WHEN I GROW UP

PSYCHFEST 2023
APRIL 27-28

PROGRAM

THURSDAY APRIL 27TH

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9:30 AM	|	Presentations
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FRIDAY APRIL 28TH

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KEYNOTE SPEAKER

Craig Rodriguez-Seijas, Ph.D.
University of Michigan

Understanding the Diagnosis of Borderline Personality Disorder among LGBTQ+ Individuals: Theory, Measurement, and Minority Stress

Abstract: Borderline personality disorder is more frequently diagnosed among LGBTQ+ individuals. However, understanding the elevated prevalence among LGBTQ+ populations is complex. Personality disorder theory and research has developed without attention to underrepresented populations like LGBTQ+ folks. In this talk, I will review a series of papers and projects aimed at disentangling factors related to the diagnosis of borderline personality disorder among LGBTQ+ individuals including conceptual/epistemological issues, diagnostic bias, criterion contamination, and measurement invariance.

DAY 1

THURSDAY APRIL 27TH

9:30-9:40 AM | **Cameron Hall** (Andy Baron)
Reasoning about Structural Inequality in Childhood

Structural inequalities create and perpetuate discrepant outcomes between social groups. However, both adults and children more often attribute discrepancies between social groups to internal factors of individuals, rather than to structural causes. Attributing inequalities between social groups to internalist factors has been linked to increased prejudice toward disadvantaged group members in both children and adults. Encouraging structural thinking in childhood may serve to reduce this bias development. Thus, the presented work investigated children's (3- to 8-years-old) ability to make structural attributions for inequality across three studies. Studies 1-3 show that by age 5, children are able to attribute differential outcomes between social groups to their correct internalist or structural sources in a novel context. I will discuss future directions which will seek to establish if children can abstract structural thinking from these novel contexts to real-world social disparities, as well as the implications for structural thinking about social inequalities in childhood.

9:40-9:50 AM | **Irein Thomas** (Kristin Laurin)
Know you, no me: People seek others' political leanings but withhold their own in first encounters

Political identity is intimately connected to morality, and as such might be diagnostic of one's true self. For that reason, in a first encounter, people may not reveal political information about themselves to avoid vulnerability but may seek out others' political information to get a quick picture of they are. Study 1 (N = 111, 1539 observations) found people preferred to seek political (versus nonpolitical) information about others but preferred to reveal nonpolitical (versus political) information about themselves. Study 2 (N = 187, 1122 observations) hinted at a potential reason why: People thought political identity was more diagnostic than other identities, like religion, sexuality, and gender. Study 3 (N = 220, 2220 observations) used a novel relationship app context and found that when people were told to exchange information in an intimate manner (i.e., prioritize the true self), they revealed (highlighted on their profile) and sought (used as filters for potential partners) political information more than when told to exchange less intimate information.

9:50-10:00 AM | **Miranda Bahng** (Steven Heine)
Cultural Fit and Wellbeing: The Story of Fitting In

The present study explored the relationship between cultural fit and subjective wellbeing. Using data from the World Values Survey, sampled from 94, 278 residents in 64 countries from mid-2017 to 2021, we examined the extent to which the fit of individual's cultural values to their country's average values predicts a composite measure of wellbeing. Results aligned with our hypothesis, showing that cultural fit predicts subjective wellbeing. Additional analyses were conducted to test the moderating effects of national-level cultural tightness, individualism, relational mobility, and cultural heterogeneity. Results were mixed for the moderating role of these national level variables on the relationship between cultural fit and subjective wellbeing. The tightness of a country emerged as the most consistent moderator, as greater tightness increased the effect of cultural fit and subjective wellbeing.

10:00-10:10 AM | **Yunru Ma** (Kiley Hamlin)
Preschooler's context dependent moral Evaluations

Punishment, although as a negative behavior, is essential for cooperation in human society, in that it serves to deter antisociality and encourage prosociality in the long-term social interactions. Infants studies found that even infants are selective in their moral evaluation, preferring agents who hinder antisocial individuals and who help prosocial individuals, when helping is "inappropriate" (e.g., helping the mean guy, like assisting robbery) and hindering is "appropriate". On the other hand, preschoolers seem to only focus on the one-shot interaction and non-selectively prefer prosocial actions in their moral evaluation. Yet there's no study addressing why children seem to be non-selective in their evaluation of punishment regarding the target's previous behavior, while infants and adults are. In the current study, we look at how children's moral evaluation toward third-party punishment is dependent on the authority context vs. the non-authority context. One possible reason is that children are socialized to be unilaterally opposed to antisocial actions -- this may lead them to see punishment as acceptable only in very limited contexts; for example, when performed by authority figures such as police or teachers. To address this possibility, the current studies will examine whether children's evaluations of third-party punishers depends on a punisher's authority-status.

