

# Society for Affective Science

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## Thematic Flash Talks:

Friday, April 28, 2017

8:30 a.m.-9:30 a.m. ....	Psychopathology and Neurodegeneration
8:30 a.m.-9:30 a.m. ....	Emotion Perception
8:30 a.m.-9:30 a.m. ....	Development

Saturday, April 29, 2017

8:30 a.m.-9:30 a.m. ....	Stress and Health
8:30 a.m.-9:30 a.m. ....	Cognition and Emotion: Prediction, Decision, and Retrieval
8:30 a.m.-9:30 a.m. ....	Emotion Regulation

## Hot Topic Session:

Saturday, April 29, 2017

4:30 p.m.-5:30 p.m. ....	Emotion in Intractable Conflicts
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## Poster Schedule:

### Poster Session A

Thursday, April 27, 2017

5:30 p.m.-6:30 p.m. ....	Assemble your poster
<b>6:30 p.m.-8:00 p.m.</b> .....	<b>Author present</b>
8:00 p.m.-9:00 p.m. ....	Take down your poster

### Poster Session B

Friday, April 28, 2017

12:00 noon-1:00 p.m. ....	Assemble your poster
1:00 p.m.-7:00 p.m. ....	Poster viewing
<b>5:30 p.m.-7:00 p.m.</b> .....	<b>Author present</b>
7:00 p.m.-8:00 p.m. ....	Take down your poster

### Poster Session C

Saturday, April 29, 2017

12:00 noon-1:00 p.m. ....	Assemble your poster
1:00 p.m.-4:15 p.m. ....	Poster viewing
<b>2:45 p.m.-4:15 p.m.</b> .....	<b>Author present</b>
4:15 p.m.-5:15 p.m. ....	Take down your poster

**Thematic Flash Talks**  
**Friday, April 28, 2017**  
**8:30 a.m.-9:30 a.m.**

### Psychopathology and Neurodegeneration

#### **CRAVING PREDICTS DRUG USE: A QUANTITATIVE META-ANALYSIS**

Hedy Kober, Rebecca G. Boswell  
Yale University

*Descriptors: craving, drug use, substance use disorders*

Craving – defined as “a strong desire” – has been a focus of both Eastern and Western philosophies for centuries. Presently, craving is studied as a new DSM5 diagnostic criterion for Substance Use Disorders (SUDs), which are the most prevalent, costly, and deadly form of psychopathology. Nevertheless, the exact role of craving in drug taking has been hotly debated, especially the role of cue-induced craving in response to drug-related cues (e.g., others drinking/smoking, paraphernalia). To resolve this, we conducted a meta-analysis assessing the prospective predictive effects of drug cue exposure and craving on drug use and relapse. Across >350 statistics, from >120 studies, representing >16,500 drug users, we found that drug craving, cue reactivity, and cue-induced craving significantly predicted drug use and relapse with a medium effect size. Subsequent analyses revealed that cue-induced craving predicted drug use measured immediately, as well as relapse up to 1 year later. Effects held for both treatment-seeking and non-treatment-seeking drug users, and were comparable across drug types. Conservative publication-bias analysis suggests that over 320,000 studies with null results would need to be published to render the meta-analytic results null. Methodologically, this highlights an important role for meta-analyses in addressing issues of replicability across entire fields of study. Theoretically, results suggest a strong motivational and causal role for craving in drug taking behavior. In turn, this has significant clinical implications for the treatment of SUDs.

#### **IDENTIFYING THE MOOD BRIGHTENING BENEFITS OF SOCIAL INTERACTION IN CURRENT AND REMITTED MAJOR DEPRESSION**

Erin S. Sheets<sup>1</sup>, Michael F. Armey<sup>2</sup>  
<sup>1</sup>Colby College, <sup>2</sup>Butler Hospital & Warren Alpert Medical School of Brown University

*Descriptors: depression, mood brightening, loneliness*

Behavioral treatment models, particularly behavioral activation, indicate that depressed individuals gain affective benefits from social interactions, even when an individual's social motivation is minimal. The present study is the first to examine the effects of objective social proximity (being alone or with others) on positive and negative emotional states in a sample of currently depressed, previously depressed, and never depressed emerging adults. Using an ecological momentary assessment approach, participants were prompted to rate their current emotional state and whom they were with 4 times per day for 14 days. Within-person processes were examined through multilevel modeling. Across the sample, participants displayed increased positive affect and decreased negative affect when they were interacting with 1 or more individuals. On top of this overall pattern, currently depressed participants demonstrated an additional improvement in sadness ( $t(97) = 2.33, p = 0.022$ ) and loneliness ( $t(97) = 2.70, p = 0.008$ ) when interacting with others. Recent interactions continued to benefit currently depressed individuals over time: social interactions from the last assessment (e.g., 4 hours ago) predicted lower hopelessness at the current assessment ( $t(97) = 2.96, p = 0.004$ ). These mood brightening, affective “bumps” for currently depressed individuals validate behavioral activation approaches that emphasize social engagement as a key treatment target.

#### **THE PROSPECTIVE RELATIONSHIP BETWEEN EMOTION DYNAMICS AND PSYCHOPATHOLOGICAL SYMPTOMS**

Marlies Houben, Peter Kuppens  
KU Leuven - University of Leuven

*Descriptors: emotion dynamics, psychological well-being, psychopathology*

Research has shown that, next to how people usually feel, the way people's emotions change and fluctuate over time is also linked to their psychological well-being. Indeed, a large scale meta-analysis (Houben, Van Den Noortgate, & Kuppens, 2015) has shown that emotions that are more variable over time, that show more abrupt changes from one time point to the next and that are more self-predictive or inert over time are linked to poor psychological well-being and more psychopathology. However, the nature and direction of this relationship is unclear. Therefore, the goal of this study was to obtain more insight into the reciprocal prospective relationships between emotion dynamical patterns and psychopathological symptoms. We used data from 178 participants that participated in a multi-wave longitudinal study. First, we examined concurrent relationships between patterns of emotional instability and inertia on the one hand, and depressive symptoms and borderline personality disorder (BPD) symptoms on the other hand. Next, we examined whether these emotion dynamical patterns could prospectively predict a change in symptoms one year later. The reverse direction was also explored. Results revealed that in line with previous research, emotional inertia was mainly linked to depressive symptoms, and emotional instability was linked to BPD symptoms ( $ps < .01$ ). Moreover, results showed that symptoms mainly predicted a change in dynamic patterns ( $ps < .05$ ), but not the other way around, shedding light on the temporal sequence of influence between emotion dynamics and symptoms.

#### **CORTISOL ADMINISTRATION MODULATES PREMOTOR CORTEX ACTIVATION AND NEGATIVE MEMORY BIAS IN DEPRESSED WOMEN WITH HISTORY OF EARLY LIFE ADVERSITY**

Heather C. Abercrombie<sup>1</sup>, Carlton P. Frost<sup>1</sup>, Erin C. Walsh<sup>2</sup>, Maggie C. Sampe<sup>1</sup>, M. Daniela. Cornejo<sup>1</sup>, Roxanne M. Hoks<sup>1</sup>, Charlotte O. Ladd<sup>1</sup>, Rasmus M. Birn<sup>1</sup>  
<sup>1</sup>University of Wisconsin-Madison, <sup>2</sup>University of North Carolina

*Descriptors: cortisol, depression, emotional memory*

Acute cortisol elevation may be neurocognitively beneficial in depressed individuals. Seventy-five women (32 depressed, 14 previously depressed & 29 never-depressed) with varying levels of prior childhood abuse participated in a memory encoding task for emotional pictures during 2 fMRI scans separated by 1 week. One hour prior to scans, women received either placebo or 20 mg cortisol (CORT). Free recall for pictures was tested 2 days after each scan. Women with greater levels of depression showed more biased recall of unpleasant relative to pleasant pictures encoded during placebo,  $r(74) = .38, p < .001$ . CORT abolished this relation; there was no correlation between depression severity & recall bias for pictures encoded during CORT,  $r(74) = .08, n.s$ . This effect of CORT was due to a reduction in recall bias only in depressed women with severe childhood emotional abuse,  $F(2,74) = 5.63, p < .01$ . In women with (vs. without) childhood emotional abuse, CORT affected activation in premotor cortex (BA6; Group X Drug interaction  $p < .01$ , corrected), which predicted recall bias for pictures encoded during CORT,  $r(74) = .26, p < .03$ . These findings suggest that cortisol elevation is psychologically beneficial in a subset of depressed women. In depressed women with early life emotional abuse, acute cortisol elevation may (counter-intuitively) decrease formation of negatively biased memories. Activation in premotor cortex, which has recently been found to be associated with adrenal function, appears to be related to cortisol's beneficial effects on emotional memory in depressed women with early abuse.

### THE BIPOLARITY OF AFFECT AND DEPRESSION

Egon Dejonckheere<sup>1</sup>, Merijn Mestdagh<sup>1</sup>, Marlies Houben<sup>1</sup>, Yasmine Erbas<sup>1</sup>, Annette Brose<sup>2</sup>, Peter Kuppens<sup>1</sup>

<sup>1</sup>KU Leuven, <sup>2</sup>Humboldt-Universität zu Berlin

*Descriptors: positive and negative emotion, depression, affective bipolarity*

People differ in the extent to which they experience positive (PE) and negative emotions (NE) rather independently or as bipolar opposites. Here, we examine the proposition that the nature of the relation between positive and negative emotions in a person's experience is indicative of psychological well-being, in particular vulnerability for depression, a mood disorder typically characterized by diminished positive emotion (anhedonia) and increased negative emotion (depressed mood). In three experience sampling studies we examined how positivity and negativity are related within people's experiences in daily life and how the degree of bipolarity of this relation is associated with depressive symptom severity. In Study 1 (n = 95) and 2 (n = 177), we show both concurrently and longitudinally how a stronger bipolar PE-NE relationship is associated with ( $r = .33$ ), and in fact is predicted by ( $r = -.26$ ), higher depression severity, even after controlling for mean levels of positive and negative emotionality. In Study 3 (n = 112), these findings are replicated with depression's core symptoms, sadness and anhedonia, in participants with elevated depression scores. Together, these results demonstrate that depressive vulnerability involves stronger bipolarity between positive and negative emotion, reflecting reduced emotional complexity and flexibility.

### FEAR VS. ANXIETY, WHAT'S THE DIFFERENCE? DIFFERENTIAL ELECTROCORTICAL AND HEART RATE RESPONSES TO PREDICTABLE AND UNPREDICTABLE THREAT

Matthias J. Wieser  
Erasmus University Rotterdam

*Descriptors: fear, anxiety, attention*

Fear is elicited by imminent threat and leads to phasic fear responses with selective attention, whereas anxiety is characterized by a sustained state of vigilance due to uncertain danger. In two studies we investigated attention mechanisms in fear and anxiety by adapting the NPU-threat test to measure steady-state visual evoked potentials (ssVEPs). We investigated ssVEPs across no aversive (N), predictable aversive (P), and unpredictable aversive contexts (U), signaled for 20 seconds by either four-object arrays (study 1) or complex visual stimuli (study 2). In addition, central cues (Gabor patches or faces) were presented for 3 s during all conditions but predictably signaled threat only during the P condition. Importantly, cues and context events were flickered at different frequencies (15 Hz vs. 20 Hz) in order to disentangle respective ssVEP responses. In study 1, onset of the U compared to the P context elicited larger ssVEPs. Conversely, P cues elicited larger ssVEPs compared to N cues. In study 2, these findings of increased ssVEP amplitudes in response to P cues were replicated, which was also accompanied by an enhanced heart rate acceleration. Both P and U context yielded increased ssVEP amplitudes, with longer lasting effects in the U context. Enhanced heart rate deceleration was observed for both P and U contexts. Overall, these results lend further support to the defense-cascade model with hypervigilance and orienting in the post-encounter phase of threat (anxiety) and selective attention and defensive mobilization in the circa-strike phase of threat (fear).

### THE EFFECTS OF OXYTOCIN ON DETECTION OF EMOTIONAL PROSODY IN SPEECH IN INDIVIDUALS WITH SCHIZOPHRENIA AND HEALTHY CONTROLS

Brandon Chuang<sup>1</sup>, Steffani Campbell<sup>2</sup>, Cassidy Dalton<sup>2</sup>, Dan Mathalon<sup>2</sup>, Sophia Vinogradov<sup>2</sup>, David Leitman<sup>3</sup>, Josh Woolley<sup>2</sup>

<sup>1</sup>University of California Berkeley, <sup>2</sup>University of California, San Francisco,

<sup>3</sup>University of Pennsylvania

*Descriptors: schizophrenia, oxytocin, verbal prosody*

Individuals with schizophrenia (SZ) have a deficit in interpreting prosody (i.e., emotional musicality of speech). The neuropeptide oxytocin has multiple prosocial effects and has the potential to remedy the social deficits in SZ. Thus, we investigated the effects of intranasal oxytocin on verbal prosody performance in individuals with SZ and healthy controls (HC). We administered 40 IU of oxytocin and placebo to 65 individuals with SZ and 98 HC in a randomized, double-blind, study with the two testing days separated by at least one week. We examined performance on identification of emotions (affection, anger, happy, sad, fear, no emotion) as well as rating intensity (scale 1-9) in a task consisting of phrases spoken with different emotional prosody (e.g., "that's exactly what happened!"). Mixed factorial ANOVA revealed that SZ were significantly impaired on recognizing emotions ( $F(1, 161)=11.26$ ;  $p < 0.001$ ) compared to HC, but there was no significant main effect of drug ( $F(1, 161)=0.86$ ;  $p > 0.36$ ) in recognizing emotions in either group. We also examined intensity ratings and found no drug ( $F(1, 161)=0.31$ ;  $p > 0.58$ ) or group ( $F(1, 161)=0.21$ ;  $p > 0.64$ ) main effects. Consistent with previous results, we found SZ to be impaired at detecting prosodic cues. We found that a single dose of oxytocin did not improve either the ability to recognize emotions in prosody or rate intensities differently in either group. These results are consistent with our previous work showing that oxytocin does not have strong effects on lower-level social cognition such as emotional cue perception.

### LOWER EMPATHIC ACCURACY IN PATIENTS WITH NEURODEGENERATIVE DISEASE IS ASSOCIATED WITH GREATER DEPRESSION IN FAMILIAL CAREGIVERS

Casey L. Brown<sup>1</sup>, Sandy J. Lwi<sup>1</sup>, Jennifer Merrilees<sup>2</sup>, Katherine P. Rankin<sup>2</sup>, Robert W. Levenson<sup>1</sup>

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*Descriptors: empathy, depression, social relationships*

Accurately recognizing others' emotions (empathic accuracy) helps us build and maintain social relationships that are critical for mental health. The loss of empathic accuracy may be detrimental to the mental health of relational partners. We investigated whether deficits in empathic accuracy brought on by a variety of neurodegenerative diseases relates to depression in familial caregivers. We used a measure of empathic accuracy with high ecological validity (tracking changes in emotional valence in another person) and obtained caregiver reports of depressive symptoms using two well-validated and reliable self-report measures of depression. Across two studies (N=54 and N=172 dyads), lower empathic accuracy in neurodegenerative patients was associated with greater depression in caregivers, (Study 1:  $\beta = -.30$ ,  $p = .029$ ), (Study 2:  $\beta = -.34$ ,  $p = .004$ ), even after accounting for patient depression and cognitive impairment. Findings suggest this relationship: (a) is related to patients' poor social functioning but not to severity of dementia; and (b) is revealed by the tracking task but not by having patients identify facial expressions of emotion. Given the aging population and increasing rates of neurodegenerative diseases, heightened risk for depression in caregivers represents a significant public health problem. These findings contribute to our basic understanding of the social consequences of declines in emotional functioning, and shed light on an important interpersonal factor associated with depression in familial caregivers.

### DIMINISHED PHYSIOLOGICAL RESPONSE TO “TASK INSTRUCTIONS” IN BEHAVIORAL VARIANT FRONTOTEMPORAL DEMENTIA

Kuan-Hua Chen<sup>1</sup>, Sandy J. Lwi<sup>1</sup>, Alice Y. Hua<sup>1</sup>, Marcela Otero<sup>1</sup>, James J. Casey<sup>1</sup>,  
Claudia Haase<sup>2</sup>, Bruce Miller<sup>3</sup>, Robert W. Levenson<sup>1</sup>

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*Descriptors: psychophysiology, frontotemporal dementia*

Physiological activation in novel situations allows individuals to prepare for potential challenges and opportunities. Behavioral variant frontotemporal dementia (bvFTD) is a neurodegenerative disease characterized by socioemotional deficits including emotional blunting and apathy due to atrophy in neural regions crucial for detecting changes in the environment (i.e., the salience network). We hypothesized that, compared to healthy controls (n = 37) and patients with Alzheimer's disease (n = 55), patients with bvFTD (n = 60) would show diminished physiological response to novel conditions. We tested this in two film-viewing tasks: (1) watching three films that elicited amusement, disgust, and sadness; and (2) identifying the emotion (enthusiasm, anger, calm) experienced by the main character in three different films. Analyses focused on the period when subjects were instructed that the film was about to start but were still unaware of the film's content or valence. Physiological response was measured using a composite of nine autonomic and somatic measures. During all three instruction periods in the first task, we found significantly lower physiological reactivity in patients with bvFTD compared to the other groups (Bonferroni corrected  $p < .05$ ; controlling for age, disease severity and medication). The similar effect was found in the second task (bvFTD vs. AD:  $p < .05$ ). These findings suggest that patients with bvFTD may not physiologically prepare themselves for novel situations, which may be related to neurodegeneration in the salience network.

### Thematic Flash Talks Friday, April 28, 2017 8:30 a.m.-9:30 a.m.

#### Emotion Perception

### CHINESE FOLK EXPRESSIONS FORM PERCEPTUAL CATEGORIES

Maria Gendron<sup>1</sup>, Qiang Liu<sup>2</sup>, Renning Hao<sup>2</sup>, Lisa Feldman Barrett<sup>3</sup>

<sup>1</sup>Northeastern University, <sup>2</sup>Liaoning Normal University, <sup>3</sup>Northeastern University and Massachusetts General Hospital/Harvard Medical School

*Descriptors: culture*

The study of non-verbal behavior is heavily dominated by facial expressions for emotions. Yet non-verbal behavior comes in many varieties, and some expressions may have weak 1:1 links to specific mental states. For example, the Chinese language contains hundreds of phrases to describe non-verbal behavior. These phrases, called Chengyu, when literally translated describe non-verbal behavior within a situational context, typically without reference to mental states (Ye, 2004). We asked whether a subset of these Chengyu, that emphasize situated facial actions, anchor perceptual categories for Chinese individuals. We identified through piloting a subset of Chengyu that were deemed most familiar and possible to express with the face. We then generated undirected poses for those Chengyu and those that reached high consensus as “good” exemplars were used to elicit a set of directed poses. In our main experiment, we asked Chinese participants to sort either this directed “Chinese folk expression” set or a validated set of Western-style facial expressions, also posed by Chinese individuals. We found that not only were the Chinese folk expressions consistently sorted into the a priori categories, but that “accuracy” was higher for the Chinese folk expressions than for Western style emotional expressions,  $t(48)=3.446$ ,  $p=.001$ . These findings suggest that similar to Western style facial expressions, other cultures possess perceptual categories for expressions and that these are not necessarily always “mental” in nature.

