Royce Harder Research Conference 2021

UNIVERSITY OF ALBERTA
DEPARTMENT OF PSYCHOLOGY

The 35th annual Royce Harder Research Conference will take place virtually, on April 15-16, 2021. This year we are delighted to feature invited talks by Penny Pexman and Dana Hayward and over 150 presentations by graduate and undergraduate student researchers, including talks, posters, and scientific cafes. The conference is supported by funding from the Faculty of Arts and the Faculty of Science.

Register at www.uab.ca/rh to receive login details for all sessions.

The Schedule in Brief lists all talks in the main Royce Harder Zoom room. Details for the Scientific Cafe and Poster Sessions are provided in the Abstracts section of this program.

Schedule in Brief

Thursday, April 15

3:20 pm	Welcome
3:30 - 4:00 pm	Speed Talk Session 1
	Chairs: Sandra Wiebe & Jenny Le

3:30	**The Impact of Uncertainty, Continuity, and Leader Prototypicality on a Group's Support for Change**
	Alina Lin, Lily Syfers, & David Rast III

3:35	**A Leader's Strategic use of rhetoric and international relations to garner support from followers during critical times**
	Haseena Khokhar (Razvan), Yunzhu Ouyang, & David Rast III

3:40	**How personality predicts the effects of COVID-19 on the mental health of Canadians**
	A. Shokrkon & E. Nicoladis

3:45	**Say what you mean: A replication study on the factors that influence the information college-aged individuals give to friends experiencing romantic**

uncertainties
Dawna Anderson, Shanela David, Alina Lin, Julie Olsen

3:50   **Second and Foreign Language Learning: A Scoping Review from Self-Determination Theory**
A. Fazli, T. Kube, B. Qayyum, K. Yee, N. Lou, & K. Noels

4:00 - 5:00 pm   Poster Session 1

Friday, April 16

9:00 - 9:30 am   Welcome and Internal Invited Talk

Where and who: Investigating the role of the greater environment and the individual on social attention
Dana A. Hayward (Department of Psychology, University of Alberta)

9:30 - 11:20 am   Scientific Cafe Sessions 1-3 (follow link for details)

Talk Session 1
Chairs: Lane Liddle & Shannon Drouin

9:30   **Inhibition of the claustrum causes altered cortical dynamics**
Ryan Zahacy, Brittany V. Hope, Yonglie Ma, Ian R. Winship, Jesse Jackson, & Allen W. Chan

9:40   **Differences in perception of depression, attitudes towards mental health, and gender roles as a function of language of responses in english – punjabi bilinguals**
Dhanoa, T., Collins, K., & Pullin, W.

9:50   **Shifting visual perspective and cognitive reappraisal during the retrieval of emotional autobiographical memories**
Selen Küçüktaş & Peggy L. St. Jacques

10:00   **"Fight or Affiliation": How threat and challenge states influence group identification in times of uncertainty**
Yunzhu Ouyang, Kathryn M. Kincaid, & David E. Rast III

10:10   **From the top: Leader prototypicality and identity entrepreneurship**
Angela C. Ma, Lisa Shi, David E. Rast III, Amber M. Gaffney

| 10:20 | **Behaviour and functional brain activity in mice** |
| | *B.V. Hope, R. Zahacy, Y. Ma, I.R. Winship, & A.W. Chan* |

| 10:30 | **EEG in motion: Using an oddball task to explore motor interference in active skateboarding** |
| | *Daniel Robles, Jonathan W. P. Kuziek, Nicole A. Wlasitz, Nathan T. Bartlett, Pete L. Hurd, Kyle E. Mathewson* |

| 10:40 | **How blood and brain pressure determine cell size and outcome after stroke** |
| | *Cassandra M. Wilkinson, Anna C.J. Kalisvaart, Frederick Colbourne* |

| 10:50 | **Can your beliefs about our social interaction affect the way you react even when I'm not around?** |
| | *Y. Song & D. A. Hayward* |

| 11:00 | **Food for thought: A critical assessment of the DSM-5 classification of food addiction** |
| | *P. A. Johnson, J. C. Johnson, & A. A. Mardon* |

| 11:30 - 11:50 am | [Speed Talk Session 2](#) |
| | Chairs: Cassandra Wilkinson & Sandra Wiebe |

| 11:30 | **Theta oscillation in memory and anxiety** |
| | *T. Shalamberidze, K. Nash, & J. B. Caplan* |

| 11:35 | **Canadian's Perspectives on Mask Wearing During the COVID-19 Pandemic: Facilitators to Public Mask Use** |
| | *Zhidi Chen, Sandra Trieu, Ying Shan (Doris) Zhang, Kimberly Noels, Heather Young-Leslie, & Nigel Lou* |

| 11:40 | **Designing a children's pop-up museum: the recognition and expression of emotions** |
| | *A. Jacobs & E. Nicoladis* |

| 11:45 | **Multilingual and monolingual child-rearing: Investigating performance in mental switching, inhibition and working memory among preschool age children** |
| | *M. Jose, S. Goonesekera, L. Predy & S. A. Wiebe* |

| 12:00 - 1:00 pm | [Poster Session 2](#) |

| 1:00 - 2:30 pm | [Scientific Cafe Sessions 4-5](#) (follow link for details) |

Chairs: Sandra Wiebe & Cassandra Wilkinson

1:00   **The impact of the social and asocial environment on the learning abilities of animals: a meta-analysis**
Connor T. Lambert & Lauren M. Guillette

1:10   **A mid-life crisis: Post-stroke tissue compliance in aged rats**
A. Kalisvaart, S. Gu, A. Abrahardt, K. Ferris, & F. Colbourne

1:20   **Evaluating the Cumulative Psychological Injury (CPI) program, a new intervention for individuals recovering from workplace bullying**
Katherine Archibald, Dr. Sandra Ziolkowski, Dr. Wendy Salvisberg, Dr. Kyle Schalk

1:30   **Under pressure? Underpowered. Statistical power and publish or perish culture**
Lane J. Liddle, Andrea Whittaker & Frederick Colbourne

1:40   **Executive function as a predictor of math and literacy achievement in 4 to 7-year-old children: A cohort-sequential longitudinal study**
Y. Wu, D.Vrantsidis, N. Ali, M. Khoei, & S. A. Wiebe

1:50   **What jumps to mind? Emotional autobiographical memory within three cultures**
N. Dahou

2:00   **Data-driven analyses of longitudinal hippocampal imaging trajectories: Discrimination and biomarker prediction of change classes and clinical outcomes**
Shannon M. Drouin, G. Peggy McFall, Olivier Potvin, Pierre Bellec, Mario Masellis, Simon Duchesne, & Roger A. Dixon

2:10   **Glibenclamide does not improve outcome after severe ICH**
T. F. Kung, C. M. Wilkinson, C. Dirks, & F. Colbourne

2:20   **Getting it right the first time affects future nest-building decisions**
Andres Camacho-Alpizar, Tristan Eckersley, Connor T. Lambert, Gopika Balasubramanian, & Lauren M. Guillette

2:30 - 3:40 pm   Brian Harder Honours Symposium
Chair: Jeremy Caplan

2:30   **Canadian perceptions on occupations: Could stereotypes influence individuals' occupation choice?**
            Kendra B. Fincaryk & Kimberley A. Noels

2:40   **The Mental Health Implications of Remote Learning during the COVID-19 Pandemic**
            Y. Abdel Razek & E. Nicoladis

2:50   **Against the grain: Promoting identity continuity as a strategy to elevate group support for change**
            Emma Monaghan, Lily Syfers, & David E. Rast III

3:00   **In the eye of the beholder: Examining the role of arousal in emotion perception**
            Kayla Huxter & Dr. Anthony Singhal

3:10   **Having photographs of events influences visual perspective in autobiographical memory recall**
            Azra A. Panjwani & Peggy L. St. Jacques

3:20   **Increasing Willingness to Communicate: Getting Students to Speak More French**
            Nicol G. Garzon, Lena Sobze, Sydney Dickner, Vincent Pham, Melissa Uwera, Sangué K. Coulibaly & Dr. Elena Nicoladis

3:30   **The Effects of Acculturation on Gender Ideology in South Asian-Canadians**
            Ramanjot K. Kalher & Kimberly A. Noels

3:50 - 5:00 pm   [Keynote Address](#)

            Grasping word meaning: Sensorimotor and emotion effects in lexical development
            Penny Pexman (Department of Psychology, University of Calgary)

Abstracts

Keynote Address

Grasping Word Meaning: Sensorimotor and Emotion Effects in Lexical Development

Dr. Penny Pexman (Department of Psychology, University of Calgary)

Theories of embodied cognition propose that sensorimotor experience is essential to learning, representing, and accessing knowledge. In research with adults, we have found evidence that sensorimotor or bodily experience is accessed even in very basic language and memory tasks. These results are consistent with some degree of embodiment in conceptual processing. An embodied framework predicts that sensory experience should also be important in development; indeed, it is well established that sensory experience is influential in children's early words and concepts. Less research attention has been given to the role of sensorimotor information in lexical and conceptual knowledge beyond the first two years of life. In several studies we investigated the role of sensorimotor information in word learning and lexical processing of children aged 5 to 10 years. The results were mixed; while sensorimotor information facilitated some aspects of lexical processing (e.g., word naming, Inkster, Wellsby, Lloyd & Pexman, 2016; Wellsby & Pexman, 2014), it showed null effects in others (e.g., object label learning, Wellsby & Pexman, 2019). As such, the results place some limits on the role of embodiment in lexical development. In addition, one of the biggest challenges for embodied accounts of conceptual development is to explain grounding of meanings for abstract concepts, like truth, since these cannot be directly experienced through the senses. We have recently tested the proposal that emotion information might provide a mechanism for grounding meaning, mapping language to felt experience, particularly for words with less concrete meanings (e.g., Lund, Sidhu, & Pexman, 2019; Kim, Sidhu, & Pexman, 2020). I will argue that on balance our findings from developmental and adult studies are most consistent with the 'weak embodiment' or multiple representations proposal, that word meanings are represented in sensory, motor, emotion, and language systems, and different systems are relatively more important for the representation of different kinds of concepts.

[Penny Pexman](#) is a Professor in the Department of Psychology and Associate Vice-President (Research) at the University of Calgary. Her research interests focus on cognitive development, psycholinguistics, and cognitive neuroscience. In broad terms, she is interested in how we derive meaning from language, how we learn to understand language in childhood, how language is processed in the brain, and how those processes are changed by damage or experience.

Internal Invited Talk

Where and Who: Investigating the role of the greater environment and the individual on social attention
Dr. Dana Hayward (Department of Psychology, University of Alberta)

Intuitively, people are often able to navigate social situations with relative ease. However, when one considers the complexity of various social environments and the difficulty in fully predicting potential outcomes, it becomes less clear what may be facilitating this ability. One important mechanism is attention, which acts to filter out irrelevant sensory information and direct one's goals. Prior work, including my own, suggests that social information is prioritized as compared to non-social information. For this talk, I will present a few recent lines of research that have investigated whether this preference for social content changes based on (i) context (lab tasks vs. naturalistic communication), (ii) the presence of another individual, or (iii) individual participant factors (e.g., those with and without an eating disorder). Each study employed a multi-method approach, and data was collected through various means, including behavioural measures, eye-tracking, and EEG. Taken together, this body of work highlights the role of the environment and the individual in shaping our attention, and opens up exciting new avenues of research.

[Dana Hayward](#) is an Assistant Professor in the Department of Psychology at the University of Alberta. She is a cognitive neuroscientist with an interest in spatial attention, including how 'affective' stimuli (such as motivation/reward or people/eyes) influence attention.

Brian Harder Honours Symposium (Friday, April 16)

2:30 PM   **Canadian perceptions on occupations: Could stereotypes influence individuals' occupation choice?**
K. B. Fincaryk & K. A. Noels (Psychology Department, University of Alberta)

After years of research, insight has been gained into why fewer women are in male-dominated domains such as STEM fields. However, research is just beginning to explore the reasons why there are fewer men in female-dominated domains such as nursing or foreign-language programs. The present study examines this question by looking whether cultural stereotypes of different occupations correspond with the relative numerical representation of men and women in each of these occupations. Using the Stereotype Content Model, which breaks down all stereotypes on two dimensions: warmth, how kind or friendly someone is, and competence, how capable or effective someone is. Participants will rate a variety of occupations on these two dimensions. We hypothesize that the occupations will be rated similarly to how the dominant gender of that occupation is rated. For example, occupations with a higher proportion of women will be rated as higher on warmth because women are typically

rated as more warm than men. To add to the understanding of occupational stereotypes, two additional factors will be assessed, agency and communication abilities. We hypothesize that agency ratings will correlate with competence ratings but they will be distinct concepts. Also, ratings of communication ability (a good communicator, able to share thoughts effectively, and listen well) are hypothesized to correlate with ratings of warmth. Overall, the present study hopes to provide insight into why there are numerical discrepancies in gender in some occupations but not others.

2:40 PM **The Mental Health Implications of Remote Learning during the COVID-19 Pandemic**
Y. A. Razek & E. Nicoladis (Psychology Department, University of Alberta)

On March 15th, 2020 the government of Alberta cancelled all in-person classes and the new normal of remote instruction began. In remote learning, a student and educator are not physically located in a classroom and information is relayed through a variety of technological means. Although remote learning has now become the new normal of the COVID-19 pandemic, for many students having classes in their homes does not feel normal. A recent survey conducted by Son et al. (2020) in the United States demonstrates the toll that remote learning can have on students' mental health. In the survey, many students' responses demonstrated themes of loneliness, uncertainty, powerlessness, and helplessness. The current study will take a similar approach to Son et al. (2020), and will assess whether or not student mental health has been implicated in remote learning during the COVID-19 pandemic. However, the current study differs as we will also investigate the role of socioeconomic status (SES). Previous research has shown that SES may be a potential modifier that impacts student mental health, and also their accessibility to resources in online courses. In the present study, we aim to assess the relationship between a student's SES and their mental health, and their SES and remote learning experience. To accomplish the goals of the study, students will be asked to take an online survey. The survey consists of questions about their mental health, their remote learning experience, and also their socioeconomic status. We predict that students of lower SES will tend to have worse mental health and also more negative remote learning experiences.

2:50 PM **Against the grain: Promoting identity continuity as a strategy to elevate group support for change**
E. Monaghan, L. Syfers, & D. E. Rast III

Change is often resisted, despite being essential for social and organizational progress. Change resistance can be rooted in threats to group identity continuity, which is the perception that the core characteristics of the group remain stable over time (Smeekes & Verkuyten, 2015). Although prototypical leaders can effectively reduce change opposition by promoting continuity (van Knippenberg, van Knippenberg, & Bobbio, 2008), change produces uncertainty that increases support

for non-prototypical leaders. This study investigated how identity continuity, leader prototypicality, and uncertainty impact support for anti-normative change. An online between subjects experiment (N = 189) manipulated leader prototypicality (prototypical or non-prototypical), identity continuity rhetoric (continuity or discontinuity) and uncertainty (high or low). Participants indicated their support for an unpopular change initiative, removing campus beer gardens. There was no significant interaction between identity continuity rhetoric, leader prototypicality and uncertainty. Future studies could correct methodology limitations, such as a change initiative that is too peripheral to the group identity to incite discontinuity threats. Further investigation of UA student values could be integrated into the change message. Participants in our study were apathetic towards the change message; therefore, determining a group's central values is critical to producing statistically significant results. Future researchers can reduce apathy by describing how the change message impacts collective self definition. These results contribute to a valuable research direction by outlining how to refine identity continuity methodology. Using rhetoric emphasizing identity continuity may be an effective tactic to reduce opposition to anti-normative change by promoting a stable sense of identity and direction.

3:00 PM   **In the eye of the beholder: Examining the role of arousal in emotion perception**
K. Huxter & A. Singhal (Psychology Department, University of Alberta)

The purpose of this study was to examine whether an individual's emotional state influences the way that they perceive emotion in other people. Data were collected from undergraduate students at the University of Alberta using the research participation pool. Participants listened to a short music clip, aiming to evoke either depressed or neutral mood, and then evaluated photographs of tennis players who had just lost or won the match point (Aviezer et al., 2012). The results of this study showed no significant differences between the experimental and control group on ratings of emotion or arousal. However, a reciprocal relationship between emotion ratings of faces was found between winning and losing images. Understanding how our internal emotional state influences our perception of other people is important for fostering strong interpersonal relationships. Furthermore, gaining a better understanding of mood induction procedures is beneficial as these methods could be used therapeutically for individuals with anxiety or mood disorders; such as depression and bipolar disorder.

3:10 PM   **Having photographs of events influences visual perspective in autobiographical memory recall**
A. A. Panjwani & P. L. St. Jacques (Department of Psychology, University of Alberta)

Photographs are often taken to preserve memories of events from the personal past, but the photograph itself can influence the resulting autobiographical memory. The objective of this study was to examine whether having a photograph of an event

influences autobiographical memory retrieval, particularly regarding visual perspective. We also investigated how the presence of the self in a photograph impacts the memory. In two studies, participants recalled autobiographical memories and made subjective ratings on the sense of vividness, emotional intensity, and visual perspective. After recalling all the memories, they indicated whether they had a photograph of each event. Across both studies, we found that photographed memories had higher ratings on all characteristics, including both own eyes and observer visual perspective. The type of photograph differentially influenced the visual perspective ratings. The results of the first study showed that simply having a photograph of an event increased own eyes perspective ratings, while intending to share a photograph boosted observer perspective ratings. In the second study, we found that having a photograph which contained the self increased observer perspective ratings, while photographs without the self increased own eyes ratings. Overall, this study demonstrates that naturalistic photo taking alters visual perspective of autobiographical memories, and that viewing oneself during retrieval can alter the memory of an event.

3:20 PM   Increasing Willingness to Communicate: Getting Students to Speak More French
N. G. Garzon, L. Sobze, S. Dickner, V. Pham, M. Uwera, S. K. Coulibaly & E. Nicoladis (Psychology Department, University of Alberta)

People who grow up with exposure to a minority language do not necessarily choose to speak it. For example, Albertans whose first language is French and who have attended francophone schools often speak a lot of English, even to other francophones. In Study 1, we explored the willingness to communicate (WTC) in French among francophone youth. We predicted that their WTC would be linked to a francophone identity. We ran two focus groups with youth from francophone schools. They spoke of a strong sense of belongingness to the francophone community and the desire to pass on French to future generations. However, despite strongly ascribing to a francophone identity, these students often favoured English to communicate. The purpose of Study 2 is to increase individuals' WTC in French. Drawing on previous research from peer mentoring and Dörnyei's (2005) concept of the Ideal L2 Self, we have designed a language peer mentors' program. Students are to meet once a week, for 45 minutes, for 10 weeks. Activity and discussion prompts will be provided, which incorporate the existing ideas of identity we have previously found and include opportunities for students' construction of ideas of future selves. Pre- and post-test questionnaires will be administered to measure their WTC to communicate in French. If this intervention successfully bolsters students' WTC in French, these results could contribute to designing programs for francophone and French immersion schools.

3:30 PM   The Effects of Acculturation on Gender Ideology in South Asian-Canadians
R. K. Kalher & K. A. Noels (Psychology Department, University of Alberta)

There is a great disparity in gender gap between South Asian and Western countries, depicting cross-cultural differences; however, little research examines gender ideologies within the cultures of bicultural people. Bicultural persons are regularly faced with the need to manage contrasting cultural values that influence various aspects of their lives, including gender ideologies and relations. This research examines how South Asian-Canadian biculturals manage the contrasting gender ideologies of their cultures. A first correlational pilot study investigated the relationship between South Asian culture and gender ideologies whilst assessing the effectiveness of cultural primes (i.e. South Asian cultural icons, symbols, famous figures) to inform a second experimental study. The results indicated that heritage and mainstream culture were significantly correlated with male status, purity, caretaking, chastity, and gender stereotypes and varied in effect size by gender. In the second study (N = 388; 132 males; 256 females), we randomly assigned participants to cultural prime groups (South Asian vs Canadian) and measured their acculturation and gender ideologies to determine whether a causal relationship exists between these variables. We hypothesized that Canadian cultural primes will induce a more egalitarian gender ideology in bicultural individuals than South Asian cultural primes. ANOVAs and post hoc tests were conducted to evaluate the difference across cultural prime groups and gender ideologies, revealing results contradictory to our hypothesis: individuals primed under South Asian contexts reported more egalitarian responses. This study suggests that our gender ideologies may not be static, thus informing methods to change gender ideologies to become more egalitarian.

Speed Talk Session 1 (Thursday, April 15)

3:30 PM   **The Impact of Uncertainty, Continuity, and Leader Prototypicality on a Group's Support for Change**
A. Lin (Psychology Department, University of Alberta), L. Syfers (Psychology Department, University of Alberta), D. Rast, III. (Psychology Department, University of Alberta)

Uncertainty, the continuity of a group, and leader prototypicality all affect how a group accepts change. Members of any group seek a clear and distinct identity, which results in group members being more likely to support change if it offers the group "a clear identity or path toward uncertainty reduction" (Gaffney, Rast & Hogg, 2018). Change that gets interpreted as supporting a group's continuity will be more likely to be supported. The type of leader who is championing change also affects the support of a group. This study involves two types of leaders: prototypical leaders versus non-prototypical leaders. Prototypical leaders are leaders who fit into the group's social identity. Non-prototypical leaders are leaders who do not conform to the group's prototype. The study has a 2 X 2 X 2 design with the following variables: the type of leader (prototypical vs. non-prototypical), continuity (continuity vs. discontinuity), and the level of uncertainty (high uncertainty vs. low uncertainty).

Participants will read about the University of Alberta of Tomorrow plan. Each condition will showcase a different leader spearheading the change. Participants will get asked about their level of support for the change. Prototypical leaders are more effective in driving change and getting it accepted (van Knippenberg 2011). This study will explore whether a leader's prototypicality plays a role if the change suggested supports the group identity and how uncertainty affects acceptance of a different leader's prototypicality.

3:35 PM   **A leader's strategic use of rhetoric and international relations to garner support from followers during critical times**
H. Khokhar, Y. Ouyang, & D. Rast III

Leaders with prior history of taking a stand for their group, affirming its distinct identity, are, in turn, able to garner more support from their followers and even promote work towards the realization of their vision. (Haslam & Reicher, 2001). By endorsing affirming language, compared to negating language, to describe the group, a leader may affirm the group identity to a better extent and evoke more support among followers, particularly in times of uncertainty (Gaffney et al., under review). During high uncertainty, group members may favour a leader proposing intergroup tension as engaging and intergroup competition enhances group identity (Hogg, 2001), which helps reduce uncertain feelings. (Hogg, 2017). Our current study uses the context of the COVID-19 pandemic to investigate the effect of uncertainty and leader rhetoric on Canadians' support for their leader, Justin Trudeau, when he encourages competitive vs cooperative international relations. Our research findings showed enhanced support for Trudeau with the usage of affirming rhetoric under high vs low uncertainty while delivering a message of international cooperative ties. This pattern reversed with the use of negating rhetoric. Besides, under low uncertainty, Trudeau garnered more support from Canadians when he used negating rhetoric enhancing the cooperative international relations. However, with the message being that of competition, our study found no significant interaction effects between leader rhetoric and uncertainty. Implications of this phenomenon can positively enhance leader-follower intergroup relations to promote social change in the direction that the leader envisions.

3:40 PM   **How personality predicts the effects of COVID-19 on the mental health of Canadians**
A. Shokrkon (Psychology Department, University of Alberta) & E. Nicoladis (Psychology Department, University of Alberta).

The Coronavirus Disease (COVID-19) epidemic was first detected in China in December 2019 and spread to other countries, including Canada, in early 2020. The illness itself and the consequences including job losses, unpredictability, and social distancing have had negative impacts on mental health, with increased depressive and anxiety symptoms, stress disorders, insomnia, anger, and fear. However, this pandemic situation has not affected everyone to the same extent. In order to explain

some of these individual differences in coping with this pandemic, we will test how personality traits, using the Five-Factor Model (FFM) as our framework, are related to the current mental health of Canadians.

3:45 PM **Say what you mean: A replication study on the factors that influence the information college-aged individuals give to friends experiencing romantic uncertainties**
D. Anderson, S. David, A. Lin, J. Olsen

Romantic relationships play an important role in many college-aged individuals' lives so they often seek out advice. One previous study showed that students who had positive expectancy outcomes and greater efficacy assessments provided more information as well as more accurate and positively valenced advice (McManus et al., 2019). The present study is a replication, focusing on the factors that influence the amount, valence, and accuracy of advice given to friends. We have recruited 303 participants between the ages of 18 and 24 who attend a post-secondary institution in Canada (cf. 367 in McManus et al., 2019). The participants completed a questionnaire with measures that assess the students anxiety about the conversation, expected outcomes, efficacy assessments, and their information provision. Expected outcomes consists of the participants' expectations about how the conversation would end when they first began the conversation with their friend. Efficacy assessments include the participants views of their own, as well as their friends, ability to cope with the conversation, to communicate the necessary information, as well as whether the information they received would be complete (target). Information provision refers to the participants' knowledge of how they responded during the conversation based on the amount, accuracy, and valence of the information. We expect to see similar results to McManus et al.'s study when data collection and analysis is completed. These results will contribute to our understanding of how to encourage healthy advice patterns between friends.

3:50 PM **Second and Foreign Language Learning: A Scoping Review from Self-Determination Theory**
A. Fazli, T. Kube, B. Qayyum, K. Yee, N. Lou, & K. Noels (Psychology Department, University of Alberta)

Over the last half-century, psychologists and educators have recognized the educational value of motivation for successful foreign/second language learning (FLL/SLL). The current study provides a scoping overview of empirical studies of FLL/SLL conducted with motivational constructs derived from Self-Determination Theory (SDT; e.g., intrinsic motivation, autonomy support). Using a systematic search protocol across three databases (PsycINFO, ERIC, and LLBA), a total of 514 peer-reviewed articles were collected. This was the number of articles retrieved before the preliminary screening stage which included duplicates across databases. Inclusion in the current study was limited to research papers that studied both FLL/SLL and SDT constructs, which yielded a total of 292 peer-reviewed articles for

descriptive analysis. After coding the articles on a well-detailed spreadsheet, the following conclusions were made: (1) Most of the selected studies examined English as a second/foreign language (76.7%); (2) The research on FLL/SLL and motivation has been conducted around the world but most commonly conducted in Japan (18%); (3) Post-secondary students were the most frequently studied samples (63.5%); (4) Most studies (55.5%) adopted a quantitative approach. The conclusions from this review and the abundance of data on self-determination and motivation in FLL/SLL, including dissertations that were not examined in this study, suggest the need for a meta-analysis to further understand the statistical relations between motivational constructs.

Speed Talk Session 2 (Friday, April 16)

11:30 AM **Theta oscillation in memory and anxiety**
T. Shalamberidze, K. Nash, J. B. Caplan (Neuroscience and Mental Health Institute, Psychology Department, University of Alberta)

Anxiety and memory are typically studied separately, but they share an electroencephalographic (EEG) correlate, called Frontal Midline Theta (FMT) oscillation. By studying the specificity of this 4-8 Hz rhythmic brain activity, we aim to discover a computational and functional relationship between anxiety, memory, and FMT. We propose two alternative hypotheses. The first hypothesis states that anxiety modulates memory-related theta oscillation, affecting memory performance by decreasing memory accuracy. The second hypothesis is that the anxiety-related and memory-related theta oscillations represent different brain computations and do not interact with each other. Memory will be tested with associative recognition. The task involves distinguishing the studied word pairs as "intact" or "rearranged". The intact probes consist of identical pairs from the study, and the rearranged probes include the studied items but from different pairs. In addition to conventional power measures, EEG signal will be analyzed with more stringent criteria for rhythmicity. Memory-related study processes will be analyzed by measuring the subsequent memory effect, meaning the difference between the study-related brain activity of subsequently remembered versus forgotten pairs. Anxiety levels will be assessed according to State/Trait Anxiety Inventory and 10-Item Personality Inventory.. If our results support the first hypothesis, it would suggest that theta oscillation related to anxiety and memory performance represent one computational mechanism. Alternatively, if our data supports the second hypothesis, it would suggest that the currently seen overlap in the frequency and topography of anxiety-related and memory-related theta is coincidental.

11:35 AM **Internalizing problems in early childhood: Associations with cultural socialization practices and immigrant status**
J. Mahal, B. Zatto, W. L. G. Hoglund (Department of Psychology; University of Alberta)

The estimated prevalence of internalizing symptoms (eg depression, anxiety) is 10-15% in early childhood, with symptoms of anxiety and depression increasing on average across this period (Briggs-Gowan et al., 2004; Gillion & Shaw, 2004). Parental cultural socialization practices (teaching about ethnic/racial heritage and history) are negatively associated with internalizing symptoms, though little research has investigated this association in early childhood (Caughty et al., 2002; Hughes et al., 2006). Research on Canadian preschool children reports that children of recent immigrants exhibit lesser internalizing symptoms than children of long-standing immigrants and native parents (Georgiades et al., 2007).Cultural socialization practices are also more common in recent immigrant groups as compared to native groups and long-standing immigrants (Hughes et al., 2006). This study will use longitudinal data collected from a sample of 443 preschool children (47.9 % girls; Mage = 4.08 years, SD = .34 years) and their parents and teachers to examine the following research questions: 1) What is the frequency and pattern of change in depressive and anxious symptoms across early childhood? Does the frequency and pattern of changes differ by children's immigration status? 2) Do parent cultural socialization practices predict the frequency or change in children's depressive and anxious symptoms?; and 3) Does the association between parent cultural socialization practices and children's depressive and anxious symptoms differ by children's immigration status? It is hypothesized that anxiety and depression symptoms will increase on average; and have a negative association with parental cultural socialization practices. This association is speculated to be stronger for immigrant children.