10:10-10:20 AM | **Nicholas Kay** (Azim Shariff & Mark Schaller)
Measuring the Speed of Cultural Change: Development and Validation of the Cultural Change Index

Does the speed of cultural change vary between countries? What factors might explain such variation? And what might the psychological consequences of rapid cultural change be? Cultural change research has left questions like these relatively unaddressed, instead focusing on documenting changes in single aspects of culture (e.g., individualism). To capture the overall speed of cultural change in a single index, we have repurposed the Cultural Fixation Index, originally a measure of cultural distance between countries using the same wave of the World Values Survey. Instead, we measure how much cultural values differ across time by calculating cultural distance between survey waves within each country. We observe substantial variation in the speed of cultural change between countries, as well as significant associations between the cultural change index and increases in economic/human development and globalization. As a future direction, we are applying this index to data from the United States General Social Survey, to discover any periods of accelerated cultural change within the US and explore potential causes of this acceleration in the rate of cultural change.

10:20-10:30 AM | **Yingchi Guo** (Toni Schmader & Jason Rights)
Daily experience of fit and authenticity in college environments

Students experience different levels of self-environment fit and authenticity across situations in college. These momentary feelings may influence students' behaviors and academic performance. We conducted two experience sampling studies to validate the association between momentary fit and authenticity (Study 1), and examine the determinants and consequences of these feelings (Study 2). Study 1 aimed to test the State Authenticity as Fit to Environment (SAFE) model, which proposes that three kinds of fit can be routes to feeling authentic: Self-concept fit, felt when an environment activates a core self-concept; Goal fit, felt when an environment affords one's goals; and Social fit, felt when others in the environment accept one's true self. In a sample of 253 undergraduates, Study 1 showed that in campus situations where students perceived self-concept fit, goal fit, and/or social fit, they felt a higher level of authenticity, and a willingness to return to that context. Study 2 investigates how marginalized identities interrupt momentary feelings of fit and authenticity in college classes. Preliminary analyses suggest that feeling marginalized in a class predicts lower levels of each type of fit and authenticity. I will discuss implications for academic outcomes (e.g., skipping the class; lower grades).

10:30-10:45 AM Break

10:45-10:55 AM | **Marta Kolbuszewska** (Samantha Dawson)
Comparing Associations Between Sexual Function, Sexual Distress and Psychological Symptoms in Women with and without Sexual Function Difficulties

Background. Anxiety and depressive disorders are highly comorbid with sexual dysfunction in women; however, little research has examined this comorbidity at the symptom level for women with versus without sexual function problems. Objective. The present research examined associations between facets of sexual function (i.e., orgasm, lubrication, arousal, desire, pain), sexual distress, and anxiety and depressive symptoms in women with (N = 575) and without (N = 150) sexual function problems. Methods. Cross-sectional network analyses were used to characterize and compare networks of sexual function, sexual distress, and psychological symptoms between groups. Findings. Women with sexual function problems did not exhibit more densely connected networks than those without sexual function problems, but the most important symptoms differed between groups. Implications. The current study examines potential contributing factors to the high comorbidity between women's sexual function problems and psychological difficulties.

10:55-11:05 AM | **Qinye Yu** (Frances Chen)
Loneliness, Cognitive Task Type, and Heart Rate Variability in the Midlife in the United States (MIDUS) Study

Some recent research suggests that loneliness may influence cardiovascular health by impacting heart rate variability, an important and commonly used indicator for the parasympathetic nervous system functioning. The present study aims to investigate how cognitive task type and loneliness are associated with HRV reactivity following a Stroop and a mental arithmetic task in a nationally representative sample with midlife and older adults. Results showed that cognitive task type was a significant predictor for HRV reactivity. Specifically, Stroop task elicited greater vagal withdrawal than the mental arithmetic task. These results suggested that the Stroop task may be a more sensitive task at detecting parasympathetic nervous system activation than the mental arithmetic task. Higher loneliness was associated with greater decreases in HRV from baseline to Stroop, and such relation remained significant after controlling for psychosocial variables only when Stroop was completed as the second task. Future research should examine the link between vagal withdrawal and cardiovascular health across different age groups, taking into account variability brought by different cognitive tasks and their contexts.