### CONTEXT FACILITATES CROSS-CULTURAL EMOTION PERCEPTION

Katie Hoemann<sup>1</sup>, Alyssa N. Crittenden<sup>2</sup>, Qiang Liu<sup>3</sup>, Chaojie Li<sup>3</sup>, Debi Roberson<sup>4</sup>,  
Greg Ruark<sup>5</sup>, Maria Gendron<sup>1</sup>, Lisa Feldman Barrett<sup>6</sup>

<sup>1</sup>Northeastern University, <sup>2</sup>University of Nevada, Las Vegas, <sup>3</sup>Liaoning Normal University, <sup>4</sup>University of Essex, <sup>5</sup>U.S. Army Research Institute for the Behavioral and Social Sciences, <sup>6</sup>Northeastern University and Massachusetts General Hospital/Martinos Center for Biomedical Imaging

*Descriptors: perception, vocalizations, universality*

Experimental paradigms used to assess universal emotion “recognition” may constitute a potent source of context that shapes perception. In three experiments, we tested the power of one such paradigm (a choice-from-array paradigm in which participants are presented with brief emotion stories and asked to choose between target and foil vocalizations, as implemented in Sauter, Eisner, Ekman, & Scott, 2010) to create a context in which participants' performance is facilitated. We examined whether participants from a remote small-scale (the Hadza hunter-gatherers of northern central Tanzania, n = 55) and two urban industrialized (China, n = 34, and the United States, n = 42) cultural samples would be able to select target vocalizations for six novel emotion categories from languages around the world. Consistent with our hypothesis, we observed that each sample performed significantly above chance (Hadza  $b = .29$ ,  $SE = .07$ ,  $t(31) = 4.04$ ,  $p < .001$ ,  $OR = 1.34$ ; China  $b = .67$ ,  $SE = .09$ ,  $t(33) = 7.26$ ,  $p < .001$ ,  $OR = 1.96$ ; USA  $b = 1.14$ ,  $SE = .10$ ,  $t(34) = 11.04$ ,  $p < .001$ ,  $OR = 3.12$ ). These results would traditionally be interpreted as evidence for universality. We also found differences in the exact pattern of performance across the three samples, suggesting content bias in cultural transmission. These findings build on accumulating experimental data that call into question the assumption that certain emotions are universally recognized, and illustrate the psychologically active roles of experimental and cultural contexts in assessing human behavior.

### PRIDE CUES SOCIAL INCLUSION (AT LEAST WHEN AUTHENTIC)

Lisa A. Williams  
University of New South Wales

*Descriptors: social inclusion, pride, person perception*

Decisions as to whether a novel social peer is 'one of us' or 'one of them' stand at the heart of social dynamics. Emotion expressions serve as one cue that informs such decisions. It is as yet unknown how expressions of pride in particular influence social inclusion. Based on their robust signal of high status, it stands to reason that pride expressions may cue social inclusion; high status others stand to benefit the group. However, not all pride expressions are equivalent. Authentic pride is associated with prestige-based status, whereas hubristic pride aligns with dominant forms of status. As such, authentic pride expressions were expected to cue social inclusion (i.e., 'one of us' inferences) relative to hubristic pride expressions. Two experiments tested this premise using dynamic (Experiment 1) and static (Experiment 2) authentic and hubristic pride expressions. Experiment 1 (N=181) revealed that participants were more inclusive of an authentically proud vs. a hubristically proud target in terms of group membership (Cohen's  $d=.28$ ) and self-other overlap ( $d=.37$ ). Experiment 2 (N=491) replicated this pattern ( $ds=.28, .36$ ). Inclusion of a neutral expression in Experiment 2 enabled directional conclusions: authentic pride expressions boosted social inclusion compared to neutral expressions ( $ds=.20, .41$ ). Social inclusion of hubristic pride expressers and neutral targets did not differ. These findings speak to the social communicative value of pride expressions – beyond signalling status, authentic pride expressions also cue inclusion of a new social target in one's group.

### ARTISTIC TRUTH VS. OPTICAL TRUTH: WHY VIEWERS OF EXTREME FACIAL EXPRESSIONS IGNORE HELPFUL DIAGNOSTIC TIPS

Hillel Aviezer  
Hebrew University

*Descriptors: facial expressions, real-life*

Facial expressions during positive and negative situations are assumed to be highly distinct. Nevertheless, recent research with intense real-life faces (e.g., winners and losers in sports tournaments) has shown that viewers fail to reliably differentiate the valence of such expressions. Interestingly, these extreme faces are in fact physically different: FACS analysis revealed that mouth opening was more common among winners than losers, indicating an objective valid difference in facial activity. In a subsequent experiment we supplied participants with valid or invalid information about objective facial activity among winners and losers. Yet, ratings remained virtually identical and participants failed to differentiate between positive and negative faces. We propose that the immunity of participants to objectively useful facial information results from a gap between artistic and optical truth. Specifically, stereotypical inner representations of extreme expressions (artistic truth) override the actual perceptual appearance of such faces in real-life (optical truth). These results suggest a surprising dissociation between information present in isolated facial expressions and information used by perceivers – and most importantly, they highlight the critical role of context in the perception of facial expressions.

### ANALYZING SPONTANEOUS EMOTIONAL FACIAL EXPRESSIONS USING FACET FACIAL ANALYSIS SOFTWARE

Ross W. Buck<sup>1</sup>, Elizabeth Dana<sup>1</sup>, Jaclyn Battaglia<sup>1</sup>, Stacie R. Powers<sup>2</sup>  
<sup>1</sup>University of Connecticut, <sup>2</sup>Philliber Research

*Descriptors: emotion receiving ability, emotional and cognitive empathy, Facial analysis software*

Emotion recognition abilities are strongly linked to interpersonal skills and social functioning, but most such measures show posed or intentionally enacted expressions. An alternative approach employs naturalistic displays of spontaneous expressions. The Communication of Affect Receiving Ability Test (CARAT) presents clips of spontaneous expressions filmed by an unobtrusive camera of solitary senders responding to emotional images (e.g. Familiar people, Unpleasant, Neutral); particularly designed for fMRI studies as a supplement to Pictures of Facial Affect (PFA). We analyze CARAT Spontaneous, Posed, Regulated (CARAT-SPR) clips using automated Emotient FACET facial expression recognition and analysis software. CARAT-SPR measures abilities to detect emotion (emotional empathy) and to differentiate SPR displays (expression categorization ability). On Posed displays senders display "as if" responding to a specific image with no image present (simulation); on Regulated displays senders display "as if" responding to a specific image when an image of opposite valence is present (masking). Expression categorization ability involves perspective-taking (cognitive empathy). Spontaneous expressions to Familiar people showed greatest FACET activity across emotion categories, and expressions to Neutral stimuli the least; females' expressions showed greater activity to Familiar people; posing positive displays generated greater activity than posing negative displays; and Joy and Surprise activity were generated most on Regulated displays. FACET analysis and FACS coding are compared.

### EMOTIONAL EXPRESSIVITY AND INTERPERSONAL PERCEPTIONS IN INTERACTIONS BETWEEN BLACK CANCER PATIENTS AND NON-BLACK PHYSICIANS

Nicole Senft<sup>1</sup>, Lauren M. Hamel<sup>1</sup>, Louis A. Penner<sup>1</sup>, Terrance L. Albrecht<sup>1</sup>, Tanina Foster<sup>1</sup>, Robert Chapman<sup>2</sup>, Susan Eggly<sup>1</sup>

<sup>1</sup>Wayne State University/Karmanos Cancer Institute, <sup>2</sup>Josephine Ford Cancer Center

*Descriptors: medical interactions, race, cancer*

Communication during racially-discordant clinic visits is hampered by negative race-based perceptions, but emotional expressivity may positively influence such perceptions. An analysis of 74 video-recorded interactions between Black patients and non-black oncologists examined relationships between coders' ratings of emotional expressivity and patient and physician perceptions. Using generalized estimating equation (GEE) regression to control for nesting within physicians, we tested whether (a) patient positive affect, negative affect, or their interaction predicted oncologist perceptions of patient intelligence and likelihood of treatment adherence and (b) physician positive affect, negative affect, or their interaction predicted patients' confidence in recommended treatment and trust in their physician. Interactions between positive and negative affect predicted each of these (all  $ps < .01$ ). Oncologists perceived patients to be more intelligent and likely to adhere to treatment if patients expressed relatively high levels of positive and negative affect. Similarly, patients were more confident in treatment recommendations if physicians expressed relatively high levels of positive and negative affect. Regarding trust, patients reported less trust when physicians expressed higher negative affect if they also expressed lower positive affect, but negative affect was unrelated to trust when physicians expressed higher positive affect. Findings suggest expression of positive and negative emotions jointly contribute to perceptions in racially-discordant medical interactions.

### CAREGIVERS' LIFE AND RELATIONSHIP SATISFACTION: THE ROLE OF PATIENTS' ABILITY TO RECOGNIZE CAREGIVERS' EMOTIONS

Dyan Connelly, Alice Verstaen, Jenna Wells, Kareena del Rosario, Robert W. Levenson  
University of California, Berkeley

*Descriptors: emotion recognition*

Caring for a spouse with dementia can be extremely challenging and many caregivers experience profound declines in health and well-being. We examined whether patients' ability to recognize caregivers' emotions is related to caregiver relationship and life satisfaction. Seventy-one patient-caregiver dyads came to our laboratory, engaged in a 10-minute conversation of an area of conflict in their relationship, and rated each other on a list of 10 positive, negative, and self-conscious emotions. Accuracy scores were computed as the absolute value of the difference between patients' ratings of caregivers' emotions and caregivers' ratings of their own emotions. Regression analyses were conducted to determine whether patients' accuracy in rating caregivers' emotions was related to caregivers' marital satisfaction and life satisfaction (measured using standard inventories) after controlling for patients' dementia severity. Results indicated that lower levels of patients' accuracy in rating caregivers' negative emotions was associated with lower caregiver marital satisfaction ( $\beta = -.42, p = .003$ ), and marginally with lower life satisfaction ( $\beta = -.24, p = .068$ ). Relationships with positive and self-conscious emotions were not significant. In our view, negative emotions (e.g., anger, sadness) typically signify dissatisfaction with the current situation and desire for change. When patients do not recognize these emotions, it can be particularly frustrating for caregivers, leading to declines in relationship and life satisfaction.

### ARE YOU SMILING OR HAVE I SEEN YOU BEFORE? FAMILIARITY MAKES FACES LOOK HAPPIER

Evan W. Carr<sup>1</sup>, Timothy F. Brady<sup>2</sup>, Piotr Winkielman<sup>2</sup>  
<sup>1</sup>Columbia Business School, <sup>2</sup>University of California, San Diego

*Descriptors: familiarity, perception, facial affect*

It is well established that unreinforced stimulus repetition leads to greater familiarity and preference (as with the classic mere exposure effect), yet how this occurs remains largely unknown. Across two experiments, we show for the first time that familiarity enhances actual perceived happiness of facial expressions. In Experiment 1, using a paradigm where participants' responses were orthogonal to happiness to avoid response biases, we found that trained (familiar) faces were deemed happier than untrained (novel) faces. In Experiment 2, we replicated this effect with a rapid "happy or angry" categorization task. Using psychometric function fitting, we found that participants needed less actual happiness to be present in trained (compared to untrained) faces to classify them as happy. Critically, our results dissociate prominent models of the relationship between familiarity and valence, by demonstrating that familiar faces appear happier through selective enhancement of positive stimulus features.

### Thematic Flash Talks Friday, April 28, 2017 8:30 a.m.-9:30 a.m.

#### Development

### ARE THERE AGE DIFFERENCES IN EMOTIONAL EXPRESSIVITY? META ANALYSES BY METHOD AND VALENCE

Ishabel M. Vicaria, Vanessa L. Castro, Derek M. Isaacowitz  
Northeastern University

*Descriptors: emotion expression, aging, meta-analysis*

Despite continued interest in expressivity in aging, the evidence for age differences in spontaneous emotional expression is mixed. Theoretical claims regarding age-related increases in positivity suggest that older adults may demonstrate greater positive expressivity than younger adults. Thus, age differences in spontaneous emotion expression may vary by valence. Additionally, because the literature on spontaneous expressivity includes diverse methods, it is not clear whether mixed findings reflect methodological variations; age differences may, thus, depend on how expressivity is assessed. Using meta-analytic techniques, we tested the effect of age group (young and older adult) on emotional expressivity by method (self-report, behavioral coding, and facial electromyography [EMG]) and by valence (positive, negative, and overall). We coded and extracted effect sizes for 32 studies that reported age group comparisons between young and older adults ( $N = 2,570$ ). Age differences were found for studies with self-report measures ( $p = .02$ ), with older adults reporting less overall expressivity than younger adults, but not for studies that used behavioral coding or facial EMG ( $ps > .05$ ). In contrast to theory, older adults were significantly less expressive in studies reporting positive and overall expressivity ( $ps = .02$ ) but not for studies that report negative expressivity ( $p > .05$ ). These results reveal a more nuanced picture of spontaneous emotion expressivity and aging as the pattern of age-related differences depends on the methodological approach used within a given study.

### MECHANISMS UNDERLYING THE DEVELOPMENT OF MULTIDIMENSIONAL EMOTION CONCEPT REPRESENTATION

Erik C. Nook<sup>1</sup>, Stephanie F. Sasse<sup>1</sup>, Hilary K. Lambert<sup>2</sup>, Katie A. McLaughlin<sup>2</sup>, Leah H. Somerville<sup>1</sup>

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*Descriptors: emotion concepts, development, verbal knowledge*

Adults typically understand emotions as multidimensional, with valence (positive—negative) and arousal (activating—deactivating) as two primary dimensions. But how does this representation arise? We hypothesized that children primarily understand emotion concepts in terms of valence and learn to separate them based on arousal as they age, extending work on the development of emotion perception. Here, we tested this hypothesis and explored mechanisms underlying emotion concept development. Participants ( $N = 203$ ) aged 4 to 25 completed tasks assessing emotion concept representation in which they i) sorted emotion words into piles based on similarity and ii) rated the similarities of 10 emotion words. We also assessed participants' verbal ability, and their capacity to perceive two dimensions simultaneously (rating similarities of circles that varied on two perceptual dimensions). Multidimensional scaling analyses revealed that emotion concept representation shifted across age. As hypothesized, focus on the valence dimension of emotions decreased with age ( $B = -.34, p < .001$ ), and focus on the arousal dimension increased with age ( $B = .44, p < .001$ ). This shift was not explained by developments in the general ability to perceive two dimensions simultaneously. However, a mediation analysis demonstrated that increased verbal knowledge explained increases in arousal focus across development ( $p = .01$ ). These results reveal the dynamic pathways through which emotion understanding develops and suggest that complex emotion understanding scaffolds on expanding verbal knowledge across development.

### CONTROL YOURSELF! PARENTS' BELIEFS THAT CHILDREN CAN CONTROL THEIR EMOTIONS ARE LINKED WITH MALADAPTIVE RESPONSES TO THEIR CHILDREN'S EMOTIONS

Helena Rose N. Karnilowicz<sup>1</sup>, Brett Q. Ford<sup>2</sup>, Iris B. Mauss<sup>1</sup>  
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*Descriptors: emotion beliefs, development, parenting*

In adults, the extent to which individuals believe that emotions are controllable has been linked with better psychological health (Tamir et al., 2007). However, it may be maladaptive to believe that children can control their emotions, especially if the child is in a developmental stage in which they can't control their emotions. The current study examined parents' beliefs about whether children aged 3, 5, and 7 can control their emotions, and whether these beliefs are linked with how parents respond to their children's negative emotions. Two hundred and thirty seven parents of 3-7 year old children reported their beliefs about how much 3, 5, and 7 year olds can control their emotions. Parents' beliefs varied by age of the child,  $F(1.674, 608.94)=154.75$ ,  $p<.001$ , such that parents believed that children aged 5 and 7 can control their emotions more than children aged 3. Only parents' beliefs that 3 year olds can control their emotions were uniquely and positively related to punitive ( $r=.17$ ,  $p=.009$ ) and distress ( $r=.20$ ,  $p=.002$ ) reactions to children's negative emotions and negatively related to emotion-focused ( $r=-.24$ ,  $p<.001$ ) and problem-focused reactions ( $r=-.21$ ,  $p=.001$ ). These results held when controlling for potential confounds, including parents' depression and children's temperament. Although believing that emotions are controllable has been linked with beneficial consequences, these beliefs may have negative consequences when applied to individuals who are less capable of emotion control.

### REGULATING RESPONSES TO NEGATIVE SOCIAL STIMULI ACROSS DEVELOPMENT

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*Descriptors: affective neuroscience, emotion regulation, self-regulation*

There are many times in life when we must successfully regulate our emotions in order to achieve our goals. One need only look at the actors who have just lost the Oscar, the runner-up for Miss America, or second-place Olympic medalists to see extremely successful (or terribly failed) acts of emotion regulation. In this research, we explore how two types of affective regulation—impulse control and cognitive reappraisal—impact the influence of affective responding on behavior across a wide developmental age group (6-25). To examine this question, we collected behavioral and fMRI data from 72 participants who completed two tasks: 1) a task wherein regulating one's negative affect is the explicit goal of the task (Cognitive Reappraisal), and 2) a task wherein individuals must exercise impulse control in order to inhibit responses to negative affective stimuli (Emotional Go/No-Go). Participants who were more successful at regulating their negative emotions using reappraisal were also better at inhibiting their responses to negative stimuli in the emotional go/no-go task across the development age range. We also found neural overlap across both tasks, such that regulation involved greater recruitment of prefrontal regions and dampening of activity in the right amygdala. Connectivity analyses indicated age-related differences in the recruitment of medial and dorsal prefrontal regions when modulating amygdala activity based on the type of regulation being implemented.