11:40 AM   Designing a children's pop-up museum: the recognition and expression of emotions
A. Jacobs & E. Nicoladis (Psychology Department, University of Alberta)

Children's museums are designed to foster learning through fun, interactive activities, including physical, emotional, and intellectual experiences (Andre et al., 2017). The goal of this project is to propose the design for a short informal learning experience for children (a pop-up children's museum). The theme of this pop-up is emotions, particularly emotion-recognition and expression. Children will have the possibility of learning about emotions by participating in three different activities. Children between the ages of 4-7 will explore feelings of happiness, sadness, anger, and fear. There are two major learning objectives: 1) children articulate emotions elicited by various situations and 2) children explore the connection between emotions and physical movement in the body. To address the former learning objective, children are invited to participate in interactive games and crafts. To address the latter, children are invited to dance. To evaluate the effectiveness of the pop-up, children will complete sections of an online worksheet that coincide with the various activities. This design was originally created as an in-person experience. However, we are currently working on an online adaptation, in order to run this experience during the pandemic.

11:45 AM   **Multilingual and monolingual child-rearing: Investigating performance in mental switching, inhibition and working memory among preschool age children**

M. Jose, S. Goonesekera, L. Predy & S. A. Wiebe (Psychology Department, University of Alberta)

The implications of bilingual and multilingual childrearing have demonstrated enormous interest in developmental psychology. Previous research has reported significant differences in cognitive abilities and neurological structures between multilingual and monolingual individuals. Our research focuses on the differences of inhibition, mental switching and working memory among children of preschool age who have either been raised monolingually or multilingually. Based on previous literature, we hypothesized that children raised multilingually would exhibit higher scores on measures regarding these cognitive functions. Our research utilized results from assessments of an ongoing parent-child interaction study on executive function. Specifically, we used data from child participants (n = 51) between 3 and 5 years of age, who were primarily recruited through online advertising. The children were assessed with a forward and backwards word span task, which intended to measure working memory store, processing and retrieval. The participant's inhibition and mental switching abilities were assessed via the Shape School task, where children had to discern naming rules by colour and shape according to a visual cue. Against our hypothesis, there were no significant differences between monolingual and multilingual-raised preschool children in mental switching, inhibition, or working memory storage and processing. Rather, age was a better predictor of performance on the assessments. We conclude that this result could be due to the fact executive function cognitions are not yet fully developed at this age, and differences in these cognitions may not be demonstrated until further along in development.

11:50 AM   **Canadian's Perspectives on Mask Wearing During the COVID-19 Pandemic: Facilitators to Public Mask Use**

Z. Chen*, S. Trieu*, Y. Shan (Doris) Zhang, Kimberly Noels, Heather Young-Leslie, Nigel Lou (Psychology Department, University of Alberta)
*Equal Contributors

The use of face masks for the prevention and protection of our well-being during the COVID-19 pandemic has become prevalent worldwide. Although face masks are beginning to reach a phase of normalization, acceptance toward public mask use still differs among Canadians. Using focus group interviews, this study strives to explore the potential facilitators that may encourage the use of face masks, via an examination of Canadians' attitudes and perceptions around public mask use. Four focus groups were conducted in Fall 2020 to inquire into Canadians' thoughts and opinions about public mask use. A total of 17 Canadians (Mage = 48.50, SD = 18.52; 16 females, 1 male) were recruited from social media platforms (e.g., Facebook,

Twitter, Reddit) and participated in this study. After performing a preliminary thematic analysis, four major themes were identified: 1) public health information accuracy; 2) biases against non-mask wearers; 3) responsibility for community/society and 4) normalization of mask wearing. Since public health information accuracy is a facilitator for public mask use, more efforts should be dedicated to increase the accuracy and availability of COVID-19 health information to the general public. Furthermore, seeing that personal bias towards non-mask wearers and feelings of responsibility help to strengthen public mask use, public health efforts and initiatives should 1) target on highlighting the personal and public health benefits of mask wearing, and 2) support the development of public mask use norms to enhance the health and safety of Canadians during the COVID-19 pandemic.

Talk Session 1 (Friday, April 16)

9:30 AM   **Inhibition of the claustrum causes altered cortical dynamics**

R. Zahacy[1,2], B. V. Hope[1,2], Y. Ma[2,3], I. R. Winship[1-3], J. Jackson[1,4], A. W. Chan[1-3*]*
*Co-supervisors
1 Neuroscience and Mental Health Institute, University of Alberta, Edmonton, Alberta, Canada
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The claustrum is an important yet understudied subcortical brain structure composed of a band of gray matter within the telencephalon. It has the highest connectivity per unit of volume in the human brain, with connections to nearly the entire cortex. The goal of this project is to examine the changes in cortical activity associated with chemogenetic inhibition of the claustrum. We performed mesoscale fluorescence calcium imaging on lightly anesthetized, adult mice expressing the genetically encoded calcium indicator, GCaMP6s, throughout the cortex. We inhibited claustral activity using the Cre-dependant Designer Receptors Exclusively Activated by Designer Drugs (DREADDs) HM4Di injected bilaterally into the claustrum in conjunction with retro-Cre injected bilaterally into the prefrontal cortex (PFC) which is known to have claustral-cortical projections. Once the DREADDs were expressed we activated them by injection of the designer drug Clozapine-N-oxide (CNO) resulting in claustral inhibition. This method allows for selective modulation of claustrum neurons that project to the PFC as surrounding regions do not project to the PFC.

Our data shows chemogenetic inhibition of claustral activity results in: 1) increased cortical activity in cingulate, anterior cingulate, and secondary motor cortices during resting state activity in both anesthetized and awake states following CNO administration, and 2) increased the amplitude of response in the visual cortex following visual stimulation, an effect that was not seen in other sensory stimulation

modalities. This data supports the hypothesis that the claustrum acts as an inhibitor for activity in the frontal cortex and has a function in sensory processing.

9:40 AM **Differences in perception of depression, attitudes towards mental health, and gender roles as a function of language of responses in english – punjabi bilinguals.**
T. Dhanoa, K. Collins, & W. Pullin. (Psychology Department, Concordia University of Edmonton)

In this study, a quantitative design is being adopted to determine if English-Punjabi Bilinguals' perceptions of depression, mental health attitudes, and gender norms vary based on target reporting language. Sixty participants were recruited via social media. Participants varied from 18 to 51 years old, including 39 women and 21 men. We hypothesized English-Punjabi bilinguals would report higher depressive symptoms in English and more negative perceptions towards mental health and gender norms in Punjabi. In part one of the study, participants received either an English or Punjabi version of the following scales:study, participants received either an English or Punjabi version of the following scales: Patient Health Questionnaire (PHQ-9), Warwick-Edinburgh Mental Well-Being Scale (WEMEBS),, Mental Health Knowledge Questionnaire (MHKQ), and Gender Role Attitude Scale (GRAS). After two weeks, participants received the opposite language version. We conducted 8 paired t-tests to determine if there were significant differences between the two versions. The results for gender norms showed: egalitarian roles $t(59) = 6.861$, $p < .001$, female gender roles $t(59) = -1.659$, $p = .102$, traditional roles $t(59) = -6.376$, $p < .001$, marriage roles $t(59) = -2.030$, $p = .047$, and male gender roles $t(59) = -3.176$, $p = .002$. The results for mental health attitudes showed $t(59) = 5.496$, $p < .001$. The results for depression showed: PHQ-9 $t(59) = .330$, $p = .89$, and WEMEBS $t(59) = .136$, $p = .74$, meaning the significance of mental health and gender norms demonstrated that language does prime certain aspects of our attitudes and perceptions, however, differences in depression levels were not demonstrated.

9:50 AM **Shifting visual perspective and cognitive reappraisal during the retrieval of emotional autobiographical memories**
S. Küçüktaş & P. L. St. Jacques (Psychology Department, University of Alberta)

Shifting from one's own eyes to an observer perspective reduces the emotional intensity and vividness of memories, but some theories have proposed that the increased self-focused attention while adopting an observer perspective could potentially increase the emotional intensity of memories associated with self-conscious emotions. Additionally, research from cognitive reappraisal has shown that adopting an impartial observer perspective is one of the most effective strategies to reduce emotion across various types of negative experiences. In the current study, we examined the effect of shifting visual perspective and cognitive reappraisal during the retrieval of emotional memories on subjective ratings of emotional intensity and vividness. Participants were asked to recall recent autobiographical memories

associated with self-conscious (guilt) and non-self-conscious (anger) emotions while adopting an own eyes perspective. Then, they were asked either to shift visual perspective by adopting an observer perspective during remembering (shifted group), employ cognitive reappraisal by adopting an impartial observer perspective to reduce emotional intensity (reappraisal group), or to recall the memory in detail (control group). We found a significant reduction in emotional intensity and vividness of memories in the reappraisal group when compared to the control group, but no differences in the shifted group. These findings suggest that reconstructing emotional memories from an alternative visual perspective while pursuing an emotion regulation goal leads to change in memory characteristics during retrieval.

10:00 AM   "Fight or Affiliation": How threat and challenge states influence group identification in times of uncertainty
Y. Ouyang, K. Kincaid, & D. Rast (Psychology Department, University of Alberta)

Uncertainty-identity theory posits that self-uncertainty can strengthen one's identification with groups as salient social identities provide individuals with information that helps reduce the aversive feelings of uncertainty (Hogg, 2012). However, this relationship between self-uncertainty and group identification may be moderated by the threat and challenge states. Threats deplete psychological resources and people tend to avoid resolving the formidable situation, whereas challenges evoke an approach motivation that propels people to solve problems actively (Blascovich, 2013). Therefore, people who experience a threat, rather than a challenge, may not alleviate uncertainty themselves but look to their groups for uncertainty reduction. The present studies investigated the effect of self-uncertainty on people's group identification when experiencing a challenge or a threat. Study 1 (N = 123) manipulated the threat state by presenting participants with a first-year experience report and primed them with high or low uncertainty. Controlling for participants' age, ethnicity and pre-identification with their group, uncertainty increased group identification among participants in the threat state, rather than those in the non-threat state. Also, experiencing a threat state significantly weakened group identification under low uncertainty. Study 2 (N = 117) manipulated the challenge state and primed participants with uncertainty. No significant effect was found on group identification even after controlling for demographic variables. This finding provides some empirical evidence for the interactive relationship between self-uncertainty and the threat and challenge states on group identification.

10:10 AM   From the top: Leader prototypicality and identity entrepreneurship
A. C. Ma, L. Shi, D. E. Rast III, A. M. Gaffney

All groups have prototypes, "fuzzy sets" of attributes the define the group's identity. These prototypes are dynamic, changing with the social context to highlight what makes the group positively distinct from outgroups. This flexibility creates opportunities for leaders to promote versions of the group prototype that fit their visions for the group. Previous studies have shown that leaders can use rhetoric to

manipulate the boundaries of their groups, either expanding or narrowing the group, or convincing members of different subgroups to view themselves as a single group. However, much of this analysis has been qualitative, relying on historical documents and transcripts of large observational studies. This current study empirically tests the effects of exclusive and inclusive leader rhetoric on perceptions of the leader as well as perceptions of the group. We recruited 113 Albertan university students. They read arguments by a student leader suggesting that out-of-province students either did or did not share the values of local students. We manipulated rhetoric (exclusive or inclusive) and prototypicality (high or low). Results show that using exclusive rhetoric lead to decreased support for the leader across all groups, but that support for excluding non-Albertans from roles representing the university increased with province identification when participants read about a prototypical leader who used exclusive argument.

10:20 AM **Behaviour and functional brain activity in mice**
B.V. Hope [1,2], R. Zahacy [1,2], Y. Ma [2,3], I.R. Winship [1-3], & A.W. Chan [1-3] (1. Neuroscience and Mental Health Institute; 2. Neurochemical Research Unit; 3. Department of Psychiatry, University of Alberta)

Autism spectrum disorder (ASD) is diagnosed in 1 in 66 Canadian youth and presents significant emotional, social, and financial challenges for both patients and their caregivers. This neurodevelopmental disorder is characterized by social communication difficulties and repetitive behaviour patterns. The etiology of ASD is presently unknown, though modulations in connectivity patterns in the dominant resting-state network, the Default Mode Network (DMN), are implicated in ASD symptomatology. To investigate this modulation, it is necessary to employ techniques that use more precise indicators of cortical activity, such as optical imaging. Using novel 'mesoscale' optical imaging techniques that focus on widespread interconnectivity, I examined functional connectivity in the DMN in wild-type mice. Behavioural tests such as 3-chamber sociability, open field, and novel object recognition tests were also conducted to explore any links between DMN connectivity and ASD-related behaviours. These patterns and associations will form a basis for subsequent comparison to clinically relevant mouse models of ASD. A better understanding of these circuits and behavioural dysfunction in ASD is essential for targeting diagnostic and therapeutic outcomes at the biological origins of the disorder.

10:30 AM **EEG in motion: Using an oddball task to explore motor interference in active skateboarding**
D. Robles, J. W. P. Kuziek, N. A. Wlasitz, N. T. Bartlett, P. L. Hurd, K. E. Mathewson (Psychology Department, University of Alberta)

Recent advancements in portable computer devices have opened new avenues in the study of human cognition outside research laboratories. This flexibility in methodology has led to the publication of several Electroencephalography (EEG)

studies recording brain responses in real-world scenarios such as cycling and walking outside. In the present study, we tested the classic auditory oddball task while participants moved around an indoor running track using an electric skateboard. This novel approach allows for the study of attention in motion while greatly removing motion. Using the skateboard auditory oddball paradigm, we found reliable and expected standard-target differences in the P3 and MMN/N2b event-related potentials (ERPs). We also recorded baseline EEG activity and found that, compared to this baseline, alpha power is attenuated in frontal and parietal regions during skateboarding. In order to explore the influence of motor interference in cognitive resources during skateboarding, we compared participants' preferred riding stance (baseline level of riding difficulty) vs their non-preferred stance (increased level of riding difficulty). We found that an increase in riding difficulty did not modulate the P3 and tonic alpha amplitude during skateboard motion. These results suggest that increases in motor demands might not lead to reductions in cognitive resources as shown in previous literature.

10:40 AM   **How blood and brain pressure determine cell size and outcome after stroke**
C. M. Wilkinson, A. Kalisvaart, F. Colbourne (Psychology Department, University of Alberta)

Chronic hypertension adversely affects health. One of the most serious effects is increasing the risk of intracerebral hemorrhage, a bleed into the brain that results in ~40% mortality with serious morbidity in survivors. Beyond raising the risk of hemorrhage, hypertension also increases blood volume, worsens secondary injury (brain swelling, intracranial pressure), and impedes recovery processes. Often, animal studies of stroke use healthy animals, which do not model the complex effects of comorbidities, like hypertension, on stroke outcome. In this study, our objective is to determine how hypertension can affect injury after intracerebral hemorrhage. We compared a hypertensive rodent strain with both the strain they were derived from (Wistar Kyoto Rats) and the strain commonly used in stroke research (Sprague Dawley Rats). We induced an intracerebral hemorrhage and measured strain differences in physiology (temperature, body weight, brain volume) and outcomes of the intracerebral hemorrhage (neurological deficits, injury volume, and neuron morphology). There were no strain differences in temperature or activity. Although neurological deficits didn't differ significantly, preliminary data shows hypertensive rats had ~25% larger bleeds, and we expect that the neuronal response to the large bleed (neuron volume/density) will be hindered in hypertensive rats, as the chronically high blood pressure will affect their compensatory strategies. Follow up studies will determine why hypertensive rats have impaired compensation, and if this can be rescued by lowering blood pressure either acutely or chronically. This will help understanding of current therapies and in developing new ones that are desperately needed for this devastating stroke.

10:50 AM   **Can your beliefs about our social interaction affect the way you react even when I'm not around?**
Y. Song & D. A. Hayward (Psychology Department, University of Alberta)

The presence of other people can play a major role in the way that we allocate our attention. In the midst of a pandemic in which there are restrictions regarding our general amount of social interaction, we sought to understand the implications of various levels of social presence on attention. Participants completed a visual search task virtually while under the impression that they both cooperated and competed with a partner (implied social interaction) while in reality the tasks were completed solo. The goal of the task for the cooperation component was to accrue more points than the supposed last pair of participants, whereas for the competition component, it was to receive more points than the partner, displayed as feedback following each trial and a point summary following each block of trials. To manipulate implied social presence of a partner, participants were either presented with no image, an image of a schematic face, an image of a real person, or an image of someone that they physically met on zoom just prior to the task. Although the only difference between cooperation and competition blocks was the feedback provided, we still found a difference in attention such that participants were faster during the compete blocks as compared to the cooperate blocks, at no cost to accuracy. However, we did not find a significant interaction between this effect and our social presence manipulation. Overall, our results demonstrate that our cognitions regarding our social interactions with others does indeed impact our attention.

11:00 AM   **Food for thought: A critical assessment of the DSM-5 classification of food addiction**
P. A. Johnson, J. C. Johnson, & A. A. Mardon (Department of Psychiatry, University of Alberta)

Food addiction is a condition characterized by interplay of complex psychosocial and environmental factors. Binge-eating disorder, obesity, craving, and substance dependence are all related to food addiction but the body of evidence surrounding this concept remains in its embryonic stages. With the classification of addiction-like eating behavior in diagnostic tools such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), based on criteria such as dependence, it has been suggested that personalized and precision approaches are compromised. Instead, oftentimes food addiction co-exists with a co-morbid mental illness. Here, we examine the lived experience of CM, a survivor of traumatic brain injury and her experience with post-traumatic stress disorder (PTSD). In her descriptions, she describes the use of food to keep her "PTSD at bay". For her, food had a consistent and sedating effect allowing her to better manage flashbacks, memories and nightmares. By "trying to adapt to things in small bites", food addiction became a defense mechanism to combat another condition, developing as a comorbidity. This experience offers both the satiating effects of food in addictive behavior and the impracticality of characterizing food addiction independently as a diagnosis based on feelings of embarrassment, guilt, and depression associated with consumption. It

also elucidates that strict criteria based on an evaluation of symptoms as recommended by DSM-5 may not necessarily be useful for cases such as that of CM's with common comorbidities.

Talk Session 2 (Friday, April 16)

1:00 PM   **The impact of the social and asocial environment on the learning abilities of animals: a meta-analysis**
C.T. Lambert (Department of Psychology, University of Alberta) & L. M. Guillette (Department of Psychology, University of Alberta; School of Biology, University of St Andrews)

Since the 1950's, researchers have examined how differences in the social and non-social environment affect the learning and memory of rats, mice, and, more recently, a variety of other species. Despite this large body of research, little has been done to empirically evaluate and synthesize these extant findings. As such, we asked the following questions: 1) is there an absolute effect of the environment on learning, 2) do 'enriched' animals consistently out-perform more 'deprived' animals (a directional effect), and 3) is the type of environmental variable (e.g., social, non-social) important? To address these questions, we conducted a meta-analysis examining how different environmental features impact learning. Using 537 mean-differences from 176 published articles across 27 species we conducted phylogenetically-corrected mixed-effects models meta-analysis that revealed: 1) the absolute effect is significant at |d| = 0.48; 2) the directional effect is significant but small at d = 0.21; 3) social treatments had much smaller effects than asocial treatments. These results suggest environmental factors generally do affect cognitive abilities, but the type of treatment is an important predictor of the strength of these effects.

1:10 PM   **A mid-life crisis: Post-stroke tissue compliance in aged rats**
A. Kalisvaart (Psychology Department, University of Alberta), S. Gu (NMHI, University of Alberta), A. Abrahardt (Psychology Department, University of Alberta), K. Ferris (Psychology Department, University of Alberta), F. Colbourne (Psychology Department and NMHI, University of Alberta).

With age, many cellular and physiological processes begin to change, leaving our bodies less able to defend against injury or infection. After a large hemorrhagic stroke, the added mass of a bleed and subsequent swelling within the brain causes pressure within the skull to increase dramatically, significantly increasing risk of patient mortality or disability. The body possesses natural compensation mechanisms to comply with this increased pressure (e.g. redirection of vascular blood and cerebrospinal fluid), but with age, these mechanisms become less efficient, leaving elderly stroke patients less able to offset these potentially deadly increases in intracranial pressure. Recently, the Colbourne Lab discovered a novel intracranial pressure compliance mechanism, in which brain cells reduce in size to

free up cranial space and accommodate increased pressure levels following stroke ("tissue compliance"). However, this research was done using young male rats, which doesn't accurately reflect clinical reality, as 3/4 of all stroke patients are over the age of 65. To explore the effect of age on tissue compliance, aged male rats were given a severe intracerebral hemorrhage, and numerous brain regions were stereologically assessed 24 h after stroke compared to controls; other measured parameters included cortical thickness, lesion volume, and intracranial pressure. Similar to other compliance mechanisms, aged rats did not display the same degree of tissue compliance as their young counterparts, suggesting that age plays an important in intracranial pressure compensation, and may partially explain increased fatality in elderly stroke patients. This is an important potential treatment target that must be explored further.

1:20 PM **Evaluating the Cumulative Psychological Injury (CPI) program, a new intervention for individuals recovering from workplace bullying**
K. Archibald (Department of Psychology, University of Alberta), S. Ziolkowski (Department of Psychology, University of Alberta), W. Salvisberg (Millard Health Centre, Edmonton, Alberta), K. Schalk (Millard Health Centre, Edmonton, Alberta)

The Cumulative Psychological Injury (CPI) program was developed for the Worker's Compensation Board of Alberta to address the concerns clients with workplace bullying and harassment claims typically present with. Such concerns include mood, anxiety, and adjustment disorders. The goals of the CPI program are to reduce client's symptoms of depression, anxiety, adjustment disorders, and burnout, increase client resilience and assertiveness, and facilitate sustainable return-to-work outcomes in clients after discharge. Since its inception in January 2019, the program has not undergone any formal evaluation of effectiveness in meeting these goals. This study is a pilot evaluation of the CPI program's effectiveness in reducing client symptoms of depression, anxiety, and burnout, as well as the program's effectiveness in increasing client resilience. Intake and discharge scores on tests of depression, anxiety, burnout, and resilience were retrieved from 32 records of previously-discharged CPI clients at Millard Health Centre. Paired-samples t-tests were used to assess for significant differences in mean test scores between intake and discharge. Significant decreases in scores of depression, anxiety, and exhaustion and cynicism components of the burnout measure were found, whereas scores of resilience and the professional efficacy component of burnout demonstrated nonsignificant increases. The findings of this evaluation will allow CPI program clinicians to further improve the program, and present implications for the future of treatment of workplace bullying- and harassment-related psychological injuries.

1:30 PM **Under pressure? Underpowered. Statistical power and publish or perish culture**
L. J. Liddle, A. Whittaker & F. Colbourne

Are all significant research findings in published literature trustworthy? Almost every researcher has used the alpha = 0.05 criterion to assess statistical "significance". By and large, statistical power is not part of the discussion - resulting in the claim that up to 50% of published studies are false because power is left unconsidered. Statistical power is the probability that a statistical test has correctly rejected the null hypothesis. This study characterized post-hoc statistical power, effect sizes, sample sizes, and variability of common measures of treatment effectiveness from the past 5 years of modern translational stroke research. These parameters are critical to examining the positive predictive value of studies . Positive predictive value is the proportion of statistically positive results that are true positive results. In other words, positive predictive value is a reasonable indicator of whether a study is rigorous, and would replicate in a future study - our lab has experience testing and (often not) replicating the work of others. By evaluating these critical statistical parameters that are often overlooked by researchers, we hope to provide useful information to researchers and bolster positive predictive value in their studies. For example, we have found that researchers should use data from multiple studies (i.e., not cherry-pick one lucky study with low variability), and should use realistic effect size estimates in their a priori sample size calculations. This research is critical because the current "replication crisis" in modern research may be the result of low positive predictive value in modern literature.

1:40 PM   **Executive function as a predictor of math and literacy achievement in 4 to 7-year-old children: A cohort-sequential longitudinal study**
Y. Wu (Neuroscience and Mental Health Institute, University of Alberta), D.Vrantsidis (Psychology Department, University of Alberta), N. Ali (Psychology Department, University of Alberta), M. Khoei (Psychology Department, University of Alberta), and S. A. Wiebe (Psychology Department, University of Alberta)

Executive function (EF) emerges during early childhood and is associated with later math and literacy achievement. The present study examines this association longitudinally in the transition to elementary school (4-7 years). A sample of 97 children (41 boys and 47 girls) completed a developmentally sensitive EF battery and a standardized cognitive ability test during the first session (4-6 years), followed by math and literacy assessments one year later (5-7 years). Confirmatory factor analysis supported a single latent EF construct. Early childhood EF was a strong, robust predictor of both later math and literacy achievement over and above age differences and socioeconomic status. However, EF was no longer a significant predictor of academic achievement when controlling for general cognitive ability. This may be because of an overlap in the cognitive resources required for EF tasks and intelligence tests. These findings have implications for improving academic interventions and policies to promote school readiness for at-risk children in educational settings.

1:50 PM   What jumps to mind? Emotional autobiographical memory within three cultures
N. Dahou (Psychology Department, University of Alberta)

Past comparative research has demonstrated that the content of memories is sensitive to cultural influences related to the nature of the self. For example, while comparing Caucasian-Americans and Chinese participants, Wang (2001) found that Americans tend to remember specific and self-focused events concerned with autonomy, the self often being put in the spotlight. East-Asian memories, in contrast, tend to be routine-related and centered on relationships, the self often put in the background to emphasize others. However, few have looked at emotional memories, even though emotional moments are the events that are remembered most vividly, and are therefore the most likely to influence future decisions and behaviours. The purpose of this study is to identify themes and patterns in autobiographical memory across cultures and emotional states. In a within-subject design, we asked Arab, Chinese, and European Canadian participants to write both a happy autobiographical memory and a sad autobiographical memory of their choosing. While this is different from the usual studies that ask participants to remember a specific event (e.g. birthday party), we chose such an open-ended question because the first memories to come to mind when sampled are usually those that were once of high relevance to the self. We then performed a thematic analysis on the memories to identify patterns of themes in the data. Other variables we looked at include memory specificity, interaction scenarios, and other/self ratios.

2:00 PM   Data-driven analyses of longitudinal hippocampal imaging trajectories: Discrimination and biomarker prediction of change classes and clinical outcomes
S. M. Drouin (Department of Psychology, University of Alberta), G. Peggy McFall (Department of Psychology, University of Alberta; Neuroscience and Mental Health Institute, University of Alberta), O. Potvin (CERVO Brain Research Centre, Quebec), P. Bellec (Département d'informatique et recherche opérationnelle, Université de Montréal; Centre de Recherche de l'Institut Universitaire de Gériatrie de Montréal, Montreal); M. Masellis (Hurvitz Brain Sciences Research Program, Sunnybrook Health Sciences Centre; Department of Medicine (Neurology), University of Toronto), S. Duchesne (CERVO Brain Research Centre, Quebec; Radiology Department, Université Laval), & R. A. Dixon (Department of Psychology, University of Alberta; Neuroscience and Mental Health Institute, University of Alberta)

INTRODUCTION: Hippocampal atrophy is a well-known predictor of exacerbated memory decline, pre-clinical impairment, and Alzheimer's disease (AD). However, among cognitively normal (CN) aging adults, substantial differences in hippocampal trajectory patterns and associated brain aging and AD biomarkers can be observed.

METHODS: We used baseline biomarker and longitudinal MRI (volumetric) data (6 waves, 59.8-94.6 age band) from CN adults (n = 351). First, we applied latent class

growth analyses to identify trajectory classes for the left (LHC) and right (RHC) trajectory distributions. Second, using random forest analyses, we tested 38 multi-modal AD-related biomarkers for their relative importance in discriminating lower versus higher trajectory classes. Third, we incorporated new trajectory class variables in prediction models of last-wave diagnosis (AD vs CN).

RESULTS: First, three LHC and RHC trajectory classes were identified. Second, both the highest trajectory classes were predicted by female sex, lower education and higher plasma Aβ1-42. The LHC highest class was also predicted by higher plasma tau and Aβ1-40, lower geriatric depression scores, and higher BMI. Third, AD diagnosis was predicted by lowest trajectory class membership, higher CSF t-tau, and lower CSF Aβ1-42.

DISCUSSION: We applied three phases of data-driven analyses to individualized LHC and RHC 35-year trajectory distributions. Although the dynamic and structural patterns of LHC and RHC trajectories were similar, machine learning models revealed that LHC was deeply discriminated by AD biomarkers. The inclusion of novel trajectory class variables showed that asymptomatic atrophy powerfully predicted AD diagnosis. Integrating data-driven trajectory and biomarker approaches elucidated the dynamics of pre-AD brain changes.

