative valence), and demonstrate that these are distributed in a radically asymmetrical way with respect to high/low imageability. What is normal in low imageability words is an extreme outlier in high imageability words. In accounting for lexical decision RTs, the construct of imageability accounts for no additional variance after the effects of contextual density and estimated affect are accounted for.

S3 Variability in intracerebral hemorrhage research

C.A. Nadeau & F.C. Colbourne (Psychology Department, University of Alberta)

Intracerebral hemorrhage (ICH) is a sub-type of stroke that is characterized by blood vessel(s) rupturing in brain tissue, resulting in pronounced motor and/or cognitive deficits. There are currently two experimental models of ICH used: the collagenase and whole-blood models. The collagenase

model results in a more clinically relevant injury profile of certain types of secondary injury (e.g. edema, blood-brain barrier damage) than the whole-blood model and, therefore, is more commonly used in our lab. When looking at our data, particularly in relation to treatment strategies (e.g. rehabilitation, hypothermia, pharmacological treatment), we often find a large variance, with roughly 30% of animals faring worse than the others in their group at a variety of different endpoints. While we initially attributed these differences to noise, we now believe this may be indicative of model issues or treatment side effects and/or compliance. I will begin by outlining our past research where we found outliers and suggesting some possible mechanisms underlying these observed differences. I will then discuss how these outliers have informed our current research.

S4 From Emerging to Expert Number-Line Estimation: How Two Outliers Led to New Theoretical and Empirical Approaches of Number-Line Estimation

C. Piatt, J. Bisanz (Psychology Department, University of Alberta) & J.Volden (Department of Communication Sciences and Disorders, University of Alberta)

Number-line estimation is an important, useful, everyday skill that has been linked to numerical cognition and more generally to mathematical achievement. In presenting a number-line estimation task to several children with Autism Spectrum Disorders, two of these children estimated targets on a number line in profoundly different ways. Intuitively, the ways these two individuals estimated seemed outside the norm. When shown 84 on a 0-100 number line, the one child counted up from 0, making 84 hash marks on the line, to estimate – quite inaccurately. The other child, when shown 613 on a 0-1000 number line simply said “61.3%” and made a mark on the line that was nearly perfect in its accuracy. There was, however, no research to establish what “the norm” might be when it came to how children estimate numbers on a number line. Moreover, there wasn’t a clear way to understand how such variability in number-line estimation might emerge. In hindsight, these two children, whose ways of thinking about number-line estimation were so unusual, were not only outliers: They were catalysts and touchstones for developing a new theoretical model of number-line estimation. The usual approach in developmental science is to compare atypical with typical development and to look for differences between the two groups. But it turns out that beginning with the atypical, the unusual, the outliers, led to capturing not just atypical and typical development but the space between.’

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