### CHILDREN'S PROTOTYPIC FACIAL EXPRESSIONS DURING EMOTION-ELICITING CONVERSATIONS WITH THEIR MOTHERS

Vanessa L. Castro<sup>1</sup>, Linda A. Camras<sup>2</sup>, Amy G. Halberstadt<sup>3</sup>, Michael Shuster<sup>2</sup>  
<sup>1</sup>Northeastern University, <sup>2</sup>DePaul University, <sup>3</sup>North Carolina State University

*Descriptors: emotion expression, development, FACS*

Past research suggests that adults often fail to communicate their emotions via prototypic facial expressions, challenging many contemporary emotion theories. We extend work with adults to consider the communicative value of children's spontaneous facial expressions during emotion-eliciting conversations with their mothers. Third-grade children (N=120) were video-recorded during a discussion with their mothers about sources of conflict (e.g., chores, bedtime). Recordings were parsed into 10-second episodes and self-report emotion ratings were obtained from the children for 441 episodes. Naïve observers provided emotion judgments of the children's nonverbal behaviors, and trained coders provided anatomically-based facial codes using FACS. Children's self-reported emotion corresponded to naïve observers' judgments of joy, anger, fear, and sadness (Odds Ratios = 3.71-14.12,  $ps < .05$ ) but not surprise (Odds Ratio = 0.36,  $p = .083$ ). In line with emotional theory, children produced joy facial expressions more in joy episodes than non-joy episodes ( $p < .001$ ) and more joy and surprise expressions than other emotional expressions in joy and surprise episodes ( $p < .001$ ) when episodes were identified by naïve observers. However, children produced anger, fear, and sadness expressions more in non-target episodes and produced these expressions less than other emotional expressions in target episodes. These findings extend the work on adults to suggest that third-grade children do not typically produce prototypic facial expressions when communicating negative emotion to their parents.

### WHY SO POSITIVE? A STUDY ON POSITIVITY BIAS AND EMOTION PERCEPTION IN YOUNGER AND OLDER ADULTS

Miray Erbey, Josefin Roebbig, Deniz Kumral, Lina Schaare, Andrea Reiter, Janis Reinelt, Till Nierhaus, Anahit Babayan, Michael Gaebler, Arno Villringer  
Max Planck Institute for Human Cognitive and Brain Sciences

*Descriptors: positivity bias, emotion perception*

It has been suggested that older adults show a stronger positivity bias (i.e. increased attention and memory for positive over negative stimuli) than younger adults. This phenomenon is known as the "positivity effect" and it is thought to play a role in older adults' higher levels of well-being. Most studies on the positivity effect focus on group comparisons and ignore individual variations that exist within the age groups. The present study aims to investigate: 1) age differences in positivity bias in attention and in emotion perception, 2) factors that relate to positivity in attention in younger and older groups. Eighty-five younger (20-35,  $m=24.4\pm3.06$  years) and 67 older (60-75,  $m=67.33\pm4.67$  years) adults passively viewed pairs of face stimuli for 3s while their eye movements were tracked. Additionally, they rated intensity levels of emotional face stimuli and completed a set of cognitive and emotion batteries. Positivity bias was quantified by computing fixations on happy compared to angry and sad faces – over the whole trial period and separately for early and late periods, to assess attentional shifts. In our study, younger adults showed a stronger positivity bias compared to older adults ( $t(101) = 2.32$ ,  $p = .02$ ), and attentional shifts to positive faces interacted with factors such as practical social support and future time perspective. Younger and older adults also showed differences in interpretation of neutral faces. Our findings illustrate the importance of individual differences in positivity in attention, and provide support for discrete emotions theory.

### **STRESS REACTIVITY IN OLDER ADULTHOOD: AN EMPIRICAL TEST OF THE MATURATIONAL DUALISM HYPOTHESIS**

Erika H. Siegel, Wendy B. Mendes  
University of California, San Francisco

*Descriptors: stress, peripheral physiology, aging*

This project is an empirical test of the maturational dualism hypothesis (Mendes, 2010), which suggests that the coupling of physiology and subjective experience may deteriorate in older adulthood due to structural differences in the brain and body. We sampled the neuroendocrine responses of a group of younger and older adults who completed a battery of social stress tasks that included delivering a speech to evaluators and completing a mental math task. We hypothesized that under conditions of moderate arousal, maturational dualism would be evident, and there would be a stronger relationship between self-reported affect and neuroendocrine responses for younger than older adults. We further hypothesized that, at high levels of arousal, age related changes would dissipate because, as arousal increased, internal sensations would grow stronger and older adults would use them to inform their subjective experience of affect. Our data supported a dualism hypotheses: before the speech task, when arousal was lower, age moderated the relationship between DHEAS and self-report such that younger individuals had a stronger coupling between physiology and self report than older adults. In between the speech and math tasks, however, when arousal was very high, age was no longer a moderator - the relationship between physiology and self report was the same for older and younger adults. This suggests that stress reactivity differs in older adulthood, but only during periods of moderate arousal. During periods of high arousal, the coupling of physiology and self report is preserved.

### **EARLY LIFE STRESS IS ASSOCIATED WITH PRECOCIOUS AMYGDALA DEVELOPMENT AND AN UNEXPECTED DIP IN FEAR-ASSOCIATED LEARNING**

Kevin G. Bath, Gabriela Manzano-Nieves  
Brown University

*Descriptors: amygdala, stress, development*

Early life stress (ELS) is associated with an increased risk for later development of emotional pathology such as depression and anxiety. The origins of pathology are thought to be rooted in atypical development of circuits regulating emotional responding, including the amygdala. Here we used a mouse model of ELS, in the form of maternal bedding restriction, and tested the effect on amygdala development, and the development of freezing behavior in a tone-associated fear conditioning paradigm. Previous work has established that tone-associated freezing develops as early 15 days of age and stays relatively stable across early development. Here, we found that mice reared under ELS conditions show an unexpected and significant dip in freezing behavior at 21 days of age. This dip in freezing behavior was associated with a precocious maturation and spike in the density and activity of Parvalbumin (PV)-positive cells in the basal amygdala (BA). To test if the spike in PV-cells was related to suppressed freezing behavior, we took advantage of optogenetic techniques to silence this population of cells in the BA during acquisition and testing phase in the conditioning paradigm. We found that silencing BA PV cell restored normal levels of freezing behavior in ELS reared mice. These results have implications for understanding the effects of ELS on the ontogeny of circuit development and its impact on the development and expression of fear associated responding.

### **LABELS FACILITATE FACIAL EXPRESSION CATEGORIZATION IN PREVERBAL INFANTS**

Ashley L. Ruba, Andrew N. Meltzoff, Betty M. Repacholi  
University of Washington

*Descriptors: infancy, language, facial expressions*

Infants are thought to perceive emotions in broad dimensions (valence) that narrow to discrete emotions (sad) as infants learn emotion labels (Lindquist et al., 2013; Widen, 2013). The current studies are the first to examine (1) whether infants form broad categories of negative emotions, and (2) how language influences this categorization. In three studies, 14- and 18-month-olds were habituated to facial expressions of anger and sadness or disgust and sadness. Test trials were two familiar negative emotions, a novel negative emotion, and a positive emotion. Study 1 (N=96) habituated infants to THREE people. A Test Trial effect ( $p < .001$ ) showed that infants did not form a negative emotion category. One explanation is that the task was too cognitively taxing for infants. Study 2 (N=96) reduced the cognitive load by habituating infants to ONE person. A Test Trial x Condition interaction ( $p = .002$ ) showed that only infants habituated to disgust and sadness formed a negative emotion category. Thus, infants can form negative emotion categories within a single person. Study 3 (N=48) tested whether infants would form negative emotion categories across multiple people if the novel LABEL "toma" were added to each habituation event (disgust and sadness only). A Test Trial effect ( $p < .001$ ) showed that infants formed a negative emotion category. Thus, infants form negative emotion categories within one person, and labels enable them to generalize these categories to new individuals. The role of vocabulary development and perceptual factors in emotion categorization will also be discussed.

### Thematic Flash Talks Saturday, April 29, 2017 8:30 a.m.-9:30 a.m.

#### Stress and Health

##### **SAY CHEEEEESE! THE ABILITY TO SMILE ON DEMAND PREDICTS LOWER CARDIOVASCULAR DISEASE RISK**

Nathan S. Consedine<sup>1</sup>, Natalie L. Tuck<sup>1</sup>, Sarah D. Pressman<sup>2</sup>, Kathryn Adams<sup>1</sup>  
<sup>1</sup>University of Auckland, <sup>2</sup>University of California, Irvine

*Descriptors: positive emotion, emotion regulation, health*

Introduction: Smiling and other indices of positive affect (PA) prospectively predict health, CVD risk, and mortality. Why is unclear. One possibility is that competencies/skills (in general) and the ability to express facial emotion on demand, in particular, is implicated. This report tests whether the ability to express positive emotion predicts an objective health metric – projected CVD risk. Methods: A community sample of 82 men and women (30-75 years) gave blood before completing self-reports of PA, depressive symptoms, and loneliness, followed by a performance-based test of expressive skill. Positive expressions were scored for 'happiness' using FaceReader™ software. Projected CVD risk was calculated using the Framingham algorithm, a New Zealand (NZ) specific algorithm, and the atherosclerosis CVD (ASCVD) algorithm. Results: Linear regressions showed that skill in expressing positive emotion predicted lower NZ risk (95% CI (-0.52, -0.13),  $p < .001$ ), ASCVD risk (95% CI (-0.87, -0.12),  $p = .011$ ), and, marginally, lower Framingham risk (95% CI (-1.20, -0.03),  $p = .061$ ). These effects remained after controlling for age, PA, depressive symptoms, and loneliness. Analyses also revealed a sex-by-skill interaction whereby links were stronger among men. Conclusions: A greater ability to express positive emotion predicts lower cardiac risk. The ability to smile or express other facial signals as required by contextual demands may be important emotional competencies underpinning some of the benefits linking positive emotionality to health.

##### **AWESOME DAY KEEPS STRESS AWAY: THE EFFECT OF AWE ON DAILY HASSLE AND WELL-BEING**

Yang Bai, Gening Jin, Dacher Keltner  
University of California, Berkeley

*Descriptors: daily hassle, awe, well being*

Awe is an emotional response to something grand that transcends one's current understanding of the world. Anecdotal, observational, and theoretical analyses posit that experiencing awe makes oneself feel smaller, and might also render bothersome daily concerns less salient and daily stress less intense. In this research, 4 experiments investigated why and how awe enhances individual well-being by making stressful concerns less significant. In Experiment 1 (N = 329), individuals who were more prone to experiencing awe experienced lower levels of stress in response to daily hassle, even after controlling for general positivity. Furthermore, when primed with awe in the lab, participants reported significant lower levels of daily hassle compared to those in the neutral condition (Experiments 2; N = 128) or other positive conditions (joy and pride, Experiment 3; N = 205). Finally, in a naturalistic induction of awe (Experiment 4; N = 86), participants stood at the top of campanile with awesome view. They reported significantly lower levels of daily hassle and increased life satisfaction. Mediation tests demonstrated that the effect of awe on decreased levels of daily hassle is explained in part by perceived vastness. Furthermore, decreased levels of daily hassle also explained the relation between awe and increased well-being. These findings indicate that awe helps reduce individuals' stress from daily hassles and improves overall well-being.

##### **UNHAPPY PEOPLE QUICKLY PROMOTE HAPPY FACES INTO AWARENESS**

Hannah Raila, Yi-Chia Chen, Brian J. Scholl  
Yale University

*Descriptors: continuous flash suppression (CFS), cognition, unconscious processing*

Recent work has begun to explore how basic cognitive phenomena differ across happy vs. unhappy people. Perhaps the most fundamental such phenomenon is visual awareness, or conscious perception. Far too much information comes in through our eyes to fully process, and only a subset of that information can be promoted into conscious experience. Might happy vs. unhappy people, even if they share the same environment, become consciously aware of different components of it more readily? We showed people (n=30) emotional faces (happy, sad, fearful, and neutral) that were rendered invisible using continuous flash suppression (CFS) and measured how quickly such faces broke through suppression and into awareness. Trait positivity was assessed by the Subjective Happiness Scale (SHS), the Satisfaction with Life Scale (SWLS), and the Dispositional Positive Emotions Scale (DPES). All three trait happiness measures were negatively correlated with detection speed of happy faces. That is, happy faces (compared to neutral faces) broke through CFS suppression and into awareness faster for unhappy people ( $ps < .022$ ), and this pattern was specific to happy faces (and not to fearful or sad faces). People who are dispositionally less happy may be biased to automatically process positive information at the unconscious level, and doing so may subsequently promote such information more quickly into their conscious experience. These results support the fascinating possibility that less happy people may experience a different world due to how readily they become aware of certain types of information.

##### **OSCILLATION, STRESS, AND THE ROLE OF THE CEREBELLUM**

Reese Minshew, Greg J. Siegle<sup>1</sup>, Andrew J. Gerber<sup>2</sup>, Jill Hooley<sup>3</sup>, Joel S. Yang<sup>2</sup>, Bradley Peterson<sup>4</sup>, Ruth Lanius<sup>5</sup>, Jonathan DePierro<sup>6</sup>, Ashley Doukas<sup>7</sup>, Steven Freed<sup>7</sup>, Nadia Nieves<sup>7</sup>, Sarah Herzog<sup>7</sup>, Vivian Khedari<sup>7</sup>, Erin Stafford<sup>7</sup>, Amanda Collier<sup>1</sup>, Marlee L. Pyzewski<sup>1</sup>, Tony Cao<sup>1</sup>, Sarah Caligiuri<sup>1</sup>, Thomas Kraynak<sup>1</sup>  
<sup>1</sup>University of Pittsburgh, <sup>2</sup>Columbia University, <sup>3</sup>Harvard University, <sup>4</sup>Children's Hospital Los Angeles, <sup>5</sup>University of Western Ontario, <sup>6</sup>New York University, <sup>7</sup>New School for Social Research

*Descriptors: oscillation, stress*

The cerebellum is a brain region that contributes to the regulation of physical oscillation, allowing fluid movement. Tight neuronal linkages between the cerebellum and the limbic system, and between the cerebellum and the pre-frontal cortex, have given rise to the Universal Cerebellar Transform hypothesis which suggests that the cerebellum may also play a role in regulating affective oscillation. Individuals who have experienced early stress afford a unique opportunity to study potential cerebellar contributions to affective oscillation. Individuals exposed to early stress report hyperarousal in the form of anxiety, and hypoarousal in the form of numbing. However, few stress-exposed individuals report being constantly hyperaroused or constantly hypoaroused. Rather, they report dramatic shifts in affective state, with little time in normative affective states. A pilot study (N=17) found differences in cerebellar function during an affective listening task based on early stress. Participants completed a Childhood Trauma Questionnaire and participated in a listening task while BOLD signal in the cerebellum was monitored. ANOVA indicates an interaction effect of CTQ score by BOLD signal during the task,  $F(18) = 2.23$ ,  $p = .003$ , with individuals with more exposure to stress evidencing greater BOLD reactivity. This experiment was repeated with 350 participants and these data are currently in preparation. Preliminary findings suggest that the cerebellum is implicated in affective arousal during a listening task, with early stress impacting cerebellar activity.

### **DID IT CHANGE YOU? EMOTIONAL STATES BEFORE AND AFTER BEING DIAGNOSED WITH A CHRONIC DISEASE**

Claudia Trudel-Fitzgerald<sup>1</sup>, Elizabeth M. Poole<sup>2</sup>, Shelley S. Tworoger<sup>2</sup>, Laura D. Kubzansky<sup>1</sup>

<sup>1</sup>Harvard T.H. Chan School of Public Health, Harvard University, <sup>2</sup>Channing Division of Network Medicine, Brigham and Women's Hospital

*Descriptors: psychological distress, positive psychological well-being, chronic diseases*

The general perception that emotions are permanently altered by having a chronic health condition leads investigators to question if emotions causally contribute to disease onset or vice versa. Higher distress and lower psychological well-being are often reported by individuals recently diagnosed with a major illness. However, as samples are often recruited shortly after diagnosis, scholars can rarely assess accurately if ongoing emotional states are truly altered due to disease onset. Nurses' Health Study women (NHS; aged 30-55 years in 1976) who completed psychological measures (anxiety 1988/2004; depression and happiness 1992/2000; optimism 2004/2012) at 2 time points and were diagnosed with cancer, stroke, diabetes or myocardial infarction between assessments were included (N's= 903-6,821 across subsamples). Linear mixed models tested if distress and well-being levels significantly changed from pre- to post-diagnosis, adjusting for demographics, year of and time since diagnosis. As unhealthy/distressed women are more likely to drop out of a study, inverse probability weights to account for attrition were included in models. Effect sizes (Cohen's d) characterized the magnitude of change. Similar models were evaluated among younger women (NHSII; aged 25-42 years in 1989). Emotions were surprisingly stable over time, a small effect in optimism only (decrease) was evident among women after a stroke (d = -0.18). Younger women showed similar trends. Findings mitigate concerns about reverse causality, suggesting prodromal illness may not explain emotion-disease relationships.

### **WHY I DON'T ALWAYS KNOW WHAT I'M FEELING: WITHIN-PERSON FLUCTUATIONS IN EMOTION DIFFERENTIATION, AND THE ROLE OF STRESS**

Yasemin Erbas, Eva Ceulemans, Peter Kuppens  
KU Leuven

*Descriptors: emotion differentiation, emotional granularity, stress*

While emotion differentiation (ED) has almost exclusively been studied as a trait, recent evidence suggests that within individuals, the level of ED may not be stable across time (Tomko, et al., 2015). One factor that may impact levels of ED is stress. Stress has repeatedly been linked to diminished cognitive resources, and these resources are necessary to process emotional information from multiple sources simultaneously. As such, experiencing stress could lead to less accurate processing of information, and result in less ED. Using data from a three-wave longitudinal study (N=202), we tested two hypotheses: first, that there would be considerable within-person fluctuations in the level of ED across time, and second, that such fluctuations would be associated with changes in stress levels. ED and stress were measured on both the day-level and wave-level, and we examined their relationship both concurrently and predictively. We found that ED varied much more within individuals from day to day (82.61%) than between individuals (13.04%). Multilevel analyses showed that on the day-level, high stress levels were associated with lower levels of ED ( $t = -4.95, p < .001$ ), and that stress negatively predicted the level of ED on a next occasion ( $t = -2.93, p < .05$ ). We also found a concurrent ( $t = -2.95, p < .05$ ), but not a predictive, relationship between stress and ED on the week-level. These results are the first to directly demonstrate that ED varies much more within individuals across time than between individuals, and that stress is a predictor of this variation.