2:10 PM   **Glibenclamide does not improve outcome after severe ICH**
T. F. Kung (Psychology Department, University of Alberta), C. M. Wilkinson (Psychology Department, University of Alberta), C. Dirks (Psychology Department, University of Alberta), F. Colbourne (Psychology Department, University of Alberta)

Intracerebral hemorrhage (ICH) is a devastating stroke with a 40% mortality rate and is the leading cause of disability in North America. Certain ion channels like Sur1-Trpm4 facilitate sodium and water entry into cells, contributing to edema (brain swelling) formation and ionic dyshomeostasis. In severe ICH, high edema can lead to worsened neurological and functional outcome. One potential post-stroke treatment is glibenclamide, which blocks the Sur1-Trpm4 channel, hypothetically blocking ion movement and reducing edema. We hypothesized that glibenclamide would lessen edema and improve behavioural outcome. In our first experiment (n=7-8), bleed volume 24 hours after ICH (p=0.83) was not affected by glibenclamide. As larger bleed volumes correlate to poor outcome, this indicates glibenclamide administration is safe. In our second experiment (n=4-10), edema (p>0.51) and ionic dyshomeostasis (p>0.65) 24 hours after ICH were not affected by glibenclamide administration. In our third experiment (n=6-9), glibenclamide significantly worsened cell swelling 24 hours post-ICH in the peri-hematoma S1 region (p<0.04), but not in CA1 or CA3 (p>0.22). This was a small effect, and likely not biologically meaningful. Overall, glibenclamide did not affect injury volume (p=0.13) or behavioural outcome (p>0.21), which was pooled across experiments 1-3. In summary, although glibenclamide appears to be safe, no benefit of the drug was found on any of our measures at 24 hours post-stroke. These results are similar

to previously published work from our lab, but contrast results found in ischemic stroke models. This further emphasizes the differences in pathophysiology between these stroke types.

2:20 PM   **Getting it right the first time affects future nest-building decisions**
A. Camacho-Alpizar (Psychology Department, University of Alberta), T. Eckersley (Psychology Department, University of Alberta), C. T. Lambert (Psychology Department, University of Alberta), G. Balasubramanian (Psychology Department, University of Alberta), L. M. Guillette (Psychology Department, University of Alberta; School of Biology, University of St. Andrews)

Nest-building birds have a variety of material with which they can build their nest. Previous experiments with zebra finches (Taeniopygia guttata) show that birds learn to associate nest material with nesting success, which affects subsequent nest-building decisions when selecting between two familiar materials. In the current experiment, we ask if nesting success affects the subsequent selection of familiar versus novel materials that differ in their structural properties. Male-female pairs experienced one breeding attempt, all using the same nesting material (coconut fiber), and their breeding success was manipulated by allowing them to raise chicks (successful pairs) or removing their eggs (unsuccessful pairs). During a second breeding attempt, birds were provided with the material from their first nesting event and a novel material (white cotton string). Successful pairs used significantly more familiar material compared to novel material, while unsuccessful birds used the familiar and novel material types equally. These results show that birds use their experience in selecting between nesting materials that differ on their structural properties to build a subsequent nest.

Scientific Cafes (Friday, April 16)

Scientific Cafe Session 1 (9:30-9:50; 9:50-10:10)

The Effect of Mindfulness on Heart Rate: The Moderating Role of Narcissism
A. D. Adedun,* E. D. Greenough,* C. Zalitach*, K. Nash (*shared first authorship)

Mindfulness has become a popular trend in both psychological research and clinical applications. Previous research indicates that some individuals suffer negative effects while practicing mindfulness, including an increase in anxiety. Archival data suggests that mindfulness could increase narcissists' already narcissistic characteristics. Despite these findings, little research has been done on the effects of mindfulness meditation on individuals who are high in trait narcissism. This study will investigate the effects of short-term mindfulness on those with high-trait narcissism. Specifically, we will explore if a mindfulness manipulation induces anxiety in those with high-trait narcissism. The participants will be students in an undergraduate psychology course. After completing the Narcissistic Personality Inventory, participants will be randomly assigned to a mindfulness or control condition where

they will record their heart rate using the Instant Heart Rate app both before and after listening to an audio clip. Increases in heart rate will infer a state of anxiety. In both conditions, participants will listen to a five minute audio. Those in the control condition will listen to a mindfulness description and those in the mindfulness condition will participate in a mindfulness exercise. We predict that high-trait narcissists will have a higher heart rate after a short-term mindfulness exercise compared to the description audio. For those low in trait narcissism, we predict that there will either be no change in heart rate after the mindfulness exercise and the description audio. This indicates that high-trait narcissists feel anxiety in response to the meditation exercise, whereas the other groups do not.

Do you trust me? Free indirect discourse or third person narratives
M. Sych (Psychology Department, University of Alberta)

I am interested in the effects created by an author's use of free indirect discourse. Free-indirect discourse is where the speech of the character has been mediated by the narrator. The speech is not reported directly, but through third person, and some of the character's individual speech "mannerisms" are maintained in the retelling of the speech or thought. This technique may lead the reader to feel more empathy with the character, or the reader may feel more ironic distance from the character because they see more than the character wants them to. In this study, participants will be asked to make judgements about whether the character is to blame for the events, or whether there were mitigating circumstances that explain the events. There will be four different versions of each passage. Early in the passage, the character will be portrayed as trustworthy by the narrator or untrustworthy. Later, the target event will be described either in the third person or in free indirect discourse. I hypothesize that free-indirect discourse will be interpreted ironically when the character is unreliable and more empathetically when the character is trustworthy.

Mind Wandering, Reading, and Rhythmic Responding
D. Dekker & P. Dixon

In the present study, I investigated the relationships among mind wandering, reading comprehension, interest value, and performance on a rhythmic response task. Participants read three different texts that varied in interest value. Texts were presented word-by-word on a computer screen, at a rate of one per second. Participants were instructed to rhythmically press the space key in time with the appearance of the words while also comprehending the story being presented. Participants were interrupted periodically to answer two probe questions: one inquired whether the participant was focused on the text, and the other asked if the participant was focused on the rhythmic response task. After reading the text, subjects were instructed to complete a short reading comprehension test. We expected the two probe responses to index comprehension and response time variance respectively. Interest value may affect how participants allocate resources to reading and rhythmic responding.

Zoom Square of Narcissus: Facial Perception in Narcissistic Individuals during Video Conferencing
T. W. Keddie & K. Nash (Psychology Department, University of Alberta)

Research on narcissism has indicated the presence of admiration and rivalry dual-stream pathways. The Narcissism Admiration and Rivalry Concept (NARC) suggests that the admiration pathway elicits a beneficial strategy of maintaining grandiosity through admiration from others, whereas the rivalry pathway elicits a strategy of self-defence and devaluation of others to prove self-superiority. Previous studies have demonstrated the effect of viewing unadorned self images, and the potential attentional inhibition required when a self-image contradicts a narcissistic overestimated self-view. This study aims to investigate the effect of positive and negative self video feeds during a public speaking presentation through video conferencing. Variations of online environments are induced using filters and lighting. Participants will be randomly assigned to a positive self-image or negative self-image condition and tasked with presenting to an audience while their own live video is mirrored alongside 'audience' videos. In the positive self-video condition, it is predicted that the admiration pathway will be activated, resulting in higher self-rating, and audience rating of public speaking skills. The negative self-video is predicted to elicit the rivalry pathway and detract from speaking skills. Between condition differences in observer and self-rated public speaking scores, language in speech, and salience of on video screens are expected. This research may provide support for the adaptive nature of admiration in the narcissistic admiration and rivalry concept while focusing attention on the potential effects live video conferencing feed can have on public speaking abilities in narcissistic personality types.

Scientific Cafe Session 2 (10:10-10:30; 10:30-10:50)

Culture and Emotion Perception
S. Shi & T. Masuda

Previous findings in cultural psychology suggest that there are substantial cultural variations in cognition and perception. According to Masuda et al. (2008), European American participants tend to focus only on the target person when making emotional judgments based on the target's facial expression, while Japanese participants account for the background figures' emotions as well. This systematic variation in the emotional perception patterns between Japanese and European Americans was attributed to cultural factors. East Asians, who value interdependence, tend to pay attention to context, whereas European Americans, who value independence, selectively focus on the focal objects. (Ito, Masuda, et al, 2013). The current study attempts to replicate research findings conducted by Masuda et al. (2008), by targeting the student body in multicultural Canadian context. At the University of Alberta, undergraduate students consist of young adults from many different cultural backgrounds, include those who are high in independence as well as those who are high in interdependence. By using a newly

developed experimental stimuli, we examine whether the level of social orientation (independence and interdependence) correlates with their context sensitivity. The results of this study will identify the association between people's emotion perception and their social orientation, and will help validating the new set of stimuli for future studies.

School Belonging and Socioemtioonal Belonging between Minority and Non Minority students among University of Alberta Students
A. D. Adedun , T. W. Keddie, A. R. Nelson, R. Suthaker (Psychology Department, University of Alberta)

School belonging, the perceived connectedness to the school community, is a known correlate of socioemotional flourishing, which is defined as feelings of success and fulfillment in life. Since flourishing is rooted in positive psychology, a newer field of psychology, there is currently limited research on the topic. However, there is some research supporting that students from minority backgrounds experience lower levels of school belonging compared to non-minority students. Using similar methodology as research conducted on the same topic by Parr (2020) in the United States of America, we examined levels of school belonging and flourishing among sexual gender minority (SGM) and racial-ethnic minority (REM) students compared to non-minority students at the University of Alberta. We hypothesize that SGM and REM students will indicate lower levels of school belonging and flourishing. We also predict that younger (18-22 years of age) will show a higher association between school belonging and flourishing, while those aged 22-26 years will have a weakened association with school belonging and flourishing. This research is key to providing university stakeholders with an understanding of current minority and non-minority students' differences in perceived levels of school belonging and how this may affect their success at the University of Alberta.

Is superior memory achieved by gaining control over a subconscious learning process?
F. E. Kluger, D. M. Oladimeji, & J. B. Caplan (Psychology Department and Neuroscience and Mental Health Institute, University of Alberta)

Superior memory is acquired through training in mnemonic techniques. However, the mechanisms behind successful memory skill development are unknown, and there are discrepancies between how skilled memorizers report memorizing and what research findings and theories have suggested. We resolve these discrepancies within a single theoretical framework in which superior memory is achieved by gaining control over a "default" learning process in which incoming information is anchored onto related existing information. Through direct feedback on whether a word was recalled or not, trained memorizers have learned to hijack this process by anchoring incoming information onto pre-selected, unrelated information via the use of mnemonic techniques.

How to be attractive in a picture
S. L. Newman & E. Nicoladis (Psychology Department, University of Alberta)

With more and more people turning to online dating, can an account picture impact perceived attractiveness? This study tests if facial expression has an effect on perceived attractiveness. Three facial expressions are compared: 1) neutral face, 2) a polite smile (a social smile), and 3) a genuine smile (a person's true smile of true happiness or amusement). Participants will rate the attractiveness of six different individuals with different facial expressions. The expected results are that individuals with a genuine smile will be rated as more attractive than those who have a polite smile and that both smiles will be rated as more attractive than a neutral face. We will test if gender (of both the participant and the individual in the photograph) and sexual orientation (of the participant) impact the results. These results would support that the choice of account picture has an important effect on online dating success.

People High in Neuroticism Respond to Social Rejection with Increased Avoidance Motivation: Frontal EEG Asymmetry Evidence
A.D. Adedun & K. Nash (Psychology Department, University of Alberta)

Humans are inherently social beings that seek the acceptance of others. Failure to obtain social acceptance causes negative emotions such as anger and sadness. Studies have also shown that social rejection can elicit increased left frontal cortical activity. Notably, left frontal cortical activity has been linked to anger responses and right frontal cortical activity has been linked to sadness responses. Currently, it is unclear if social rejection may sometimes increase relative right frontal cortical activation, indicating increased sadness. We hypothesize that only certain people prone to avoidance and sadness will demonstrate this effect—i.e., people high in neuroticism. Here, we re-analyze archival data. In this study, participants completed a number of personality questionnaires, including a neuroticism scale. Participants then played Cyberball—a simulated game of catch where participants were randomly assigned to be either included or excluded. Frontal cortical activity asymmetry was measured using EEG. We predict that people high in neuroticism would demonstrate increased right frontal cortical activity after an exclusion, indicating increased sadness and avoidance. We believe that this research has the potential to create more specialised interventions for those with avoidance tendencies (ex. those high in anxiety and neuroticism) and ultimately further our understanding of the harmful effects of social exclusion.

What cis and male bias exists in "gender neutral" pronouns?
J. Cawkwell & E. Nicoladis (Psychology Department, University of Alberta)

In 2015, Laveren Cox appeared on the cover of Times Magazine, declaring that year to be the Transgender Tipping Point. With the rise of transgender rights comes an

ever increasing awareness of personal pronouns, especially in terms of gender neutral and gender fair language. The assumption here is that there are gender neutral pronouns. This study aims to understand what effect pronouns have on how people think about gender. Specifically we are testing whether "they" and "ze" are effectively gender neutral. To test this hypothesis, participants read short descriptions of individuals, using different gender neutral pronouns and pronoun combinations and then identify which of six sample individuals (balanced for race and gender presentation) best fits the described person. They will choose from two masculine, two feminine, and two androgynous photos. Participants will be also assessed for individual levels of cisgender bias. This study expects to find that "they" is not the most effective pronoun to prompt androgyny in other people. In formal and impersonal language, we expect to see that "he/she/they" is more effective at reducing male and cisgender biases and expectations. In informal and personal language, we expect to see that "ze" is most effective. The results of this study will contribute to best practices for reducing gender bias in language.

Scientific Cafe Session 4 (1:00-1:20; 1:20-1:40)

Pharmacy students' stereotypes and attitudes relating to older patients
R. Read & S. Kwong See (Psychology Department, University of Alberta)

Aging is associated with stereotyped beliefs despite being a highly individualized and complex process. Compared to younger adults, older adults are believed to have lower physical and cognitive abilities (e.g., lack physical activity, poor memory) but higher abilities in the social domain (e.g., storytelling; Rust & Kwong See, 2010). Health professionals, such as physicians and nurses, have been found to age stereotype, hold negative attitudes and be biased in care provision with older patients (Caris-Varhallen, 1999; Peake et al., 2003). Less research has focused on pharmacy professionals. Interestingly, in one study, pharmacy students were found to have favourable attitudes toward older people and providing geriatric care (Adkins et al., 2012). This study will further explore beliefs and attitudes of pharmacy students. Pharmacy students at the University of Alberta, will first interact with either a younger (38) or older (83-year-old) patient in the context of a medication review. To assess age stereotypes, they will then rate the patient on statements about physical, cognitive and social abilities and then on items assessing attitudes toward working with older patients (e.g., pharmaceutical treatments are hopeless). Comparing conditions, it is hypothesized that the students will rate the older patient more positively in the social domain but more negatively in the physical and cognitive domains of ageing. Based on research with other health professions, it is expected that the students in this study will have more negative attitudes toward working with older patients.

Undergraduate students' and practical nurses' perceptions of elder abuse
A.R. Nelson & S.T. Kwong See (Psychology Department, University of Alberta).

Individuals with dementia (IWD) living in care facilities are abused at disproportionately higher rates than individuals without dementia (Fang & Yan, 2018). Previous research has suggested dementia stereotypes (enhanced strength, decreased memory, relative to normal ageing; Rust & Kwong See, 2010) may bias caregivers to be more forceful and tolerant of abusive care. Likewise, greater stress arising from the burden of caregiving for IWD may bias toward abusive behaviour and tolerance for it (Matsuda, 2007; Runac et al., 2020). This study explores these influences on perceptions of abuse. Undergraduate students and licensed practical nurses (LPNs; selected for first-hand experience of the burdens of care) will view a real-life abusive interaction between a caregiver and care recipient (CR). Participants will be told the CR is in care because of diabetes (but otherwise cognitively healthy) or dementia (cognitively unhealthy). Replicating Runac et al. (2020), in the dementia condition, compared to the diabetes condition, tolerance for abuse is expected to be shown by the caregiver being rated as more respectful, nurturing, competent, benevolent, and more burdened. In the dementia condition, the CR is expected to be rated lower in physical and cognitive competence; and rated as more satisfied and respectful. In the dementia condition, the abusive exchange is expected to be rated less abusive and serious; and more forgivable and forgettable. The LPNs as a group are expected to report more contact with older adults than the students and to show the patterns of tolerance for abuse to a greater extent.

What mediates creativity? The bilingual advantage in divergent thinking
T. Cox, E. Nicoladis, Farzaneh Anjomshoae (GLAD Lab, Psychology Department, University of Alberta)

Previous studies have shown a bilingual advantage in creativity, particularly divergent thinking. The purpose of this study is to test two possible mediators of this bilingual advantage: executive functioning (EF) and multicultural exposure. With EF, attentional control regulates bilinguals' constant usage of two languages, where one language is inhibited from interference and the other is attended for expression. On the other hand, bilinguals' exposure to multiple cultures diversifies their conceptual knowledge. This improves cognitive flexibility, which functions for the ability to mentally shift between varying cognitive schemas. Research supports attentional control and cognitive flexibility to have a positive effect on performance scores in divergent thinking tasks. For our current research, both bilingual and monolingual participants will perform two measures of creativity: Abbreviated Torrance Test for Adults (ATTA) and Alternative Uses Task (AUT). To measure multicultural exposure, we will ask about their immigration status. To measure EF, we will ask them to perform three tasks tapping inhibition and flexibility (flanker, Simon & colour shaping tasks). We predict that we will replicate previous research showing a bilingual advantage in creativity. We then test whether EF and multicultural exposure mediate this difference. The present research contributes to the understanding of the cognitive and socio-cultural mechanisms that underlie creativity.

Factors Impacting the Mental Health of Canadian University Students During the COVID-19 Pandemic

G. Boutros & K. A. Marchak (Faculty Saint-Jean, University of Alberta)

Since the outbreak of the novel coronavirus (SARS-CoV-2) in December 2019, public health agencies have urged countries around the world to put in place quarantine and social distancing measures to prevent the spread of the virus. In this study, we explored the impact of these measures on the mental health of Canadian university students. We conducted an online survey of 638 students at the University of Alberta and asked them to answer questions about their mental health (depression measured using the MDI and anxiety measured using the GAD-7), online/physical contact, online learning, COVID-19 knowledge and first-hand experience, and other demographic factors that may be associated with their mental health during the first six months of the pandemic period (March – August 2020). We found that anxiety and depression were not significantly correlated with demographic factors or average amounts of online/physical contact. However, students tended to have less symptoms of anxiety and depression if they preferred taking online courses, believed they could achieve their goals, and were satisfied with university/government performance. In contrast, they had greater symptoms of anxiety and depression if they felt that the pandemic resulted in greater changes to their daily lives or they felt at risk of contracting the virus. Our results provide insight into the experience of university students during the first wave of the pandemic. We additionally discuss the implications of our research on ways to mitigate mental health concerns faced by students.

Pharmacy students and ageism: patronizing talk in a medication review

M. G. Peters & S. T. Kwong See (Psychology Department, University of Alberta)

Ageism refers to stereotyping and discrimination directed towards older people (Butler, 1980). It is manifested in patronizing talk directed toward older adults by younger adults (Giles & Gasiorek, 2001). This talk includes speech overaccommodations such as increased pitch, decreased speed, and speech repetitions (Samuelsson et al., 2013; Williams et al., 2017), and is driven by stereotypes that associate ageing with incompetence, dependency, and decreased language ability (Rust & Kwong See, 2010). Patronizing talk is common in settings where age stereotypes may be reinforced. Healthcare professionals, for example, are more likely to use patronizing talk when older adults are perceived negatively in terms of cognition and function (Kemper, 1994; Schnabel, 2020). This study aims to demonstrate patronizing talk by health professionals that have not been studied. Undergraduate pharmacy students from the University of Alberta will conduct a mock medication review with either a young (38) or old (83-year-old) patient. In both conditions, illness and medication history will be identical. Recordings of the medication review conversation will be analyzed for some features of patronizing talk: pitch, speed, and repetitions (Flamion et al., 2017; Kemper, 1998). If pharmacy students' talk is driven by age stereotypes, we expect to find speech with higher

pitch, decreased speed, and more repetitions in the older patient condition compared to the younger patient condition.

Scientific Cafe Session 5 (1:40-2:00; 2:00-2:20)

To vaccinate or not to vaccinate? COVID-19 vaccine acceptance in the Edmonton Metro Area

M. Allarie, M. Dar, K. Lesko, S. Newman, & M. Sych. (Psychology Department, University of Alberta)

In the midst of the COVID-19 pandemic, individuals are faced with the decision of whether or not to vaccinate against SARS-CoV-2. Despite the consensus among the scientific community regarding the importance of COVID-19 vaccination, some individuals are still reluctant to be vaccinated. The present study investigated the rate of COVID-19 vaccine acceptance among individuals from the Edmonton Metro Area. We also examined how demographic factors, perceived risk of being infected with SARS-CoV-2, experienced impact of the pandemic, and attitudes towards vaccines correlate with COVID-19 vaccine acceptance or rejection. We surveyed adults from the Edmonton Metro Area and hypothesized that they would have a lower COVID-19 vaccine acceptance rate than the Canadian, Chinese and global acceptance rates. We also predict that individuals who are male, 18-24 years old, or have a low-risk perception of being infected with SARS-CoV-2 will be more likely to reject COVID-19 vaccination. The findings of this study will bring insight to the willingness of individuals living in the Edmonton Metro Area to be vaccinated against SARS-CoV-2. Our results will also identify which populations may be more likely to refuse vaccination and therefore may benefit from additional information regarding COVID-19 vaccination.

Integrating both Gender and Sex into Memory Aging Research

Ye Won Han (Department of Psychology, University of Alberta), G. Peggy McFall (Department of Psychology, University of Alberta; Neuroscience and Mental Health Institute University of Alberta), Shannon M. Drouin (Department of Psychology, University of Alberta), Linzy Bohn (Department of Psychology, University of Alberta), & Roger A. Dixon (Department of Psychology, University of Alberta; Neuroscience and Mental Health Institute University of Alberta)

Objective: Research with cognitively normal older adults often reveals that women have higher episodic memory performance than men. Do these results indicate differences in sex, gender, or an interaction? Typically, in biomedical research, differences are attributed to sex (biological attributes), whereas gender (psychosocial attributes) is under-studied. The Victoria Longitudinal Study (VLS) focuses on the multifaceted and dynamic nature of brain health and aging. It includes a binary sex variable but no explicit gender measures. We attempt to integrate sex and gender into a single study by extracting gender-related items from VLS data archives and testing if gender mediates the sex-memory association.

Methods: We (1) identified a 56-item pool of gender-based items in VLS inventories on metacognition, memory compensation, demographics, subjective cognitive impairment, lifestyle activities, health behaviours; (2) used a cross-sectional sample (n=825; Mage=72; 53–95 years) and principal component analysis (PCA) to identify gender components; (3) tested the effect of sex on memory performance; (4) used SPSS PROCESS to test gender components as mediators of the sex-memory association.

Results: PCA analysis revealed 6 gender components representing 45 items. We confirmed the female sex memory advantage. Sex-memory association was mediated by five gender-related lifestyle components (% mediated): (1) Traditional male activities (62.4%),(2) Traditional female activities (34.2%), (3) Creative community opportunities (8.5%), (4) Leisure time (6.5%), (5) Health seeking behaviour (2.9%).

Discussion: Archival databases in brain and cognitive aging may not have explicit gender measures. We show that gender-related items can be extracted from such databases and perform informative research functions. Integrating gender and sex in brain health and dementia research advances both scientific and equity goals.

The effect of Parkinson's disease and facial masking on the quality of close friendships
D. M. Anderson & E. Nicoladis (Psychology Department, University of Alberta)

Parkinson's disease is a neurodegenerative disease that can lead to many motor symptoms such as stiffness, tremors, difficulty with motor functions, as well as facial masking. Facial masking means that an individual's ability to show facial expressions is greatly reduced or completely eliminated. Facial expressions are one of the fundamental components of social interactions that help individuals express information such as their interest in a topic of conversation, and emotion being felt during a conversation without actually having to use words. A number of researchers have found that the romantic partners of Parkinson's patients with facial masking often struggle to understand how their partner is feeling, which can cause conflict and misunderstandings within the relationships. The purpose of this study is to test whether facial masking impacts the quality of a relationship between an individual with Parkinson's and a close friend. Participants are individuals who have Parkinson's disease or a close friend. They answer questions about the extent to which they or their friend displays symptoms of Parkinson's disease and about how the quality of their friendship has changed since the symptoms of Parkinson's disease started. The prediction is that the more severe the facial masking, the lower the quality of the friendship, particularly with regard to emotional communication. These results could impact how the public is educated about Parkinson's disease: if it is common knowledge that facial masking affects relationships, people with Parkinson's may be better able to maintain high quality friendships.

The perception of abuse types as a function of recipient cognitive status
N. S. Qureshi & S.T. Kwong See (Psychology Department, University of Alberta)

In long-term care, persons with dementia (PWD) are at an increased risk for experiencing abuse. Previous research has found that abuse of PWD is perceived with leniency and has suggested a role for dementia stereotypes (i.e., PWD have poor memory so will not remember abuse) and sympathy for burdened caregivers as reasons abuse is forgivable and frequent. This study further explores leniency in perceptions of abuse. Undergraduate students will read incidents of abuse that occurred in Alberta care facilities between 2014 and 2017 and that caused serious harm either emotionally, bodily, or from neglected nutrition or medical attention. Critically, participants will be told the care recipient described in the incidents is a PWD (cognitively unhealthy) or is in care because of diabetes (but otherwise cognitively healthy). If dementia stereotypes and sympathy for burdened caregivers bias perception of abuse toward leniency, abusive incidents will be rated overall as less abusive (dependent measures: abusive, serious, harmful) and the caregiver less culpable (guilty, forgivable, to blame) in the PWD condition compared to the diabetes condition. Leniency in perception of abuse will also be explored as a function of the type of abuse with greater leniency expected for emotional abuse compared to abuses that cause physical harm (bodily, neglect nutrition and medical). Associating dementia with severe cognitive incompetence is predicted to lead to emotional abuse being viewed even less abusive and the caregiver less culpable in the PWD condition because "she won't understand the insult or remember it anyway".

Poster Session 1 (Thursday, April 15)

Utilizing relational affirmation to promote secure relationships
A. J. Munn & K. Nash

Attachment styles describe the sense of security formed with a primary caregiver that generalizes into adulthood. An individual's attachment style may change throughout their lifetime, meaning that there is the potential for an individual with an insecure attachment to change to a secure attachment style. Precisely how healthy relationships help spur the change from a secure attachment style to an insecure attachment remains unclear. Further, how this occurs may depend on the type of insecure attachment style. A sample of participants recruited through crowdsourcing will participate in a survey including personality measures, a relational affirmation, followed by scales of interpersonal trust, openness, and self/other overlap. The study's primary hypothesis is the relational affirmation condition compared to no-affirmation control condition will cause increased trust in interpersonal trust, openness, and self/other overlap. Data analysis has yet to begin. A hierarchical linear regression using Hayes' (2012) PROCESS MACRO for SPSS is planned. Followed by Cronbach's alpha, α (or coefficient alpha) will be measured to compare

that the 3 measures to compare that the 3 dependent variables are factors of the same construct.

Second and Foreign Language Learning: A Scoping Review from Self-Determination Theory

A. Fazli, T. Kube, B. Qayyum, K. Yee, N. Lou, & K. Noels (Psychology Department, University of Alberta)

Over the last half-century, psychologists and educators have recognized the educational value of motivation for successful foreign/second language learning (FLL/SLL). The current study provides a scoping overview of empirical studies of FLL/SLL conducted with motivational constructs derived from Self-Determination Theory (SDT; e.g., intrinsic motivation, autonomy support). Using a systematic search protocol across three databases (PsycINFO, ERIC, and LLBA), a total of 512 peer-reviewed articles were collected. This was the number of articles retrieved before the preliminary screening stage which included duplicates across databases. Inclusion in the current study was limited to research papers that studied both FLL/SLL and SDT constructs, which yielded a total of 295 peer-reviewed articles for descriptive analysis. The following conclusions were made: (1) Most of the selected studies examined English as a second/foreign language (75.59%); (2) The research on FLL/SLL and motivation has been conducted around the world but most commonly conducted in Japan (17%); (3) Post-secondary students were the most frequently studied samples (70.51%); (4) Most studies (55.59%) adopted a quantitative approach. The conclusions from this review and the abundance of data on self-determination and motivation in FLL/SLL, including dissertations that were not examined in this study, suggest the need for a meta-analysis to further understand the statistical relations between motivational constructs.

Adaptation in adversity: resilience, risk, and executive function in early childhood

A. Bernardo (Psychology Department, University of Alberta); S. A. Wiebe (Psychology Department, University of Alberta); D. Vrantsidis (Nationwide Children's Hospital); L. Wakschlag (Northwestern University); K. A. Espy (University of Texas, San Antonio)

Resilience is the ability to adapt and function successfully in the face of adversity. Past research has linked resilience to executive function, the ability to regulate one's own behavior in setting and achieving goals. However, the relationship between these two constructs in early childhood is still understudied. This study looked into the relationships between adversity, executive function, and resilience in early childhood. The sample included 143 mother-children dyads from a longitudinal cohort recruited during pregnancy and followed up in infancy and early childhood. Risk factors, executive functioning, and resilience were measured across participants using a combination of self-report and laboratory-based measures. Risk was negatively correlated with resilience while executive function was positively

correlated with resilience. Regression analyses found that children with more risk factors showed lower levels of adaptive functioning in social and emotional domains. However, "cool EF" (i.e., working memory and inhibitory control) dampened these effects, indicating resilience. In contrast, "hot EF" (i.e., self-control in the presence of a delayed reward) only predicted resilience in social skills. The findings suggest that EF contributes to early childhood resilience, by counteracting the effect of level of risk.