11:05-11:15 AM | **Mathilde Rioux** (Noah Silverberg)

A Novel Intervention for Persistent Memory Problems after Concussion: A Feasibility Pilot Randomized Controlled Trial

Background: Although objectively measurable memory impairments typically resolve within weeks after sustaining a concussion, many people continue to perceive memory problems months to years later. The current standard of care, cognitive rehabilitation, has not shown to be effective at improving functional memory symptoms after concussion. Given that cognitive behavioural therapy (CBT) has been effective in treating other functional neurological disorders, this pilot RCT aims to determine the feasibility and preliminary efficacy of a manualized CBT-based treatment program in improving functional memory symptoms after concussion.
Methods: Patients with functional memory symptoms persisting for 6-24 months after a concussion will be recruited and randomized (1:1, stratified by memory concern severity) to manualized CBT or cognitive rehabilitation. All participants will receive 11 x 50-minute sessions via videoconferencing, facilitated by clinical psychology graduate students under the supervision of a clinical psychologist.
Results: Eighteen patients have been recruited so far, out of a total of 30 planned participants. Feasibility outcomes will be reported descriptively. Between-group comparisons on the primary outcome (i.e., memory concern; Multifactorial Memory Questionnaire-Satisfaction subscale) and secondary outcomes will be analyzed by calculating standardized mean differences pre- and post-intervention.
Conclusion: This pilot study represents the first attempt to create and validate a CBT protocol treating functional memory symptoms after concussion. Given proof of feasibility, a larger, more definitive clinical trial, focused on testing efficacy could be undertaken.

11:15-11:25 AM | **Andre Zamani** (Kalina Christoff)

Neural correlates of spontaneous thought during breath-focused meditation

Thoughts are pervasive in conscious experience, arising so frequently that they appear to form a continuous 'stream of consciousness'. Relatively little is known, however, about how the brain supports the generation of subjectively spontaneous thoughts. Despite our lack of neurobiological understanding, spontaneous thoughts have been investigated through contemplative techniques for over a millennia. For example, through practice with certain meditation techniques, people are able to report on the arising of individual thoughts with great accuracy. The present research thus combines modern brain imaging with contemplative practice to better study the neural correlates underlying spontaneous thought generation. Participants with different levels of experience in certain meditation techniques (Vipassana, Zen; ranging from ~900 to 19,000 hours) were recruited to undergo functional magnetic resonance imaging (fMRI) while monitoring their conscious experience for spontaneously arising thoughts and reporting on their arising as quickly as possible. We predict to observe a time course of increased fMRI signal that is unique to spontaneous thought generation, including increased activation prior to the conscious experience of thoughts. Future analyses will evaluate whether meditation experience moderates the fMRI signal associated with spontaneous thought generation, and whether a d-prime for thought detection can be computed. We expect our results will make important contributions to better understanding the neural correlates of spontaneous thought.

11:25-11:35 AM | **Shuyuan Shi** (Noah Silverberg)

Predictors for mental health complications following mild traumatic brain injury: development of prognostic models

Background: People with mild Traumatic Brain Injury (mTBI) are at elevated risk for developing mental health disorders, which in turn can lead to poorer recovery. This study aims to identify risk factors and develop multivariable prognostic model(s) for mental health complications following mTBI. Method: The study will be a secondary data analysis of a randomized controlled trial. 535 adults presenting to emergency departments and urgent care centers will be recruited. Information on pre-, peri-, early post-injury predictors are collected during eligibility screening call within a week of injury and through self-report online questionnaires at 2-weeks post-injury. At 12- and 26-weeks post-mTBI, participants engage in a structured psycho-diagnostic interview to determine the presence/absence of new/worsened Major Depressive Disorder, anxiety-related disorders, and Post-Traumatic Stress Disorder. Results: 537 patients have been recruited so far, and six-months assessments will continue to April 2023. Logistic regression with a regularization procedure will be used to assess the prognostic value of pre-, peri-, and early post-injury factors, with presence/absence of a new/worsened mental health complication at 12- or 26-weeks post-injury as the primary outcome. The model(s) will be internally validated, and model(s) performance will be assessed. Implications: The study will shed light on risk factors for mental health complications after mTBI and develop a holistic prognostic model to identify patients who are at risk. The results will inform early post-injury screening and risk stratification efforts.

11:35-11:45 AM| **Linnan Zhou** (Victoria Savalei)

Using RMSEA associated with the chi-square difference test to compare bifactor and hierarchical factor models under minor misspecification: A simulation study

The bifactor model (BFM) has been widely used in psychology. Recent studies have shown that BFM tends to have a better model fit relative to its nested model, such as the higher-order model (HFM), even when HFM is the data-generating model. The superior model fit of BFM has been described as a fit index "bias" rather than an indication of model correctness. Focusing on the root mean square error of approximation (RMSEA), we argue that the dominant approach of using the difference between model RMSEAs (i.e., computing ΔRMSEA or simply eyeballing the RMSEA values across models) is problematic. Instead, we advocate the fit index RMSEA_D (Savalei, Brace, & Fouladi, 2022), an RMSEA associated with the chi-square difference test, which captures the deterioration of fit per added degree of freedom in the constrained model (HFM) relative to the original model (BFM) on the familiar RMSEA metric. Our large-scale simulation study showed that compared with the dominant approach, RMSEA_D, is less biased towards BFM. We also report under which conditions and degrees of underlying misspecification RMSEA_D were able to retain the otherwise correct constraints in the HFM and which levels of misspecification were too great that led to the rejection of HFM.