### **COMPASSION AND SUFFERING: GUILT AS A DRIVING FORCE FOR POST-TRAUMATIC PROSOCIAL GROWTH**

Daniel Lim, David DeSteno  
Northeastern University

*Descriptors: adversity, guilt, compassion*

An emerging body of research in the study of post-traumatic growth suggests that adversity precedes prosociality. Our previous research revealed that severe adversity in life could predict elevated levels of compassion which could be driven by increases in trait empathy. In three studies across two samples, we attempted to establish other routes in which adversity could lead to increased prosocial orientation. We hypothesized that the tendency towards reparative guilt could also be one such mechanistic route. In study one (n = 126), we found promising evidence that individuals who have suffered severe adversity were more likely to exhibit a modest increase in trait guilt ( $r = .18, p = .051$ ) and dispositional compassion ( $r = .27, p < .01$ ). Moreover, in a longitudinal study (n = 123), individuals who have suffered severe adversity were more likely to experience day-to-day feelings of guilt ( $r = .24, p < 0.01$ ) and compassion ( $r = .22, p < .05$ ). Multilevel modelling revealed that these day-to-day emotional states were occurring in tandem. In a compassion inducing study (n = 111), we found that individuals who suffered severe adversity felt more compassion and guilt after being exposed to the suffering of others. A mediational model established guilt as a mediator that accounts for a significant portion of the direct effect between adversity and compassion. In sum, converging evidence support the notion that individuals who suffered severely are more likely to feel guilty in response to the suffering of others which then predicts an increase in compassionate responding.

### **WHEN CONTEXT MATTERS: NEGATIVE EMOTIONS AND PSYCHOLOGICAL ADJUSTMENT**

Karin G. Coifman  
Kent State University

*Descriptors: negative emotions, health, methodology*

Although dominant emotion theories have argued consistently for the adaptive function of negative emotions, there is a striking absence of research demonstrating this in real world samples in real world circumstances. Indeed, although basic experimental research has demonstrated functional benefits to specific negative emotions, it is far more common for research in community samples to demonstrate a maladaptive association between negative emotions and functioning, particularly during stress. In this talk, I will review evidence from three studies in which negative emotions predict adaptation and adjustment in three distinct community samples: adults in intimate partnerships; adults with chronic illness; and young adults adjusting to college (Coifman, Flynn & Pinto, 2016). In particular, the emphasis will be on methodological issues and complications that may help to explain the rarity of such data. We will discuss the relevance of contextual parameters in emotion elicitation, the role of multi-dimensional emotion assessment, as well as the particular importance of a functional tie between the emotion in question and the outcome variable or index. The aim is to facilitate greater research in this area so as to better understand the functional role of negative emotions during stress and in overall psychological health.

**Thematic Flash Talks**  
**Saturday, April 29, 2017**  
**8:30 a.m.-9:30 a.m.**

### **Cognition and Emotion: Prediction, Decision, and Retrieval**

#### **RELIGIOUS PEOPLE FORECAST BUT DO NOT EXPERIENCE LESS NEGATIVE EMOTION FOLLOWING A NEGATIVE OUTCOME**

Steven Carlson<sup>1</sup>, Linda Levine<sup>1</sup>, Lench Heather<sup>2</sup>  
<sup>1</sup>University of California, Irvine, <sup>2</sup>Texas A & M University

*Descriptors: religion, wellbeing, affective forecasting*

People who are more religious often report greater subjective wellbeing when coping with negative events. This association may reflect their actual emotional experience or it may be influenced by their beliefs about how they will or should feel. The present research contributes to our understanding of the links between religion and wellbeing by assessing both (a) people's beliefs about their typical emotional experience (e.g., ratings of subjective wellbeing, forecast emotion), and (b) people's feelings about a specific negative event. Undergraduates from California and Texas (N = 407) predicted their feelings about receiving a higher or lower exam grade than expected. Among those who later received a lower grade than expected (N = 238), the more religious students were, the less intensely unhappy they anticipated feeling about an their exam grade,  $r(235) = -.17$ ,  $p = .01$ . Greater religiosity was also associated with forecasts of less frequent grade-related unhappiness,  $r(232) = -.15$ ,  $p = .02$ , and a lower impact of the grade on their mood,  $r(236) = -.16$ ,  $p = .02$ . However, for those who received a lower grade than expected greater religiosity was not associated with differences in experienced feelings (all  $p > .05$ ). This result provides evidence that religious individuals hold beliefs that they should experience less negative emotion following a negative outcome, but that these beliefs do not influence actual feelings for the event itself. These findings have important implications for behavior as affective forecasts play a significant role in the decision-making process.

#### **AFFECTIVE FORECASTING AS A RESOURCE FOR SITUATION SELECTION ACROSS THE LIFESPAN**

Victoria A. Flocker<sup>1</sup>, Molly Sands<sup>2</sup>, Derek M. Isaacowitz<sup>2</sup>, Ayanna K. Thomas<sup>1</sup>, Heather L. Urry<sup>1</sup>  
<sup>1</sup>Tufts University, <sup>2</sup>Northeastern University

*Descriptors: affective forecasting, situation selection, aging*

The resources for situation selection, an emotion regulation (ER) strategy in which one chooses situations based on their emotional potential, remain unknown. In two studies, we tested the hypothesis that affective forecasting, or the ability to predict how situations will make one feel, would be associated with situation selection. In Study 1, presented at SAS previously, 53 younger adults completed behavioral assessments of both affective forecasting and situation selection on a single measurement occasion. Contrary to our predictions, there was no robust support for the hypothesis. However, a number of design limitations may have obscured the hypothesized association. Thus, we conducted a second study to retest the hypothesis after instituting several improvements in measurement and timing. In addition, we sought to test a new hypothesis that the association between affective forecasting and situation selection would vary by age. In Study 2, 54 younger and 50 older adults completed behavioral assessments of affective forecasting and situation selection. Analyses indicated that greater forecasting success was associated with selecting fewer emotional relative to neutral situations,  $Bs = .09-.21$ ,  $t(103)s = 3.17-3.63$ ,  $ps < .01$ . No robust age differences were found. This pattern suggests that affective forecasting may be a resource for situation selection across the lifespan.

#### **PRIOR KNOWLEDGE BIASES THREAT DETECTION: EVIDENCE FROM COMPUTATIONAL MODELING AND MULTIVARIATE PATTERN ANALYSES (MVPA)**

Jingwen Jin, Tamara Sussman, Akos Szekeley, Aprajita Mohanty  
Stony Brook University

*Descriptors: perceptual decision making, top-down, threat detection*

We use prior knowledge to anticipate and detect stimuli in our environment. However, most research has attributed prioritized detection of threatening stimuli to automatic processing, while the role of top-down factors remain ignored. The present study examined whether prior knowledge regarding threat and its probability facilitates subsequent threat detection. Participants used 25%/50%/75% likelihood cues to detect perceptually degraded threatening or neutral faces, while functional magnetic resonance imaging (fMRI) data were recorded. Behavioral results (N=29) showed greater perceptual sensitivity ( $d'$ ) for threat vs. neutral,  $F=18.24$ ,  $p<.001$  and high vs. low probability,  $F=5.26$ ,  $p<.005$  cues. An interaction in RT ( $F=5.55$ ,  $p<.005$ ) indicates faster response following high probability threat but not neutral cues. Drift Diffusion Model results showed that the enhancement effects of high probability threat cues can be attributed to bias in baseline evidence. MVPA of fMRI data (N=11) indicates that pattern representations of threat and neutral cues can be classified at 75% & 50% probability conditions in superior temporal gyrus. Future analyses will examine whether, compared to neutral cues, ensemble codes for high probability threat cues better predict perceptual decision than low probability cues, clarifying the mechanisms by which the brain integrates prior information to enhance subsequent perception. In a literature focused on bottom-up processing of threatening stimuli, present results provide support for the importance of top-down bias mechanisms in threat detection.

#### **IN THE WAKE OF TRAGEDY: CHANGES IN THREAT- RELEVANT DECISION MAKING OVER THE FIRST ANNIVERSARY OF THE BOSTON MARATHON BOMBINGS**

Jolie B. Wormwood, Lisa F. Barrett, Karen S. Quigley  
Northeastern University

*Descriptors: threat detection, individual differences, physiological reactivity*

The Boston Marathon bombings of April 2013, sent shockwaves through the Boston community that were further fueled by a hunt for the perpetrators, additional bloodshed, and a city-wide lockdown. In the current experiment, we leveraged the first anniversary of the bombings as a rare and fleeting opportunity to assess how renewed media attention to this still very salient and much discussed terrorist threat would impact decision making about potential threats at three time points surrounding the anniversary of the bombings: two months before the anniversary (T1), in the weeks immediately preceding the anniversary (T2), and two months after the anniversary (T3). Data were analyzed using Hierarchical Linear Modeling. Results revealed that, in the absence of any in-lab manipulation whatsoever, participants had a significantly more liberal response bias (i.e., a greater tendency to favor the "shoot" response in a shooting task with armed and unarmed targets) at T2 compared to at both T1 ( $p=.003$ ) and T3 ( $p=.02$ ). Participants also exhibited inhibited physiological reactivity to images of the bombings (assessed via an acoustic potentiated startle paradigm) at T2 compared to at both T1 ( $p<.001$ ) and T3 ( $p=.06$ ). Importantly, the strength of these effects were moderated by individual differences in how emotionally affected participants reported feeling by the bombings the week they first occurred. Implications for responsible media reporting and the identification of individuals vulnerable to biased threat-relevant decision making in the wake of incidents of mass violence are discussed.

### DISRUPTING FACIAL EXPRESSIONS INCREASES RISK TAKING IN DECISION MAKING

Stephanie M. Carpenter, Paula M. Niedenthal  
University of Wisconsin-Madison

*Descriptors: risk, decision making, facial expression*

Emotional responses provide information about whether or not risk should be avoided. The present research examined the idea that disrupting the facial expression of emotion compromises the informative function of emotion. We observed in pilot testing that people make facial expressions of fear during a standard risky decision task. If fear expressions are useful for inhibiting risk taking, then preventing spontaneous fear expressions should lead to more risk taking. To test this hypothesis, we randomly assigned participants ( $N = 112$ ) to an experimental or control condition. In the experimental condition, stiff and inflexible medical tape was attached to participants' foreheads to disrupt activation of the corrugator muscle (that controls movement of the forehead and eyebrow), and a mouth guard disrupted activation of the zygomaticus and levator muscles (that control movements of the mouth). In the control condition, tape did not disrupt corrugator activation and a mouth guard was not worn. All participants then performed the Balloon Analogue Risk Task (BART; Lejuez et al., 2002), where a greater number of balloon pumps signals more risk taking. As predicted, disrupting the activation of facial muscles during the BART task led to riskier decisions, i.e., more balloon pumps ( $M = 1048.71$ ,  $SD = 321.28$ ), as compared to control participants who did not have disrupted facial muscle activation ( $M = 922.31$ ,  $SD = 302.06$ ),  $t(110) = 2.14$ ,  $p = .034$ . This suggests that facial expressions are critical to risk taking, and has implications for how emotions influence decision making.

### INVESTIGATING THE EFFECT OF SYSTEM RELIABILITY ON USERS' EMOTIONS

Yusuf Albayram, Mohammad Maifi Hasan Khan, Ross Buck, Emil N. Coman  
University of Connecticut

*Descriptors: emotions, human-computer interactions, decision*

In safety-critical systems, users often face to deal with a large volume of information and need to make decisions in real-time. However, current designs of human-computer interactions for safety-critical systems do not consider users' emotions. This lack of consideration of users' emotions while interacting is likely to undermine effective decision making. This study examines the effects of system reliability on users' emotions through a two-way 3 (situation: high/medium/low risk) X 2 (role: drone operator/system administrator) factorial design experiment. We recruited 296 participants (53.4% male; ages 19 to 48,  $M=33.5$ ) from Mechanical Turk. Participants were provided a written description of one of the six scenarios (a drone identifying (a) enemies on a battlefield; (b) illegal immigrants; (c) whale pods) and then asked to rate how they would feel 44 emotions (presented in random order) while imagining the scenario. Results indicated that situation had a significant main effect on negative individualistic emotions  $F(2,290)=22.3$ ,  $p=.001$  and negative prosocial emotions  $F(2,290)=9.3$ ,  $p=.017$ . Participants assigned to high risk scenario felt more negative individualistic (e.g., nervous), negative prosocial (e.g., resentful, lonely) and less positive (e.g., happy) emotions than participants assigned to medium risk and low risk scenarios. This research has important implications for human-computer interactions for safety-critical systems, as insights gained in this study may heighten understanding effects of emotions on the decision-making process in high risk situations.

### EMPATHIC EMOTION REGULATION INFLUENCES PROSOCIAL DECISION MAKING

Kristin M. Brethel-Haurwitz<sup>1</sup>, Maria Stoianova<sup>2</sup>, Abigail A. Marsh<sup>2</sup>  
<sup>1</sup>University of Pennsylvania, <sup>2</sup>Georgetown University

*Descriptors: altruism, emotion regulation, donation behavior*

The regulation of emotion evoked in response to another's distress may be important for biasing an individual toward a concerned response rather than personal distress. But, another threat to a prosocial response is regulation of empathic affect resulting in apathy. The current study examined the role of emotion regulation in prosocial decision making. Participants ( $n = 50$ ) engaged in hopeful and distancing reappraisals while viewing photos of others in distress, then decided how much money to donate to help. While hope was expected to invoke an approach motivation, distance was expected to invoke an avoidance motivation. It was hypothesized that varying effects of the two reappraisals on positive and negative affect would influence donation decisions. While both hope,  $t(49) = 4.18$ ,  $p < .001$ , and distance,  $t(49) = 3.91$ ,  $p < .001$ , decreased negative affect, hope also increased positive affect,  $t(49) = 4.46$ ,  $p < .001$ . Logistic regression revealed a trend effect of condition,  $\chi^2(2) = 5.59$ ,  $p = .061$ , in which donation rates were higher in hope than distance,  $p = .021$ . Trait reappraisal interacted with condition,  $\chi^2(2) = 8.50$ ,  $p = .014$ , positively predicting donations in hope,  $r(48) = .28$ ,  $p = .046$ . There was a main effect of negative affect in predicting donation behavior,  $\chi^2(1) = 71.92$ ,  $p < .001$ . A positive affect x condition interaction,  $\chi^2(2) = 10.33$ ,  $p = .006$ , suggests that positive affect was a relatively stronger predictor in hope. Together, these results suggest that type of appraisal and separate effects on negative and positive affect influence prosocial decisions.

### THE EFFECT OF ACUTE PAIN ON RISKY AND INTERTEMPORAL CHOICE

Lina Koppel<sup>1</sup>, David Andersson<sup>1</sup>, India Morrison<sup>1</sup>, Kinga Posadzky<sup>1</sup>, Daniel Västfjäll<sup>2</sup>, Gustav Tinghög<sup>1</sup>

<sup>1</sup>Linköping University, <sup>2</sup>Linköping University and Decision Research

*Descriptors: pain, incidental affect, decision making*

Pain is a highly aversive, salient, and attention-demanding experience that motivates people to act. We investigated the effect of pain on decision making by delivering painful heat stimulation to participants' forearm while they made risky and intertemporal choices involving money. Participants ( $n = 107$ ) were more risk seeking under pain than in a no-pain control condition when decisions involved monetary gains ( $t(106) = 2.06$ ,  $p = .042$ ,  $d = 0.12$ ) but not when they involved equivalent losses ( $t(106) = 1.00$ ,  $p = .322$ ,  $d = 0.07$ ). Pain also resulted in greater preference for immediate (smaller) over future (larger) monetary rewards ( $t(106) = 3.84$ ,  $p = .0002$ ,  $d = 0.16$ ). We interpret these results in terms of a motivation to offset the negative, pain-induced state. Winning money feels rewarding and may reduce the subjective intensity and unpleasantness of a painful stimulus. Thus, increased risk seeking and impatience for monetary rewards could be viewed as an attempt to relieve pain and repair one's mood. Our findings have implications for understanding how incidental affect influences behavior and add to the long-standing debate regarding the role of intuition and reflection in decision making.

### EXPLICIT AND SPONTANEOUS MEMORY RETRIEVAL OF EMOTIONAL ASSOCIATES: EVIDENCE FROM BRAIN POTENTIALS

Mathias Weymar<sup>1</sup>, Carlos Ventura-Bort<sup>2</sup>

<sup>1</sup>University of Potsdam, <sup>2</sup>University of Greifswald

*Descriptors: emotional memory, explicit vs implicit, retrieval*

Much evidence indicates that emotional stimuli are better remembered than neutral stimuli, but effects of an emotionally charged context on memory for associated elements is also important in trauma and stress-related disorders, where strong memories are often activated by neutral cues due to their emotional associations. In two studies we investigated explicit and involuntary (spontaneous) long-term memory (1 week delay) for neutral objects that had been associated with emotional background scenes. Results showed that, during explicit retrieval, objects encoded in the context of emotional scenes were better recognized than objects from neutral scenes, and that objects associated with emotional contexts prompted enhanced ERP amplitudes for old, compared to new objects (ERP old/new effect), suggesting better recollection. Interestingly, ERP old/new differences were also larger for neutral stimuli from emotional backgrounds when presented in a free-viewing task, in which no deliberate memory search was required, showing evidence for involuntary (spontaneous) retrieval. Our results suggest that information originally encoded in an emotional context shows better retrieval, regardless of whether memory is explicitly probed or not, which could assist in understanding binding mechanisms involved in the activation of trauma-related memories by neutral environmental cues.