Anger is a feeling too: Emotional language competence as developed through gender norms
A. Besoi, K. Lee, A. Ladhani & E. Nicoladis (Psychology Department, University of Alberta).

Emotions are a concept that have been stigmatized over time through societal lenses. Although emotions are a normal part of the human experience, and are carried out by processes in the limbic system, many consider them to be complicated to understand or even feel through. Additionally, many emotions have been stigmatized into gender norm systems. Sadness for example, is typically considered a feminine emotion, as it is "softer", whereas anger is often considered a masculine emotion because it is "tougher". In this study the authors tackled the construct of Emotional Language Competency. Emotional Language Competency being the two way communication between two individuals using emotional language to accurately describe ones experience or feelings. Here the authors attempted to identify if emotions and Emotional Language Competency had developed in different ways between sexes due to gender norms. 30 interviews of heterosexual couples were administered inquiring the couples about their current uses with emotional language and how comfortable they felt communicating it. Another vector that was explored was how stigma affected the perception of emotions and the use of emotional language. Conversation and discourse analysis, gesture analysis, and content analysis will be performed following the transcription of the data. Preliminary analysis has demonstrated that males feel that they were never given tools to express their emotions as they were taught it was not a part of proper masculine identity expression. This study is important because it highlights how gender stereotypes and emotional stigmatization has limited males capacities to use emotional language in a freely expressive way.

The Impact of Uncertainty, Continuity, and Leader Prototypicality on a Group's Support for Change
A. Lin (Psychology Department, University of Alberta), L. Syfers (Psychology Department, University of Alberta), D. Rast III. (Psychology Department, University of Alberta)

Uncertainty, the continuity of a group, and leader prototypicality all affect how a group accepts change. Members of any group seek a clear and distinct identity, which results in group members being more likely to support change if it offers the

group "a clear identity or path toward uncertainty reduction" (Gaffney, Rast & Hogg, 2018). Change that gets interpreted as supporting a group's continuity will be more likely to be supported. The type of leader who is championing change also affects the support of a group. This study involves two types of leaders: prototypical leaders versus non-prototypical leaders. Prototypical leaders are leaders who fit into the group's social identity. Non-prototypical leaders are leaders who do not conform to the group's prototype. The study has a 2 X 2 X 2 design with the following variables: the type of leader (prototypical vs. non-prototypical), continuity (continuity vs. discontinuity), and the level of uncertainty (high uncertainty vs. low uncertainty). Participants will read about the University of Alberta of Tomorrow plan. Each condition will showcase a different leader spearheading the change. Participants will get asked about their level of support for the change. Prototypical leaders are more effective in driving change and getting it accepted (van Knippenberg 2011). This study will explore whether a leader's prototypicality plays a role if the change suggested supports the group identity and how uncertainty affects acceptance of a different leader prototypicality.

How personality predicts the effects of COVID-19 on the mental health of Canadians
A. Shokrkon (Psychology Department, University of Alberta) & E. Nicoladis (Psychology Department, University of Alberta).

The Coronavirus Disease (COVID-19) epidemic was first detected in China in December 2019 and spread to other countries, including Canada, in early 2020. The illness itself and the consequences including job losses, unpredictability, and social distancing have had negative impacts on mental health, with increased depressive and anxiety symptoms, stress disorders, insomnia, anger, and fear. However, this pandemic situation has not affected everyone to the same extent. In order to explain some of these individual differences in coping with this pandemic, we will test how personality traits, using the Five-Factor Model (FFM) as our framework, are related to the current mental health of Canadians.

The Effects of Anxiety on Magical Thinking Beliefs
A. Aggarwal, K. Nash (Psychology Department, University of Alberta), J.Leota

Magical thinking is a broad term used to describe thoughts and events that are linked but are not consistent with the laws of causality present in the objective world (Bocci & Gordon, 2007). Research has focused on magical thinking in clinical obsessive-compulsive disorder (OCD) populations to explain certain neutralizing behaviours (West & Willner, 2011). The current study aimed to expand the research area of magical thinking by exploring whether anxiety-inducing situations could lead to an increase in magical thinking. I hypothesized that participants who experienced anxiety would be more likely to indicate greater magical thinking beliefs. Participants were assessed using the Illusory Beliefs Inventory after being randomly assigned to a manipulated anxiety condition or a control condition. The manipulated condition

involved reading an article regarding a global economic threat and the control condition had a neutral economic article. The results are consistent with the hypothesis that inducing anxiety in participants did lead to an increase in magical thinking, such that the participants in the anxiety condition expressed greater magical thinking compared to the control condition. Future research may explore the role of magical thinking as a form of neutralization or protection in anxious situations.

The relationship between divergent thinking and episodic details when shifting visual perspective

A. Romero & P. L. St. Jacques (Psychology Department, University of Alberta)

Previous research has found that higher divergent thinking (DT) was associated with more episodic details when constructing future events, due to DT's ability to flexibly recombine details to create novel mental simulations. The current study investigated the relationship between DT and the change in episodic details when participants shifted the visual perspective (own-eyes or observer) of their autobiographical memories (AMs). Previous studies have suggested a reduction in episodic details when participants shift from an own-eyes to an observer visual perspective. Therefore, we showed that participants with higher DT have a greater decrease in the number of episodic details when they shift from an own-eyes to an observer visual perspective. In session one, participants retrieved 30 unique AMs, and rated the degree of own-eyes and observer perspective and provided a typed narrative of the event. In session two, participants retrieved their AMs in either the same visual perspective or they were asked to shift to an alternative visual perspective. In session three, participants were asked to retrieve all their AMs without an assigned visual perspective, and they also completed the Alternate Uses Task (AUT) as a measure of DT. We coded the AM narratives on the number of episodic details using a standard approach. Preliminary analysis revealed a negative correlation between the AUT and change in episodic details when participants shifted from an own-eyes to an observer perspective, which suggests that DT is related to the recombination of details when mentally simulating a shifted observer visual perspective of an AM.

The Interaction Between Neuroticism And Self-Adaptors And The Influence Of Visibility

A. Musiwarwo (Psychology Department, University of Alberta)

This study explored the relationship between the usage of self-adaptors and neuroticism. Furthermore, the study analyzed the effect of visibility on the use of self-adaptors. Self-adaptors are non-representational gestures that involve self-touch, such as holding one's hands or scratching. Participants were filmed doing an interactive activity with a partner, and their self-adaptors were coded for after. To assess neuroticism, participants completed a self-report survey. The hypothesis was built on the assumption that neurotic people will display more self-adaptors in both the screened and face-to-face conditions due to their anxious nature and as an attempt to self-soothe. Previous research has discovered a connection between

perceived emotional stability and neuroticism, demonstrating that the more self-adaptors an individual exhibits, the less emotionally stable they appear to others. Past research has also shown that non-representational gestures such as self-adaptors are produced at a constant rate in face-to-face and screened settings. Analyzing the results of previous studies alongside this study could contribute to the ongoing research surrounding the interaction between neuroticism and gestures. This study provides a deeper understanding of the extent to which self-adaptors can reflect one's degree of neuroticism. In the future, researchers could extend the topic of this study further by analyzing the relationship between self-adaptors and other personality traits.

What you see is what you get: investigating change blindness in an online setting
A. Cook, (University of Alberta), V. Mackie, (University of Alberta), S. Saeed, (University of Toronto), & D. A. Hayward (University of Alberta)

Prior work has demonstrated that perceptual "clutter" (or load) affects the degree to which we notice large changes in our environment, as the ability to notice someone swapping places with another decreases under high levels of perceptual load (52% vs. 71%). What remains to be determined is whether proportions of change blindness (failure to notice a change) vary based on how familiar you are with the individual, or what happens when testing online rather than face-to-face. Across two studies, a research assistant (RA) interacted with a participant over videochat in front of a background with high or low visual clutter. To manipulate familiarity, the RA did not converse with the participant (baseline) or conversed about either light or heavy topics. After the conversation, the RAs swapped and participant's change blindness was recorded. Based on previous research, we predicted greater change blindness for the cluttered background and no conversation conditions. 115people were tested across two experiments, varying in RA identity, with 66 individuals in E1 and 49 individuals in E2. We found no difference in level of change blindness across familiarity and load. Further, neither experiment replicated the original findings; in E1, only 21% (14/66) of participants noticed the RA swap, while in E2, 84% (41/49) of participants noticed the RA swap. While overall levels of change blindness vary, our results suggest that when testing online, load and familiarity don't appear to modulate change blindness. We explore potential factors that may have influenced change blindness rates across experiments.

Language-Dependent Memory and Inhibitory Control in Bilingual Children
A. Qureshi (Psychology Department, University of Alberta), E. Nicoladis

Is bilingualism more than the ability to communicate in two languages? In some studies, compared to monolinguals, bilinguals demonstrate a bilingual advantage, namely enhanced executive functions, particularly inhibitory control (IC). Executive functions are cognitive processes that control our behaviour with a goal in mind. IC involves the ability to suppress irrelevant information. Enhanced IC in bilinguals

comes from their need to control and select for the current language in use but block interference from another. Not all studies have shown a bilingual advantage. One possible explanation for inconsistent results is there is/are various intervening variable(s). The purpose of the present study is to test whether language-dependent memory predicts the bilingual advantage of IC. Individuals differ on language-dependent memory, or the encoding specificity principle (ESP). The ESP refers to the phenomenon that memories become more accessible when context cues present during learning are also present during recall. For bilinguals, these context cues are the language in which new information is introduced (linguistic cue). In this study, 5–to 10-year-old French-English bilinguals and English monolinguals are compared on two measures of IC: the day and night task and Stroop task. I expect to find a bilingual advantage. The bilingual children will learn academic material in one language and answer questions to test the material in the same or the other language. Children with low ESP are those who transfer knowledge learned in one language to the other. I predict that a bilingual advantage will be observed among those who have low ESP.

Level of narcissism as a moderator between social comparisons and emotional affect in relation to photo-editing
A. Annett & K. Nash (Psychology Department, University of Alberta)

Narcissists portray themselves as superior in many ways; one of which is through social media. Their desire to be portrayed as 'higher-ranked' in comparison to others could be a reason for why they edit their photos more than the average person. Moreover, it was found that upward comparisons are troubling to narcissists because it threatens their sense of superiority. In my study, the most widely used measure of narcissism will be used: the Narcissism Personality Inventory (NPI). I hypothesize that high NPI-rated individuals will edit their photos more than low NPI-rated individuals. I question whether creating an upward comparison via the Instagram selfies of verified individuals would have a differential effect on high/low NPI-rated individuals. Participants will complete the NPI to determine their level of narcissism and then choose a selfie they view as most influential from an array of either 'blue-checked' Instagram users or downward comparisons. They will then complete a questionnaire and a heart-rate measure via a phone application to determine their emotional reactions to the comparison conditions. Afterwards, they will have unlimited time to edit a selfie of their own while imagining they were getting it ready to post. Again, they will complete a heart-rate measure and a questionnaire to assess emotional affect to the comparisons. It is predicted that high NPI-rated individuals will edit their photos more than low NPI-rated individuals after being primed with an upward comparison. This study will provide insight into the impact of influential individuals on those high in narcissism traits.

Rapport: The Role of Language Choice in Establishing Common Ground in Bilinguals
A. Dhanoa & E. Nicoladis (Psychology Department, University of Alberta)

This study examined whether participants feel a stronger rapport when communicating in English or Punjabi. The sample consists of mainly second-generation immigrants from the University of Alberta. Participants completed a communication origami task via Zoom with a confederate while communicating in English and Punjabi trials. The task was to listen to auditory instructions and make either a paper airplane or fortune teller. Then, the roles were switched, and the task was to give instructions to make an airplane or fortune teller. The task was done in both languages and the order of this was randomly assigned. Finally, they completed a questionnaire after the task that targeted rapport while they engaged in the task with the confederate. I hypothesized that Punjabi will be less effective in establishing rapport. Paired t tests were conducted to determine whether there is a significant difference between English and Punjabi testing environments and if there's a significant difference between English and Punjabi speaking and listening abilities. The results demonstrate that the Punjabi testing environment yielded higher rankings throughout most categories. There was a significant difference between languages with the tasks when asked about comfort and awkwardness. These results demonstrate Punjabi speaking abilities have an effect on developing rapport and all of these interactions were significant and Punjabi listening abilities can impact the development of rapport, specifically when asked about how nice, mean, and helpful the other person is.

Sleep, Emotion Regulation & Personality
C. Sterling & J. Reddon (Psychology Department, University of Alberta)

Insomnia is a sleep disorder that affects many individuals and is associated with decreased overall quality of life. Two characteristics that inform how we go about everyday life are emotion regulation and personality. This study aims to investigate the relationships among sleep, emotion regulation and personality. Participants were recruited through social media platforms such as Twitter, Facebook, Instagram and Reddit. Sleep quality was assessed using multiple self-reports such as the Insomnia Severity Index (ISI), Epworth Sleepiness Scale (ESS), and the Pittsburgh Sleep Quality Index (PSQI). Emotion Regulation was assessed using the Mentalized Affectivity Scale (MAS, 3 subscales) and the Emotion Regulation Questionnaire (ERQ, 2 subscales). The MAS measures identifying, processing, and expressing emotions and the ERQ measures suppression and reappraisal. Work in our lab indicates that together, the ERQ and MAS cover the essence of emotion regulation and jointly result in three pervasive dimensions. Personality was assessed using the Jackson Personality Inventory-Revised (JPI-R, 15 subscales) which measures personality in the normal range across a broad spectrum of the population. It has 5 scale clusters for personality including analytical, emotional, extroverted, opportunistic, and dependable. Responses will be analyzed using a variant of factor analysis to simplify things through dimension reduction. Items that are highly correlated will be clustered together to inform us of any significant relationships amongst measures. Additionally, descriptive statistics and coefficient alpha reliability

will be presented for each of the scales for each questionnaire as well as the correlations with age and sex.

Shifting visual perspective influences the narrative content of autobiographical memories
C. I. King & P. L. St. Jacques (Psychology Department, University of Alberta)

Visual perspective influences how individuals remember their autobiographical memories (AMs), including the type of narrative content retrieved. Previous research has shown that shifting from an own eyes to an observer perspective during AM retrieval decreases the number of episodic details, but little is known about what happens to semantic details. Additionally, researchers have suggested observer perspectives lead to more abstract rather than concrete information. We predicted that shifting from an own eyes perspective to an observer perspective would decrease the number of episodic details in the narrative and increase the number of semantic details. In session 1, participants provided written narratives for their AMs that were high in either own eyes or observer perspective ratings. In session 2, participants were instructed to recall and provide written narratives for the AMs from either a maintained or shifted visual perspective. In session 3, which tests the influence of shifting visual perspective on subsequent remembering, participants again recalled their AMs from their natural perspective. Preliminary results indicated no differences in episodic details due to shifting visual perspective when compared to maintaining the original perspective. Unexpectedly, however, there was a decrease in the number of semantic details. Additionally, when looking at detail types individually, there was a decrease in the number of emotion/thought details when shifting from an own eyes to an observer perspective. The findings show that when instructed to shift visual perspective there is a change in the narrative content of AMs. Although, the findings were contrary to what was predicted.

Differential associations between parental age on schizotypy sub-dimensions
C. Wasel (Hurd Lab, Department of Psychology, University of Alberta)

Previous research shows schizophrenia and schizotypy are highly heritable and passed down through offspring. Parental age at time of birth is a factor in the inheritance of schizotypal traits. Parents who reproduce at both the young and old ends of the age spectrum tend to have children who score high in schizotypy. Here, I will examine nine sub-dimensions of schizotypy: Odd Speech, Unusual Perception, No Close Friends, Ideas of Reference, Suspiciousness, Social Anxiety, Eccentric Behavior, Magical Thinking, Constricted Affect, and I expect parental age and these sub-dimensions to be related. I expect to find non-linear effects across parental age over the nine sub-dimensions, with a minimum towards the centre of the age distribution. I expect father's age to have a stronger effect on offspring schizotypy scores than mother's age. Male sperm undergo far more cell divisions before fertilization than do female eggs, and the number of divisions increases with age. I will collect data from undergraduate students who will complete the Schizotypal

Personality Questionnaire and provide the age of their parents at the time of their birth anonymously through the online platform www.psytoolkit.org. I will analyze data using R. A non-linear regression will be done for each parental sex for each sub-dimension, allowing for a comparison of mother's to father's age effects across each of the nine sub-dimensions.

Effects of incidental emotions on altruistic punishment
D. Timan & K. Nash (Psychology Department, University of Alberta)

Altruistic punishment refers to the phenomenon in which individuals invest resources to punish norm violations without regard for material benefits. Prior research has attributed feelings of empathy and anger as emotional antecedents for engaging in altruistic punishment. However, there is little understanding on the effects of these emotions when induced in a manner unrelated to a punishment task. This study will examine the effects of incidental emotions of empathy and anger, on subsequent punishment of a transgressor in an ultimatum game. Participants will be randomly assigned to one of three conditions, an anger manipulation condition, an empathy manipulation condition, or a control condition. They will then participate in an ultimatum game in which we will measure how much resources are spent on punishing transgressors who make unfair offers. We hypothesize that participants in the empathy manipulation condition will display reduced punishment of transgressors and participants in the anger condition will display increased punishment of transgressors, compared to those in the control condition.

Word frequency effects in bilinguals
D.A. Tewelde, V.R. Zeschuk, & E. Nicoladis (Department of Psychology, University of Alberta)

Relative to monolinguals, bilinguals often score lower on vocabulary tests and have a harder time accessing low-frequency words on picture-naming tasks. The bilinguals' lower vocabulary/lexical access is likely related to how much time bilinguals use each of their languages. Consequently, there are "weaker links" between the representations of words in each language for bilinguals. The purpose of the present study is to test whether bilinguals produce higher frequency words than monolinguals in a free-form narrative task. Adult French-English bilinguals and English monolinguals watched a cartoon and told the story back. They took a standardized vocabulary test in English; the bilinguals also took a standardized vocabulary test in French. We will analyze the median frequency of the words that they use, the lowest frequency word used, the percentage of low-frequency words used as well as cognate usage in English by the participants. We predict that bilinguals will have a higher median frequency, higher lowest frequency words, lower percentage of low-frequency words and more cognate usage when compared to monolinguals. Moreover, their vocabulary scores will correlate with all the frequency measures in English while the French vocabulary scores will correlate with the

cognate usage. These results would be consistent with the argument that bilinguals have "weaker links" to words in both languages than monolinguals.

Am I distracting? Investigating the effect of semantic similarity in visual search tasks

D. Teodorescu (Computing Science Department, University of Alberta), J. Song (Psychology Department, University of Alberta), A. Fyshe (Computing Science & Psychology Department, University of Alberta), & D. A. Hayward (Psychology Department,

Prior work has used visual search (VS) tasks to investigate spatial attention and resistance to distraction. However, to our knowledge semantic meaning of distractors is not typically considered. Evidence suggests that individuals project their decisions through movement trajectories, which could prove fruitful in determining the distractibility of similar items. Therefore, we quantify distraction through the use of word vectors, which are derived via machine learning models trained on large collections of text. The more semantically and syntactically similar two words are, the more similar their word vectors, allowing us to quantify word similarity. We asked participants to click on a target concept in a group of 6 images arranged in a circle. In the group of 5 distractor images, 4 were chosen to have near zero word similarity to the target, and we manipulated the similarity of the 5th distractor (main distractor). We found that accuracy declined and response times slowed as semantic similarity increased. Mouse trajectory information is also collected, which may provide further insights into the degree of distraction, and is a work in progress. Taken together, our work demonstrates that distraction in the visual search task can be quantified through the use of machine learning models, allowing researchers to apply this to create more sound VS tasks, and expand our knowledge of the world around us.

Navigating the Transition: An Examination of Early Academic Outcomes for Children with Hyperactive and Inattentive Behaviours

E. Toews, B. Zatto, & W. L. G, Hoglund (Psychology Department, University of Alberta)

Preschool children who exhibit hyperactive or inattentive behaviours often have long-lasting academic difficulties (Holmberg & Bölte, 2014). This disparity is particularly significant in children who show high levels of inattentive behaviours (Czmara et al., 2013). School readiness is a framework used to evaluate children's risk for academic difficulties and delays (Pritchard et al., 2014). School readiness examines children's performance across five domains: physical health and motor skill development, socioemotional development, approaches to learning, language development, along with cognition and general knowledge (High, 2008). The current study examines associations between hyperactive and inattentive behaviours and school readiness. The following research questions are examined: 1) Does the frequency of hyperactive and inattentive behaviours change over time? Does the frequency differ between girls and boys?; 2) Do hyperactive and inattentive

behaviours predict school readiness delays in kindergarten?; and 3) Do these associations differ between girls and boys? This study followed an ethnically-diverse sample of 433 children (47.9% girls; Mage = 4.08 years, SD = 3.4 years) across preschool and kindergarten. Data was collected from teacher reports and behavioural assessments conducted with children in the fall and spring of preschool and kindergarten. It is hypothesized that hyperactivity and inattentiveness will decline over time. Additionally, we expect children who display greater levels of hyperactive or inattentive behaviours will show greater school readiness delays. Since inattentiveness is a primary cause of academic difficulties, it is expected that greater school readiness delays will be demonstrated by children with greater inattentiveness. No significant differences between genders are anticipated.

Acculturative stress and mental health among Chinese immigrants: Does cultural empathy matter?
F. Yang, H. Luo, J. Zhang & Kim Noels (Psychology Department, University of Alberta)

Acculturative stress refers to the stressors associated with being immigrants or ethnic minorities coming into contact with another culture and facing the challenge of adapting to a new culture. Past research found that acculturative stress puts immigrants at risk of developing a mental illness. Cultural empathy, which is the ability to identify with the experiences of people from another culture and appreciate the differences and similarities between two cultures, is often used in counselling psychology. However, few studies have examined the implication of cultural empathy in other fields outside of counselling psychology. Our proposed study aims to explore the moderating effect of cultural empathy on the relationship between acculturative stress and mental problems. It is hypothesized that individuals with high cultural empathy are easier to build intergroup contact and better adjusted in the community. It helps them cope with acculturative stress and reduces the risk of suffering mental problems. The study will recruit first-generation Chinese immigrants residing in Canada to complete an online survey. Acculturative stress is expected to correlate with mental health, and high cultural empathy could weaken this association. This study will provide insight into future research on cultural empathy, which could apply cultural empathy to study immigrants' acculturation. Also, immigration services can inform new immigrants on cultural empathy, which may facilitate their acculturation processes and reduce the potential for mental problems.

Working memory capacity and structure in monolinguals and bilinguals
F. Anjomshoae, E. Nicoladis, & R. Gagnon

Working memory (WM) is defined as a limited capacity memory for keeping and processing information in mind for a short time. There have been debates on whether knowing more than one language leads to advantages in WM capacity. In the current study, we tested whether there are WM capacity or structure differences in monolingual and bilingual adults. WM models often distinguish between verbal

and visual stores. We predicted: 1) bilinguals would have greater WM capacity than monolinguals and 2) bilinguals would show greater integration between verbal and visuospatial memory than monolinguals. Sixty monolingual and 101 bilingual adults were asked to perform verbal (Digit Span) and visuospatial WM (Corsi Block) tasks, both forward and backward. The results showed little difference in WM capacity between the groups. Principal component analysis revealed two WM components for the bilingual group: 1) visual WM (forward and backward) and 2) verbal WM (forward and backward). In contrast, only one WM component was observed among the monolinguals. These results suggest greater specialization in WM modality among bilinguals. Future research will test whether these differences are causally linked to the acquisition of two languages.

Cerebral lateralization and Personality: Examining the Relationship between Handedness and Footedness in Relation to the Big-5 personality traits, depression and Borderline Personality
F. Ehsan, P. L. Hurd

Cerebral lateralization, the tendency for some neural functions or cognitive processes to be localized to a specific hemisphere of the brain, has been studied extensively. However, the impact of this lateralization on human behaviour is less well-understood, particularly its impact on human personality. Handedness and footedness are among the most obvious manifestations of cerebral lateralization and can therefore be used to study it. Past research has found a significant association between the strength of handedness and certain personality traits such as aggression, boldness, and schizotypal personality. This research aims to understand how differences in cerebral lateralization can influence aspects of individual personality. Specifically, it examined the relationship between the degree of handedness and footedness with different aspects of personality, including the big five personality traits (openness, conscientiousness, extraversion, agreeableness and neuroticism) along with other factors including depression and aspects of borderline personality. It is hypothesized that there will be a significant relationship between various personality factors and the degree of both handedness and footedness. The results of this study will bring us one step closer to understanding more about the biological factors that contribute to individual differences in human personality.

Impacts of a mother's stress on child externalizing behaviour problems
G. Mico & S. A. Wiebe (Psychology Department, University of Alberta)

Early childhood is a time of rapid change in cognitive skills, and primary caretakers play a critical part in this development. Maternal psychological distress can be especially detrimental to development during these early years. More research is needed on the relationships between maternal stress and the emergence of externalizing behaviour problems in children aged three to five years. Externalizing problems include difficulties regulating anger, as well as attention. The proposed

study will use data from the Midwestern Infant Development Study (MIDS) cohort, a sample of mother-child dyads originally recruited to study the effects of prenatal tobacco exposure (Espy et al., 2010). This cohort has been followed longitudinally through age 5 years, and data is available on maternal stress, mental health, and child behaviour at multiple timepoints, we will examine the relationship between maternal stress and child externalizing problems, and how this relationship changes as the child develops from three to five years old. Additionally, we will search for any mediating variables to this relationship, as previous research has found preliminary evidence to suggest that maternal insensitivity can mediate parental stress and externalizing behaviour in children (Gerstein & Poehlmann-Tynan, 2015).

Language transference in bimodal bilingual children through storytelling
G. Wong & T. Lau (Psychology Department, University of Alberta)

Telling a good story in American Sign Language (ASL) involves many bodily characteristics, such as taking on the perspective of the characters when communicating about the actions. Adults who are bilingual in both ASL and English (bimodal bilinguals) transfer some of these ASL characteristics into their English stories. The purpose of the present study is to test whether these same results generalize to bimodal bilingual children. 14 bimodal bilingual children between the ages of 4 and 10 years of age participated in this study. Their gesture use in storytelling was compared to 14 age-matched English monolingual children. All children watched a short cartoon clip and told the story back in English. The children's gesture use was coded. We predict that the bimodal bilingual children will use more gestures than the monolingual children, particularly more gestures adopting the viewpoint of the story characters.These findings would be consistent with the argument that bilinguals transfer aspects of their language knowledge from one language to the other.

Calcium Imaging Analysis on Mice Modeling Cognitive Impairment Similar to Schizophrenia with Acute Ketamine Model
G. K. Mix (Neurochemical Research Unit,Department of Psychology, University of Alberta), I. R. Winship (Neuroscience Mental Health Institute, Neurochemical Research Unit,Department of Psychiatry, University of Alberta,)

There are approximately 20 million people who suffer from schizophrenia worldwide, and those who do suffer are approximately twice as likely to die early compared to someone without schizophrenia. While schizophrenia often includes positive (inserted) or negative (withdrawn) symptoms, the cognitive deficits suffered are the most debilitating. Acute ketamine induction can be used to model cognitive impairment reliably in mice. This study uses acute ketamine induction as a cognitive impairment model representative of schizophrenia to perform calcium imaging. Retrosplenial dysfunction commonly accompanies schizophrenia and is thought to be a mechanism of schizophrenia in humans. This study will use adult mice with a fixed head plate and cranial window to perform calcium analysis and imaging in

awake mice in the retrosplenial cortex. This study will contribute to the field of clinical neuroscience and psychology to gain insight into the activity occurring in the retrosplenial cortex during cognitive impairment and have potential implications for the development of pharmacological interventions to manage and control schizophrenia symptoms in humans.

A Leader's Strategic use of rhetoric and international relations to garner support from followers during critical times
Y. Ouyang, D. Rast III, & H. Khokhar (Razvan)

Leaders with prior history of taking a stand for their group, affirming its distinct identity, are, in turn, able to garner more support from their followers and even promote work towards the realization of their vision. (Haslam & Reicher, 2001). By endorsing affirming language, compared to negating language, to describe the group, a leader may affirm the group identity to a better extent and evoke more support among followers, particularly in times of uncertainty (Gaffney et al., under review). During high uncertainty, group members may favour a leader proposing intergroup tension as engaging and intergroup competition enhances group identity (Hogg, 2001), which helps reduce uncertain feelings. (Hogg, 2017). Our current study uses the context of the COVID-19 pandemic to investigate the effect of uncertainty and leader rhetoric on Canadians' support for their leader, Justin Trudeau, when he encourages competitive vs cooperative international relations. Our research findings showed enhanced support for Trudeau with the usage of affirming rhetoric under high vs low uncertainty while delivering a message of international cooperative ties. This pattern reversed with the use of negating rhetoric. Besides, under low uncertainty, Trudeau garnered more support from Canadians when he used negating rhetoric enhancing the cooperative international relations. However, with the message being that of competition, our study found no significant interaction effects between leader rhetoric and uncertainty. Implications of this phenomenon can positively enhance leader-follower intergroup relations to promote social change in the direction that the leader envisions.