12:00-2:00 PM Lunch Break

2:00 PM
Keynote Speaker:
Professor Craig Rodriguez-Seijas
University of Michigan

4:00 PM BOH

DAY 2
FRIDAY APRIL 28TH

11:00-11:10 AM | **Bronwen Grocott** (Joelle LeMoult)
Biased interpretation of ambiguity in state and chronic loneliness

The rising prevalence and adverse impacts of chronic loneliness underline the need to understand its underlying mechanisms. Although evolutionary models implicate negatively biased interpretation of social information in chronic, but not state loneliness, this remains untested. The present study will examine negative interpretation biases towards socially relevant and non-social ambiguous stimuli in chronic and state loneliness, and test whether anxiety and depressive symptoms moderate these associations. Over a two-hour online session, approximately 300 undergraduate students will complete an interpretation bias task where they will rate social and non-social ambiguous images as positive or negative, with interpretation bias calculated as percent negative ratings. Next, participants will undergo a state loneliness induction and complete the interpretation bias task a second time. Finally, participants will self-report levels of chronic loneliness, anxiety, and depression. Findings would substantiate untested tenets of the evolutionary theory of loneliness and elucidate shared vulnerability for loneliness, anxiety, and depression.

11:10-11:20 AM | **Erin Fitzpatrick** (Samantha Dawson)
Does sexual satisfaction mediate daily associations between body satisfaction and relationship satisfaction in new parent couples?

PNew parenthood is often accompanied by changes to couples' sexual and romantic relationships and is a vulnerable time for body image concerns due to bodily changes (e.g., weight gain, shape changes) that occur in both parents throughout the perinatal period. Cross-sectional research finds that feeling dissatisfied with one's own or partner's body is linked to poorer sexual, and in turn, relationship satisfaction. However, no research has examined this in a vulnerable sample of new parents or using a longitudinal design better suited to test hypotheses of mediation. To address this gap, 243 new parent couples completed 21 daily surveys beginning at 3-months postpartum assessing daily own and partner body satisfaction, sexual satisfaction and relationship satisfaction. We expect that when one parent reports lower satisfaction with their own or their partner's body on a given day, both parents will report lower sexual, and in turn, relationship satisfaction on that day. Normalizing changes to new parents' bodies and finding ways to appreciate these changes in oneself and one's partner may bolster sexual and relationship satisfaction during this vulnerable time.

11:20-11:30 AM | **Carmelle Bareket-Shavit** (Toni Schmader)
What's the harm? Experiences of Implicit and Intentional Bias

What does it actually feel like to be on the receiving end of implicit and intentional forms of bias? In a series of studies, we measure the perceptions and experiences of harm. First, we use a theoretically derived approach to develop vignettes for unbiased, implicitly biased, and intentionally biased behavior and included scenarios involving stereotypes about five different social identity groups. Second (N = 302), we ask whether bias that is attributed to intentional, compared to implicit processes, are perceived as more harmful, or whether they are perceived as similarly harmful. We find that when biased behavior is attributed to intentional processes, recipients perceived more pain than those that were attributed to implicit processes, however perceptions of exclusion and invisibility did not vary as a function of intentionality. Third, we test whether those with third-party perspectives (N = 309) on an incident of bias underestimate or overestimate the experience of harm from implicit, more than intentional, bias. And finally, we use a qualitative recall method to better understand the experiences of these incidents in the real world (N = 138). Together, this research asks how attributional ambiguity may inform the experience of harm from bias.

11:30-11:40 AM | **Jessica Lee** (Andy Baron)
Who can lead? Children's leadership judgments are shaped by gender and racial biases.

The gender gap in leadership functions as a barrier for women, potentially signalling who can and cannot occupy these roles. Initial evidence suggests that stereotypes and beliefs about leadership and competence develop early in life, where boys and men are more associated with status and brilliance, while White people are more associated with decision-making power and being in-charge. In the current study, I examined the presence of gender and racial biases in children's leadership selection as part of a larger project exploring children's intuitions of minority members' status and perceived fit. When asked to choose a "captain" from a diverse group, children aged 5-7 & 9-11 (N = 265), regardless of their own identity, showed a gender-ingroup preference, as well as a pro-White and a familiarity bias for East Asian people when making leadership judgements. Thus, two independent biases (i.e., gender and race) were operating when children select leaders.