### Thematic Flash Talks Saturday, April 29, 2017 8:30 a.m.-9:30 a.m.

#### Emotion Regulation

### SOCIAL EMOTION REGULATION IN RESPONSE TO ANXIETY AND SADNESS IN DIFFICULT LIFE DILEMMAS

Jocelyn Shu, Niall Bolger, Kevin N. Ochsner  
Columbia University

*Descriptors: emotion regulation, social support*

How can we best support others when they are confronted with difficult and intractable dilemmas in their lives? Two common emotions experienced in such events are anxiety and sadness. As appraisals of threat and loss underlie experiences of anxiety and sadness respectively, different social emotion regulation strategies may be more effective depending on the emotion that someone is experiencing. We hypothesize that when providing regulatory support to others, a strategy that helps someone to modify their situation will be more helpful for someone experiencing anxiety, as such a strategy may avert potential threats. However, a reappraisal strategy, which targets the emotional reaction that someone is experiencing, will be more helpful for someone experiencing sadness. We tested this hypothesis through a novel paradigm in which individuals (Targets) were recruited online to write about a current dilemma causing them to experience either anxiety (n = 70) or sadness (n = 61). Another set of individuals (Regulators) were recruited to provide written regulatory support to the Targets, using either a situation modification or reappraisal strategy. The written support was then sent to the Targets for them to read and assess. When controlling for the Targets' trait reappraisal, those who were experiencing anxiety rated situation modification to be more helpful, whereas those experiencing sadness rated reappraisal to be more helpful, as demonstrated in a between groups ANCOVA ( $F(1, 126) = 4.87, p = .03$ ). This pattern of results was replicated in multiple analyses and another study.

### THE TEMPORAL DEPLOYMENT OF EMOTION REGULATION STRATEGIES DURING NEGATIVE EMOTIONAL EPISODES

Elise K. Kalokerinos<sup>1</sup>, Maxime Résibois<sup>1</sup>, Philippe Verduyn<sup>2</sup>, Peter Kuppens<sup>1</sup>  
<sup>1</sup>KU Leuven, <sup>2</sup>KU Leuven and Maastricht University

*Descriptors: emotion regulation, negative emotion, time*

Time is central to theoretical models of emotion regulation, but key questions remain unanswered. We investigated two such questions. First, we explored when different emotion regulation strategies were used within the course of daily emotional episodes. Second, we investigated the association between the temporal deployment of strategies and negative emotional experience. We conducted a daily diary study in which participants (N=74) drew an intensity profile depicting the temporal unfolding of their negative emotional experience across daily emotional episodes (N=480), and mapped their usage of emotion regulation strategies onto this drawing. Strategies varied in their temporal deployment: suppression ( $p=.019$ ) and rumination ( $p<.001$ ) occurred more at the start of the episode, and reappraisal ( $p<.001$ ) and distraction ( $p<.001$ ) occurred more towards the end of the episode. Strategies also varied in their association with negative emotion: rumination was positively associated with negative emotion, and reappraisal and distraction were negatively associated with negative emotion ( $ps<.001$ ). Finally, both rumination and reappraisal interacted with time to predict negative emotion. Rumination was more strongly positively associated with negative emotion at the end of the episode than the beginning ( $p=.006$ ), and reappraisal was more strongly negatively associated with negative emotion at the beginning of the episode than the end ( $p=.025$ ). These findings highlight the importance of time in emotion regulation, as well as the value of studying these temporal processes in daily life.

### MIX IT TO FIX IT: EMOTION REGULATION VARIABILITY IN DAILY LIFE

Elisabeth S. Blanke<sup>1</sup>, Annette Brose<sup>2</sup>, Yasemin Erbas<sup>3</sup>, Elise K. Kalokerinos<sup>3</sup>, Peter Kuppens<sup>3</sup>

<sup>1</sup>Humboldt-Universität zu Berlin, <sup>2</sup>Humboldt-Universität zu Berlin and KU Leuven, <sup>3</sup>KU Leuven

*Descriptors: emotion regulation, variability, affective well-being*

Emotion regulation (ER) is crucial for well-being. Previous research has often categorized ER strategies based on their effectiveness in regulating negative affect (NA). Recently, however, it was proposed that strategies are neither adaptive nor maladaptive per se: instead, strategies need to be applied variably (or flexibly) to meet contextual demands. In four experience-sampling studies conducted in Germany and in Belgium (Ns Studies 1–4 = 70, 95, 200, and 179) we examined whether the NA levels are predicted by the variability with which people use ER strategies in daily life in terms of how much the use of particular ER strategies varies across time (within-strategy variability) and in terms of variability across strategies at a given point in time (between-strategy variability). Controlling for mean strategy endorsement, regression analyses revealed that between-strategy variability was associated with reduced experience of NA across individuals (Studies 1, 2, & 4:  $p < .01$ ; meta-analytic  $r = -.316$ ). Moreover, using multilevel modeling, we corroborated this finding at the level of individual measurement occasions, showing that on occasions during which participants used a more variable spectrum of strategies, they experienced less NA. No consistent associations were found for within-strategy variability. However, both types of variability were related, suggesting that individuals who differentiated between strategies did not always use the same strategy. These findings have implications for understanding the nature of adaptive and maladaptive emotion regulation.

### THE PSYCHOLOGICAL HEALTH BENEFITS OF ACCEPTING NEGATIVE EMOTIONS AND THOUGHTS: LABORATORY, DIARY, AND LONGITUDINAL EVIDENCE

Brett Q. Ford<sup>1</sup>, Phoebe Lam<sup>2</sup>, Oliver P. John<sup>3</sup>, Iris B. Mauss<sup>3</sup>

<sup>1</sup>University of Toronto, <sup>2</sup>Northwestern University, <sup>3</sup>University of California, Berkeley

*Descriptors: acceptance, negative emotion, psychological health*

People differ in the degree to which they habitually accept their emotions and thoughts without judging or trying to alter them – a process here referred to as acceptance. Acceptance has been linked with greater psychological health, which we propose may be due to the role acceptance plays in negative emotional responses to stressors: Although seemingly paradoxical, acceptance helps keep individuals from reacting to – and thus exacerbating – their negative mental experiences. Over time, feeling less negative emotion should promote psychological health. To test these links, we first verified that habitually accepting mental experiences predicted a wide range of psychological health indicators,  $r_s = .25-.57$ ,  $p_s < .001$  (e.g., well-being, mood symptoms) (Study 1,  $N=1003$ ). In a lab study, we then established that habitual acceptance predicted lower negative,  $r = -.20$ ,  $p = .013$  (but not positive) emotional responses to an induced stressor (Study 2,  $N=156$ ). This experiment laid the groundwork for a longitudinal study wherein acceptance predicted lower negative,  $\beta = -.30$ ,  $p < .001$  (but not positive) emotion during daily stressors that, in turn, accounted for the link between acceptance and greater psychological health six months later (Study 3,  $N=222$ ). The potential confounding roles of gender, ethnicity, socioeconomic status, and life stress severity were also ruled out. Overall, these results suggest that people who accept their mental experiences attain better psychological health, in part because acceptance helps them experience less negative emotion in response to stressors.

### MAKING IT NOT FEEL SO BAD (OR GOOD)

Greg J. Siegle<sup>1</sup>, Wendy D'Andrea<sup>2</sup>, Margee Kerr<sup>1</sup>, Anthony Cao<sup>3</sup>, Amanda Collier<sup>3</sup>, Marlee Pyzewski<sup>3</sup>, Jahala Orsini<sup>3</sup>

<sup>1</sup>University of Pittsburgh, <sup>2</sup>New School for Social Research, <sup>3</sup>University of Pittsburgh Medical Center

*Descriptors: affective neuroscience, dissociation*

Introduction: People popularly report feeling “dazed”, “drained”, “not with it”, or otherwise failing to process information following intense emotional experiences. There is little neuroscience to mechanistically explain such experiences. Mechanistic evidence could suggest profound revisions to how we understand the effects of emotion on the brain and body. I will thus discuss multiple large experiments from our group in which neural activity was measured before and after high arousal experiences in search of explanations for such decreased subsequent processing. Method & Results: I will show data from two fMRI studies, each of  $N > 100$  in which rising mood associated with thinking about the best times in one's life, and listening to criticism by a loved one were accompanied by profound decreases in activity throughout the brain's emotion processing networks, and from two pre-post EEG studies, also with  $N$ 's  $> 100$  in which naturalistic (extreme haunted house) and laboratory stressors are accompanied by profound widespread decreases in activity throughout the scalp at many frequency bands. -Discussion: Data suggest that high arousal emotional information processing can yield widespread decreases in subsequent brain function. In “usual” doses, such reactions could help to buffer individuals against stress. In individuals for whom such phenomena are particularly strong, these changes may help to explain pathologies such as dissociation.

### MEANING-BASED REAPPRAISAL MODERATES THE RELATION BETWEEN ANGER AND PROTEST PARTICIPATION AND DISTRUST IN RESPONSE TO THE KEITH SCOTT SHOOTING

Sara M. Levens, Cherie D. Maestas  
University of North Carolina at Charlotte

*Descriptors: protests, distrust, emotion regulation*

The shooting death of black resident Keith Scott in Charlotte, NC and subsequent protests and conflict released a storm of emotional responses. The unrest surrounding this and related events around the nation has not only posed important questions about race, but also how emotion regulation in times of conflict may give rise to action or corrosion of trust. Following the death of Keith Scott ( $N=1438$ ) students at the University of North Carolina Charlotte completed a survey assessing demographic information, emotional reactions, regulatory responses, locus of control, trust sentiment, and protest participation surrounding the Keith Scott shooting. To examine the moderating role of reappraisal in the association between anger and protest participation, and anger and distrust in local government, a series of regressions were conducted, controlling for age, education, income, gender, race, and locus of control. Analyses revealed that reappraisal focused on deriving long-term meaning from the situation moderated the relation between anger and protest behavior ( $\beta = .067$ ,  $p < .001$ ) and anger and distrust in local government ( $\beta = -.101$ ,  $p < .05$ ). Examination of the interactions revealed that at high levels of anger, higher meaning focused reappraisal strengthened the associations between anger and protest participation and local government distrust; there was no moderating effect of reappraisal in those reporting low anger. These findings suggest that meaning focused reappraisal is influencing whether anger leads to actions or distrust in times of intense interpersonal conflict.

### WHEN ARE WORRY AND RUMINATION NEGATIVELY RELATED TO HEART RATE VARIABILITY: THE MODERATING ROLE OF COGNITIVE REAPPRAISAL

Andre J. Plate, Emily Dunn, Kara Christensen, Amelia Aldao  
The Ohio State University

*Descriptors: heart rate variability (HRV), worry and rumination, cognitive reappraisal*

Worry and rumination are forms of repetitive negative thinking (RNT) that play a crucial role in anxiety and depression (e.g., Borkovec, 1994; Nolen-Hoeksema et al., 2008). However, less is known about how they interact with other emotion regulation (ER) strategies. This is noteworthy given that recent research has demonstrated the importance of examining the interactions between ER strategies when predicting mental health (e.g., Aldao et al. 2014; Plate et al., 2016). One important mental and physical health outcome is resting heart rate variability (HRV) – a physiological index of flexible cardiac functioning that has been linked with adaptive ER and improved mental health (e.g., Thayer et al., 2012). To expand on this work, we predicted resting HRV in 233 undergraduates using self-report measures of reappraisal, RNT (a standardized composite score of worry and rumination), and their interaction. This two-way interaction was significant,  $b = .15$ ,  $SE (.07)$ ,  $p = .029$ , 95% CI [.02, .29]. Specifically, RNT was negatively associated with resting HRV, only in participants who reported habitually using reappraisal at low levels (i.e., at the 10th and 25th percentiles;  $p$ 's < .02). Overall, these results suggest that RNT was linked with maladaptive physiological functioning when people were not habitually using the adaptive strategy of reappraisal. This study extends a growing body of work highlighting the necessity of modeling interactions between ER strategies in order to obtain a more sophisticated understanding of the relationship between ER and mental and physical health.

### EMOTION REGULATION CAN BE DOUBLE-EDGED: REAPPRAISAL, BUT NOT DISTRACTION, IMPAIRS TASK-SWITCHING PERFORMANCE

Vera E. Newman, Belinda J. Liddell, Steven B. Most  
University of New South Wales, Australia

*Descriptors: emotion regulation, executive function*

Emotions are a pervasive aspect of daily life, and they often need to be regulated to maintain adequate cognitive performance to meet behavioral goals. While much research has focused on the adaptive value of particular strategies for emotion regulation (ER), previous research indicates that different ER strategies (for example, reappraisal versus distraction) may be more or less appropriate and helpful depending on the situation. In the current study, participants ( $N=127$ ) undertook a classic task-switching task. Prior to each trial a negative or neutral task-irrelevant distractor appeared. After a baseline task performance measure, participants were given instructions to engage in an ER strategy: either reappraisal, distraction, or control (i.e., no ER). For negative trials, a Trial Type (Switch versus Run) X ER Strategy interaction emerged ( $p = .009$ ). Post hoc tests indicated that participants given reappraisal instructions were significantly slower on switch trials than those given distraction instructions ( $p = .026$ ). In contrast there was no difference between those given reappraisal versus distraction ER instructions on run trials ( $p = .724$ ). Despite the differential effects of ER strategy on performance, both strategies resulted in significant reductions in self-rated negative affect ( $p$ 's < .05). These results demonstrate that despite similar ER effectiveness in reducing negative affect, different ER strategies might be more adaptive and suitable for tasks of different types, and question the utility of a one-size-fits-all approach to emotion regulation techniques.

### INDIVIDUAL DIFFERENCES IN REAPPRAISAL: RELATIONS TO COGNITIVE CONTROL AND DEPRESSION

William M. Vanderlind<sup>1</sup>, Narun Pornpattananangkul<sup>2</sup>, Robin Nusslock<sup>3</sup>, Jutta Joormann<sup>1</sup>

<sup>1</sup>Yale University, <sup>2</sup>National University of Singapore, <sup>3</sup>Northwestern University

*Descriptors: reappraisal, cognitive control, depression*

Online reappraisal is an emotion regulation strategy in which individuals change their interpretation of a situation in order to modulate emotions that have already been elicited. Reappraisal has been linked to a number of positive psychological outcomes and has been shown to effectively down-regulate negative affect. Yet, not everyone is able to use this strategy, highlighting the importance of better understanding individual differences in the successful use of online reappraisal. Although cognitive control has been postulated to underlie effective emotion regulation, no study has examined its relation to online reappraisal empirically. Across two studies, the relation between cognitive control and online reappraisal effectiveness was examined. Affective and non-affective n-back tasks were used to measure affective and general cognitive control, respectively. In Study 1, online reappraisal was assessed by cuing participants to begin using reappraisal in the middle of a sad film clip, and self-reported sadness was measured over time. In Study 2, continuous electrocortical activity was collected while participants were instructed to reappraise (vs. attend to) sad images. Changes in self-reported sadness and the late positive potential (LPP) across conditions indexed online reappraisal effectiveness. Results revealed that n-back task performance was associated with subjective (Study 1) and electrocortical (Study 2) indices of online reappraisal. Across both studies, affective cognitive control accounted for variance in online reappraisal beyond that accounted for by general cognitive control. These findings suggest that the ability to exert cognitive control when processing emotional material may be particularly important for successful utilization of online reappraisal.

### Hot Topic Session: Emotion in Intractable Conflicts

Saturday, April 29, 2017

4:30 p.m.-5:30 p.m.

#### EMOTIONS IN INTRACTABLE CONFLICT: STUDYING EMOTIONAL PROCESSES WITHIN A UNIQUE CONTEXT

Eran Halperin  
Interdisciplinary Center Herzliya

Recent years have seen researchers making initial steps towards drawing on insights from emotion research in the study of conflicts. I argue that building bridges between these two communities (i.e., scholars of emotions and those studying conflict resolution) would help us to form a better understanding of core processes in emotion and emotion regulation as well as greatly advance theory and practice in conflict resolution. But the knowledge on emotion and emotion regulation cannot simply be implanted “as is” into the study of these unique contexts. My talk will begin with outlining the importance but also the challenges of integrating these two disciplines. From there I’ll proceed to detailing the contextual factors unique to intractable conflict that must be taken into account when studying emotional processes, and then to a review of recent work studying various aspects of emotions and emotion regulation processes in different conflicts. Finally, I’ll discuss the challenges facing those wishing to integrate conflict studies and emotion research.

#### OVERCORRECTION FOR SOCIAL-CATEGORIZATION INFORMATION MODERATES IMPACT BIAS IN AFFECTIVE FORECASTING

Tatiana Lau<sup>1</sup>, Carey K. Morewedge<sup>2</sup>, Mina Cikara<sup>1</sup>  
<sup>1</sup>Harvard University, <sup>2</sup>Boston University

*Descriptors: affective forecasting, intergroup relations, emotion*

Plural societies require us to forecast how in-group and out-group members will respond to gains and setbacks. Typically, correcting affective forecasts to include more relevant information improves accuracy by reducing their extremity. In contrast, we find across five experiments that providing forecasters with social category information about targets makes forecasts more extreme and less accurate. In both political (winning and losing the Midterm Elections, N=1044; losing an online tournament, N=512) and sports contexts (losing the Harvard-Yale football game, N=350), forecasters exhibited greater impact bias for both in-group and out-group members (e.g., a “Democrat” or “Republican”; effect sizes = 14.30, 11.78, 7.82, 3.22 for in-group, 19.70, 14.75, 17.82, 4.36 for out-group) than for unspecified targets (a “person”; effect sizes = -1.42, -0.74, 2.63, 1.05) when predicting their responses to events. Inducing time pressure (N=1445) reduced the extremity of forecasts for group-labeled (effect sizes = 8.63, 13.81) but not unspecified targets (effect size = 3.91), suggesting that increased impact bias was due to overcorrection for social category information. Finally, overcorrection was better accounted for by stereotypes than retrieval of extreme exemplars; 545 participants ranked targets as average in terms of affective extremity (mean differences = 3.86, 11.58 for in-group and out-group compared to unspecified). Because many of the decisions that we make for others rely on these affective forecasts, the insight provided here may help to reduce bias in many domains of decision making.