Trajectories of Cyber-Victimization and Cyber-Aggression in Adolescence: The Roles of Sexual Orientation, Social Competencies, and Mental Health Problems
H. Nawab (Psychology Department, University of Alberta), B. Zatto (Psychology Department, University of Alberta), & W. Hoglund (Psychology Department, University of Alberta)

Cyber-aggression is aggression committed via technological devices that is typically enacted by peers and directed toward peers. Cyber-victimization refers to being the target of cyber-aggression. About 20% to 40% of adolescents report having been cyber-victimized at least once in their lives. Cyber-victimization is associated with several negative outcomes, including higher scores on symptoms of depression and anxiety. Cyber-aggression and cyber-victimization are of concern during

adolescence as adolescents are among the highest user groups of social media. Adolescents who identify as being part of a sexual minority group have been found to be at particular risk for cyber-victimization. Sexual minority adolescents may identify as lesbian, gay, bisexual, pansexual, or asexual. It is unclear if rates of both cyber-aggression and cyber-victimization differ by adolescents' sexual orientation and whether the role of social competencies and mental health problems on cyber-aggression and cyber-victimization differ by adolescents' sexual orientation.

The current study examines how rates of cyber-aggression and cyber-victimization change over two school years and relate to social competencies and mental health problems among adolescents who identify as a sexual minority (i.e., lesbian, gay, bisexual, pansexual, and asexual) or sexual majority (i.e., heterosexual). This two-year study included 1434 adolescents (54.5% girls; Mage = 13.49 years, SD = .89) in grades 7 (32.6%), 8 (31.2%), and 9 (36.1%). Adolescents self-reported on their sexual orientation (8.4% identified as a sexual minority), cyber-aggression, cyber-victimization, social competencies, and mental health problems. This research extends understanding of how experiences of cyber-aggression and cyber-victimization may differ among adolescents based on their sexual orientation.

Making rational decisions: the effect of types of opponent on the speed and quality of decision-making
H. Kim & B. J. Dyson (Psychology Department, University of Alberta)

Win-Stay-Lose-Shift (WSLS) is a behavioral strategy for decision-making where people produce the same responses when reinforced with positive feedback but change the response after a negative feedback. Previous studies had demonstrated that WSLS strategy could lead to poor decision-making and suboptimal outcomes when trying to succeed in a competitive environment. Furthermore, it has been proposed that these poor outcomes could result from the reduction in decision-making time (post-error speeding). However, it is unclear if the type of an opponent impacts on the speed and quality of decision making in a competitive environment. The current study investigated the interaction between the type of an opponent and individual decision making in a competitive zero-sum game. The participants played rock-paper-scissors against two different automated opponents, the exploitable condition operated on a non-random pattern, and the unexploitable condition operated on a random pattern. We hypothesized post-error speeding should be correlated with lower win-rate in unexploitable condition, and post-error slowing should be correlated with higher win-rate in exploitable condition. The study reported significant post-error speeding in the unexploitable condition, but no significant post-error slowing in the exploitable condition. Since there is a certain pattern in exploitable condition, slowing down decision-making following loss should allow for a better decision making and increase the future successful outcomes. Therefore, to better understand how people can stay rational after the negative outcomes, further studies would be needed to show that post-error slowing could help make better decisions in competitive environments.

Relationships between handedness, emotion, and personality
J. Morin & P. L. Hurd (Psychology Department, University of Alberta)

Handedness, and strength of handedness, are biological indicators of lateralization that have been shown to have relationships with various personality and behavioural phenotypes. Lateralization is also hypothesized to be a factor in emotional processing differences between individuals, explained by the valence, or right hemisphere, hypotheses. These two observations have yet to be properly reconciled and studied together. We tested the hypothesis that complex emotion-based personality traits (schizotypy, neuroticism, and empathy) would be associated with direction and strength of handedness in a nonclinical population. Furthermore, we tested the hypothesis that schizotypy and neuroticism would be positively correlated, that empathy would be negatively correlated with both, and that all three traits would be interrelated to form a dimension of personality variation. Individually, only schizotypy produced a significant but weak correlation with strength of handedness, whereas none of the components after primary component analysis were significantly associated with strength of handedness. When accounting for sex and strength of handedness, only schizotypy produced a significant difference, while empathy and neuroticism both showed significant sex differences. These preliminary findings suggest that the relationship between handedness and schizotypy, as well as between emotion and lateralization may be moderated by other variables such as sex, deserving further study.

Program Expansion Evaluation and Qualitative Assessment of Patient Experience with University of Alberta Hospital (UAH)'s Pet Program: Dogs that Heal
Ted Han, Jasmin Majumdar (Department of Psychology, University of Alberta) , Jeanny Wilson (Program Director), Pamela Mathura, Jaime Yu (Faculty of Rehabilitation Medicine, University of Alberta)

Dogs that Heal is a pet program offered by UAH's Volunteer Resources department. It is the leading hospital-based pet program in Canada with more than 30 active certified dogs. The program includes both pet visitations and pet therapy sessions, which entail scheduled and unscheduled visits that allow patients to interact with the dogs. Anecdotally, we have received tremendously positive feedback from the patients, families, and the staff members over the years. However, the program has existed more as an informal entity within the larger UAH volunteer department, without a standardized way to measure and track effectiveness. As part of the continued effort to expand and consolidate the program, our goals included incorporation of feedback collection into the visit process and streamlining the referral process. While working with multiple administrative personnel identified communication and collaboration challenges, so far we have: (1) introduced a qualitative feedback survey for users of the program, (2) standardized the program measurements and recording process, and (3) introduced an electronic referral process., and (4) started awareness campaigns for hospital staff and patients. Work

continues with focus on consolidating the referral and feedback collection process. Future goals of this evaluation and quality improvement project include assessing the clinical impact of our services and improving our communication strategies for awareness and funding support.

The effects of reading style on the experience of reading fiction
J. Halabi, A. Byrd, & C. Westbury (Department of Psychology, University of Alberta)

Little is known about the phenomenology of reading. However, past research has supported that normal readers typically engage in a combination of mental imagery, subvocalization (silently reading words in one's head), and emotional sensations while reading text. Although the extent of engagement is largely influenced by the text itself, there has been support that individual differences in reading also play a role. This study aims to investigate if there are differences in an individual's reading behaviour (reading speed and affective classification) that are because of an individual's reading style. In experiment one, we created a self-report measure that identifies three distinct reading styles: reading as primarily seeing, reading as primarily hearing, and reading as primarily feeling. In experiment two, participants were presented with pure short sentences, each referring to an emotional description, a visual description or an auditory description, and then had to make a quick judgement on whether that sentence referred to something negative or not while reaction time was recorded. Participants then completed various behavioural measures (Reading style survey, Shipley Vocabulary Measure, PANAS-SF, and BIS/BAS). We hypothesize that differences in an individual's reading style should lead to differences in reading behaviours.

Can interactive imagery instructions increase association-memory without imagery?
J. Thomas (1. Department of Psychology, University of Alberta) & J. B. Caplan (1. Department of Psychology, University of Alberta. 2. Neuroscience and Mental Health Institute, University of Alberta)

Interactive imagery, which is one of the most effective memory strategy instructions for remembering pairs of words, involves asking participants to form mental images during study. We examined whether individuals who report that they have no experience of mental imagery, known as aphantasics, also benefited similarly from interactive imagery instructions. We recruited self-reported aphantasics and non-aphantasics. Individuals who self-classified as aphantasic scored significantly lower on the Vividness of Visual Imagery Questionnaire (VVIQ), but still exhibited significantly better recall performance when asked to use interactive imagery, and to the same degree as non-aphantasics (BF<0.3). These results suggest that the mechanisms underlying interactive imagery may not require the use of mental imagery.

Digital iatrogenics: mHealth therapeutics and addiction

J. Johnson (Faculty of Medicine & Dentistry, University of Alberta), P. Johnson ((Faculty of Medicine & Dentistry, University of Alberta), & A. Mardon (Psychiatry Department, University of Alberta)

Smartphone-based mobile apps have become increasingly prevalent over the last decade. A 2015 World Health Organization (WHO) survey of 15,000 mobile Health apps revealed there to be a 29% focus on mental health diagnosis, treatment, or support. While well-designed mental health mobile apps can present content in interactive, engaging, and stimulating ways can promote cognitive learning, personal growth, and mental health enhancement, there remains a dangerous trap concealed behind flashy iPad and mobile screens. In this study, we conducted a systematic review of databases PUBMed, EMBASE, and IEEE Xplore to examine factors that look at the efficacy of mHealth apps. This becomes especially concerning when we take a look at its underlying neuroscience. One of the biggest predictors of mobile Health app usage is the use of a variety of apps as a daily habit, this will increase the likelihood that people will also use mental health mobile apps. Secondly, hedonic motivation to access and use these apps can tap into dopaminergic pathways of the brain, which is compounded by the use of colourful graphics. Finally, a large amount of these mobile apps have a poor evidence base for efficacy making it more challenging for the everyday user to locate appropriate mHealth resources and promote effective delivery and implementation of e-Mental Health.

Meaning recognition in language and visual perception

J. D. Cole (Honours undergraduate, Psychology Department, University of Alberta) & C. Westbury (Associate Chair, Graduate Studies, Psychology Department, University of Alberta)

The intent of this study is to investigate the potential analog between noticing meaningful patterns in visual stimuli and in language. The technical term for the visual recognition of patterns is pareidolia, which is when people see a meaningful percept in an ambiguous or random image, like seeing a face in a building or an animal in the clouds. We will conduct an experiment to determine if a link exists between perceiving meaning in ambiguous visual images and perceiving lexical meaning in ambiguous sentences. We will ask participants to perform a go/no-go decision about images that appear to have faces in them and closely matched images which do not have faces in them, and analyze whether accuracy or speed in recognizing the faces is correlated with meaningfulness ratings of ambiguous sentences made by the same participants. We expect to find a connection which indicates that lexical semantics shares functionality with non-lexical meaning perception. It has previously been suggested that the ability to see one thing and perceive it as another was involved in the evolution of language and language mechanisms (Bateson, 1972). A similar connection has been suggested in the context of early tool use (Gibson et al, 1993), which may have benefited from the

human ability to see an object as if it were something else (e.g. seeing a rock as a hammer).

Say what you mean: A replication study on the factors that influence the information college-aged individuals give to friends experiencing romantic uncertainties
D. Anderson, S. David, A. Lin, & J. Olsen

Romantic relationships play an important role in many college-aged individuals' lives so they often seek out advice. One previous study showed that students who had positive expectancy outcomes and greater efficacy assessments provided more information as well as more accuracy and positively valenced advice (McManus et al., 2019). The present study is a replication, focusing on the factors that influence the amount, valence, and accuracy of advice given to friends. We have recruited 284 participants between the ages of 18 and 24 who attend a post-secondary institution in Canada (cf. 367 in McManus et al., 2019). The participants completed a questionnaire with measures that assess the students anxiety about the conversation, expected outcomes, efficacy assessments, and their information provision. Expected outcomes consist of the participants' expectations about how the conversation would end when they first began the conversation with their friend. Efficacy assessments include the participants views of their own, as well as their friends, ability to cope with the conversation, to communicate the necessary information, as well as whether the information they received would be complete (target). Information provision refers to the participants' knowledge of how they responded during the conversation based on the amount, accuracy, and valence of the information. We expect to see similar results to McManus et al.'s study when data collection and analysis is completed. These results will contribute to our understanding of how to encourage healthy advice patterns between friends.

Set in concrete: Head noun concreteness influences response generation in noun-noun compounds
K. J. Archibald (Department of Psychology, University of Alberta), C. L. Gagne (Department of Psychology, University of Alberta), & T. L. Spalding (Psychology Department, University of Alberta)

Knowledge and use of concepts is influenced by their concreteness; that is, the extent to which perceptual information about a particular concept is available. For example, concepts such as tree, chair, and car are concrete; in contrast, concepts like love, happiness, and leadership are abstract. Conceptual combination is the process by which people combine concepts to create new concepts, and often results in noun-noun compounds. Noun-noun compounds are words consisting of two constituents: a modifier noun (e.g., snow in snowball) and a head noun (e.g., ball in snowball). Because the meanings of compounds are derived from interactions between their constituents' features, constituent concreteness influences the meaning of compounds by producing different types of available features. We

propose that the concreteness of head nouns in particular will influence the diversity of responses generated by participants after reading a compound. Participants (n=61) listed the first five items that came to mind for 50 separate compounds with varying levels of head noun concreteness. We found that the number of unique responses per compound increased as compounds' head noun concreteness decreased. The results demonstrate that the concreteness of constituents influences our mental representations of compounds, which in turn offers insight into how concreteness and abstractness interact when concepts are combined. These findings can be used in various clinical applications, such as in understanding schizophrenia, maladaptive thought patterns, and traumatic memories.

Peer Aggression in Middle Childhood: Association with Internalizing Symptoms and Classroom Support

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

Peer aggression is linked to greater risk for maladaptive outcomes, such as internalizing symptoms (e.g., depression, anxiety), but classroom emotional support (e.g., child speaks to teacher is problem arises) may serve as a moderator for this array of problems. The current study examines peer aggression (e.g., purposely inflicting harm on a peer who is often of lower status) through two routes: overt (e.g., hitting) and relational (e.g., spreading lies about peer). Participants consisted of 461 children (Mage = 6.9 years, SD = 1.2 years) followed across one school year and assessed at three time points. While children reported on peer aggression and internalizing symptoms, teachers reported on children's internalizing symptoms and classroom emotional support. Parallel process models will examine the association between patterns of change in peer overt and relational aggression with patterns of change in depressive and anxious symptoms across middle childhood. Multiple group models will examine differences in the associations by classroom emotional support. Relational aggression and symptoms of depression and anxiety are expected to increase, whereas overt aggression is expected to decrease. A positive association between peer aggression and internalizing symptoms is expected. In classrooms with low emotional support, greater internalizing symptoms and peer aggression are expected, with the associations between these constructs stronger than in more emotionally supportive classrooms. Findings will expand knowledge about peer aggression and internalizing symptoms, while also implicating the classroom environment as an important target for prevention and intervention efforts.

The effects of individual differences in reading experience on reading behaviour

K. Anderson (Faculty of Arts, University of Alberta) & C. Westbury (Psychology Department, University of Alberta).

Previous psycholinguistic research has attempted to identify the principle components of semantics using word2vec, a word-embedding model of semantics (Mikolov, Chen,Corrado, & Dean, 2013). However, research has suggested the

possibility that individual reading behaviour can be affected by an individual's reading experience. (Johns & Jones, 2015; Ramscar et al., 2013). These findings indicate the possibility that different corpora (representing individual reading experience in word2vec matrices) may instantiate different principle components of semantics (Hollis & Westbury, 2016). This current study will investigate that possibility using word2vec matrices created from the lexical corpora of different subreddits on the website Reddit, which can act as a model of individual reading experience due to the specializations of each subreddit. These matrices will be subject to principal components analysis to determine whether individual differences in reading behaviour can be predicted from these models of reading experience. The expected result of this study is that the principle components obtained from different subreddits will allow us to predict differences in reading behaviour resulting from differing reading experience.

Leader prototypicality and leader rhetoric effects on group attitudes
L. Shi, A. Ma, & D. Rast

Social identity theory suggests that a group's identity is formed by a set of qualities which can be molded and changed. In these groups, leaders who best represent the group's attributes are known as prototypical leaders. These leaders receive more support from followers than non-prototypical leaders, who are less representative of the group's qualities. As a result, prototypical leaders have a greater capacity to define a group's identity than non-prototypical leaders. Leaders may also seek to alter the group's identity. These "entrepreneurs of identity" may do so by including or excluding certain people from their groups. The current study examines the effect of leader prototypicality and exclusionary or inclusionary rhetoric on leader trust, leader support, leader effectiveness, and attitudes towards multiculturalism. We further explore the impact of participant characteristics, such as political orientation and social dominance orientation on this relationship. Participants will read about a Canadian politician who is either similar or dissimilar to their constituents and who is either for or against multiculturalism in Canada. They will then respond to survey questions measuring their attitudes towards the leader and multiculturalism. In line with previous research, we anticipate that prototypical leaders will receive higher ratings of leader support, leader trust, and leader effectiveness for both rhetoric conditions than non-prototypical leaders, with the difference being smaller in the exclusionary rhetoric condition. These results will contribute to the current understanding of "Identity entrepreneurship" by exploring it through a social identity perspective.

The Impact of public events on the content and organization of autobiographical memory
M. Doughan (Psychology Department, University of Alberta), N. R. Brown (Psychology Department, University of Alberta), & E. Z. Heanoy (Psychology Department, University of Alberta)

The purpose of this project is to determine whether dramatic or tragic public events in other countries spawn important autobiographical memories in culturally-related individuals living outside of the area of impact. To investigate this issue, we will collect data from second-generation Lebanese and Iranian first-year university students living in Edmonton, Alberta. Both groups will be asked to recall and date 12 memorable, interesting, or important autobiographical events from the 2020 calendar year. They will also be required to fill out the Transitional Impact Scale (TIS) questionnaire to determine the degree to which the downing of FLT 752 (Iranian sample) or the Beirut port explosion (Lebanese sample) were experienced as transitional events. The predictions are that the Iranian students will frequently recall the crash, that the Lebanese students will frequently recall the port explosion and that participants in both groups will recall COVID related events and events related to high school graduation and starting University. We also expect that the TIS scores will indicate that the crash and the explosion were impactful in a psychological sense but not a material sense.

The Co-Occurrence of Peer Relational Aggression and Internalizing Problems in Adolescence
M. J.O. Lastiwka, B. Zatto, & W. Hoglund (Psychology Department, University of Alberta)

Peer relational aggression is interpersonal in nature and involves behaviours that target another youth's social status and relationships with peers, such as by spreading rumors, threats to end friendships, or excluding another youth (Archer & Coyne, 2005; Crick & Grotpeter, 1995). Relational aggression often emerges during early adolescence and increases as youth transition from middle school to high school. Internalizing problems typically emerge during this transitional period too (Card et al., 2008; Cicchetti & Rogosch, 2002; Murray-Close et al., 2007). Internalizing problems include symptoms of depression (e.g., sadness, loneliness, etc.) and anxiety (e.g., fearfulness, worries, etc.) and both are associated with relational aggression (Card et al., 2008; Gresham, Melvin, & Gullone, 2016). The current study examines patterns of change in relational aggression and its covariation with internalizing symptoms in adolescence. Participants included 1434 adolescents in grades 7 to 9 (54.5% girls, Mage = 13.49 years, SD = 0.89 years) whom self-reported on relational aggression, depressive, and anxious symptoms over two consecutive school years. Accelerated latent growth curve modeling was used to examine patterns of change across the accelerated period of 11 to 16 years. Parallel process models were used to examine covariation in the constructs. Relational aggression and internalizing problems are hypothesized to increase upon entering adolescence. Depression and anxiety are speculated to be equally positively correlated with relational aggression in a reciprocal manner. Results from this study will help identify risk factors for relational aggression and internalizing symptoms which may prove an effective measure in preventing future mental illnesses and bullying.

Theta oscillations and unlikely outcomes during reward-driven verbal learning
M. H. Danyluik (Neuroscience and Mental Health Institute), S. Chakravarty (Psychology Department), & J. B. Caplan (Psychology Department, Neuroscience and Mental Health Institute)

Reward prediction error (RPE) represents the difference between expected and actual behavioural outcomes. Some have proposed that frontal midline theta (4-8 Hz) cortical activity increases following unexpected outcomes, or when an RPE calculation occurs. The feedback-related negativity (FRN) is a negative event-related potential deflection found at similar regions and latencies as the frontal midline theta, and it is thought to be most pronounced following surprising feedback as well, suggesting that the two signals are functionally connected. However, the theta-RPE and theta-FRN accounts have not been evaluated in paradigms including a strong memory component, and it is unclear whether this theta activity is truly oscillatory. Here, we studied a task where participants learned through feedback to choose the rewarding stimulus from each of 48 word-string pairs. Unbeknownst to participants, some stimuli switched values late in the task, producing unlikely outcomes when they chose the originally rewarding stimuli. We expected to find elevated FRN and theta activity following switched-value feedback. Our analysis revealed that theta activity did not clearly increase during the reversals, coinciding with relatively weak FRN signals. Despite this, the FRN was significantly correlated with theta power across subjects, and correlations were present across individual trials for some subjects as well. When screening for rhythmic activity using the better oscillation detection method, these relationships largely dissipated, suggesting that any FRN-linked theta activity in our task was not oscillatory, and that the FRN may simply contain energy in the theta band.

A discursive and affective approach: construction of anti-vaccination belief systems within the vaccine hesitant community
M. Miskic & C. Baerveldt (Psychology Department, University of Alberta).

In 2019, WHO listed vaccine hesitancy as one of the top ten threats to global health, resulting in an influx of harm-reduction studies focused on public-health measures. Few studies have accounted for members of this movement being resistant to vaccine education, or how their belief system is maintained despite being in contradiction with scientific findings. This exploratory study attempts to bridge that gap by using discursive analysis to ascertain how members of the vaccine hesitant community construct a shared logical reality through discourse. The data collection was done by gathering public twitter posts from 29 individuals engaged in vaccine hesitant discourse, these were found by using keywords pertaining to vaccination or vaccine hesitancy. The sample consists of 70 posts from Twitter spanning September to October of 2020 in observation of discourse during the COVID-19 pandemic. A discursive analysis was conducted under supervision of Cor Baerveldt

by using certain frameworks in examination of the data set: the individual's use of interpretive repertoires (e.g. metaphors, terminology), rhetorical organization (e.g. counter statements), and accountability features (e.g. disclaimers). Affect theory was applied in conjunction with discursive analysis to alleviate its theoretical shortcomings, exploring the emotional dimension of the discourse and how this underpins the rationale of vaccine hesitant individuals. Due to this being a qualitative study with no statistical analysis, the study contains no hypothesis but is exploratory and its conclusion is derived from inductive reasoning.

The links between parental emotion socialization, adolescent emotion regulation strategies, daily hassle, and negative emotion
M. Cho, J. Zhang, & Y. Zheng (Psychology Department, University of Alberta)

Emotion regulation is a multifaceted regulatory process of emotions. Parental emotion socialization involves parental responses toward their children's emotional expression. Parental responses toward children's expression of negative emotions affect children's future development of emotion regulation. However, there is little research examining this association among adolescents while simultaneously looking at specific emotion regulation strategies (e.g., suppression, cognitive reappraisal). This study examined the relations among parental emotion socialization, emotion regulation strategies, adolescent negative emotions, and daily hassles. Ninety-nine 12–17-year-old adolescents completed a daily online survey for 30 consecutive days. Using multilevel modeling, results showed that at the within-person level, both cognitive reappraisal and suppression significantly predicted negative parental emotion socialization and negative emotions on the next day. Further, negative emotions predicted negative parental emotion socialization, cognitive reappraisal, and suppression on the next day. In contrast, neither positive nor negative parental emotion socialization significantly predicted cognitive appraisal, suppression, or negative emotions. Nonetheless, there were significant between-person differences in these cross-day links, suggesting substantial between-family heterogeneity in this within-person processes. Daily hassles significantly predicted higher of the same day's negative emotions. Overall, the current findings contribute to our knowledge of adolescent emotion regulation development in relation to their daily negative emotions within the parent-adolescent context.

Facts and your feelings: The polarizing effect of factual vs. rhetorical messaging on Twitter, and its affective underpinnings
N. K. Murray & K. Nash (Psychology Department, University of Alberta)

Social media is rapidly becoming a primary form of communication, and social networks are dominant in the realm of political messaging. However, recent research has found that political Tweets have a polarizing effect on those who disagree with them – liberals respond to conservative Tweets by rating themselves more liberal, and vice versa. Much research has explored polarization effects, but there has been

little regarding the specific medium of Twitter. The present research investigates a possible connection between the apparent factual content in a Tweet and the level of polarization it causes, as well as what affect underlies this polarization. Participants will be presented two sets of five counter-attitudinal Tweets, which will either be rhetoric-based or fact-based (fact-based Tweets are not guaranteed to be accurate, but use statistics, polls, etc.). Each set of Tweets focusses on a single issue, and all Tweet content comes from real Twitter accounts. Participants will rate their beliefs about the issue before and after reading the Tweets, and discrepancies between ratings will be our metric for polarization. Participants will also self-report on their affect. We predict that participants exposed to rhetoric-based Tweets will become more polarized than those exposed to fact-based Tweets. We also expect feelings of anger or frustration to be associated with more extreme (polarized) views, while feelings of anxiety or uncertainty will correlate with less extreme views. This research allows us to further understand how people process the types of information seen on social networks.

Do French-English bilingual adults show crosslinguistic effects in speech and gesture when talking about motion events?
P. L., Divina & E. Nicoladis (Department of Psychology, University of Alberta)

Previous studies have highlighted that bilingual adults elicit crosslinguistic influence in their speech and their gestures. In the present study, the primary purpose is to investigate if the same holds true for French-English adult bilinguals when describing and gesturing about motion events. If it is true, we hypothesize that the bilingual adults would show a different pattern when gesturing and speaking compared to the French and English monolinguals. Two videos were shown to the French-English bilingual group, English monolingual group and French monolingual group and were asked to describe in detail what happened in the videos. We predict that in speech and gestures, bilinguals will not differ from French monolinguals, but they will contrast from English monolinguals. Bilinguals, in comparison to English monolinguals, will use lexicalization of Path motion more in token numbers but not in verb type.

Behavioural effects validate a computational model of metaphor quality
R. Mustaklem, P. Harati & C. Westbury (Psychology Department, University of Alberta)

A well-known computational model used to predict how humans process a metaphor is Kintsch's (2000) categorization theory model, which posits that metaphor comprehension can be explained through class-inclusion in an ad hoc category. For example, when comprehending the metaphor Life is a highway, the target word life is taken to belong to the "long and challenging" category to which the source word highway also belongs. Following Harati et al. (in press), we extend Kintsch's model by optimizing its parameters. The current study modeled metaphor goodness judgment. The metaphors used in this study were randomly generated (though

human selected from a larger pool) in the format of an x is a y. Participants saw a single metaphor with the source word (y) missing and made a forced choice between one of two words that they believe would make the best metaphor. A response was considered 'correct' when participants chose the metaphor that the model predicted would be the easiest to understand. We used a linear mixed-effects model to analyze the data. There was a reliable effect of the model-estimated difference in ease between the two metaphors. The results supported our hypothesis. Participants were more likely to choose the predicted metaphor when the two metaphors were estimated by the computational model to be farther apart in ease of comprehension.

Outgroup leader's rhetoric affects their influence
R. Suthaker, C. Kershaw, & D. E. Rast III (Psychology Department, University of Alberta)

Intergroup interactions, such as intergroup conflict or collaboration, occur between subgroups within a common group. For example, within a group of university students, undergraduate and graduate students are subgroups with distinct identities. An undergraduate would see other undergraduates as part of their in-subgroup and graduate students as their out-subgroup, and some undergraduates would identify more strongly with being an undergraduate than others. Out-subgroup, compared to in-subgroup, leaders are perceived as less effective leaders because they are not trusted by subgroup members. Leaders use one of two prevalent types of rhetoric to define group identity: an intergroup relational identity (IRI), which promotes the relationship between subgroups, and a collective identity (CI), which implies similarity between subgroups. These rhetoric affect group members differently. When groups feel threatened, like those who strongly identify with a subgroup may with an outgroup leader, research shows that an IRI is more effective in improving intergroup relations. This occurs with an ingroup leader, and we expect a stronger reaction with an outgroup leader. Participants (N = 145) read a statement from an out-subgroup leader promoting either an IRI or CI. The predictor variable, level of identification with the subgroup, and dependent variable, leader effectiveness, were also assessed. Confirming our hypothesis, the results showed that as identification with the ingroup increased, an outgroup leader promoting an IRI is evaluated more favourably and an outgroup leader promoting a CI is evaluated less favourably. This research expands our understanding of the role of an outgroup leader in improving intergroup relations.

Effect of Third Language Knowledge on Idiom and Proverb Processing in Bilinguals
S. Naboulsi (Psychology Department, University of Alberta)

Previous studies have shown that bilinguals may process information in both languages when reading in 1 language. This study tests for 3 predictors of cross-linguistic influence in idioms and proverbs: proficiency, the context of usage (formal vs informal), and knowledge of a 3rd language (French). We recruited 120

participants from Lebanon and Canada, who have either English (L1) and Arabic (L2), Arabic (L1) and English (L2), or are English, Arabic, and French speakers. We will ask participants to self-report their proficiency, in addition to asking questions about the setting where the language was learnt and practiced and for how long. To assess cross-linguistic influence, participants are asked to indicate the best translation of 20 idioms and proverbs in both English and Arabic. The translation options will include the correct equivalent, the word-for-word translation, and a distractor phrase. An example of this: fere5 el bat 3wam: 1) like father, like son (equivalent answer), 2) son of a duck is a floater, 3) duck out of the water. I am planning on using regression to analyze my results. I predict that increased proficient and time spent in an informal context leads to higher scores on both tests. Also, French speakers are more likely pick the distractors phrases over the 2 other bilingual groups. This study will contribute to our understanding of bilingual translation and the best method to learn a second language.