11:40-11:50 AM | **Vasileia Karasavva** (Amori Mikami)
To Intervene or Not to Intervene? Bystander Intervention in Cyber Aggression

Background: Owing to the public nature of social media, incidents of cyber aggression often occur in the presence of observing bystanders. Though bystanders have the option to intervene to reduce the impact of cyber aggression on victims, few actually do. We examined how the five steps and barriers of the bystander intervention model (validated in face-to-face settings) can predict helping behaviors when encountering cyber aggression.Method: A sample of 1114 undergraduates viewed a fictitious Twitter timeline with pilot-tested cyber aggressive content. The bystander intervention model was tested using the maximum likelihood estimation procedure. We considered modification indices that are supported by theory and follow the proposed structure of the model.Results: Overall, interpreting a situation as problematic and taking personal responsibility to act predicted behavioral intentions to intervene. However, participants who interpreted situations as more problematic were less certain about how to handle them. The hypothesized barriers did impede the steps, but this was not limited to the specific step to which the barrier was theoretically assigned. In fact, the perception that the costs of intervening would be greater than the rewards seemed to be substantial, as it affected successful performance of the most steps. Discussion: Based on these results, educational programs targeting cyber bystander intervention might focus on earlier steps on the model. Ultimately, this work could inform interventions to address cyber aggression with the end goal of creating healthier online social experiences.

11:50 AM - 12:00 PM | **Nicole Stuart** (Nancy Sin)
Daily stress and meta-attention: Moderation by physical activity and age

Growing research indicates that daily stress is associated with poor same-day memory performance, but it is unclear whether this relationship varies by age and whether moderate-to-vigorous physical activity (MPVA) might offset the within-person link between stress and memory in daily life. Ecological momentary assessment data were collected from adults aged 25-88 across British Columbia, Canada. For 14 days, participants (N = 249) wore a tri-axial physical activity monitor, reported stressor occurrence and perceived stressfulness of the events in mobile surveys 4 times per day, and rated their memory at the end of each day. Multilevel modeling was run to evaluate daily perceived stressfulness as a predictor of subjective memory, with same-day MVPA engagement (activity counts >570 counts/60s) and age (years) entered as moderators. At the within-person level, on days when stressors were perceived as more stressful than usual, subjective memory was rated as relatively worse (b = -0.037, CI[-0.061, -0.017], p < .001). MVPA did not buffer against the within-person associations of daily stress with subjective memory, nor did age (p > .05). Future work could examine the mechanisms that might explain the link between stress and memory, for example cortisol, as well as the associations of different intensity and forms of physical activity on stress across age groups.

12:00-1:00 PM Lunch Break

1:00-1:10 PM | **Grayson Mullen** (Alan Kingstone)
Time estimation in virtual reality

Virtual reality developers have suggested that "time passes differently" in VR: that an hour spent in VR can feel like 15 minutes. This claim appeals to a common intuition that time flies during fun or absorbing tasks, but empirical tests for an effect of VR on time perception are sparse and inconclusive. In a 2021 study we reported the first evidence that VR causes people to underestimate time (in comparison with a matched non-VR condition). But in attempting to replicate and extend that finding, our current study found a surprising reversal of the effect: participants overestimated time in VR. In subsequent experiments we investigate the possibility that our divergent results could be explained by changes to the size of the virtual camera, which inversely determines the apparent size of the virtual environment. VR may flexibly cause people to underestimate time in large environments and overestimate time in small environments.

1:10-1:20 PM | **Mudi Zhao** (Stan Floresco)
Delineating prefrontal-amygdala circuits in cue-guided probabilistic decision-making

The medial prefrontal cortex and amygdala mediate various cognitive processes, including decision-making under conditions of reward uncertainty. The prelimbic (PL) and infralimbic (IL) subregions of the rodent medial prefrontal cortex are functionally heterogeneous and exhibit distinct patterns of connectivity with the basolateral amygdala (BLA). Here, we pharmacologically disconnected PL-BLA vs. IL-BLA communication in rats while they performed a cued probabilistic decision-making task, known as the "Blackjack" task. Animals select between two levers: a safe lever that delivers a small/guaranteed reward, or a risky lever that delivers a larger, but uncertain reward. At the start of each trial, an auditory tone is presented to inform rats of whether the odds of obtaining the larger reward are good (50% chance) or poor (12.5% chance). When PL and BLA signaling was disrupted, animals were less risky when the odds of receiving the large/risky reward were good, yet more risky when the odds were poor. In contrast, disrupting signaling between the IL and BLA produced an increase in risky choice only on poor-odd trials. This study provides evidence of dissociable prefrontal-amygdala circuits regulating risk/reward decision-making.