#### WE ARE BAD, BUT THEY ARE WORSE: PERCEIVED INTERGROUP CONFLICT PREDICTS NEGATIVE FEELINGS ABOUT INGROUP AND OUTGROUP IN THE 2016 PRESIDENTIAL ELECTION

Nicole J. Betz, John D. Coley, Lisa Feldman Barrett  
Northeastern University

*Descriptors: intergroup conflict, presidential election*

The 2016 United States presidential race was a contentious time, pitting Republican and Democratic citizens against one another in one of the most polarizing elections in recent history. In the current research, 88 Republicans and 87 Democrats

reported on their perceived conflict across party lines and their emotional responses to political parties in an online survey two weeks prior to election day. We found that perceptions of intergroup conflict significantly predicted negative feelings about the opposing political party,  $\beta = .037$ ,  $t(173) = 7.35$ ,  $p < .001$ . Perceptions of intergroup conflict also explained a significant proportion of variance in negative feelings about outgroup members,  $R^2 = .238$ ,  $F(1, 173) = 54.02$ ,  $p < .001$ . Surprisingly we also found that perceptions of intergroup conflict significantly predicted negative feelings about participants’ political party,  $\beta = .02$ ,  $t(173) = 4.26$ ,  $p < .001$ , and explained a significant portion of the variance,  $R^2 = .071$ ,  $F(1, 173) = 13.12$ ,  $p < .001$ . As expected, participants reported more negative feelings about outgroup members ( $M = 4.35$ ,  $SD = 1.66$ ) than ingroup members [ $M = 2.57$ ,  $SD = 1.64$ ],  $t(186) = 11.93$ ,  $p < .001$ . These findings highlight the detrimental consequences of a polarizing election on attitudes towards political groups. Democracy depends on compromise across party lines, which requires trust between and within the two parties. By fostering negative attitudes about political groups, intense intergroup conflict may decrease opportunities for party members to compromise and work together both within and across groups.

#### RECONCEPTUALIZING BIAS: CONCEPTUALIZATION SHAPES RELATIONSHIP BETWEEN NEGATIVE AFFECT AND FEAR OF BLACK AMERICANS

Kent M. Lee, Alicia Chen, Kristen A. Lindquist, Keith Payne  
University of North Carolina at Chapel Hill

*Descriptors: emotion, implicit bias*

Implicitly measured negative affect toward Black Americans often predicts discrimination. Yet, other evidence suggests that negative affect may be related to sympathy (Uhlmann et al., 2006). Based on psychological constructionist theories, we hypothesized that encouraging participants to conceptualize their negative affect toward Black Americans as sympathy, vs. fear, could result in different self-reported, behavioral, and psychophysiological outcomes. In two studies (Study 1: N = 189; Study 2: N = 140), we indexed participants’ negative affect toward Black Americans using the Affect Misattribution Procedure. Then, we encouraged participants to conceptualize their negative affect as either sympathy or fear. We then examined self-reported fear, in Study 1, and perceptual and psychophysiological measures of fear in Study 2. In Study 1, the relationship between negative affect and self-report measures of fear was weaker in the sympathy condition,  $b = .04$ ,  $p = .72$ , compared to the fear condition,  $b = .37$ ,  $p = .04$ ,  $t(168) = 2.20$ ,  $p = .03$ . In Study 2, the relationship between negative affect and perceptual measures of fear was weaker in the sympathy condition,  $b = .10$ ,  $p = .40$ , compared to the fear condition,  $b = .46$ ,  $p < .001$ ,  $t(136) = 2.22$ ,  $p = .03$ . Further, conceptualizing negative affect as sympathy, vs. fear, reduced the magnitude of skin conductance responses to images of Black Americans,  $t(113) = 1.96$ ,  $p = .05$ . Our results provide the first evidence that conceptualization can modulate the relationship between negative affect toward Black Americans and fear.

#### MOTIVATED PROCESSES OF EMOTIONAL INFLUENCE: ANALYSIS OF TWEETS FROM THE FERGUSON UNREST

Amit Goldenberg<sup>1</sup>, David Garcia<sup>2</sup>, James. J. Gross<sup>1</sup>  
<sup>1</sup>Stanford University, <sup>2</sup>ETG

*Descriptors: intergroup relations, emotions, twitter*

On August 9th 2014, Michael Brown, a Black teenager, was fatally shot by a White police officer in Ferguson Missouri. Emotions from this incident quickly spread on social media, leading to the development of a full blown collective movement. This spread of emotions seems unsurprising, considering the severity of the incident. However, a careful investigation of similar cases suggests that it is in fact quite rare. In 2015, for example, 224 unarmed Black women and men were shot by police officers, yet very few of these cases spread on social media. This suggests that there are other factors that influence the spread of emotions in such contexts. Here we focus on the role played by two such factors, namely the desire to be emotionally similar to one’s group and the desire to be emotionally different than one’s group. We examine the existence and impact of these two motivations by conducting sentiment analysis on 20 million tweets that were collected over a four month period following Michael Brown’s shooting. Our analysis shows that tweeters’ exposure to certain emotions led them to express emotions that were more aligned with those of others. However, tweeters also maintained a certain distance from others by expressing stronger negative emotions compared to their networks. These findings help to illuminate the role of motivational processes in the spread of emotions in real-world situations.

### POSTER SESSION A

Thursday, April 27, 2017

#### Poster Schedule

5:30 p.m.-6:30 p.m. .... Assemble your poster  
6:30 p.m.-8:00 p.m. .... **Author present**  
8:00 p.m.-9:00 p.m. .... Take down your poster

### POSTER A-1

#### MACAQUES DO NOT EVIDENCE SEX DIFFERENCES IN THREAT PROCESSING

Eliza Bliss-Moreau, Victoria A. Heng  
University of California, Davis

*Descriptors: sex differences, rhesus macaque, affective processing*

A common perception is that men and women differ in their emotional responses – women are often labeled as the more emotional sex and men are assumed to be more stoic and reserved. The extent to which these differences are socially constructed versus biologically engrained is not clear. One means of investigating the extent to which sex differences in emotion are biologically based is by adopting an evolutionary approach and studying nonhuman primates – our closest relatives. As part of a larger ongoing investigation of sex differences of affective processing, we tested 14 rhesus macaques (50% female) (*Macaca mulatta*) in a classic evaluation of threat processing, called “the human intruder (HI) task”. In the HI task, an unfamiliar human positions him or herself in front of the experimental subject in four different positions that increase in the potency of their threat value. Behavioral responses indexing affective reactivity are assessed during these 4 conditions during 5 sessions. We found no significant differences between males and females in their overall affective reactivity, in specific behaviors generated, or in the organization (co-occurrence) of behaviors (all *ps* associated with sex > 0.4). While the present sample is small (in terms of typical human studies), previous HI studies with macaque subjects utilizing similar sample sizes identified significant group differences. These findings provide preliminary evidence that sex differences in emotional processing may be constructed and not biologically engrained.

### POSTER A-2

#### CHILDHOOD MALTREATMENT PREDICTS POOR MINDFULNESS-BASED COGNITIVE THERAPY OUTCOMES FOR ACUTE DEPRESSION

Elizabeth A. Cosby, Willoughby B. Britton  
Brown University

*Descriptors: mindfulness, trauma*

Mindfulness-based interventions are an increasingly popular approach to treating affective disturbances, and a current goal of the field is to identify factors that moderate treatment response. Childhood trauma is a moderator of interest, since history of early trauma has been shown to negatively impact acute depression treatment outcomes for other forms of treatment, and results from recent studies investigating childhood maltreatment as a mindfulness-based treatment moderator have been mixed. In a clinical trial of Mindfulness-Based Cognitive Therapy (MBCT) for acute depression (N=91), childhood trauma predicted worse treatment outcomes as measured by depression change scores ( $r = .207, p = .049$ ) as well as by meditation-related adverse effects ( $r = .227, p = .027$ ). Participants who reported any childhood sexual abuse ( $n = 17$ ) or severe childhood emotional neglect ( $n = 13$ ) exhibited less of a decrease of depression symptoms post-treatment compared to participants reporting no sexual abuse or non-severe emotional neglect, respectively ( $t(89) = 2.28, p = .025$ ), ( $t(89) = 2.87, p = .005$ ). These data have significant clinical implications, highlighting the need for trauma-sensitive modifications to standard mindfulness-based treatments.

### POSTER A-3

#### DOES HIGHER SOCIAL CLASS CAUSE POORER EMOTION PERCEPTION?

Hannah Schmidt, Valerie Zhao, Stephen Chen, Christen Deveney, Jeremy Wilmer  
Wellesley College

*Descriptors: social class, culture, emotion recognition*

A growing body of research frames social class as a cultural identity that influences thoughts, emotions, and behaviors. In a preregistered study, we sought to replicate – in a large age-, gender-, and social class-diverse sample – findings from this literature suggesting that lower social class causes more accurate emotion perception (Kraus et al., 2010). 183 adults (19-71yrs;  $M=35, SD=11$ ; 106 female) were recruited from Amazon Mechanical Turk. Through communications with authors of the original study, we replicated Kraus et al.'s (2010) social class manipulation, emotion perception measure (Reading the Mind in the Eyes Test, RMET), and subjective (self-reported position on a ladder) and objective (education) social class indices, and included a second objective (income) social class measure. The social class manipulation impacted neither emotion perception ( $F=.70, p=.41$ ) nor subjective social class ( $t=.84, p=.40$ ). Moreover, despite substantial statistical power (80% to detect a small-to-medium  $\eta^2=.22$  effect), we found no clear associations of emotion perception with either subjective ( $\eta^2=.012, p=0.07$ ) or objective (education  $\eta^2=.012, p=0.10$ ; income  $\eta^2=.006, p=0.42$ ) social class after controlling for gender and agreeableness (as in past research) plus vocabulary (to account for the language-demands of the RMET). The present study suggests that the previously demonstrated inverse relations between social class and emotion perception may be less robust, replicable, and/or generalizable than previously recognized.

### POSTER A-4

#### IMPROVING EMOTION LABELING IN ALEXITHYMIA: A PRELIMINARY ASSESSMENT OF THE EMOTION MAPPING ACTIVITY

Emily R. Edwards<sup>1</sup>, Sindhu Shivaji<sup>2</sup>, Peggilee Wupperman<sup>2</sup>

<sup>1</sup>John Jay College/City University of New York Graduate Center, <sup>2</sup>John Jay College

*Descriptors: alexithymia, mindfulness, emotion labeling*

Alexithymia is a psychoemotional trait associated with various functional impairments, including psychopathology, engagement in dysregulated behavior, and perpetration and victimization of relational violence. In psychotherapy, alexithymic persons present unique challenges, decreasing the overall effectiveness of psychological intervention. Research suggests that the challenges of alexithymic persons stem primarily from an inability to appropriately apply linguistic labels to emotional experiences and content. The present research introduces and preliminarily evaluates a novel, psychotherapeutic tool to improve emotion-labeling ability in alexithymic persons. Based in mindfulness principles and culturally universal patterns of somatic experience, the Emotion Mapping Activity (EMA) directs alexithymic persons to reflect on their internal, somatic experiences as a source of information for interpreting and labeling emotions. Sixty-seven alexithymic individuals completed a series of emotion-labeling tasks either with or without use of the EMA. Results suggest that completion of the EMA contributed to a lower frequency of inaccurate emotion labels (7% vs. 13%,  $p = .05$ ) and higher frequency of semi-accurate labels (62% v. 49%,  $p < .01$ ), but did not interfere with frequency of accurate labels (30% v. 39%,  $p = .07$ ). Though further research is necessary, the EMA may hold the potential to be incorporated into psychotherapy protocols as a tool for improving emotion-labeling ability for alexithymic clients.

### POSTER A-5

#### ADAPTIVE EMOTION REGULATION STYLE MODERATES FRONTAL BRAIN ASYMMETRY TO INFLUENCE RECOVERY FROM STATE EMOTIONS

Aliza Schwartzblatt<sup>1</sup>, Chyna Haywood<sup>2</sup>, Natalia Coss<sup>2</sup>, Kathryn Dana<sup>1</sup>, Justin Storbeck<sup>3</sup>, Jennifer L. Stewart<sup>3</sup>

<sup>1</sup>The Graduate Center, City University of New York, <sup>2</sup>Queens College, City University of New York, <sup>3</sup>The Graduate Center & Queens College, City University of New York

*Descriptors: electroencephalography, frontal asymmetry, emotion regulation*

Electroencephalographic (EEG) asymmetry research demonstrates that negative emotion and withdrawal motivation characteristic of depression are linked to relative right frontal activity, whereas positive emotion and approach motivation are associated with relative left frontal activity. Few studies, however, have examined how self-reported adaptive and maladaptive emotion regulation (ER) styles (e.g., cognitive reappraisal and suppression, respectively) influence neural patterns of asymmetry when individuals attempt to recover from emotional experiences. To this end, the present study investigated patterns of EEG asymmetry before, during and after 39 young adults experienced a state mood manipulation induced via film clip (happy: n=17; sad: n=22). Post-clip EEG asymmetry was recorded following a behavioral inhibition task ~20 minutes after film clip completion. Although happy and sad groups did not differ in frontal asymmetry pre-, during- or post-clip, moderation analyses revealed that individuals with lower depression scores or greater use of adaptive ER strategies paired with greater leftward asymmetry during the film clip resulted in greatest relative left frontal asymmetry post-clip ( $p < .01$ ). Similarly, lower use of maladaptive ER strategies paired with greater left frontal asymmetry during the clip resulted in greatest relative left frontal asymmetry post-clip ( $p < .01$ ). In sum, approach-related brain activity paired with adaptive ER promotes approach-related recovery from brief emotional states.

### POSTER A-6

#### PRENATAL STRESS TAKES SMILES AWAY—A MEDIATION ANALYSIS OF SUPERSTORM SANDY EXPOSURE, MONOAMINE OXIDASE A AND INFANT TEMPERAMENT AT 12 MONTHS

Patricia M. Pehme<sup>1</sup>, Zhang Wei<sup>2</sup>, Nomura Yoko<sup>1</sup>

<sup>1</sup>The Graduate Center, City University of New York and Queens College, City University of New York, <sup>2</sup>Queens College, City University of New York

*Descriptors: prenatal stress, temperament, epigenetic impact*

Prenatal stress has been linked to suboptimal child temperament development. Stress in utero has been linked to regulation of monoamine oxidase A (MAOA) gene expression in animal but few human studies. MAOA breaks down key neurotransmitters in the brain. Lower expression of MAOA gene contributes to emotional and behavioral problems. Capitalizing on ongoing longitudinal study data from ninety-four dyads were analyzed to evaluate whether MAOA expression mediates the association between prenatal stress and infant temperament. Prenatal stress was defined by exposure to Superstorm Sandy during pregnancy. MAOA expression was analyzed from the placental tissues. 12 domains of temperament were measured by Infant Behavior Questionnaire (IBQ-R). Independent sample t-tests revealed that children whose mothers were exposed to Superstorm Sandy had lower MAOA expression,  $t(92) = 2.55, p = .012$ , and lower Smile and Laughter domain scores,  $t(92) = 3.05, p = .003$ . MAOA expression was positively associated with Smile and Laughter. Finally, mediation analysis using bootstrapping procedure confirmed that MAOA expression partially mediated the relationship between Superstorm Sandy exposure and Smile and Laughter (beta =  $-.11, 95\% CI = [-.37, -.003]$ ). Sandy exposure in utero was a significant predictor for Smile and Laughter (beta =  $-.56, p = .003$ ) and remained significant after controlling for MAOA expression (beta =  $-.45, p = .017$ ). These findings suggest that stress experienced in utero could shape the temperamental development epigenetically through alteration of MAOA gene expression.

### POSTER A-7

#### THE ROLE OF REAPPRAISAL SUCCESS IN MEMORY

Nick Yeh, Sarah J. Barber  
San Francisco State University

*Descriptors: emotion regulation, cognitive reappraisal, memory*

Previous research suggests that when people reappraise negative information, they later remember it better than if they had passively viewed it. However, it is unclear whether this benefit extends to high arousal negative images, which may be difficult or impossible to reappraise. The present study investigates this issue. At encoding, participants ( $N = 27$ , data collection ongoing) were instructed to use situation-focused reappraisals to decrease their emotions to some negative images and were asked to passively view others. Images were low or high in emotional arousal. During reappraisal trials, participants also rated their success in generating a reappraisal. Memory was assessed after a one-week delay with a surprise recall test followed by a recognition test. Preliminary results for the incidental recall test revealed that participants recalled significantly more images when using situation-focused reappraisals compared to passively viewing them,  $F(1, 25) = 28.37, p < .001$ . High arousal images were recalled significantly more than low arousal images,  $F(1, 25) = 13.00, p = .001$ . Additionally, although failures to generate reappraisals occurred significantly more for high arousal images compared to low arousal images,  $t(24) = 3.93, p < .001$ , the memory benefit of reappraisal did not vary as a function of arousal,  $F(1, 25) = 1.24, p = .276$ . The same pattern of results was found for hit rates, albeit at weaker levels. These findings suggest that the memory benefits of reappraisals can occur at all levels of arousal and may not depend upon reappraisal success.

### POSTER A-9

#### GENDER AND RECENT TRAUMA IMPACT EMOTION REGULATION CHOICE

Tabitha Alverio, Romin Kazemeini, Sara M. Levens  
University of North Carolina at Charlotte

*Descriptors: emotion regulation, gender, trauma*

Emotion regulation choice may impact how an individual copes with adverse experiences. Past research has shown that females process emotions differently than males suggesting that they may choose to regulate their emotions differently, particularly following trauma. The current study examined how gender and number of recent traumatic events impacted emotion regulation choice (ERC) behavior. Young adults ( $n=155$ ) completed an ERC task in which they were presented with low, moderate and high intensity negative photos and asked to choose the strategy (reappraisal or distraction) that would best lower their negative affect. A 2 (Intensity) by Gender repeated measure ANOVA with number of recent trauma events entered as a continuous independent variable yielded main effects of intensity,  $F(1,151)=1054$ ,  $p<.001$ , trauma  $F(1,151)=4.03$ ,  $p<.05$ , and gender,  $F(1,151)=5.14$ ,  $p<.05$ , qualified by an intensity by gender interaction,  $F(2,302)=6.56$ ,  $p<.05$  and a trend gender by trauma interaction,  $F(1,151)=3.55$ ,  $p<.1$ . Follow-up analyses reveal that a higher number of recent trauma events is associated with lower levels of reappraisal choice, and that females choose reappraisal less in response to high intensity negative photos than males. In addition, in males the number of recent traumatic events was associated with lower levels of reappraisal across intensity, whereas in females, lower levels of reappraisal was restricted to low intensity negative photos. These findings suggest male and female young adults may choose to regulate their emotions differently, particularly following recent trauma.