Common calling: black-capped chickadee (Poecile atricapillus) colony room chick-a-dee call convergence
S. M. L. Smeltz (Department of Psychology, University of Alberta), C. Montenegro, (Department of Psychology, University of Alberta), & C. B. Sturdy (Department of Psychology, University of Alberta; Neuroscience and Mental Health Institute, University of Alberta)

The vocalizations of black-capped chickadees (*Poecile atricapillus*) are learned and modified throughout their lifespan. Vocal plasticity enables adaptive social operations, namely acoustic discrimination, and vocal convergence (i.e., process by which the vocalizations of an ingroup become successively more similar to each other and more different than outgroups). Vocal convergence has previously been observed both in wild and laboratory contexts in chickadees and other songbirds. Notably, the *chick-a-dee* contact call is known to converge. The current study considers the role of spontaneous convergence of the *chick-a-dee* call in laboratory colony rooms. Our study will implement bioacoustic analyses of chick-a-dee calls from birds housed in a pseudo colony room (a space designed to imitate a colony room), behavioural observation of chickadees exposed to own-colony-room and foreign-colony-room stimuli, and operant conditioning to answer: a) whether chickadee calls converge when housed in colony rooms; b) which acoustic features of the *chick-a-dee* call converge in colony rooms, if any; c) whether chickadees prefer vocalizations made by birds from their own colony room over others; and d) whether chickadees can discriminate between the vocalizations of their own colony room and vocalizations from another colony room. We predict that the *chick-a-dee* calls of chickadees housed in pseudo colony rooms will converge, that chickadees will prefer the calls of their own colony room over others, and finally, that chickadees will reliably discriminate between colony rooms. Answers to these questions may influence future research and laboratory design; particularly concerning treatment of acoustic stimuli and consideration of enclosure arrangements.

Approach-Motivation Matchmaking: pro-self vs. pro-other goals on low mood in hedonic and eudaimonic personalities

S. Mazidi (Psychology Department, University of Alberta), K. Nash (Psychology Department, University of Alberta), & J. Leota (Department of Psychology, University of Alberta).

Goal theories of depression suggest that problematic low mood can occur when competing goals feel unresolvable (Hayes, Ward, & McGregor, 2016). In this low mood state of behavioural inhibition (BIS), the subject is unable to reinstate behavioural activation (BAS) until the goal conflict is resolved or an alternative goal is found. This study investigates the difference between pro-self goals and pro-other goals as means of reengaging approach motivation during times of problematic BIS. Participants' Hedonic and Eudaimonic motivation (HEMA-R, Huta and Ryan, 2010) was measured as the independent variable, while state BISBAS (Carver and White, 1994) and depression (Speilberger et al., 2003) were measured as Dependent variables. Participants in the treatment groups were exposed to a self failure threat to induce a BIS state, and subsequently asked to either write a pro-self or pro-other goal. Participants in the control condition were exposed to threat, but skipped the pro-self or pro-other writing task. We hypothesize that for participants with low life satisfaction, those high in trait hedonia will have a larger increase in BAS and lower state depression scores when palliative goal approach is self related, while those high in trait eudaimonia will have a larger increase in BAS and lower sate depression scores when palliative goal approach is other related. This study helps to untangle the role of pro-self and pro-other goals in the understanding and treatment of low mood.

Influences on Exploratory Behaviour Due to Social Context Between *Pelvicachromis pulcher*

S. Fisher & P. Hurd (Hurd Lab, Psychology Department, University of Alberta)

The social aspects of personality are an under-studied area of animal behaviour. Since most animals in research labs are tested alone, we have often neglected the potential impact that conspecifics (members of the same species) could have on results. Exploratory-avoidant is a popular personality trait that is tested in animals with the use of novel objects. Typically, the amount of time that it takes an animal to approach the area surrounding an unfamiliar/new object classifies individuals in the exploration-avoidant personality traits. Previous work with Oreochromis mossambicus (cichlid fish) showed that the presence of a conspecific influences exploratory time of a novel object. Given this, how does social context affect displays of exploratory-avoidant behaviour in Pelvicachromis pulcher (cichlid fish)? In this study I will investigate the exploratory-avoidant trait by observing male cichlids under various conditions. These males will be introduced to a novel object while: alone, with a familiar female conspecific and with an unfamiliar female conspecific. The goal of this study is to further establish a causal relationship between social context and exploratory behaviour by investigating the effects in a different species. It is predicted

that when individuals are tested in the alone condition they will approach the object with more delay compared to when tested in the familiar conspecific and the unfamiliar conspecific conditions. Essentially, less exploratory and more avoidant behaviours are predicted while alone. By conducting this experiment, the body of knowledge concerning animal personality will be further developed and preferential coping mechanisms for stressful experiences among kribensis cichlids will be highlighted.

Bridging online board games and informal children's museums for science learning
S. Gounder (Psychology Department, University of Alberta)

As social distancing is required to keep children safe in the pandemic, remote learning options must be considered. This paper will apply principles from children's museums (e.g., play-based learning) to school-based science learning. We will be teaching children about plants, based on Alberta's Grade 4 science curriculum, using online board games. Online multiplayer competition games allow interaction at a distance while increasing effort and concentration of grasping difficult concepts in addition to maintaining an enjoyable experience. Moreover, these online experiences can encourage teamwork between children, as well as supporting independent learning. In this project, the board games will include a variety of activities such as, multiple choice questions and puzzles, all related to plant biology. Grade 4 students will complete a pre-test about their plant knowledge. They will then be assigned in groups of 3-4 players to play an online board game with the objective to keep their plant alive. Students will complete a post-test to assess their knowledge about plants after the board game, both immediately afterwards and two months later, to test their long-term retention. We expect to see improved knowledge following playing the board game. These results will contribute to best practices in teaching children scientific concepts.

Altered syntax in black-capped chickadee song
T. J. Benowicz (Department of Psychology, University of Alberta), W. D. Service (Department of Psychology, University of Alberta), C. Montenegro (Department of Psychology, University of Alberta), S. Thunberg (Department of Biological Sciences, University of Alberta), K. A. Campbell (Department of Psychology, University of Alberta), & C. B. Sturdy (Department of Psychology, Neuroscience and Mental Health Institute, University of Alberta)

Male black-capped chickadees (Poecile atricapillus) produce their two note fee-bee song in order to attract mates and repel territorial competitors. While the song is known to be syntactically invariant across populations, chickadees are capable of producing altered songs in isolated geographical regions (e.g., Kroodsma et al., 1999). Our study aims to determine whether chickadees perceive natural, two note, fee-bee song and altered fee-bee songs similarly. Male and female chickadees from a population which produces natural fee-bee song will be exposed to both male

natural song and to two different versions of male altered songs, one with each note repeated (fee-fee-bee-bee), and one with the entire song repeated (fee-bee-fee-bee). The number of vocalizations in response to each condition will be analyzed, in addition to movement data, and song frequency matching, a territorial behaviour involving meeting the frequency of a competitor's song in an effort to escalate conflict. We predict chickadees will perceive the altered songs similarly to natural songs, since they contain both note types arranged in the correct temporal order, factors which are predictive of response speed and frequency (Ratcliffe & Weisman, 1986). Results in support of this hypothesis would indicate that chickadees are capable of recognizing altered songs with repeated notes. Possessing the ability to perceive deviations in a largely invariant form of communication would provide insight on the flexibility of chickadee perceptual abilities, and potentially their capacity to adapt their vocalizations to changing environmental conditions.

Great Expectations: Can Prediction Errors Improve how we learn from Negative Feedback?
V. Denga (University of Alberta), B. Dyson (Psychology Department, University of Alberta), & C. Asis (University of Alberta)

Negative feedback (which indicates failure on a given task) undermines declarative learning in a way that positive feedback does not. In addition to increasing delay and encouraging semantic processing, the experience of a prediction error also enhances declarative learning. Prediction error is the mismatch between our expected outcome and our actual outcome. Specifically, recent findings have indicated that positive prediction error (i.e. when people expect negative feedback but instead receive positive feedback) drives declarative learning. In this study we tested whether negative prediction error can have a similar effect: does negative prediction error have a remedial effect on declarative learning when we receive negative feedback but expect positive feedback? In a pilot study, participants played a binary trivia game composed of an initial stage and a testing stage; in stage one, participants predicted their outcome before answering the question, while in stage two they simply answered the question again. Learning was operationalized as the change of a question from wrong in stage 1 to right in stage 2. We found that negative prediction errors did not improve learning: participants learned from negative feedback better when a prediction error had not occurred. It may be that negative prediction error will only drive declarative learning in paradigms that require a deeper level of processing than a binary trivia game, such as a reading comprehension task.

Black-capped chickadee emotional responses to typical and atypical song
V. Rennie, P. K. Sahu, C. Montenegro, M. Deimeke, F. A. Russo, & C. B. Sturdy (Department of Psychology, Neuroscience and Mental Health Institute, University of Alberta)

Songbirds and humans exhibit similarities in their songs because of shared vocal-motor constraints. For example, past research suggests that both birds and humans sustain the endnote of a musical or song phrase. This begs the question: Does birdsong also elicit an emotional response in conspecifics similar to how music elicits an emotional response in humans? More specifically, if this endnote regularity was altered, would we expect the black-capped chickadee (*Poecile atricapillus*) to react emotionally, analogous to humans? The present research proposes altering birdsong so that it conforms or violates this sustained endnote regularity and presenting each to chickadees in the lab. This results in two conditions: a convergent test trial, where the sustained endnote is present, and a divergent test trial, where the sustained endnote is cut short to resemble the duration of the penultimate note. Prior research has shown that feather characteristics such as crown feather height, angle of throat feathers, and vocal response are an indicator of a bird's state of arousal, which may serve as a proxy for emotion and preference. Therefore, it is expected that the bird's autonomic arousal will be greater (i.e., more ruffled feathers) in the divergent test trial because the bird's expectation of a sustained endnote is not met. Conversely, the feathers will be sleeked in the convergent test trial because the expected sustained endnote was present.

Imagery Capability, Vividness of Imagery and Attitudes toward Wayfinding
Y. Tan, F. E. Kluger, J. J. Thomas, & J. B. Caplan

Aphantasia is a condition where people report being unable to form mental imagery. Since when people involving in wayfinding tasks might imagine the map or relative positions between the landmarks in their mind's eye, imagery ability may play a role in wayfinding, we asked whether aphantasics with impaired imagery also have lower wayfinding self-ratings. Participants completed the mass-testing questionnaire consisting of self-report of imagery ability (Vividness of Visual Imagery Questionnaire; VVIQ), wayfinding ability (Wayfinding Questionnaire; WQ), and one aphantasia-identification question ('Are you able to form mental images (i.e., pictures) in your mind's eye?'). Some participants completed the questionnaires twice, about four months apart. We found that VVIQ and WQ are significantly correlated. Also, aphantasia participants scored significantly lower in both the VVIQ and the WQ when compared to non-aphantasia participants, but the difference in WQ is much smaller. In sum, vividness might be interpreted subjectively in ways that do not necessarily rely on a subjective sense of an image and although the ability to imagine may play a role in one's judgement of wayfinding ability and feelings, it may not play a major necessary role in wayfinding.

Poster Session 2 (Friday, April 16)

COVID-19 impact on commitment to sport and basic psychological needs
A. M. Beeby (Department of Psychology, University of Alberta), P. C. Parker

(Department of Educational Psychology, University of Alberta), & L. M. Daniels (Department of Educational Psychology, University of Alberta)

COVID-19 has interrupted sport in unprecedented ways. While there is a media focus on how the interruption impacts activities for young children, there are repercussions for adult activities as well. A recognized concern in North America is the low rates of adult sport participation. Research by Datz and Blair (2015) found only 1 in 4 surveyed adults are committed to playing sports. Unfortunately, COVID-19 may further exacerbate these low levels of sport commitment. To examine whether the pandemic has impacted adult sport commitment, we draw on self-determination theory (SDT) to examine motivation in sports. We collected data from (N = 117) adult participants who completed a self-report questionnaire assessing important SDT components (autonomy, competence, relatedness) and commitment to sport. We used an Ordinary Least Squares regression to assess whether higher scores on these components of SDT are associated with increased commitment to sport, and found support for the overall model (R^2 = .35, $F_{(4, 100)}$ = 15.11, $p < .001$). Positive significant results that supported the hypothesis for competence (β =.30, p =.005), relatedness (β = .30, p = .003), and level of sport (β = .26, p = .004). Autonomy, however, did not yield significance (β = -.18, p = .256). These results contribute to a broader discussion of how adults can maintain commitment to sport during a global pandemic, by highlighting key SDT components involved in sport. Implications and recommendations for adult sport participation will also be reviewed.

Designing a children's pop-up museum: the recognition and expression of emotions

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

Children's museums are designed to foster learning through fun, interactive activities, including physical, emotional, and intellectual experiences (Andre et al., 2017). The goal of this project is to propose the design for a short informal learning experience for children (a pop-up children's museum). The theme of this pop-up is emotions, particularly emotion-recognition and expression. Children will have the possibility of learning about emotions by participating in three different activities. Children between the ages of 4-7 will explore feelings of happiness, sadness, anger, and fear. There are two major learning objectives: 1) children articulate emotions elicited by various situations and 2) children explore the connection between emotions and physical movement in the body. To address the former learning objective, children are invited to participate in interactive games and crafts. To address the latter, children are invited to dance. To evaluate the effectiveness of the pop-up, children will complete sections of an online worksheet that coincide with the various activities. This design was originally created as an in-person experience. However, we are currently working on an online adaptation, in order to run this experience during the pandemic.

The Effects of Emotional Self-reflection on Performance
A. Asad & B. Dyson

Emotions influence the way we make judgements and play an important role in decision-making. Positive feelings usually lead to better decisions and outcomes whereas negative feelings lead to impulsive and low-quality decisions. We hypothesized that an awareness of internal states (performance following affective report vs. performance following no affective report) would lead to the polarization of overall performance: if a participant was doing well, then self-reflection would lead to even better performance, but, if a participant was doing poorly, then self-reflection would lead to worse overall performance. Using the Self Assessment Manikin (SAM; Bradley & Lang, 1994), we interrupted play during the zero-sum game Rock, Paper, Scissors (RPS) by requesting participant's affectual experiences. Specifically, we collected information on three dimensions of emotions; valence, arousal and dominance. There were 180 trials for each of the two conditions; exploitable and unexploitable opponents. . Preliminary results suggest that reaction times were significantly faster for the trials that did not have SAM proceeding, suggesting that emotional self-reflection interrupted the primary task of play. Reaction times for the exploitable condition were faster than during unexploitable play, and, speeding was also observed after a draw compared to wins or losses. This suggests that draws were perceived as negative outcomes as it related to post-error speeding. The findings of this study suggest that emotionality may play a huge role in influencing overall performance.

Evaluation of the research evidence that suggests chunking improves memory
A. Shafaghat (Neuroscience and Mental Health Institute, University of Alberta) & J. B. Caplan (Neuroscience and Mental Health Institute, Psychology Department, University of Alberta)

Serial recall is a method used to evaluate memory in cognitive psychology research. It involves studying a list and recalling them in the order studied. It has been proposed that, in order to make this process easier, people divide up a list into smaller groups; however, direct evidence for the so-called "chunk," has been rather unclear. The main exception is Johnson (1970), who introduced the decoding operation model, in which a sequence of codes necessary for a particular response was divided into chunks of smaller size organized in a tree-like hierarchy. He proposed that there has to be a systemic decoding of codes in this hierarchy that produces meaningful information in one's memory. Johnson conducted multiple serial recall experiments aimed at validating and specifying the model. His chief measures were the chance of a participant successfully recalling one word after having recalled the previous word, and the chance of completely leaving out a whole chunk. In this presentation, we will review Johnson's decoding operation model and experiments to gain profound insight about the model, including its strengths and weaknesses. This review will help us understand the importance of chunks as decision units and the hierarchical organization, and propose an experiment to

collect data on chunking using different procedures and data analyses. The review will inform the design of our experiment to examine the effects of temporal grouping on the way people encode and recall lists of more complex stimuli.

Callous-Unemotional Traits in a community sample of adolescents: A daily diary investigation of its links with parenting behaviors and parent-child relationship quality

A. Ambrose, J. Zhang, & Y. Zheng (Psychology Department, University of Alberta)

CU traits distinguish a particularly antisocial and unemotional subgroup of youth. Preliminary evidence suggests that parental warmth could reduce, while negative parenting could increase, CU traits over time. The nature of the reciprocal association between parenting behaviours and CU traits nonetheless remains unclear. This study examines the reciprocal relationship between parenting behaviours and adolescent callous-unemotional (CU) traits in daily life. Participants were comprised of a community sample of 98 parent-adolescent dyads and were assessed in a daily diary design over 30 consecutive days. Using dynamic structural equation modeling, results showed at the within-person level significant autoregressive paths of parenting behaviours, parent-child relationship quality, and CU traits, suggesting a cascading effect over days. Parenting behaviours and parent-child relationship quality nonetheless did not predict next-day's adolescent CU traits. At the between-person level, adolescents who reported higher levels of family cohesion and lower levels of positive family expressivity in general also report higher levels of perceived psychological aggression. Further, adolescents with higher levels of family cohesion also reported lower levels of non-violent discipline in general, though heightened positive family expressivity was related to more non-violent discipline. Lastly, negative family expressivity moderated the autoregressive path of psychological aggression over days. Our results contribute to a growing literature demonstrating the complex role of parenting behaviours in the development of adolescent CU traits, and may inform interventions for improving parenting practices to prevent adolescent CU traits.

Social media's Impact on Depression and Loneliness During the COVID-19 Pandemic: A Replication-extension

A. Annett, S. Fisher, G. Mico, A. Qureshi, & C. Wasel (Psychology Department, University of Alberta).

Social media has been used for decades and continues to be a source of connection for people across the globe. Researchers have studied the impact of social media's presence for as long as it has been around, and found that it influences many facets of our mental-well being. Previous research established a relationship between social media use and depression, specifically higher levels of social media usage being linked to higher levels of depressive symptoms. The current study is a replication plus extension looking at the relationship between social media usage, depressive symptoms, and loneliness in the time of the COVID-19 pandemic. Three

hundred and fifty-six Canadian participants aged 19-32 completed several questionnaires that measured their social media usage, depressive symptoms, feelings of loneliness and social isolation, and the psychological impact of the COVID-19 pandemic. The results of the current study will be compared with the results of the original study to determine whether the association between social media usage and depression has changed due to the pandemic, and what role loneliness may play in this association. We predict that social media use will be positively associated with depression. Due to COVID-19, we also predict that the association between social media use and depression will be stronger than the original study. Finally, we predict that loneliness will be a moderator between social media and depression. Our study will provide an understanding of how social media use has impacted young adults' depression and loneliness in the context of COVID-19. Further research may resolve the ongoing ambiguity surrounding the effects of the COVID-19 pandemic on depression.

Preference for feminine facial cues under conditions of low-social support: a replication study
S. Adams, A. Cook, K. Kavia, S. Naboulsi, & C. Sterling (Psychology Department, University of Alberta)

Attractive facial cues are obviously preferred by most people but, interestingly, people tend to find certain facial features more attractive depending on the context. This replication of Watkins and colleagues (2012)investigates how priming low or high social support conditions influence preferences for feminized or masculinized faces. Based on literature and previous research by Watkins et al., we expected to see a preference for feminized male and female faces for participants in low social support conditions. We also expected feminized female faces to be preferred to masculinized faces in both low and high social support conditions. For our research, 123 participants were recruited from the University of Alberta student population. Participants completed an online survey where they were asked the following: "Please take a moment to imagine a time when you felt very (close to/isolated from) your (family/friends) and felt that you received (a lot of/little) emotional support from them." Then, participants were shown 2 versions of the same face; one version was feminized and the other was masculinized and asked to rate which face is more attractive and by how much. Using a one-sample t-test and ANOVA to analyze our results, we found feminine female faces and masculine male faces were significantly preferred. Future research is needed to settle the debate of social support on feminine preference.

Does seeing a complete event make you gesture more?
B. Bahmani & E. Nicoladis (Psychology Department, University of Alberta)

When people gesture (move their hands to communicate), they sometimes gesture as if they are watching an event (observer viewpoint; OVPT) and sometimes as if they are the ones performing an action (character viewpoint; CVPT). For example, in

gesturing about running, a speaker could trace the horizontal movement of the path of a runner (OVPT) or pump her arms up and down and her sides as if running (CVPT). Some previous studies have suggested that people are particularly likely to produce a CVPT gesture when they construe an event as having a goal or an endpoint. The present study aimed to test two possible predictors of CVPT gestures: telicity and the type of movements. Telicity refers to having a natural endpoint/goal. We analyzed two movement types: hand/arm movement (object manipulation) and body movement (self-propelled motion). Participants watched 19 videoclips that contained both types of movements. Each movement was either telic or atelic. After watching each clip, participants were asked to describe the events. Their gestures were coded for viewpoint (CVPT/OVPT). The results showed that object manipulation events produced significantly more gestures with CPVT (compared to motion events). These events were also significantly related to the rate of total gestures and representational gestures. No significant effect of telicity was found. The results suggest that it is the nature of the action itself that leads to viewpoint choice, at least among English speakers. More research is required to untangle the role of telicity in gestures.

The effects of sign language knowledge on non-verbal emotion recognition
C. Moller, A. Lang, M. G. Hernandez, & E. Nicoladis (Psychology Department, University of Alberta).

When deciding whether to approach someone, we often try to figure out if they are happy or angry through their non-verbal communication such as their facial expressions and body language. The purpose of this study is to test whether learning American Sign Language (ASL) improves people's sensitivity to non-verbal communication. ASL may improve sensitivity as it marks some signs with facial and other body movements. In order to test this hypothesis, we assessed people's ability to recognize emotions in three modalities: the eyes, face, and the body. ASL learners, learners of a spoken language, and people not learning a language participated. Participants' ability to recognize emotions was measured at the start of the term and again after one semester of learning the language. We predict that ASL learners will be better at emotion recognition than spoken-language learners after one semester. These results would be consistent with the argument that the use of facial and body expression in ASL trains learners to notice small changes in facial and body movements. Moreover, this ability would generalize to a non-linguistic task (i.e., emotion recognition). These results would suggest that non-verbal emotion recognition abilities could be improved through practice and experience in other skills.

Effects of losing on decision-making: an inquiry Into zero sum games
B.J. Dyson & I.C. Asis (Re:Cognition Lab, Psychology Department, University of Alberta)

If a zero-sum game was programmed to make players lose due to their opponent being unbeatable,: what would a player do once they are faced with large amounts of losses? A player either stays with their losing strategy or they change their strategy (lose-shift) in order to try to win. Research also indicates that players exhibit higher impulsivity in their decisions when facing a loss and could be affecting their cognitive control. The effect on players' decision-making would most likely result in quickly shifting their game strategies following a loss. This study will explore the possibility of higher proportions of Lose-Shift player behavior in an Exploiting opponent across both Rock, Paper, Scissors (RPS) and Matching Pennies (MP) games, lowered proportions of Lose-Shift player behavior in an Exploitable opponent, as well as all of which are compared to players who play a Mixed Strategy (MS) opponent as the control. If participants were faced with a game that has been programmed to be harder to defeat, it was also hypothesized that post-error speeding might occur across these games due to impulsivity. The results show that there is a main significant effect between MS, Exploiting and Exploitable opponents. Players who faced the Exploiting opponent had higher proportions of losing, as well as shifting their subsequent choices following a loss, as compared to players who faced the Exploitable opponent. Post-error speeding was not found to be significant among any of the games and the respective opponents. There were no differences between RPS and MP, in terms of players' performances. These results could shed further light onto how impulsivity interacts with the Lose-Shift paradigm and players' decision-making.

Time-out & post-error impulsivity in the zero sum game Rock Paper Scissors
D. Vavrek, S. Anjum, & B. Dyson (Psychology Department, University of Alberta)

Impulsive decision-making is often risky, expressed prematurely, and leads to undesirable outcomes. In the context of the zero sum game rock paper scissors (RPS), a participant is more likely to display impulsivity (post-error speeding), and decreased win rates when playing against an unexploitable opponent versus an exploitable opponent. The goal of the current study was to reduce impulsivity with a time-out procedure of 2.5 seconds following a random 1⁄2 of trials. We hypothesized that in the timeout condition, optimal strategies will increase (measured via win rates, win-stay, and lose-shift probabilities). We also hypothesized that reaction time (RT) in the timeout condition will be significantly different from RT in the no-timeout condition. 49 undergraduate students (25 female, 4 left-handed, M age = 19) played 360 trials of RPS (4 conditions of 90 trials) against computerized opponents. We used repeated measures ANOVA to assess the effects of timeout (no, yes) and opponent type (unexploitable, exploitable) on win rates, win-stay and lose-shift probabilities, and RT. There were no main effects of timeout on win rates, win-stay or lose-shift probabilities, but RT was significantly higher with a timeout than without. The results may indicate that while the timeout condition is causing the participants to slow down, they might not be using this time to optimize their gameplay. Future research should look into strengthening the timeout manipulation, as well as adding

a motivation check to assess how much participants are engaging in quality decision making.

Do consistent behavioural differences exist between blue and green colour morphs of *Pelvicachromis pulcher*?
D. Gynane (Psychology Department, University of Alberta)

Colour polymorphism, referring to the presence of various distinct and genetically determined colour morphs within a single species' population, has been observed in numerous species and is involved in adaptive behaviours. Considered the animal equivalent of personality, behavioural syndromes are sets of consistent behavioural traits observed across situations. Correlations between behavioural syndromes and morphological traits suggest that colour polymorphism may be a byproduct of, or associated with the development of behavioural syndromes. This study intends to extend research concerning behavioural consistencies amongst colour morphs of the African kribensis cichlid (Pelvicachromis pulcher). Four male colour morphs of kribensis cichlids have been identified: red, yellow, blue, and green; the latter two are essentially unstudied in empirical literature. Recent research by Seaver and Hurd (2017) assessed whether a common behavioural syndrome and consistent behavioural differences exist between red and yellow male kribensis cichlids, and found significant differences in aggression and boldness between the morphs. In this study, I examine the aggressiveness and boldness of the blue and green alternative colour morphs of male kribensis cichlids, using mirror-aggression, open field, and octagonal lateralization tasks, to assess whether similar differences exist compared to those seen in yellow and red morphs. I hypothesize that differences in aggressiveness and boldness will be observed between blue and green males, consistent with the differences observed in Seaver and Hurd's study, however, as no published research exists on the behaviour of blue and green kribensis cichlids, it is possible that no significant consistent differences will be found.

Individual acoustic differences in female black-capped chickadee (Poecile atricapillus) fee-bee songs
D. Patel, C. Montenegro, P. K. Sahu, & C. B. Sturdy

Songs are primarily sung by male songbirds and are typically used for territorial defense and mate attraction. However, recent studies have shown that females can also produce songs but research on the function and differences between female and male songs are limited. The fee-bee song is composed of a higher-frequency fee-note, followed by a lower-frequency bee-note, and is primarily produced by male black-capped chickadees (Poecile atricapillus). Female black-capped chickadees also produce the fee-bee song. Previously, we have shown that male and female black-capped chickadees can discriminate between individual female chickadees via their fee-bee songs, even if only hearing the bee-portion. Thus, we predicted that there may be individual differences between the female fee-bee songs and these differences could be found in the bee-portion of the song. To measure these

differences, we used discriminant function analyses (DFA) to analyze the importance of 16 acoustic features in the fee-bee songs of six female chickadees. We found significant differences among seven acoustic features, including fee-note peak frequency and bee-note length, suggesting that these features are used for individual discrimination. We then trained an artificial neural network (ANN) to confirm the identity of individuals based on the significant acoustic features based on the DFA results. The ANN accurately classified the female fee-bee songs by individual at 89%. The current study presents the significant acoustic features of female chickadee song; however, future studies into the individual differences may be beneficial to understand the function of the female song and how it is perceived by conspecifics.

Attachment style effect on self-sacrifice when primed with economic threat
G. M. Pedro, K. Nash, J. Leota & A. Tran (Psychology Department, University of Alberta)

Self-sacrifice is associated with significant heterogeneity across individuals yet remains poorly understood. Here, we examined if a particular insecure attachment style could influence the readiness to self-sacrifice. Dismissive attachment style is characterized by more individualistic emotion-regulation strategies and self-enhancing behaviour, compared to other insecure attachment styles. Previous studies have shown that dismissive individuals have high self-esteem and regards themselves to be in control of their interpersonal relationships. Priming of economic distress has been correlated with decreased self-esteem and decreased self-perception of autonomy. Therefore, using economic distress should induce anxiety to a dismissive individual. Additionally, the act of self-sacrifice, which signifies control and increases self-esteem via competency, should buffer this anxiety. Importantly, self-sacrifice is often motivated by self-enhancement. In the current study, we will measure attachment style and randomly assign participants to either a distress condition or a neutral condition. All participants will then complete the Self-Sacrifice Scale, our primary dependent variable. We expect that in distressing situations, dismissive individuals will regulate negative emotions by becoming more self-enhancing and consequently more self-sacrificing. This study aims to identify the moderation effect of dismissive attachment style in a person's readiness to self-sacrifice for a group after exposure to economic distress. Economic instability threatens psychological well-being by preventing self-enhancement. Attachment style can help establish personality profiles that can be utilized in identifying which individuals are more likely to engage in self-sacrifice during economic downturn.