1:20-1:30 PM | **Raymond Wu** (Luke Clark)
Impulse and Reason: Justifications in Disordered Gambling

Disrupted self-control is as a core feature of addiction. Although such failure is often viewed as reflexive, they can also result from the more deliberate use of justifications. People think of reasons to give themselves permission to engage in tempting activities (e.g., "I worked hard today so I deserve to…"). Justifications have been minimally studied in the context of behavioral addictions like gambling disorder. Here, we investigated the degree to which justifications occur in gamblers who are trying to reduce or quit gambling. We further tested whether these justifications predicted key indices of gambling involvement (e.g., gambling frequency, problem gambling severity) beyond standard measures of self-control (e.g., trait impulsivity, delay discounting). Results showed that justifications explained unique variance in gambling involvement even when controlling for self-control. These findings suggest that the use of justifications may underpin behavioral addictions, or at least disordered gambling, as much as disrupted self-control. More generally, research efforts should be made to characterize the various metacognitive reasoning processes that reinforce addiction.

1:30-1:40 PM | **Zohreh Soleimani** (Kiley Hamin & Lauren Emberson)
Infants' neural responses to sociomoral scenarios via EEG

Preverbal infants prefer prosocial to antisocial characters, suggesting that the ability to sociomorally evaluate others is early emerging. However, some argue that infants' responses within these studies reflect low-level perceptual processes rather than social understanding of the events. Using EEG, the purpose of this research was to address this alternative explanation by examining 1) specific neural signatures that have been associated with social (indexing by P400 and N290 ERP components) versus lower-level attentional processing (indexing by Nc ERP component) and 2) infants' preferences towards prosocial over antisocial interactions (indexing by frontal alpha asymmetry for approach/avoidance motivation) when 6-month-old infants watch a helping/hindering scenario (the box-paradigm). We hypothesized that 6-month-olds would show greater amplitudes in the P400 and N290 ERP components to hinderers versus helpers (indexing social perception); in contrast, no significant differences would be observed for the Nc component (indexing attentional allocation). Also, greater right frontal alpha power (indexing approach motivation) would be observed when infants view helping versus hindering. While data collection is ongoing, the preliminary results will be presented. This work may provide evidence for the presence of both motivational and social processes in infants' responses to sociomoral behaviors and actors, suggesting that infants' responses to sociomoral events are unlikely to be attributable to attentional differences.

1:40-1:50 PM | **Shayden Schofield-Lewis** (Stan Floresco)
D1 and D2 dopamine receptor subtypes in nucleus accumbens core and shell exert differential effects on cue-guided risk-reward decision-making

The ability to integrate cues to guide efficient decision making is a central behavioral adaptation in many organisms, and disorders involving pathophysiology of the dopamine (DA) system are associated with sub-optimal decision making. Prior research into dopamine modulation of decision-making has used probabilistic discounting tasks where internal representations of probability guide choice. Yet, real-world decision-making often involves using information provide by external cues to guide choice. To measure this, our group has developed a rodent assay known as the "Blackjack" task, requiring rats to use external stimuli to guide optimal decisions. Each trial involves the presentation of one of two auditory cues, followed by the extension of two levers. Rats choose between the small/certain lever (1 pellet at 100% probability) and the large/risky lever (4 pellets, probabilistically). The auditory stimuli signals if the large/risky lever will have good (50%) odds or poor (12.5%) odds of delivering the large reward. Separate groups of rats were trained on a control, conditional auditory discrimination task, wherein the same two cues were used to inform animals that a response on either the lever or right lever would deliver reward with 100% certainty, thereby removing the probabilistic component embedded in the Blackjack task. Using these tasks, we investigated the influence of intracranial D1 and D2 antagonists in the nucleus accumbens core/shell in male and female rats. Animals were well-trained on the tasks and then received intracranial infusions of either D1 or D2 antagonists prior to testing. Previous work by our group has shown that a D1 blockade reduces risky choice during probabilistic discounting guided by internal representations of reward history. In contrast, a recent study by our group using systemic DA manipulations on the Blackjack task found that D1 antagonism did not affect choice on the Blackjack task. This suggests recruitment of distinct underlying decision-making circuits between the tasks. Preliminary data show that infusion of either DA antagonist into the accumbens shell had no effect on performance of the conditional auditory discrimination. The current study aims to highlight both the functional heterogeneity of the nucleus accumbens core and shell, and investigate potential sex differences between our male and female subjects on how D1 and D2 antagonism affects risk/reward decision making guided by external cues.