### POSTER A-10

#### THE ROLE OF POSITIVELY AND NEGATIVELY VALENCE D EMOTION IN FACIAL PROCESSING AND RESPONSE INHIBITION: AN ERP STUDY

Laura A. Stockdale<sup>1</sup>, Rebecca L. Siltou<sup>2</sup>

<sup>1</sup>Brigham Young University, <sup>2</sup>Loyola University Chicago

*Descriptors: neuroscience, face processing, response inhibition*

Negatively valenced emotional information is differentially processed in the brain. Facial processing is a bottom-up neurocognitive process recruiting the occipital lobe and the fusiform gyrus. Response inhibition, a top-down neurocognitive process, may be more difficult in the presence of task irrelevant negatively valenced information. The current study seeks to decouple the influence of negatively valenced emotion on facial processing and response inhibition in an emotionally irrelevant task. In study one, participants performed a stop-signal (SS) gender discrimination task using happy and afraid faces while their EEG was recorded. On go trials, participants were less accurate for afraid faces, displayed reduced latencies in their P100s for afraid faces as compared to happy faces and more negative N170 amplitudes. For stop-trials, participants did not differ in their performance in response to happy or afraid faces and their N200/P300s did not distinguish between happy and afraid faces. For study 2, participants completed the SS task using sad and happy faces. Face valence did not modulate behavioral performance or ERPs. For bottom-up processes, afraid faces are more difficult to ignore, as such their performance is poorer and their ERP components are delayed and enhanced. However, participants were still able to quickly and accurately withhold responding in the presence of emotionally irrelevant afraid, sad, and happy faces, suggesting that top-down processing is not impeded or enhanced by task irrelevant negatively valenced emotional information.

### POSTER A-11

#### PARENTS' NEGATIVE EMOTIONS AND UNHEALTHY CHILD EATING HABITS PREDICT PARENTS' APPRAISALS OF CHILD WEIGHT-RELATED FILM

Cecily A. Basquin, Laura M. Armstrong, Summer McKinney, Devmarie Drummond, Sara J. Sagui-Henson, Sara M. Levens  
University of North Carolina at Charlotte

*Descriptors: appraisal, weight, health behavior*

The Health Beliefs Model suggests that appraisals are a key determinant of one's motivation to enact health behavior change, yet the role of parent appraisals in the context of child weight-related challenges is unknown. We present evidence from a national community MTurk study on parents ( $N=77$ , mean age=35 years) with 6 to 12-year-old children. Parents completed a survey assessing demographic information, child and parent body mass index, parent stress and mental health, and family eating and activity habits, and they watched 10 health-focused film clips of children and their families struggling with weight-related issues. Parents described their positive appraisals (PA) and negative appraisals (NA) in response to each clip. The number of PA and NA generated by each parent was coded to create a mean PA score, a mean NA score, and an appraisal balance (AB) score (difference between mean PA score and mean NA score). Three regression models were run to examine parent, child, and family predictors of parent appraisals. While models predicting mean PA and NA were not significant, the model predicting AB was significant,  $R^2=.39$ ,  $F(11,69)=3.33$ ,  $p<.01$ , with children's unhealthy snack consumption ( $Beta=-.31$ ,  $p<.05$ ), children's negative eating habits ( $Beta=.27$ ,  $p<.05$ ), and parent negative emotions during the film clips ( $Betas=-.30$  to  $.32$ ,  $ps<.05$ ) significantly predicting appraisal balance. Findings highlight the importance of understanding factors influencing parent appraisals and suggest avenues for increasing family motivation to engage in healthy behaviors.

### POSTER A-12

#### EXECUTIVE CONTROL TRAINING ENHANCES EMOTION REGULATION

Noga Cohen<sup>1</sup>, Okon-Singer Hadas<sup>2</sup>, Mor Nilly<sup>3</sup>, Henik Avishai<sup>4</sup>

<sup>1</sup>Columbia University, <sup>2</sup>Haifa University, <sup>3</sup>Hebrew University, <sup>4</sup>Ben-Gurion University

*Descriptors: amygdala, executive control, reappraisal*

Adaptive behavior depends on the ability to effectively regulate emotional responses. Failure in the regulation of emotional arousal can result in heightened physiological reactions and disruptive behavioral performance. In turn, these behavioral and physiological alternations can lead to various psychopathologies. In several studies we demonstrated that training executive control, an attentional mechanism that enables goal-directed behavior, lead to reduced emotional interference by aversive pictures and to a lower amygdala activation to these pictures. Moreover, we showed that training individuals to recruit executive control prior to the presentation of unpleasant pictures enhances their ability to regulate an upsetting personal event using reappraisal. These findings suggest that the interplay between emotion and executive control is essential for maintaining adaptive behavior and may be impaired in individuals with emotion regulation difficulties.

### POSTER A-13

#### INTERFERENCE RESOLUTION IN BIPOLAR DISORDER

Yanqing Li<sup>1</sup>, Marc G. Berman<sup>2</sup>

<sup>1</sup>University of California, Irvine, <sup>2</sup>University of Chicago

*Descriptors: bipolar disorder, interference, short-term memory*

Although much evidence has indicated that depression and rumination are linked to deficits in resolving interference in short-term memory (STM), knowledge of why individuals with BD (BDs) are especially prone to rumination is lacking. The present research addressed this gap by separately exploring the interference resolution processing in BDs based on illness phase and psychosis history. BDs ( $n = 23$ ) and healthy controls (HCs;  $n = 16$ ) were administered a directed-forgetting procedure in a short-term recognition task that required inhibition of irrelevant information in STM. The results demonstrated that (a) symptomatic BDs tended to have more difficulty than did HCs and euthymic BDs in suppressing information of both positive and negative nature,  $F(2, 33) = 0.54$ ,  $p = .59$ , partial eta squared = .03; (b) a history of psychosis modulated the degree to which BDs are impaired in interference resolution, with psychotic BDs exhibiting more severe deficits compared to nonpsychotic BDs,  $F(2, 32) = 2.72$ ,  $p = .081$ , partial eta squared = .15. These findings indicate that BD is associated with difficulties removing emotional information from STM, and this difficulty is exacerbated in BDs who are symptomatic and/or have a history of psychosis. As such, the inability to remove information from STM may serve as a mechanism or mediator for rumination. While limited by a small sample size, the present study represents a critical beginning process to elucidate the nature of the relationship between BD, rumination, and resolving interference in STM.

### POSTER A-14

#### THE JINGLE AND JANGLE OF EMOTION ASSESSMENT: IMPRECISE MEASUREMENT, CASUAL SCALE USAGE, AND CONCEPTUAL FUZZINESS IN EMOTION RESEARCH

Aaron C. Weidman, Conor M. Steckler, Jessica L. Tracy  
University of British Columbia

*Descriptors: measurement, self-report, decision making*

Affective science has seen an explosion of interest in measuring subjectively experienced distinct emotions; yet, most existing self-report measures tap affect dimensions and dispositional emotional tendencies, rather than momentary distinct emotions, raising the question of how emotion researchers are currently measuring momentary distinct emotions. To answer this question, we reviewed the self-report measurement practices regularly used to assess momentary distinct emotions, by coding these practices in a sample of articles published in *Emotion* from 2001-2011 ( $n=467$  articles; 751 studies; 356 measurement instances). This review produced several noteworthy findings. First, researchers assess many purportedly distinct emotions ( $n=65$ ), a number substantially different from established emotion taxonomies. Second, researchers frequently use scales that were not systematically developed, and that include items also used to measure other emotions on separate scales in separate studies. Third, the majority of scales used include only a single item, and have unknown reliability. Together, these tactics may create ambiguity regarding which emotions are being measured in empirical studies, and conceptual inconsistency among measures of purportedly identical emotions across studies. We discuss how these problematic practices may hinder researchers' ability to gain insights into distinct emotions based on self-report measures (e.g., understanding the effects of various distinct emotions on decision making), and conclude with suggestions for improving the field's measurement tactics.

### POSTER A-15

#### CORTISOL RESPONSES ENHANCE NEGATIVE VALENCE PERCEPTION FOR AMBIGUOUS FACIAL EXPRESSIONS

Catherine C. Brown<sup>1</sup>, Candace M. Raio<sup>2</sup>, Jessica L. Calvi<sup>1</sup>, Maital Neta<sup>1</sup>

<sup>1</sup>University of Nebraska-Lincoln, <sup>2</sup>New York University

*Descriptors: stress, cortisol, ambiguity*

Social stimuli are often ambiguous in nature. Surprised expressions, for example, predict both positive (e.g., birthday party) and negative (e.g., car accident) events. Previous work has found marked individual differences in valence ratings of surprised faces. However, how stress affects this valence bias has not been tested. Given that stress prioritizes automatic emotional processing which, in the context of valence bias, is associated with more negative ratings of ambiguity, we predicted that stressed participants would show a temporary increase in negativity. Forty-five participants rated both ambiguously- (surprised) and clearly-valenced (happy, angry) faces as positive or negative. One week later, participants were randomly assigned to a stress ( $n = 22$ ) or control ( $n = 23$ ) condition. Participants again rated surprised, angry, and happy faces (different identities) at 10 and 50 minutes after the manipulation. Salivary cortisol levels were assessed at baseline and again before each rating. The results revealed a trending correlation such that increases in cortisol levels were correlated with increases in participants' negative ratings of surprised faces ( $r = 0.279$ ,  $p = 0.045$ , one-tailed) 10 minutes after the manipulation. When we examined this effect by group, we found the effect was significant only for the stress group ( $r = 0.48$ ,  $p = 0.03$ ; controls  $r = -0.14$ ,  $p = 0.48$ ). Within the stress group, those who became more negative showed the biggest increase in cortisol levels after the task, evidencing that increased stress is associated with more negative valence bias.

### POSTER A-16

#### CROSS-CULTURAL DIFFERENCES IN ALEXITHYMIA

Megan G. Strickland, Alexander J. Skolnick  
Saint Joseph's University

*Descriptors: alexithymia, culture, trait anxiety*

A new direction examining anxiety disorders is focusing on the role of emotion regulation (ER), or the process by which individuals can influence the overall experience of an emotion (Gross, 2002). When individuals with anxiety use suppression, they experience increased negative affect and self-reported increased anxiety; in contrast, cognitive reappraisal is a more efficacious ER strategy (Hofmann et al., 2009). There is a broad understanding of anxiety disorders and ER but what is left unknown is whether flexibility in ER and the ability to recognize emotions (alexithymia) plays a significant role in trait anxiety across cultures. A total of 190 participants (50.5% USA, 49.5% India); primarily males (63.2%) completed an online survey through Amazon's Mechanical Turk. Participants from India demonstrated significantly higher alexithymia scores,  $\chi^2(6)=20.90$ ;  $p=.002$ ; no differences were seen for trait anxiety. A MANOVA testing between-group differences for trait anxiety, flexibility in emotional expression, negative affect, cognitive reappraisal, and expressive suppression on alexithymia found a significant multivariate effect [ $F(10,364)=7.89$ ;  $p<.001$ ; partial eta squared = .178]. All dependent variables were highly significant ( $p<.001$ ) except flexibility in emotional expression, which was nonsignificant. Given the cross-cultural differences in alexithymia, the differences might indicate that anxiety would be dealt with differently between cultures as indicated by associated differences in ER strategies, cognitive reappraisal and expressive suppression.

### POSTER A-17

#### PREFERENCES FOR AND EFFECTIVENESS OF THREE FORMS OF COGNITIVE CHANGE FOR EMOTION REGULATION ACROSS THE ADULT LIFESPAN

Kimberly M. Livingstone, Derek M. Isaacowitz  
Northeastern University

*Descriptors: emotion regulation, aging*

This research is the first laboratory study to examine both preferences for and effectiveness of various forms of cognitive reappraisal across the adult lifespan. Based on socioemotional selectivity theory and past research, we hypothesized that older adults would prefer and benefit from positive reappraisal compared to other forms. Younger (ages 20-39, N=68), middle-aged (ages 40-59, N=69), and older (ages 60-79, N=66) adults were given descriptions of and practiced negative, objective, and positive ways of "rethinking" to manage their emotions, then chose the order in which they wished to engage them. They viewed one block of negative videos normally, then three more blocks using their chosen regulation strategies (videos were counterbalanced), reporting affect after each video. Logistic regression showed that older adults were marginally more likely (74%) than younger adults (59%) to choose positive reappraisal first (OR=1.98 [95% CI=.96-4.10]),  $p=.063$ . Analyses of affect showed a main effect of reappraisal condition and an age x reappraisal interaction,  $F(6,600)=2.17$ ,  $p=.045$ : Although older adults reported more negative affect than other age groups in the control condition, they reported equally positive affect in the positive reappraisal condition; objective reappraisal was not as effective for them as for other age groups. Younger adults also reported less negative affect in the negative rethinking condition. This research generally supports positivity in older age and may help explain how older adults can maintain positive emotional well-being.

### POSTER A-18

#### SOCIOECONOMIC STATUS AND DIETARY DECISION MAKING

Daniel J. O'Leary, James J. Gross  
Stanford University

*Descriptors: dietary decision making, socioeconomic status*

Across many important domains, people of low socioeconomic status (SES) make worse decisions than their higher SES counterparts. People of low SES are more likely to engage in disease-causing behaviors such as smoking, drinking, and unhealthy eating than more affluent individuals (Pampel, Krueger, & Denney, 2010). In this study, we examined whether the maladaptive patterns of dietary decision making in low SES individuals observed in the real world can be captured in a laboratory context. If possible, this would pave the way for studying mechanisms and developing interventions in laboratory contexts that control for environmental influences in this domain. Participants,  $N = 48$  Age  $M = 18.8$  56% female, from a range of SES completed a standard incentive-compatible dietary decision-making task where they first rated a set of foods on taste and health and then decided whether or not they want to eat the foods. Using a mixed effects logistic regression model, we show that low SES participants chose healthy foods less often than high SES participants. Specifically, low SES individuals chose foods rated "health" and "very healthy" on 32% and 26% of trials, respectively, compared to rates of 51% and 56% for high SES individuals. Thus, we observe low SES-related unhealthy dietary decision making in the lab and can use this methodology to explore mechanisms and design interventions in future work.

### POSTER A-19

#### PERCEIVED CONTROL OF LOVE AND EMOTIONS

Kruti Surti, Sandra J.E. Langeslag  
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*Descriptors: love regulation, emotion regulation*

Romantic love is applicable to majority of the population and being able to modulate love feelings could be beneficial for individuals. A previous study showed that love is somewhat uncontrollable and people seem to think they can control attachment more than infatuation. However, the previous study did not compare people's perceptions about up-and-down- regulation of love and emotions. In this study, 155 participants (21 men, 130 women, 3 gender queer, 1 other) completed a 34-item questionnaire regarding their views about their ability to up-regulate, down-regulate, start, stop, express, and suppress love (i.e. infatuation, attachment, sexual desire), and emotions (i.e. happiness, fear, anger, and sadness). Participants thought it was easier to up- than down-regulate love and emotions,  $p < .001$ , and that it was harder to up-regulate infatuation than attachment and sexual desire,  $p < .001$ . Participants also thought it would be harder to start and stop feelings of infatuation compared to attachment and sexual desire,  $p < .001$ . Moreover, the more participants habitually used reappraisal for emotion regulation, the easier they thought it was to increase and decrease love feelings,  $r = .23$ ,  $p = .005$ . Finally, the more participants habitually suppressed their emotions, the easier they thought it was to suppress love,  $r = .23$ ,  $p = .004$ . The next step will be to compare whether people's perceptions align with their cognitive ability to control love and emotions, which can improve psychoeducation of love and emotion regulation.

### POSTER A-20

#### MOTIVATION-COGNITION INTERACTIONS IN OLDER AND YOUNGER ADULTS

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*Descriptors: motivation, cognitive control, decision making*

Motivational incentives play an influential role in cognitive control, putatively by modulating the mechanisms by which individuals actively maintain and flexibly update task representations to control goal-directed behavior. While there is evidence that the integration of diverse incentives modulates cognitive control in young adults, an open question is how motivation-cognition interactions are impacted throughout healthy aging. In this study, we used an innovative task paradigm that has established dissociable effects of liquid (e.g., juice, neutral, saltwater) and monetary incentives on cognitive task performance. Participants (Young Adults (YA):  $N=60$ , Ages 18-39; Older Adults (OA):  $N=56$ , Ages 66-92) performed a cued task-switching paradigm to earn monetary rewards, with liquid incentives serving as post-trial performance feedback. Our results revealed that OA task performance was modulated by money ( $F=6.20$ ,  $p=.002$ ), but not liquid ( $F=0.65$ ,  $p=.552$ ). YA task performance was modulated by both money ( $F=38.15$ ,  $p<.001$ ) and liquid ( $F=39.42$ ,  $p<.001$ ). A surprising discovery was that OA continued to improve task performance across blocks ( $F=109.43$ ,  $p<.001$ ), such that in the last block they matched and even surpassed (on saltwater trials) the performance of YA. These data suggest that OA are 1) less sensitive than YA to the motivational impact of liquid incentives, and 2) slower to adaptively adjust their cognitive strategy to improve task performance. Future work involves elucidating the neural mechanisms for differential motivation-cognition effects in younger and older adults.

### POSTER A-21

#### CARDIAC INTERACTION BETWEEN MOTHER AND INFANT (2): FACTORS OF INFANTS' REACTIVITY

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*Descriptors: mother-infant interaction, heart rate variability, developmental stage*

The autonomic functions of infants develop remarkably after birth, and their physiological responses to external stimuli change as they grow. We evaluated infants' cardiac reactivity to mothers' heart rate variability (HRV) at different developmental stages. Mothers breathed at a pace of 6 cycles per minute while holding their infants vertically and close to their bodies, followed by a 5-minute rest period. Infants were classified by age into a younger group (4-5 months old, n=11) and an older group (6-8 months old, n=8). Mothers were categorized by their reactivity of a low frequency (LF) power of HRV during paced breathing into a high reactivity group (n=9) and low reactivity group (n=10). The change in the amount of mothers' LF power significantly explained the change in the amount of infants' LF power more in the older group than in the younger group. Results of regression analyses indicated that the degree of increase in mothers' LF power during paced breathing could solely predict the degree of increase in LF power of the older group, whereas the explanatory variables in the younger group were infants' weight and sex. These results suggest that cardiac interactions between mothers and infants may be modulated by the developmental stages of infants.

### POSTER A-22

#### PREDICTIONS AS DRIVERS OF CONSCIOUS ACCESS AND EVALUATIVE JUDGMENTS IN SOCIAL PERCEPTION

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*Descriptors: social perception, conscious access, evaluative judgments*

Emerging perspectives in neuroscience indicate that the brain functions as a prediction machine that constantly anticipates sensory input based on past experience. According to these perspectives, predictions drive perception, guiding and constraining what we actually experience. However, the role of predictions in social perception remains largely unexplored. Here we show that predictions deeply influence how we experience emotional input. In a behavioral experiment using continuous flash suppression (Exp. 1), we show that predicted emotion facial expressions have privileged access to consciousness (n=42; repeated-measures analysis of variance (ANOVA)). In four additional experiments, we show that predicted facial expressions are judged as more likable (Exp. 2 and 4; n=35 each; repeated measures ANOVA and hierarchical linear modeling (HLM)) and trustworthy (Exp. 3 and 5; n=35 and n=90, respectively; repeated measures ANOVA and HLM). These effects were observed across emotion categories (happiness, sadness, fear). In addition, we show that these effects extend to real-world persons where such judgments have particularly high consequence (i.e., evaluating presidential candidates for elections; Exp. 5; regression). The implications of these findings are numerous. They suggest that social perception is constructed as the remembered present, that uncertainty or prediction violation (as might occur in cross-cultural interactions) may lead to dislike, and that disruptions in the dynamics of predictions might underlie problems in emotion perception across mental disorders.