Predictors of present tense verb use in emotional autobiographical narratives
H. J. Volk, S. Zabian, J. Goetze, N. Rao, & E. Nicoladis (Psychology Department, University of Alberta)

Many people have experienced traumatic events in their lives. Even long after the trauma is over, some people continue to suffer from its recurrence via

Post-Traumatic Stress Disorder (PTSD). People sometimes (but not always) talk about their traumatic experiences in the present tense, as if the event were happening in the moment. The purpose of this study is to test four predictors of present tense use when describing past trauma: 1) PTSD severity, 2) imagery abilities, 3) emotionality, and 4) coping. We predicted that participants would use more present tense verbs when their PTSD was worse, imagery abilities were high, the traumatic event was highly emotional, and when they had not completely coped with the traumatic event. Participants described a neutral, a positive, a negative, and a traumatic event from their lives. After sharing the event, they reported the degree of emotionality associated with each. To measure imagery abilities, they completed two imagery tasks. Lastly, participants answered questions about their PTSD severity and degree of coping with regards to the traumatic memory. The preliminary results show that participants used more present tense in recounting traumatic events than neutral, positive, or negative events. In the follow-up analyses, we will look at PTSD severity, imagery abilities, emotionality, and coping as predictors of present tense use. The results of this study could contribute to the development of effective treatments for people with PTSD and to reduce distress during moments of reliving traumatic experiences.

The distinct roles of social contact and the length of residence in the process of emotional acculturation
H. Liu & K. A. Noels (Psychology Department, University of Alberta)

The process of fitting into the cultural normative emotional patterns is referred as emotional acculturation. Research shows that the more an individual's emotional pattern concurs with that of the receiving culture, termed emotional fit, the better their well-being. Two factors are thought to influence this process for migrants, including length of residence in the culture and social contact with the mainstream cultural members. However, previous research did not examine these two factors simultaneously. Therefore, this study investigates how these factors may interact to influence emotional acculturation. The participants will consist of Chinese migrants and local Canadians. The Canadian participants will only receive the emotional pattern questionnaire to establish a comparison standard for the dominant emotional patterns in Canada. Chinese migrants will receive a questionnaire that also measures their age of arrival, emotional patterns, length of residence, and quality and frequency of interactions with the receiving cultural members. The study is still under its data collection process; thus, no actual results can be provided now. However, it is mainly expected that there is an interactive effect, such that the length of residence primarily affects emotional acculturation when there is also extensive interaction. This study extends understanding of emotional acculturation to Chinese Canadians, a population that has not been previously examined. Also, it may provide insight regarding how to help newcomers to better adapt in the receiving culture.

Sex differences in lateralized responses to emotionally conditioned stimuli in kribensis cichlid fishes
H. Kim & P. L. Hurd (Psychology Department, University of Alberta)

Cerebral lateralization of emotion was once believed to be a unique trait to humans, but several studies have shown that a variety of animals demonstrate lateralized responses to the different emotional triggers. Numerous animals have also shown sex differences in lateralization patterns when responding to intrinsically emotionally arousing stimuli. Not many studies have however, investigated the lateralized responses to learned emotional stimuli. The current research will use emotionally conditioned stimuli to examine sex differences in lateralized behaviour of Kribensis Cichilds (Kribs). The Kribs will be emotionally conditioned using either stimulus-food pairings after a period of deprivation (positive emotional valence) or chemical alarm signal paired with conspecific damage (negative emotional valence). A lateralized maze will be used to measure the asymmetries in eye use as a measure of lateralization. We hypothesize the males to have a stronger visual lateralization to negatively valent stimuli, and the females to have a stronger visual lateralization to positively valent stimuli. Additionally, we expect the Kribs to exhibit lateralization only at an individual level, since lateralization at the population level is only prevalent in those species with strong schooling tendencies. The finings of the current study could contribute to understanding the complex relationship between sex and lateralized responses to emotion, which could help identify and explain the sex differences in certain behavioral roles and personality-like characteristics of these animals.

Gaming' the system: Measuring decision making via mouse trajectories during 2-player games using an online platform
H, Ma (1), J. K. Bertrand (2), C. S. Chapman (2), & D. A. Hayward (1); (1) Department of Psychology, (2) Department of Kinesiology

Social interactions and contexts influence decision-making and the movements made to enact or convey the eventual choice. Yet, most relevant research is conducted on single participants in controlled laboratory settings. We present a novel two-player card game designed to measure social decisions and their reflection in body movements. Participant pairs (dyads) completed four games, twice in each of two dyad-goal frames (cooperate, compete). Each game had three rounds with four turns each. Per round players had a personal goal (to collect a color, shape or number of items) which was either in full (same goal), partial (some goal overlap), or no conflict (no goal overlap) with the other player. Each turn one player (e.g. P1) looked at two cards and decided which to place face up. P2 then decided if they wanted to keep the face-up or face-down card; P1 received the unselected card. Points were awarded per round for each card matching the player's goal. Due to the pandemic we used Labvanced, an online experiment delivery platform to implement our task. One major objective was to explain our unique use of this platform to both record and share real-time mouse movement information from both participants

during this social decision-making task. Data from 18 dyads allows us to employ tools that automatically extract mouse trajectories, card choices, various response times (e.g., choose duration, draw duration), and many other behaviours (e.g., card interactions) indicative preliminarily of aberrant gameplay but eventually of sophisticated and nuanced dyadic decision information.

Ethnicity-based victimization, internalizing problems, and school ethnic diversity
H. Khan, B. R. L. Zatto, W.L.G. Hoglund (Psychology Department, University of Alberta)

In the school context, ethnic minority adolescents often face discrimination and victimization by their peers (Huynh & Fuligni, 2010). Victimization may be relational, physical, or ethnic. Additionally, it may lead to adolescents experiencing subsequent heightened internalizing symptoms, such as depression and anxiety (Kawabata & Crick, 2012). It has been indicated that a lack of school ethnic diversity may lead to perceived power imbalances and greater victimization of ethnic minorities (Graham, 2018). As such, greater school ethnic diversity may serve as an alleviating factor. This study examines: 1) how internalizing symptoms (depression, anxiety) change across adolescence and whether these trajectories differ by adolescents' ethnicity and immigration status; 2) how adolescents' experience of victimization (relational, physical, ethnic) predict levels and change in internalizing symptoms and whether these associations between differ by ethnicity and immigration status; and 3) whether ethnic diversity of adolescents' schools predicts levels and change in internalizing symptoms and their association with peer victimization. Participants included 1,434 adolescents in grades 7 to 9 assessed in the fall and spring of two school years. Participants reported on their experiences of victimization and internalizing symptoms. Ethnic minority adolescents are expected to experience greater victimization and internalizing symptoms than ethnic 'majority' adolescents. School ethnic diversity should moderate this relationship in that greater ethnic diversity at the school level will lead to less victimization of ethnic minority adolescents and less internalizing symptoms. Results may indicate the need for further study on school diversity and its possible helpful applications to school settings.

Can Negative Emotions Be Used as a Driving Force Towards Personal Growth?
I. Farooqi & K.Nash (Department of Psychology, University of Alberta)

Effectively dealing with distressing situations requires the use of healthy coping strategies. In previous research, problem-focused and emotion-focused coping strategies both demonstrated merits. One method focuses on working through the issue, and the other aims to manage the emotions associated with the problem. While there is extensive research on different aspects of conflict resolution techniques, few studies have looked at its impact on growth motivation. Growth motivation reflects an individual's drive towards reaching their full potential. Prior

research shows growth motivation corresponding to increased well-being. In this study, we compare differences in growth motive when using problem-focused or emotion-focused strategies. We predict problem-focused strategies to be linked with higher growth levels as it encourages individuals to use tangible actions to work through a problem. Undergraduate participants face a distressing manipulation and are randomly assigned to use a particular coping strategy. Growth motive is being measured by the Felt Uncertainty Scale (McGregor, 2001), the Growth Motivation Index (Bauer, 2005), the Self-efficacy scale (Schwarzer & Jerusalem, 1995), and the Personal Project Analysis (Little, 1998). The research is currently underway, and results will be presented at the conference. Understanding the effect on growth motive may be relevant to anyone dealing with negative emotions. Additionally, individuals may gain a long-term benefit by learning to incorporate more robust coping techniques to overcome future obstacles.

Inducing optimism to reduce anxiety
J. Prouse & K. Nash (Psychology Department, University of Alberta)

This study will focus on optimism's influence on an individual's experience of anxiety and stress. Specifically, this study will examine the usefulness of induced optimism in reducing anxiety experienced by individuals with varying levels of dispositional optimism. Dispositional optimism has been shown to serve a protective function, allowing individuals who display this quality to better deal with stressful situations. In the proposed study, after first completing a measure of dispositional optimism, participants will be randomly assigned to either an optimism-induction condition or a neutral control condition. All participants will then complete an anxiety-provoking task and have their subsequent anxiety levels recorded. I hypothesize that induced optimism will reduce anxiety, and that the effects of induced optimism will be greatest for those with low dispositional optimism. The findings of this study will further the knowledge of effective anxiety-reducing strategies for particularly vulnerable people.

Internalizing problems in early childhood: Associations with cultural socialization practices and immigrant status
J. Mahal, B. Zatto, & W. L. G. Hoglund (Psychology Honors student, Department of Psychology; University Alberta; MSc, WCHRI Graduate Student, Department of Psychology, University of Alberta; Associate Professor, Department of Psychology, University of Alberta)

The estimated prevalence of internalizing symptoms (eg depression, anxiety) is 10-15% in early childhood, with symptoms of anxiety and depression increasing on average across this period (Briggs-Gowan et al., 2004; Gillion & Shaw, 2004). Parental cultural socialization practices (teaching about ethnic/racial heritage and history) are negatively associated with internalizing symptoms, though little research has investigated this association in early childhood(Caughty et al., 2002; Hughes et al., 2006). Research on Canadian preschool children reports that children of recent immigrants exhibit lesser internalizing symptoms than children of long-standing

immigrants and native parents (Georgiades et al., 2007).Cultural socialization practices are also more common in recent immigrant groups as compared to native groups and long-standing immigrants (Hughes et al., 2006). This study will use longitudinal data collected from a sample of 443 preschool children (47.9 % girls; Mage = 4.08 years, SD = .34 years) and their parents and teachers to examine the following research questions: 1) What is the frequency and pattern of change in depressive and anxious symptoms across early childhood? Does the frequency and pattern of changes differ by children's immigration status? 2) Do parent cultural socialization practices predict the frequency or change in children's depressive and anxious symptoms?; and 3) Does the association between parent cultural socialization practices and children's depressive and anxious symptoms differ by children's immigration status? It is hypothesized that anxiety and depression symptoms will increase on average; and have a negative association with parental cultural socialization practices. This association is speculated to be stronger for immigrant children.

Is uncertainty a threat or a challenge? Effects on group identification
J. Blumhagen, K. Kincaid & D. E. Rast, III (Department of Psychology, University of Alberta)

We live in an uncertain world. Feelings of uncertainty are aversive, thus people are motivated to reduce uncertainty. Joining or identifying more strongly with a group is an effective way to reduce uncertainty because groups give us a sense of belonging and prescribe how we should act, think and feel. In some situations, uncertainty may be perceived negatively as an anxiety-provoking threat, in others, it may be perceived more positively as an exciting challenge to overcome. Moreover, people may respond differently to uncertainty depending on whether it is perceived as a challenge or a threat. This research examined the effects of framing uncertainty as either a challenge or a threat on group identification. We hypothesized that under high uncertainty conditions, when uncertainty is framed as a threat, people would identify more strongly with a group than when uncertainty is framed as a challenge. A 2 x 2 between-subjects design was used to test this hypothesis. Results did not support hypotheses, instead when uncertainty was framed as a challenge, participants identified marginally more strongly with the University of Alberta when uncertainty was low rather than high. And, when uncertainty was framed as a threat, participants identified marginally more strongly with the Students Union when uncertainty was high rather than low. Results provide preliminary evidence for how group identification may be exacerbated or mitigated depending on how uncertainty is framed. For example, challenge appeals may be more effective if uncertainty is low and threat appeals may be more effective if uncertainty is high.

Contributions of parental sensitivity to inhibitory control in preschool children
J. Cross, K. Kaur, N. Tangon, D. Vrantsidis, N. Ali, M. Khoei, & S. A. Wiebe (ABCD Lab, Psychology Department, University of Alberta)

There is growing evidence that parental factors contribute to individual differences in children's executive functioning (EF). EF is an umbrella term that refers to cognitive skills involved in goal-directed behaviour such as inhibitory control, working memory, and cognitive flexibility. The present analysis investigates differences in inhibitory control in preschool children related to parenting behaviour, particularly parental sensitivity and harshness. We hypothesize that parenting behaviours and children's inhibitory control will be correlated. Specifically, we predict that harsh parenting will be correlated with poorer inhibitory control, and sensitive parenting will be correlated with better inhibitory control. The study used a cohort-sequential design to measure change during the transition to elementary school. The sample included 4- to 7-year-old children and their parents. Parents completed questionnaires about family demographics and parenting practices and children completed a battery of game-like executive function tasks including three inhibitory control measures: the Fish Go/no-go Task, Simon Task and Flanker Task. Analysis of the data for this study is currently in progress.

Twitter and COVID-19: Using Social Media to Measure Attitudes
J. Huang, M. Wang, A. Fazli, & Y. Sharafaddin-zadeh (Intercultural Communications Lab, Psychology Department, University of Alberta)

As social media use has become prevalent through sites such as Facebook, Instagram, Reddit, and Twitter, an opportunity arises to capture large-scale public responses towards events such as COVID-19. As part of its response to the pandemic, Canadian healthcare authorities have, like their counterparts across the world, encouraged the usage of masks. However, mask wearing remains controversial amongst the general population. Previous studies in the lab have found that the socially constructed identity of gender impacted the practicing of preventive behaviours, facemask opinions, and wearing facemasks. Further illuminating the demographics of Canadians who refuse to wear masks could contribute to a better understanding of the reasons behind their attitudes and result in more targeted health policies. We began to investigate the pro- and anti-mask sentiment among Canadian Twitter users. Over 400 million tweets related to COVID-19 and facemasks have been gathered through Twitter's publicly available dataset (Chen & Ferrara, 2020). Four independent assessors classified a subset of tweets into pro- and anti-mask sentiment using VADER (Hutto & Gilbert, 2015), a text-based sentiment analysis. A classifier will then be trained to categorize the remaining tweets. Another classifier is being trained to identify and extract users who are likely to be Canadian based on things such as self-ascribed location, tweets, and profile description. Relationships will be examined using correlational analysis and linear regression. Future studies could potentially examine the impact that federal and provincial health responses have on mask use.

Contributions of executive function to parenting
J. Le, L. Predy, & S. A. Wiebe (Psychology Department, University of Alberta)

Executive function (EF) skills may be important in effective parenting. Research has shown that negative parenting practices have been found to be related to EF task performance deficits across several domains, namely working memory, inhibitory control, attention/set shifting, and planning. The role of parenting attitudes and attributions also plays a critical role in understanding the link between executive function and parenting, such that the ability to accurately perceive a child's intentions affects parental responses to undesirable behaviour. Furthermore, the relationship between EF and parenting measures may be moderated by factors that affect EF such as stress. EFs are cognitive functions necessary for cognitive control. They are skills essential not just for cognitive health, but social, emotional, and physical health. Considering the risk of impaired or lowered EF performance during the early years of parenting, it is important to understand the ways in which EFs are related to parenting. To date, there is limited research on the association between parenting and executive function, and particularly variables that may be moderating this relationship. This study's objectives are to: a) examine whether there is a positive association between executive function and parenting measures and b) examine whether there are any moderating variables within the association between executive function and parenting measures. I hypothesize that there is a link between executive function and parenting measures, such that poorer executive function predicts negative parenting, and higher executive function predicts positive parenting practices. Preliminary data analyses are ongoing, using questionnaires assessing parenting and EF tasks.

The effect of prior opponent type on the default behaviours seen against unexploitable opponents in RPS
J. Wiebe (University of Alberta)

Following up on previous findings that facing exploitable opponents prior to facing unexploitable opponents in RPS changed the default behaviour observed against them, data collected from 3 phasic experiments previously conducted in the lab were analyzed. In order to see if the finding that facing an opponent that is not unexploitable changes the default behaviours we tend to see against unexploitable opponents to be closer to MES, the rates of shift and stay behaviour after the different possible outcomes (wins, losses, or draws) from the previous trial were looked at to see if, on the whole, participants showed a tendency towards MES behaviour against unexploitable opponents after facing opponents of a different type. This shift in default behaviour against unexploitable opponents was only found after draws when looking at the data from all 3 experiments as a whole, so the data from the individual experiments was then analyzed. Data from experiment 2 was the closest to replicating previous findings, showing approximate MES behaviour after wins and draws, but a strong tendency to downgrade after losses. Data from experiments 1 and 3 failed to replicate previous findings, both showing tendencies to win-stay and lose-shift, but differing in the behaviours seen after draws, with

experiment 1 showing tendencies to stay or upgrade, and experiment 3 showing the tendency to shift.

Examining the relationship between time spent playing video games and executive function in 3-year-old children
J. Olsen, M. Predy, J. Rai, V. Carson, & S. Wiebe (University of Alberta)

It is commonplace for young children to interact with screens as often as they could a toy or book. The Canadian Paediatric Society (2017) recommends that 2-5 year old children should limit screen time to one-hour per day. However, Christakis et al. suggests that children spend more time playing video games as it is viewed as interactive, and therefore less harmful, than television (2004). Several studies have found that children who play computer games show increased executive function compared to controls (Yang et al., 2020; Antrilli et al., 2018). The current study uses data from a pilot study being conducted remotely over Zoom with families located in Edmonton, Alberta. A sample of 48 parents and their 3-year-old children first watch a video, play a computer game, and read a book together. This meeting will be coded using PARCHISY to assess the quality of parent-child interactions during each activity. Such codes include positive and negative control, responsiveness, reciprocity, and cooperation. Next, families complete a 14-day screen time diary documenting the amount and type of media the child consumes. Finally, during a second Zoom session the child completes a cognitive battery including the Head Toes Knees Shoulders Task (response inhibition), Word Span Task (working memory), and Snack Delay Task (self control). I hypothesize that children who spend more time playing video games will have increased executive function. Additionally, I predict that dyads with higher-quality parent-child interactions during the computer game will have increased executive function scores.

Examining the relationship between self-control and anxiety regulation
K. Lesko & K. Nash (Psychology Department, University of Alberta)

Self-control has been linked with a myriad of positive outcomes including better health, lower psychopathology, and higher educational achievement (Baumeister et al., 2007). Previous research has demonstrated that self-control appears to depend on a finite resource that is depleted as self-control is used. For example, exerting self-control at Time 1 impairs subsequent self-control efforts at Time 2. To extend this research, the present study aims to examine the role of self-control in regulating anxiety. While anxiety remains pervasive in today's society, it is imperative to understand the ways by which it can be managed. Participants will first complete a personality inventory including measures of trait self-control and anxiety. Participants will then be randomly assigned to either a self-control depletion condition or a control condition. Afterward, all participants will face the same anxiety-inducing event and then complete self-report and heart-rate measures of state anxiousness. It is hypothesized that participants who had to exert self-control during the prior task will exhibit greater anxiety than those who completed the neutral task. The findings of the present study will allow us to expand our understanding of the role self-control

plays in the face of anxiety. In doing so, there may be potential to highlight self-control skills as healthy coping mechanisms in the management of anxiety.

That's my autocrat: Does concern for COVID-19 inoculate autocratic ingroup leaders?

K. M. Kincaid, A. C. Ma., & D. E. Rast III (Psychology Department, University of Alberta)

The COVID-19 pandemic is forcing extreme uncertainty worldwide. In the midst of this uncertainty, political leaders issued emergency declarations, expanded their power, and shifted to increasingly autocratic leadership styles. Building on the social identity theory of leadership and uncertainty-identity theory, prior research has shown that self-uncertainty is associated with greater support for autocratic leaders, who are typically seen as undesirable. The current study examines whether uncertainty induced by COVID-19 increases support for autocratic leadership. 500 Canadian participants indicated their level of self-uncertainty related to COVID-19, wish for a strong leader, support for restricting civil liberties, and preference for democracy over other forms of government. Participants also reported how autocratic they perceive their Prime Minister to be, and how much they support and trust their Prime Minister. Results showed that uncertainty induced by COVID-19 was associated with an elevated desire for strong leadership, willingness to curtail civil liberties, and weakened preference for democratic governance, but uncertainty did not elevate support for a political leader perceived as autocratic. This research assesses an important psychological and socio-political consequence of the pandemic, and furthers our understanding of how self-related uncertainty is associated with support for unexpected, non-traditional, and potentially anti-democratic leadership.

Leader Rhetoric and Subgroup Affiliation: How Leaders can Maximize Effectiveness Ratings

K. W. Freiheit, C. Kershaw, & D. E. Rast (Psychology Department, University of Alberta)

History and media are rife with examples involving a leader attempting to improve the relationship between two or more groups: Trudeau's leadership over both liberal and conservative leaning Canadians is just one example. Intergroup leadership theory proposes how intergroup leaders use rhetoric to improve intergroup relations. Specifically, an intergroup relational identity rhetoric highlights subgroup boundaries while advocating for cooperation between subgroups, whereas a collective identity rhetoric encourages subgroups toward a common goal by dissolving subgroup boundaries. A leader can share subgroup membership (an in-subgroup leader) or belong to another subgroup (an out-subgroup leader). Typically, in-subgroup members demonstrate bias toward in-subgroup leaders by evaluating them more positively than out-subgroup leaders. Considering the relationship between in-subgroup members and in-subgroup leaders, we aimed to understand how the

rhetoric of an out-subgroup leader impacts bias, and ultimately intergroup relations. Participants (N = 192) reported their identification with their subgroup and were randomly assigned to either a collective identity or intergroup relational identity rhetoric that was given by either an in- or out-subgroup leader. Due to technical error, the in-subgroup by collective identity condition received no participants. Therefore, t-tests analyzed the effect that out-subgroup leader rhetoric had on in-subgroup bias. Supporting our hypothesis, results indicated that in-subgroup bias increased when the out-subgroup leader used collective identity rhetoric. These findings are consistent with intergroup leadership theory and offer new insight into how out-subgroup leaders can avoid worsening intergroup relations.

Plausible implausibilities: Reducing the contradiction effect through narratorial stance
K. Hoffart (Psychology Department, University of Alberta; Supervisor: Peter Dixon)

The contradiction effect occurs when information discussed earlier in a text is disproved by the events that follow, resulting in slower reading pace. Previous research has demonstrated that this effect can be reduced by a narrator who doubts the information which ends up being untrue. However, this work relied on stories with obvious contradictions. The present study investigated whether a doubtful narrator could still reduce the contradiction effect when contradictions are subtle. Undergraduate students at the University of Alberta read passages where a narrator made no comment on a character's trait (neutral), commented that a trait was true (credible), or commented that a trait was false (skeptical). Reading times were measured for subsequent sentences which were consistent or inconsistent with the trait. A contradiction effect occurred in the neutral but not the credible condition. Critically, when the narrator was skeptical participants took less time to read inconsistent passages than consistent ones. These findings reinforce the notion that a skeptical narrator can reduce the contradiction effect. More generally, they suggest that the narrator's attitude is an important resource for understanding narrative.

Mind wandering and recency judgments
L. Yeo & P. Dixon (Psychology Department, University of Alberta)

Despite the amount of working memory capacity research in the domains of mind wandering and judgments of recency, there has been very little research that involving both. I used a mixture of the n-back task and a judgement of recency task. The participant was shown letters one at a time and they estimated how many trials ago they last saw the letter. Three letters occurred more frequently than three other letters. The participants also had their level of mind wandering measured after. Based on this measurement, participants were classified as either on or off task. I hypothesized that the letters that occurred more frequently would be thought of as more recent, and I hypothesized the participants results to would vary depending on whether the participant was mind wandering as opposed to being focused on the

task. These hypotheses were supported by the results: More frequent letters were thought to be more recent but only for the participants who were on task.

Are You Lying to Me? The Role of Theory of Mind in Children's Detection of Lies and Formation of False Memories *M. Allarie & E. Nicoladis (Psychology Department, University of Alberta).*

Previous research has found that adults' memories for events can be altered by post-event misinformation. However, if adults perceive the source of misinformation to have deceptive intentions, they are able to resist having their memories altered. The current study will examine this same phenomenon with children aged five to eight. We predict that children will become more sensitive to deceptive intentions as they get older and therefore less prone to incorporate misinformation in their memories. A second aim of this study is to examine whether age or Theory of Mind is a better predictor of children's ability to detect deceptive intentions. Participants will be tested on their Theory of Mind using an age-appropriate measure. They will also be presented with a misinformation paradigm where they will watch a video of a. Two days later, participants will watch a video of a bystander or the guilty man retelling the events of the initial video. Based on condition, the individual will retell the events accurately or inaccurately. We predict that: 1) children's memories will be more accurate when they receive misinformation from the guilty individual compared to a bystander; 2) children's memories will be less accurate in the misinformation conditions than the correct information condition; 3) Theory of Mind will be a better predictor of children's resistance to misinformation than age. These results will have important implications for children's eyewitness testimony.

To Trust or Not to Trust: The Effect of Trustworthiness on Attention
M. Dar, Z. Liston, K. Nash & D. A. Hayward (Psychology Department, University of Alberta)

How does attention in social contexts shift based on how much we trust someone? Using gaze cueing tasks where a face looks towards or away from a target, previous research demonstrates that attention is preferentially allocated to faces that consistently look towards the target; further, these faces are judged to be more trustworthy by participants. However in our daily lives, we evaluate people's trustworthiness based on our interactions with them and whether they stay true to their word; as such, the present study manipulates trustworthiness by using a task where participants invest money with three different facial identities, and then assess potential changes in attention afterwards. Trustworthiness was manipulated by using a modified investment game where one face always splits earnings equally (trustworthy), one always keeps the earnings (not-trustworthy), and one is unpredictable. Attention was subsequently measured via gaze cueing and visual search tasks. Preliminary evidence shows that participants learn which face is trustworthy during the investment task, with the trustworthy face receiving higher investments on average than the other faces across trials. Although we found robust

gaze cueing across all three faces during the cueing task, we do find evidence during visual search that participants exclusively follow the gaze of the trustworthy face. These findings suggest that trustworthiness can be manipulated using the investment game, and that attention to faces varies based on differing levels of trustworthiness, with trustworthy faces orienting more attention than untrustworthy or ambiguous faces.

Inter-relations among six emotion regulation measures and their association with psychosocial adjustment

M. B. Eckel & J. R. Reddon (Psychology Department, University of Alberta)

262 undergraduate participants (177 women and 85 men) were used to investigate the inter-relationships of 6 measures of Emotion Regulation (ER) and their respective association to a multi-scale measure of psychosocial adjustment. ER was measured using: the Behavioural Emotion Regulation Questionnaire (BERQ, 5 subscales), the Cognitive Emotion Regulation Questionnaire (CERQ, 9 subscales), the Emotion Regulation Questionnaire (ERQ, 2 subscales), the Emotion Regulation Skills Questionnaire (ERSQ, 9 subscales), the Mentalized Affectivity Scale (MAS, 3 subscales), and the Perth Emotion Regulation Competency Inventory (PERCI, 8 subscales). Psychosocial adjustment was measured using the Basic Personality Inventory (BPI, 12 subscales). Descriptive statistics and reliabilities are presented for the ER and BPI scales. Principal components analysis (PCA) followed by rotation to a varimax criterion was used to separately evaluate the structure of the subscales for each scale. Dimensionality was determined by implementation of a confidence interval approach to the scree test: ERSQ 2, PERCI 2, CERQ 3, MAS 2, BERQ 2, and ERQ 2. All 36 ER subscales for the 6 ER scales were also subjected to PCA followed by varimax rotation with five dimensions interpreted as Reappraisal, Processing, Suppression, Negative ER strategies, and Positive ER strategies. Factor scores of each of the 6 ER measures were also subjected to PCA. Three dimensions resulted and were interpreted as Reappraisal/Processing, Suppression/Expression, and Identifying. ER analysis indicated that overall, the MAS and ERQ covered the ER domain very well. Relations of the 36 ER subscales, 5 factors, and 4 factors of the factor scores were related to the BPI subscales and factors. Relations with the BPI subscales and factors indicated ER was most strongly, negatively, related to Psychiatric Symptomatology.

Multilingual and monolingual child-rearing: Investigating performance in mental switching, inhibition and working memory among preschool age children

M. Jose, S. Goonesekera, L. Predy & S. Wiebe (Psychology Department, University of Alberta)

The implications of bilingual and multilingual childrearing have demonstrated enormous interest in developmental psychology. Previous research has reported significant differences in cognitive abilities and neurological structures between

multilingual and monolingual individuals. Our research focuses on the differences of inhibition, mental switching and working memory among children of preschool age who have either been raised monolingually or multilingually. Based on previous literature, we hypothesized that children raised multilingually would exhibit higher scores on measures regarding these cognitive functions. Our research utilized results from assessments of an ongoing parent-child interaction study on executive function. Specifically, we used data from child participants (n = 75) between 3 and 5 years of age, who were primarily recruited from local daycares and preschools. The children were assessed with a forward and backwards word span task, which intended to measure working memory store, processing and retrieval. The participant's inhibition and mental switching abilities were assessed via the Shape School task, where children had to discern naming rules by colour and shape according to a visual cue. Results of the study are currently ongoing. We anticipate that our findings will have important implications for a child's cognitive development, considering that an increasing number of children are growing up in multilingual households. If our research indicates potential benefits of multilingual child-rearing in cognitive development, applications in domains such as parenting, education, and caretaking can be explored.