1:50-2:00 PM | **Maria Gil Brandao** (Darko Odic)

The role of catching mistakes and our number sense in the development of early mathematics

When solving a math problem, we sometimes feel like we made a mistake, even when we are unsure about exactly what it is. Imagine a problem like 57 + 45 = 112; although you may not know the exact answer without calculating, you probably feel that 112 is too high. Where does this feeling of "error detection" come from? In adults, one known source of math-related error detection is the Approximate Number System (ANS), a universal perceptual number sense we are all born with. The current study had two main questions: 1- Is the ANS significantly related to formal math abilities in children?; 2- Is the ability of error detection a possible mechanism that underlies this relationship? To answer these questions, I proposed and executed 2 experiments, creating a new paradigm to be used on these. Experiment 1 – I developed a new paradigm to test for children's ability to detect mistakes in math problems made by others. To do so, we show them a little pig puppet and ask math questions to it. The puppet has pre-recorded answers that are then played to the kid. Their goal is to decide if the puppet gave a correct or incorrect answer in each trial, with a total of 22 trials. The puppet is right on 50% of the trials and the difficulty of the questions vary. Besides this new paradigm, we also ran the PANAMATH task with the participants to assess their ANS acuity. Experiment 2 – I used the same paradigms as Experiment 1 and added a formal math assessment to this experiment. This assessment allowed me to test each child's ability in formal math, the one learned in school, and gave a better picture of their capacity to solve problems and deal with numbers by themselves. Results: This study showed a robust correlation between children's ability to catch mistakes in math made by others and their individual differences in the ANS. We also found a significant correlation between the ANS and formal math abilities. Further analysis showed that one's ability to catch mistakes in math may serve as a potential mechanism for the relationship between the ANS and formal math.

2:00-2:10 PM | **Miranda Long** (Darko Odic)

Number perception and statistical learning: Investigating how children develop number sense

Despite its abstractness, human newborns and many non-human animals can represent number. How? Number is thought to be represented via the Approximate Number System (ANS), an innate module dedicated to number perception. I tested a new proposal: number perception does not require a built-in specialized system but emerges through gradual experience with natural scenes and domain-general learning mechanisms like statistical learning. To do this, I investigated a prominent statistical feature of natural scenes: a low number prior. If human's number perception emerges through experience and statistical learning, then (1) humans should expect most natural scenes to contain few objects and (2) this expectation should become stronger with experience (i.e., age). To test this expectation, I embedded stimuli with perceptual noise (e.g., reduced contrast). Given efficient-coding theories, the more uncertain humans are when estimating the number of objects, the more they should rely on their priors, thus making an educated guess of lower numbers. Younger (five and six-year-olds) and older (seven and eight-year-olds) children (N = 80) completed a number discrimination task where they verbally reported which of two sides contained more dots. Findings suggest that number perception does not emerge via experience with natural scenes and statistical learning.

2:10-2:15 PM Break

2:15-2:25 PM | **Tianxin Wang** (Jason Snyder)
Representational Drift of Contextual Fear Engrams Across the Brain

The physical manifestation of memory is an "engram", the population of neurons that is activated during a learning experience and, when reactivated, contributes to the process of memory retrieval and subsequent behaviour. To maintain stable memories, it has long been assumed that neural representations must also be stable. However, memories are dynamic and recent investigations also suggest that neural representations are more fluid than formerly thought. How representations drift over longer intervals remains unclear, but is important to understand how short- vs long-term memories are used to guide future behavior. Since perception and memory rely on many brain regions, and drift has been identified in areas outside of the hippocampus, true understanding of representational stability requires a broad network-level approach. To characterize representational drift across sensory and associational regions of the brain, FosTRAP mice and activity-dependent tagging are used to indelibly label activated neuronal populations during two identical contextual fear conditioning events, at recent and remote timepoints. This work will help to identify the extent to which representations drift in individual brain regions and brain-wide networks that are involved in perception and memory.

2:25-2:35 PM | **Victoria Wardell** (Connor Kerns & Daniela Palombo)
How Childhood Adversity Relates to Associative Memory for Emotional Stimuli

Binding content together in memory (i.e., associative memory) is impaired by the presence of negative stimuli, limiting the contextualization of negative content in memory. Adults exposed to adverse childhood experiences show heightened emotional reactivity that may influence memory for emotional content. Here, we sought to elucidate whether adverse childhood experiences moderate the impairing effect of emotion on associative memory. As part of an online study, participants (N=700) self-reported exposure to childhood adversity. Participants were presented with images stratified by emotion (negative, neutral) alongside a paired image of a benign object. After a 24-hour delay, participants' associative memory for image pairs was tested. A mixed linear model was used to test the hypothesis that greater exposure to adverse childhood experiences would be associated with poorer associative memory for negative images. Contrary our prediction, exposure to adversity in childhood was not associated with poorer associative memory, regardless of the emotionality of the stimuli. Exploratory analyses revealed that current psychological well-being did not influence the pattern of results. These findings indicate that exposure to adverse experiences in childhood is not always related to one's ability to bind content together in memory, at least as measured in the current study, contrary to prominent theories positing that disruption to associative memory drives mental health concerns associated with childhood adversity