Do character viewpoint gestures have an effect on vocabulary acquisition?
N. Wong (Nursing Department, University of Alberta), E. Nicoladis (Psychology Department, University of Alberta)

It is important to investigate the effects of narrative abilities in young children due to the reading success promoted in later ages (Parrill et al. 2018). Iconic gestures are sometimes used when children are retelling a narrative. Previous research has shown that one form of iconic gesture that significantly benefit narrative abilities in children is character viewpoint gestures (CVPT) (Parrill et al. 2018). Additionally, research has shown that as a child age, there is an increase in their vocabulary repertoire. Hence, we hypothesized that CVPT gestures would positively affect narrative abilities. More specifically, we hypothesized that vocabulary development and story structure would be positively related to age and CVPT gestures. The current study observes the effect of character viewpoint gestures on narrative structure abilities and vocabulary development in 70 monolingual children, ranging from four to six, when orally retelling two cartoon narratives. The children also completed a standardized vocabulary test. The results did not reflect our hypothesis. It was shown that the age and vocabulary of the children did not have a significant correlation to CVPT gestures. Although gesturing in any form did increase narrative structure scores, the use of character viewpoint gestures specifically did not have a significant effect. A strong correlation was present between narrative length and narrative structure. We suggest that the small sample size may have affected these results. Hence, further research into the effects of CVPT gestures would be helpful in understanding these relationships.

The Relationship between Emotional Intelligence and Deception Detection
N. Kim (Psychology Department, University of Alberta).

In some circumstances, it can be important to detect whether someone is deceiving you. Previous studies have shown that facial expressions can provide cues of deception. The proposed study tests the possibility that accurately detecting deceptive facial expressions is related to emotional intelligence (EI), which is defined as the ability to understand, manage, and use emotions. This is evidenced by previous study findings that suggest that deception is an emotional process. In particular, one previous study showed that individuals with higher EI were better at creating deceptive facial expressions without being caught than individuals with lower EI, suggesting that there is a link between the two variables. This study tests whether those results generalize to detection, by making participants view photographs of deceptive and genuine facial expressions and identifying the photographs as deceptive or genuine. Prior to the study, their EI is measured by a questionnaire. The study predicts that individuals with higher EI would display higher accuracy in detecting deceptive facial expressions than individuals with lower EI. The results of this study will contribute to our knowledge of how best to detect deception and could have important implications for the field of criminal justice, especially for professionals that require high accuracy in deception detection, such as judges.

Climbing the Board: Leaderboard Effects and Their Impact on Competitive Decision-Making
N. D. Mitchell & B. J. Dyson

Given the recent explosion in widespread popularity of gamification in our modern society, examining popular elements of gamification may provide insights into fundamental processes of decision-making. Gamification aspects such as leaderboards are often implemented across multiple settings in an attempt to create a more competitive atmosphere, allowing for upwards and downward relative comparisons to others (Landers, Bauer, & Callan, 2017; Nebel, Schneider, Beege, & Rey, 2016). This study examines the effects of the relative placement on a leaderboard within the zero-sum game of Matching Pennies. Participants played against computer opponents and then experienced rising or falling placement on an artificially controlled leaderboard. Participants were also subject to a control condition, in which no leaderboard was presented. Preliminary analyses indicate that the proportion of win-stay (but not lose-shift) behaviour in all conditions was significantly greater than the optimal value of 0.50. There was also a main effect of the leaderboard associated with a decrease in win-stay (but not lose-shift) behaviour, as well as a decrease in post-error speeding. These findings are consistent with previous research that suggests win-stay behaviour is more robust in 2-choice games (Sundvall, 2019). Future research should attempt to further examine leaderboards within a more natural competitive environment. For example, future research may want to examine how leaderboards impact decision-making in an

environment where wins and losses are not artificially fixed, to address potential confounds that may come with fixing a player's win/loss rates.

Personality Research Form and Emotion Regulation
N. Armoush & J. Reddon (Psychology Department, University of Alberta)

In the proposed exploratory research, relationships will be evaluated between three different psychological scales: Personality Research Form-E (PRF-E), Mentalized Affectivity Scale (MAS), and Emotion Regulation Questionnaire (ERQ).

The PRF-E is composed of 20 bipolar content scales including Achievement, Aggression, Dominance, and Impulsivity. The 20 scales can be categorized into six distinct categories: Impulse Expression and Control, Orientation toward Work and Play, Direction from Other People, Intellectual and Aesthetic Orientation, Ascendancy, and Quality of Interpersonal Orientation. The MAS and ERQ are emotional regulation scales and together provide broad coverage of the emotional regulation domain. The MAS is composed of 3 scales: Identifying, Processing, and Expressing emotion and, the ERQ consists of two scales: Reappraisal and Suppression of emotional Expression.

There are many interesting relationships that we will be studying. An important association is between the PRF-E and both emotion regulation scales (ERQ & MAS). Our hypothesis is that those who score higher on impulse expression and control will be more likely to have positive emotion regulation, such as reappraisal. We also hypothesize that those who score lower will more likely have maladaptive emotion regulation such as suppression. We will also examine the relationship between the PRF-E and the MAS and look for categories and/or scales that correlate with the MAS scales.

This research has many implications such as how different ideal or modal types of personality are related to emotion regulation and therapy.

Kidland: The Magical World of Learning
P.T. Crowshaw, J.M. Diaz, P.L. Divina, D.A. Tewelde, & E. Nicoladis (Department of Psychology, University of Alberta)

Children spend 14% of their time in formal education settings and 53% of their time in their community or home (AWE Learning, 2017). As childhood is a critical developmental period, it is imperative to look at outside environments for further educational opportunities. These educational opportunities can be found through informal learning. One such setting in which informal learning takes place is within a children's museum. Traditional museums targeted towards adults may be tedious for children, and their learning may be impeded by their boredom. A children's museum emphasizes a more interactive and fun form of learning through active manipulations and physical engagement with different objects. The existing literature on children's museums focuses on science and natural history based museums, but there is

limited research done on pop-up museums. We aim to create our own pop-up museum called Kidland, where there will be multiple exhibits within the museum focusing on cartography, the social sciences, culture, lifestyle, and many more. Though each exhibit has different learning outcomes, together they form a cohesive learning environment where play and parent-child interactions are emphasized. If the Kidland pop-up were to become a reality, we expect the content of this exhibit to impact, foster, and bolster children's learning in Edmonton, Alberta.

Effect of antipsychotic drug on reduced hand-gesture production in patients with schizophrenia
P. R. Tiwari (Psychology Department, University of Alberta)

67% of patients diagnosed with schizophrenia show reduced hand gesture production, limiting their non-verbal communication. One likely cause of this gesture production deficit is damage to the pre-motor cortex. One helpful treatment of brain damage is a brain-derived neurotrophic factor (BDNF), which can stimulate new neuronal growth and enhance synapse connection in the pre-motor cortex's damaged region, helping to regain the lost control over fine motor skills (aka gestures). Atypical antipsychotic drugs such as risperidone have been shown to improve BDNF levels in blood plasma. The purpose of the proposed study is to test the effect of an atypical antipsychotic drug (risperidone) on improving hand-gesture production by increasing BDNF in patients diagnosed with schizophrenia. In a randomized study, thirty patients with schizophrenia will receive a six-week risperidone treatment from the sample of sixty patients. The level of BDNF in blood plasma and Test of Upper limb Apraxia (TULIA, to measure hand-gesture production) will be administered at the start and end of the six-week treatment to all patients. Increased TULIA score will be expected in patients who received the six-week atypical antipsychotic drug treatment as it will increase the blood plasma level of BDNF, which will help stimulate the growth of new neurons in the damaged pre-motor cortex. This research can contribute to interventions with patients with schizophrenia to improve communication.

Positive peer relations in early and middle childhood: Classroom climate and teacher-child relationships
R. Sorensen, B. L. Zatto & W. G. Hoglund (Psychology Department, University of Alberta)

Children who are accepted by peers have rewarding interactions in the classroom and are frequently included in positive group activities with peers (Weyns, Colpin, Laet, Engels, & Verschueren, 2017). The quality of the classroom climate and relationship children share with their teachers may be important for children's success in their early peer interactions. Teacher-child relationship quality represents the affective nature of the relationship between children and their teacher (Pianta, 2016). The overall classroom climate also may have an effect on peer relations. Classroom climate reflects the overall emotional and instructional quality of the

classroom (Gazelle, 2006). Positive relations with teachers and supportive classroom climate may promote children's peer acceptance because these positive interactions with their teacher may model to classmates the child is worthy of their acceptance. Similarly, in classrooms with a supportive climate, children may be encouraged to interact positively with each other and promote children's acceptance by peers. This study investigates how teacher-child relationship quality and classroom climate relate to children's peer acceptance in early childhood and middle childhood. Participants in the early childhood sample included 443 children followed from the fall of preschool to the spring of kindergarten. Participants in the middle childhood sample included 506 children in kindergarten to grades 3 followed across two school years. This research will benefit children in the classroom by clarifying what aspects of their relationship with their teacher should be focused on, and what classroom processes will support their peer interactions.

Effects of expressive enactment on bidirectional metaphor comprehension, personification, and sublime feeling during literary reading
R. Dahal & D. Kuiken (Psychology Department, University of Alberta)

Kuiken and Douglas (2017, 2018) found evidence that expressively engaging unconventional literary metaphors alters the reader's sense of self. Such meaningful reading experiences may be attributable to some readers' tendency to personify the cumulative "sense" of a text's extended metaphoric structures. A total of 330 undergraduate students read "The Conversation of Prayers," a poem by Dylan Thomas, before completing questionnaires (a) that assessed a mode of reading engagement called expressive enactment (Kuiken &; Douglas, 2017) and (b)that assessed their understanding of the poem's central metaphor: "all prayer is grief flying" (Katz et al., 1988). A structural equation model affirmed prior evidence that expressive enactment mediates the relation between open reflection and aesthetic outcomes (e.g., sublime feelings). Moreover, in the model, expressive enactment predicted bidirectional metaphor comprehension (A metaphorically is B, B metaphorically is A) and metaphors of personal identification (a sense that I "am" A; I "am" B). In these respects, the explication-centered process that accompanies expressive enactment contrasts with the explanation-centered process of a form of engaged reading called integrative comprehension. This pattern suggests that, for some readers, bidirectional forms of metaphor interpretation facilitate the aesthetic effects of literary reading. Additional analyses will examine whether different types of reader personification of extended metaphoric structures differentially contribute to these aesthetic effects.

Differences in Visual Perspective in Familiar and Unfamiliar Future Events
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Our ability to remember the past enables us to imagine future events. We imagine future events from varying perspectives. An event can be imagined via the same visual perspective in which it will occur, termed 'through-eyes' or '1st person'

perspective. The event can also be imagined from a vantage point that is outside the person experiencing the event, termed 'observer' or '3rd person' visual perspective. Previous studies have shown that familiarity can influence how well a person simulates future events. There is a dearth of research examining how familiar and unfamiliar future events influence visual perspective, especially if they involve the self or a close other. We hypothesized that for individuals in the 'self' condition, familiarity and unfamiliarity will result in a 1st person and 3rd person visual perspective, respectively. For individuals in the 'close other' condition, familiarity and unfamiliarity will result in a through-eyes and 3rd person visual perspective, respectively. Our preliminary findings suggest that the 'through eyes' perspective was significantly higher than the 'observer' perspective for familiar events in the 'self' condition. There were no differences in visual perspective for unfamiliar events in the 'self' condition. Both 'through eyes' and 'observer' perspectives were significantly higher for familiar than unfamiliar events in the 'other' condition. These findings agree with previous literature, and indicate that familiarity of future events positively influences how well they are simulated. A novel finding is that there are differences in visual perspective for future events simulated for the self or close other.

Sexuality, Attachment, Emotion Regulation, and Psychosocial Adjustment
S. Adams & J. Reddon (Adjunct professor, University of Alberta)

Adult attachment is a complex and multifaceted topic impacting sexuality, emotion regulation (ER), and personality. Individual psychosocial adjustment is influenced by a combination of these factors and the relationships between them. Substantial research on attachment and its correlates already exists, so we are aware of the negative effects of insecure attachment (high attachment anxiety/avoidance) on functioning, relationships, and mental/physical health. Infant attachment orientation is one predictor of adult ER strategies. ER refers to our ability to identify, process, and express emotions. These abilities develop from childhood experiences and our capacity to understand the mental state of ourselves and others. Moreover, infant-caregiver attachment shapes our ability to build relationships and regulate emotions in a healthy way. Our objective is to uncover what psychological, social, and sexual outcomes are associated with adult attachment and ER strategies. We will be administering five tests to Canadian young adults. First, the Basic Personality Inventory has 12 scales grouped into the 3 supraordinate dimensions: Psychiatric, Social, and Depression Symptomatology. The Trueblood Sexual Attitudes Questionnaire has 5 scales: Autoeroticism, Heterosexuality, Homosexuality, Sexual Variations, and Commercial Sex. Experiences in Close Relationships Scale-Revised measures the two dimensions of attachment anxiety and avoidance. Finally, the Mentalized Affectivity Scale, and Emotion Regulation Questionnaire are combined to measure three dimensions of Reappraisal/Processing, Suppression/Expression, and Identification of emotions. Detailed examination of the relationships between variables should allow us to develop a model of attachment and ER based

functioning, whereby specific personality traits and sexual attitudes reflect an outcome of these interacting systems.

Transition to University among Canadian Domestic and International Freshmen: Daily Academic Stress, Leisure Activities, and Emotional Well-being
S. Lohner, J. Zhang, & Y. Zheng (Department of Psychology, University of Alberta)

First year university students are particularly susceptible to academic stress as they are still adjusting into university during this transition. International students experience enhanced levels of academic stress due to acculturative stressors (e.g., learning new cultural norms, a new language). Most students have not yet fully developed the necessary skills and coping styles required to manage their academic tasks. Students may use various techniques to cope with these stressors, such as engaging in leisure activity or reaching out for social support. This study examined the links between academic stress, leisure activities, and emotional well-being (positive and negative affect) to investigate reciprocal relations among these variables on a day to day basis. Additionally, gender, student status (i.e., international vs. domestic) and coping style (social support, avoidance, and problem solving) were included to examine between-person differences in these within-person daily processes. A sample of 313 first year university students participated in a 30-day daily diary study. Multilevel modelling analyses suggest that academic stress was more predictive of a student's emotional well-being than their engagement in leisure activities. This study contributes to the existing literature on the experiences of students as they transition into university. The daily diary approach provides student service professionals with a unique insight into the day to day experiences of students as they undergo their first semester of university to promote daily well-being.

Increasing willingness to communicate: The Juntos Program
S. M. Sepulveda & E. Nicoladis (Psychology Department, University of Alberta)

This study investigated English-Spanish bilingual children, who had Spanish as a minority language or mother tongue. And it looked at whether their Spanish improved when participating in the Juntos Program. The Juntos program consisted of weekly meetings where the children got to do fun and educational activities, where they got to actively participate and practice the language. The study was looking at how participation in the weekly meetings helped in the children's daily life and if their Spanish improved. To measure the improvements, parents filled out a proficiency questionnaire before the start of the weekly meetings and at the end of the weekly meetings. I hypothesize that the children's Spanish will improve at the end of the weekly meetings, if they are actively engaging in the activities and do not feel pressure to participate. The results from this study will help parents in improving and maintaining minority languages in their families. Furthermore, it creates fun and engaging activities, where the child has autonomy over participation. Deciding to

actively participate, without outside pressures, will play an important role in the maintenance of the language.

The Effect of Hearing Status and Bilingualism on Lip Reading Abilities
S. Umlah, N. Nawsheen, Z. Chen, E. Nicoladis

People who are deaf or hard of hearing are often thought to be better at lip reading than those who have normal hearing. However, many studies have found individual differences within both populations, regardless of hearing status. This study will examine the effects of hearing status and bilingualism on lip reading abilities. I will recruit 180 participants from the University of Alberta and the city of Edmonton for this study. There will be 6 groups, each with 30 participants: Deaf and hard of hearing (hh) monolinguals, hh unimodal bilinguals, bimodal bilinguals, normal hearing (nh) monolinguals, nh unimodal bilinguals, and nh bimodal bilinguals. I hypothesize bimodal bilinguals will be better lip readers, regardless of hearing status. One explanation for this result is bilinguals tend to look more at the mouth region compared to monolinguals. Also, those who communicate with a signed language will often mouth individual words in place of signing.

Both lateral line and vision are involved in normal shoaling in the Zebrafish (Danio rerio)
S. Chaput (University of Alberta), P. Hurd (University of Alberta), T. J. Hamilton (MacEwan University), W. Burggren (University of North Texas)

Shoaling behavior in fish is an instinctive process that depends upon visual, auditory, olfactory systems, as well as the lateral line. Shoaling is typically investigated under low to full light conditions – we know far less about how, and even if, fish shoal in complete darkness. We tested the hypothesis that 'dark shoaling' occurs in zebrafish and is dependent upon sensory input from the lateral line system, detecting pressure changes in the immediate environment. Shoaling in groups of five zebrafish was tracked in an arena and analyzed with motion tracking software. Average interindividual distance, time near the wall of the arena (thigmotaxis zone) and distance moved was calculated in fish in normal room light and in complete darkness (recordings were made under infrared light). Two additional populations in light and darkness were tracked after treatment with cobalt chloride ($CoCl_2$), which eliminates lateral line receptor evoked potentials. In control populations, dark shoaling was reduced (i.e. increase in inter-individual distance) compared to shoaling in light conditions, but nonetheless still present. Elimination of lateral line sensory input by $CoCl_2$ treatment reduced, but did not eliminate, shoaling compared to control levels in both light and dark populations. Collectively, our findings indicate that zebrafish shoaling involves a complex interplay between both visual and lateral line inputs.

Theta oscillation in memory and anxiety
T. Shalamberidze, K. Nash, & J. B. Caplan (Neuroscience and Mental Health Institute, Psychology Department, University of Alberta)

Anxiety and memory are typically studied separately, but they share an electroencephalographic (EEG) correlate, called Frontal Midline Theta (FMT) oscillation. By studying the specificity of this 4-8 Hz rhythmic brain activity, we aim to discover a computational and functional relationship between anxiety, memory, and FMT. We propose two alternative hypotheses. The first hypothesis states that anxiety modulates memory-related theta oscillation, affecting memory performance by decreasing memory accuracy. The second hypothesis is that the anxiety-related and memory-related theta oscillations represent different brain computations and do not interact with each other. Memory will be tested with associative recognition. The task involves distinguishing the studied word pairs as "intact" or "rearranged". The intact probes consist of identical pairs from the study, and the rearranged probes include the studied items but from different pairs. In addition to conventional power measures, EEG signal will be analyzed with more stringent criteria for rhythmicity. Memory-related study processes will be analyzed by measuring the subsequent memory effect, meaning the difference between the study-related brain activity of subsequently remembered versus forgotten pairs. Anxiety levels will be assessed according to State/Trait Anxiety Inventory, Traits Personality Questionnaire, and Neuroticism Questionnaire. If our results support the first hypothesis, it would suggest that theta oscillation related to anxiety and memory performance represent one computational mechanism. Alternatively, if our data supports the second hypothesis, it would suggest that the currently seen overlap in the frequency and topography of anxiety-related and memory-related theta is coincidental.

The effects of masked pseudo-compound and compound words on constituent processing
T. N. Melvie, A. Taikh , C. L. Gagné, & T. L. Spalding (Psychology Department, University of Alberta)

How do readers process pseudo-compound words (e.g., season cannot be broken down into sea + son) and compound words (e.g., seabird can be broken down into sea + bird)? Research shows that readers access the morphemic information from both pseudo-compound and compound words (e.g., they access sea in seabird or season), which results in facilitated reaction times to constituents and inhibited reaction times to pseudo-constituents. In the current study, we examine whether readers access the semantic properties related to the activated morphemes. Using a masked priming lexical decision task, we test whether the time required to respond to a target word (e.g., ocean) is influenced by brief exposure to a compound, pseudo-compound, or the (pseudo)constituents only, where the constituent is semantically related to the target word (e.g., seabird, season and sea respectively). We hypothesize that compounds may help participants respond faster to semantically related words, whereas pseudo-compounds may result in slower responses, because readers might access the morphemes in an attempt to use the structure of each word to infer its meaning. This would slow down processing in pseudo-compounds because pseudo-constituents don't contribute to the structure of

the word. The first constituent only condition provides a baseline measure of the semantic priming of the (pseudo)constituents. Surprisingly, we found that the only condition that led to a priming effect was the first constituent only condition. It seems that even though the (pseudo)constituents are accessed as morphemes, this doesn't lead to access of the semantics of those (pseudo)constituents.

The effect of feedback on individuals' behaviors and decision-making performance in playing Matching Pennies
T.H.T. Huynh (Psychology Department, University of Alberta) & B. Dyson (Psychology Department, University of Alberta)

People often make poor choices in a competitive environment due to external factors such as exposure to negative outcomes. Feedback strengthens outcome-action associations (e.g., win-stay, lose-shift) that might allow them to reflect on, and update, their performance. My study aims to investigate the impact of feedback on reaction time and individuals' performance. Eighty-one participants (36 female, 45 male) were instructed to play Matching Pennies, in which there were 6 conditions consisting of 90 trials each. The study followed a 2 x 3 within-participant design with 2 types of feedback (intrinsic versus extrinsic) and 3 types of opponents (alternation, repetition, and mixed strategy). Intrinsic feedback was feedback that showed individuals whether they won or lost the trials, while extrinsic feedback was feedback that additionally showed cumulative scores for both the participant and opponent. For opponent styles, alternation and repetition were exploitable opponents while mixed strategy was an opponent playing the response randomly (i.e., unexploitable). We found that there were significant differences in win-stay, lose-shift behavior across three opponents, in which these behaviors occur more often in trials with repetition opponent than in mixed-strategy opponent and followed by alternation opponent. However, there were no significant differences in their performance in relation to the type of feedback provided to them, which is inconsistent with our predictions. This finding suggested that the provided feedback was not useful to participants for them to differentially reflect on their performance based on previous trials.

How to regret: A study about moral agency and articulation
Tyler Saison & Cor Baerveldt (Department of Psychology, University of Alberta)

Regret, while a painful emotion is also a moral emotion. This means with each regret experience, there is a slew of moral implications regarding the psychology of personhood. The current study investigates individual accounts of a "biggest regret" and the impact like that of m-articulation has on these accounts. M-articulation is a term from Philosopher Charles Taylor meaning "moral-articulation" or the ability to express deeply held moral thoughts and desires as a moral agent. Hubert Dreyfus furthers this concept with a skill acquisition paradigm positing agency and free will are not innate but are developed. The hypothesis combines these concepts for the prediction that articulate regret accounts will situate themselves as having more

agency as they have developed their m-articulacy. The data collection was from 10 forum posts of the heading "my biggest regret" on Reddit and Quora. Under the supervision of Dr. Cor Baerveldt, a mixed-method analysis (e.g., discursive psychology and folk psychology) was used to ascertain aspects of "articulate" accounts. From the analysis, it was discerned that traditional articulation is developed separately from m-articulation, contrary to previous literature.

The relationship between two approaches of speech evaluations towards Chinese immigrants
V. Wong, K. Noels (Intercultural Communication Lab, Psychology Department, University of Alberta)

People judge others based on their language competence as well as ethnic identifiers of speech like the degree of accentedness. The primary objective of the study is to determine the relationship between these two types of speech evaluations, distinguished as linguistic and socio-emotive approaches. The linguistic approach addresses various speech pronunciation dimensions, including comprehensibility, fluency, and accentedness, while the socio-emotive characteristics refer to stereotypical and personal traits associated with the speech style, particularly warmth and competence dimensions. While the first two linguistic dimensions can be refined, accentedness is limited to match to that of a native speaker, typically solidifying after a year or two after settlement. Therefore, my hypothesis predicts that there will be a positive correlation between comprehensibility, as well as fluency, and warmth and competence, while a negative correlation will be found between accentedness and warmth and competence. After listening to Chinese immigrants' speech clips, the participants, who are Canadian-born English monolinguals, will evaluate the clips based on the aforementioned dimensions. Multiple regression analyses will be conducted to examine the relations between the evaluations. The results will provide greater insight into how immigrants are perceived based on the linguistic aspects of speech. Furthermore, they might suggest how second-language programs can modify the focus of English teaching, depending on the positive or negative correlational relationship of the socio-emotive dimensions with the linguistic dimensions. Improvement of second-language programs will lessen the experienced acculturative stress, which is a strong factor when settling into the host culture.

Emotional stimuli enhance attention control
V. R. Gumnur (Psychology Department, University of Alberta); R. Phulpoto (Neuroscience and Mental Health Institute, University of Alberta); S. Wiebe (Psychology Department, University of Alberta)

There is extensive evidence that emotion can impact cognition. Relative to neutral stimuli, positive and negative stimuli tend to enhance and impair performance respectively. The goal of the current study was to test the effect of emotional stimuli and cognitive load on performance on a Flanker task, a common measure of cognitive control. This study addresses the influence of emotional flankers along with emotional targets, which is relatively unexplored in existing literature. Participants (N

= 22, 17-24 years) completed a flanker task wherein they responded to the gaze direction of a target face, presented between flanker faces gazing in the same (congruent) or the opposite direction (incongruent). Emotional valence was manipulated separately for the target and flanker stimuli (positive, negative or neutral). Analyses of behavioural data revealed that incongruent trials resulted in slower response and lower accuracy than congruent trials. We also found that participants responded faster on trials with happy faced flankers only when the targets were happy faced as well. Analysis of ERP found significant interactions between task congruence and stimuli emotion (for targets as well as flankers). P1 peak amplitude was greater for sad target and happy flanker stimuli under incongruent and congruent conditions respectively. N1 was enhanced only when both target and flanker showed the same emotion. However, N2 peak amplitude was smaller for incongruent trials when the target and flanker showed the same emotion. Our findings suggest that both negative and positive emotions can enhance attentional control, depending on their placement and task cognitive load.

Self-Regulation and Teacher-Child Relationships in Early Childhood: Differences Between Children with and without Learning Difficulties
Y. Elshamy, B. Zatto & W. Hoglund

Self-regulation is a multidimensional concept that encompasses emotional self-regulation (moderating one's emotional reactivity), behavioural self-regulation (controlling one's impulses and attentional control (shifting and focusing attention). As self-regulation develops in early childhood, teachers play a crucial and supportive role in fostering regulatory skills in a structured classroom environment. In schools, as children begin to face new challenges, teacher-child relationships (conflict and dependency) can influence how successful children become in regulating their emotions, behaviours and attention. Since each child's capabilities differ, those regulatory skills and teacher-child relationships can also depend on a child's learning abilities. However, there is a lack of research on how teacher-child relationships impacts all three types of self-regulation collectively and on how learning difficulties moderate the link between self-regulation and teacher-child relationships. Using a sample of 428 children (Mage = 4.08), teacher reports and behavioural assessments are collected across four waves in the fall and winter of preschool and kindergarten. Latent growth curve modelling is used to understand the relationship between self-regulation and teacher-child relationships and multiple group modelling will compare the groups of children with and without learning difficulties. It is hypothesized that the quality of teacher-child relationships is predictive of self-regulation. Teacher-child relationships will be stronger for children without learning difficulties compared to children with learning difficulties. Lastly, the self-regulation of children with learning difficulties will not increase as significantly as children without learning difficulties. The association between self-regulation and teacher-child relationships bears significance because it relates to the academic and social competence of children.

Canadian's Perspectives on Mask Wearing During the COVID-19 Pandemic: Facilitators to Public Mask Use

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The use of face masks for the prevention and protection of our well-being during the COVID-19 pandemic has become prevalent worldwide. Although face masks are beginning to reach a phase of normalization, acceptance toward public mask use still differs among Canadians. Using focus group interviews, this study strives to explore the potential facilitators that may encourage the use of face masks, via an examination of Canadians' attitudes and perceptions around public mask use. Four focus groups were conducted in Fall 2020 to inquire into Canadians' thoughts and opinions about public mask use. A total of 17 Canadians (Mage = 48.50, SD = 18.52; 16 females, 1 male) were recruited from social media platforms (e.g., Facebook, Twitter, Reddit) and participated in this study. After performing a preliminary thematic analysis, four major themes were identified: 1) public health information accuracy; 2) biases against non-mask wearers; 3) responsibility for community/society and 4) normalization of mask wearing. Since public health information accuracy is a facilitator for public mask use, more efforts should be dedicated to increase the accuracy and availability of COVID-19 health information to the general public. Furthermore, seeing that personal bias towards non-mask wearers and feelings of responsibility help to strengthen public mask use, public health efforts and initiatives should 1) target on highlighting the personal and public health benefits of mask wearing, and 2) support the development of public mask use norms to enhance the health and safety of Canadians during the COVID-19 pandemic.