2:35-2:45 PM | **Omran Safi** (Daniela Palombo)

Immersive affective dilation: Investigating temporal-duration for emotional events using virtual reality

Our memory for "time" may be colored by the emotions we feel at the moment of experiencing an event. Prior work has pointed to temporal duration being particularly susceptible to emotion-induced inaccuracies. In particular, negative emotional events are subsequently recalled as having elapsed for longer than neutral events. However, previous work has been faced with the challenge of balancing ecological validity and experimental control, often opting to use either autobiographical events or video stimuli. We sought to address this issue by using virtual reality (VR) to provide immersive naturally-unfolding events in an experimentally controlled manner. Using a novel VR paradigm, we expose participants to negative and neutral stimuli across different environments. We then asked participants to provide temporal duration estimates for each of these 'micro-events'. We hypothesize that negative micro-events will be associated with memory for greater duration than neutral ones.

2:45-2:55 PM | **Talia Morstead** (Anita DeLongis)

Perceived threat and coping responses during the COVID-19 pandemic: Prospective associations with vaccine hesitancy

Background The COVID-19 pandemic has brought to light the importance of identifying factors associated with vaccine hesitancy. Disease threat and coping responses are central to health behavior engagement and present potential alterable targets for intervention. Purpose To examine the roles of perceived threat of COVID-19 and coping in vaccine hesitancy, we examined how coping strategies involving approach and avoidance interact with perceived threat of COVID-19 to predict vaccine hesitancy. Methods We used data from 1570 North American participants who reported their vaccine hesitancy as part of a longitudinal study assessing psychosocial responses to the pandemic. We used logistic regression models and mean scores of perceived threat of COVID-19, approach coping, and avoidance coping from prior timepoints to predict vaccine hesitancy in December 2020, when COVID-19 vaccines were first being approved for use in North America. Results. Low perceived threat of COVID-19 was associated with greater likelihood of being vaccine hesitant. However, approach coping moderated this association, such that people who engaged in more approach coping were less likely to be vaccine hesitant even when they did not feel personally threatened by COVID-19. In contrast, avoidance coping was associated with greater likelihood of vaccine hesitancy regardless of perceived threat of COVID-19. Conclusions. Our results illustrate the contributions of approach and avoidance coping to vaccine hesitancy and in doing so, provide preliminary evidence for coping behavior to serve as a target for intervention to reduce vaccine hesitancy.

2:55-3:05 PM | **Chaoyi Shi** (Jiaying Zhao)
How does choice architecture influence attention and decision making?

Decades of studies on nudge have demonstrated that choice architecture has a profound influence on human decision making, but the underlying cognitive mechanisms still remain unclear. In the current study, we examined three commonly studied choice architecture (default, instructions, presentation order) and how they influence visual attention and decision making. In a pre-registered experiment (N=646), participants were presented with two credit cards and asked to choose the better card for themselves given their financial situation. We used a factorial between-subjects design with 8 conditions: default (better card vs. worse card was pre-selected) x instructions (pre-selection was intentional vs. random) x presentation order (better card vs. worse card was presented on the left). We found that participants paid more attention to the card when it was pre-selected than when it was not, and they were more likely to choose the pre-selected card. Participants also paid more attention and were more likely to choose the card when it was presented on the left than on the right. However, instructions about the pre-selection didn't influence attention or choice. Interestingly, presentation order had a stronger influence on visual attention than default, but default had a stronger influence on choice than presentation order. These findings suggest that visual attention can determine decision making, but this effect depends on the specific choice architecture. The current study provides new theoretical insights on the cognitive mechanisms of nudge and practical implications for practitioners (e.g., banks, financial regulators) on designing choice architecture to guide attention and decision making.

3:05-3:15 PM | **Sabrina Ge** (Paul Hewitt)
The impact of narcissism on group psychotherapy outcome

Theory and research suggest that pathological narcissism (PN) adversely impacts psychotherapy processes important for treatment outcome (e.g., therapeutic alliance). However, few studies have empirically tested whether PN interferes with treatment outcome itself. The present study aims to assess whether higher levels of pre-treatment PN predict smaller improvements in life satisfaction, from pre- to post-treatment, in a sample of patients undergoing group psychodynamic treatment for perfectionism. Results: Pathological narcissism did not predict change in life satisfaction from pre- to post-treatment. Discussion: While past research and theory suggests that pathological narcissism may adversely impact treatment processes, these findings suggest that narcissism's adverse effects do not extend to treatment outcome.

3:15-3:30 PM
Break

3:30 PM
Awards Presentation

It takes courage to grow up and
become who you really are.
— E.E. Cummings