### POSTER A-23

#### TARGETING INCONGRUENT EMOTION EXPERIENCE IN SCHIZOPHRENIA

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*Descriptors: schizophrenia, incongruent emotion*

People with schizophrenia (SZ) report more negative emotion in response to positive and neutral stimuli, or incongruent emotion experience, compared to people without SZ. In this study, adults with SZ (n = 29) and without SZ (n = 26) reported their baseline emotional experience, watched short positive and neutral films, and again reported emotional experience. They then engaged in the Broad Minded Affective Coping Procedure (BMAC; Terrier, 2010), a cognitive-behavioral strategy used to decrease negative affect. After the BMAC, participants watched additional positive and neutral films and reported their emotion experience, and completed a cognitive control task. We sought to test whether baseline negative affect and/or cognitive control was correlated with incongruent emotion experience, and whether we could decrease incongruent emotion experiences in response to films through reducing negative affect through the BMAC. We found that people with SZ reported significantly more baseline negative affect compared to people without SZ (p = 0.004), and this heightened negative affect was positively correlated with incongruent emotion experiences in response to films in people with SZ (p's < 0.005). However, the BMAC did not decrease negative affect in people with SZ, thus did not influence reports of incongruent emotion experience. Further, cognitive control was not correlated with incongruent emotion experience. Our results suggest that incongruent emotion experience may be explained by heightened and persistent negative affect in people with SZ.

### POSTER A-24

#### POOR MENTAL HEALTH IN CAREGIVERS PREDICT MORTALITY OF PATIENTS WITH NEURODEGENERATIVE DISEASE

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*Descriptors: mental health, caregiving, neurodegenerative disease*

Neurodegenerative diseases cause profound declines in functioning and many patients require caregivers for assistance with daily living. Patients differ greatly in how long they live after disease onset, with the nature and severity of the disease playing an important role. Caregivers also differ in the impact of caregiving, with many experiencing declines in mental health compared to their non-caregiving peers. Because declines in caregiver mental health can influence the environment in which patients live and the care they receive, caregiver mental health may also play a unique role in patient mortality. We tested this hypothesis in a sample of 176 patients with a range of neurodegenerative diseases (Alzheimer's disease, frontotemporal dementia, progressive supranuclear palsy, corticobasal syndrome) and their familial caregivers. Cox proportional hazard models indicated that worse caregiver mental health predicted greater patient mortality (RR = .680, CI = [.567, .816], p<.001), even when controlling for patient factors (i.e., diagnosis, age, sex, dementia severity, patient mental health; RR = .674, CI = [.549, .827], p<.001). The association with patient mortality was specific to caregiver mental health; it did not extend to caregiver physical health. These findings indicate that caregiver mental health uniquely predicts mortality in patients with neurodegenerative disease, and highlights the importance of caring for caregivers – in addition to patients – when attempting to improve patients' lives and lengthen their survival.

### POSTER A-25

#### MEMORY FOR DANGERS PAST: THREAT CONTEXTS PRODUCE MORE CONSISTENT LEARNING THAN NON-THREATENING CONTEXTS

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*Descriptors: context, threat, learning*

In earlier work we showed that individuals are able to learn the regularities within visual contexts and use this contextual information to guide detection of embedded threatening targets. However, in real life, contexts once associated with threat can become associated with non-threatening targets and vice versa. To examine how contextual learning changes when the salience of associated the target changes, we presented threatening and non-threatening face targets in new or old spatial configurations and changed the target salience halfway through the experiment. We found that detection of threatening targets was faster in old than new configurations and this learning persisted even after the target changed to non-threatening. However, the same was not seen when the targets changed from non-threatening to threatening. Present findings show that detection of threatening targets is driven not only by stimulus properties as theorized traditionally but also by the learning of contexts in which threatening stimuli appear. Additionally, learning of the context associated with threatening targets is persistent and benefits detection of subsequent non-threatening targets presented in the same context. Overall, our findings highlight the importance of top-down factors such as context and learning in the detection of threatening targets.

### POSTER A-26

#### AFFECT INTEGRATION: HOW VARIOUS SOURCES OF EMOTIONAL INFORMATION IS INTEGRATED

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*Descriptors: affective responding, information integration*

Affective value is a basic building stone of decision making. However, research on how various sources of emotional information is integrated into overall affective value is scant. We present a research program and two experiments that aim to study integration strategies used by the affect system. Given the lack of previous work, we used a very basic paradigm where participants viewed four emotional pictures in sequence and assessed their momentary core-affect. Each picture was shown for 2 (exp1 N=44) or 4 seconds (exp2 N=45). Positive and negative images were presented in separate blocks, and sequences were formed based on picture arousal. In a series of analyses, we attempted to predict measured positive and negative arousal for each sequence using picture arousal. We tested and compared a number of integration models to predict core-affect: peak, end, primacy, time-based average, salience-based average. We also performed ANOVAs for specific sequences to compare them at a group level. Both experiments showed that time- and salience-weighted averages were the best to predict positive and negative arousal. More emotional items were weighted heavier than less emotional ones. No difference was found between 2 and 4-second exposures. It seems that within the tested time-frame the affect system is not sensitive to actual time units but to discrete items. Using this research strategy, we aim to study how integration mechanisms are affected by parameters such as number of items, behavioral relevance of an item, and attention, and how the integrated affect influences judgments.

### POSTER A-27

#### NEUROPLASTICITY IN NEURAL NETWORKS OF EMOTION FOLLOWING TARGETED SOCIAL COGNITION TRAINING

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*Descriptors: emotion, neuroplasticity, targeted cognitive training*

Computer-based targeted cognitive training (TCT) shows promise as a tool to improve cognitive skills by stimulating learning-induced neuroplasticity in regions specific to the trained processes. The current study investigated whether SocialVille, a computerized social cognition training program from PositScience Corporation, could improve social cognition and induce neuroplastic changes in neural networks associated with emotion in particular. 56 healthy adults from the community were randomly assigned to train on 10.5 hours of either SocialVille or common computer games. Participants completed an fMRI scan before and after training, during which they completed an emotion identification task contrasting object and emotion discrimination blocks. Behaviorally, those randomized to the TCT condition improved significantly more than those in the active control condition on the emotion discrimination blocks. Psychophysiological interaction analyses of the neuroimaging data indicated significant increases in functional connectivity from pre- to post-training during the emotion discrimination blocks in participants randomized to the TCT condition compared to those in the active control condition. Brain regions central to emotion processes (i.e. amygdala) and social processes (i.e. MPFC) show increased connectivity with a number of brain regions, including the DLPFC and the angular gyrus. These findings suggest that SocialVille was successful in targeting behavioral processes and neural systems associated specifically with emotion, as well as induce neuroplastic changes.

### POSTER A-28

#### AFFECTIVE AND ATTRIBUTIONAL ADJUSTMENTS WITH INCREASED WORKING MEMORY LOAD IN MAJOR DEPRESSIVE DISORDER

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*Descriptors: depression, cognition, motivation*

Introduction: Major Depressive Disorder (MDD) is associated with impairments in working memory (WM). It is unclear whether non-neurocognitive factors, such as physiological arousal and motivation contribute to WM impairment. Method: 65 participants with MDD completed an n-Back (3 levels of working memory load) while recording heart rate (HR) and galvanic skin response (GSR) and a 4-item visual analogue scale of attributions. Results: Across WM loads, n-back accuracy decreased, partial  $\eta^2 = .826$ , and reaction time increased, partial  $\eta^2 = .607$ . Subjective disengagement/anxiety significantly increased across WM loads, partial  $\eta^2 = .564$ . Reduced motivation was related to n-back accuracy ( $r = -.234$  to  $-.332$ ), and number of missed responses ( $r = .306$  to  $.407$ ). The rate of motivation decrease across trials was related to the number of self-reported cognitive failures experienced in everyday life ( $r = .358$ ) but significantly with overall neurocognitive ability ( $r = .063$ ) or depressive symptoms ( $r = -.237$ ). Heightened arousal with parametric increase in working memory load was associated with performance. Discussion: As WM task difficulty increases, people with MDD become subjectively more disengaged and anxious, which is related to performance. The more people became disengaged and anxious with greater cognitive load, the more the difficulties they also reported with cognition in everyday life. If neurocognitive ability in MDD is a function of arousal and disengagement, this has important implications for enhancing cognition in MDD.

### POSTER A-29

#### WHAT DO WE WANT TO FEEL WHEN EXPERIENCING NEGATIVE EMOTIONS? AN EXPERIENCE SAMPLING STUDY IN THE UNITED STATES AND CHINA

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*Descriptors: actual affect, ideal affect*

When experiencing negative emotions, people want to feel positive emotions. However, what kinds of positive emotions that people want to feel? European Americans (N =69), Chinese Americans (N =68), and Hong Kong Chinese (N =113) participants (age range 17 to 83) used palm pilots to report their momentary actual affect and momentary ideal affect 5 times a day for a week. Our data showed that momentary actual affect shapes desirability for momentary ideal affect. First, regardless of age and culture, anxious and sadness predicted increased preference for enthusiasm. Second, anxious also predicted stronger desirability for calm among Hong Kong Chinese participants (vs. European and Chinese Americans). Third, boredom predicted age-related decrease in preference for enthusiasm. Our results suggested that age and culture may shape the interplay between momentary actual affect and momentary ideal affect.

### POSTER A-30

#### PRIMARY INTEROCEPTIVE CORTEX ACTIVITY DURING LINGUISTICALLY-DRIVEN SIMULATION OF BODILY EXPERIENCES

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*Descriptors: interoception, language*

To what degree does language shape experiences of the body and thus play a central role in health? Studies of the classic exteroceptive sensory systems (e.g., vision, touch) consistently demonstrate that language-based simulation of a sensory experience impacts activity in the corresponding primary sensory cortex. We hypothesized, analogously, that simulation of internal bodily experiences would be associated with increased neural activity in primary interoceptive cortex. A language-based mental imagery paradigm was used to test this hypothesis (e.g., imagining your heart pounding during a roller coaster ride). During two neuroimaging experiments, participants listened to vividly described situations and imagined "being there" in the scenario. In Study 1 (N = 16), we observed significantly heightened activity in primary interoceptive cortex (of dorsal posterior insula) during imagined experiences involving vivid internal sensations ( $t(15) > 4.05$ ,  $p < .001$ , corrected  $p < .05$  cluster threshold within the insula). This effect was specific to interoceptive simulation: it was not observed in a separate affect focus condition in Study 1, nor in a second, independent study (N = 20) that did not involve detailed simulation of internal sensations (instead involving simulation of other sensory experiences). Our findings reveal that words can be powerful drivers of what we experience in our bodies and underscore the large-scale predictive architecture of the brain. The implication: words might not break your bones like sticks and stones but they can indeed hurt (or help) you.

### POSTER A-31

#### THE IDENTIFIABLE VILLAIN EFFECT

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*Descriptors: identifiability, moral judgment, anger*

Much research has examined the impact of an identifiable victim on emotion and prosocial outcomes. However, most moral scenarios also involve the presence of a moral villain. Across two experiments, we compared the impact of identified victims and villains on a variety of outcomes. In Experiment 1, the presence of an identifiable villain increased anger, moral wrongness judgments, and punishment, but not donation. Increased anger mediated the influence of identifiable villain on all outcomes. By contrast, identifiability condition did not influence empathy, and empathy did not mediate any moral outcomes. Results from Experiment 2 partially replicated Experiment 1, while introducing a new scenario to test effect generalizability. The presence of an identifiable villain increased anger, moral wrongness judgments, and punishment. In all cases, anger mediated the influence of identifiable villain condition on moral judgment and moral behavior. Unlike Experiment 1, identifiability also increased empathy, which mediated the influence of identifiable villain condition on all outcomes. Exploratory analyses revealed that these effects were limited to the scenarios used in Experiment 1. On the other hand, anger appears to be a consistent mediator regardless of stimulus features. These results suggest focus on the victim or the villain in moral dilemmas plays an important role in our emotional responses to those dilemmas, which shapes our moral judgment and behavior.

### POSTER A-32

#### TOWARDS A NEURAL SIGNATURE OF STRESS REACTIVITY

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*Descriptors: stress, EEG*

Background: Some individuals with psychopathology react strongly to stressors. Identifying neural features of stress while accounting for baseline characteristics facilitates next-generation on-line interventions that detect and alert or dynamically target stress responses with neurostimulation. Methods: Participants (N=114 adults; 71 with history of psychopathology, 43 without (controls)) were assessed in Pittsburgh, PA or NYC, NY on a Trier Social Stress Task, consisting of a speech against a false accusation and mental arithmetic. 14-channel EEG data was collected during 2.5-minute resting periods before and after the tasks. We compared pre- and post-stressor theta (4-7Hz), alpha (8-12Hz), beta (15-25Hz), and gamma (>25Hz) power. Results: Post-stressor, theta, alpha, beta, and gamma power decreased significantly at a wide subset of electrodes across subjects. Subjects with psychopathology showed significantly more decrease in post-stressor alpha (12 electrodes), beta (8 electrodes) and gamma (6 electrodes) power than controls after accounting for pre-stressor power, and had significantly less variability. 85% of subjects displayed >25% decrease in prefrontal beta power post-stressor, yielding a signature of stress response. Conclusion: Decreasing frontal alpha, beta, and gamma powers could reflect neural disengagement that can be detected with wearable EEG from as few as one electrode. This signature could potentially be used for dynamic neurostimulation technologies and neurofeedback that target stress.

### POSTER A-33

#### GOOD FOR YOUR HEALTH? COMPARING THE ASSOCIATIONS BETWEEN PESSIMISM, OPTIMISM, AND HEALTH-RELATED WELL-BEING OUTCOMES IN U.S. AND JAPAN

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*Descriptors: aging, health, pessimism*

The negative effects of pessimism and beneficial effects of optimism on health have been shown in Western cultures, but recent research suggests that negative affect may be less harmful in Asian cultures. We hypothesized that the relations between pessimism, optimism, and health-related well-being outcomes differ in the U.S. and Japan and that these relationships vary by age. Pessimism, optimism, and affect were examined in 4,962 adults from MIDUS I and 1,027 adults from MIDJA I ranging from 28 to 84 years-old at baseline. Self-reported control over one's health (health control) and effort put into one's health (health effort) were obtained at baseline and ten years later. Compared to U.S. adults, greater pessimism predicted greater health control, whereas greater optimism predicted decreased health control in Japanese adults. Examining outcomes by age, greater pessimism predicted decreased health control across all ages in the U.S., whereas in Japan, greater pessimism predicted increased health control among the oldest adults (65-84 years-old). This pattern replicated with negative affect, such that greater negative affect predicted increased health control in Japan. Moderate levels of pessimism and negative affect also predicted greater health control and effort among older Japanese adults. Notably, health control and effort are important predictors of health in both cultures, with health control and effort at baseline predicting better self-rated health 10 years later. The findings suggest that the costs of negativity on well-being outcomes may not be universal.

### POSTER A-34

#### IS IT WHAT IS SAID, HOW IT IS SAID, OR BOTH? LINGUISTIC AND PARALINGUISTIC ELEMENTS OF EXPRESSED EMOTION IN RELATIVES OF INDIVIDUALS WITH SCHIZOTYPY

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*Descriptors: expressed emotion, schizotypy, objective measurement*

Expressed Emotion (EE) is a type of communication style characterized by critical comments and emotional over-involvement, where more warmth and positive comments are viewed as inappropriate idealization. In families of individuals with schizophrenia-spectrum phenotypes, EE is associated with increased rates of psychiatric relapse. Relatively little research has been conducted on linguistic and paralinguistic aspects of speech in EE. This study explored the relationship between speech abnormalities and EE in relatives of individuals with schizotypy, defined as the personality organization associated with risk for schizophrenia. We employed paralinguistic analysis of speech using the Computerized Assessment of Affect from Natural Speech (CANS) and linguistic content analysis using the Linguistic Inquiry and Word Count (LIWC; positive & negative words). Participants (N=26) completed the Camberwell Family Interview (CFI), a measure of EE. Speech samples, selected to highlight EE, were extracted from the CFI. Overall, paralinguistic and linguistic aspects of speech were unrelated to EE. However, positive comments were associated with a paralinguistic signature, namely in terms of increased emphasis ( $b=-.83$ ,  $t(8)=-2.0$ ,  $p=.05$ ) and increased "shimmer" (perturbation of intensity;  $b=.56$ ,  $t(8)=3.12$ ,  $p<.05$ ;  $R^2=.77$ ,  $F(6,13)=6.20$ ,  $p<.05$ ). Linguistic variables were not significantly associated with positive comments. These findings suggest that paralinguistic elements of EE may predict certain aspects of EE, but overall, a speech signature of other EE aspects is not readily apparent.

### POSTER A-35

#### SOCIAL MOTIVATION IN DAILY LIFE: LINKS BETWEEN REAL-TIME APPROACH AND AVOIDANCE AFFECT WORDS AND REPORTED ENJOYMENT OF SOCIAL INTERACTIONS

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*Descriptors: social motivation, affect words, schizophrenia*

Recent work has identified a link between word choice and functional outcomes in schizophrenia, including the use of past and present tense words as well as first-person words in predicting anhedonia. Relatedly, while in the moment pleasure appears to be intact, deficits in anticipatory enjoyment, as well as heightened general levels of negative affect, might negatively impact drive for social connection in schizophrenia. It is unclear how approach and avoidance affect words used in daily life might be associated with momentary reports of enjoyment of social interactions. We attempted to answer this question by utilizing both traditional, mobile phone-based Ecological Momentary Assessment (EMA) and a novel, objective method of real-time audio sampling of conversations. People with schizophrenia ( $n=11$ ) and controls ( $n=7$ ) were prompted to report how much they enjoyed momentary social interactions over a 7-day period. In addition, unobtrusive, ambient audio sampling was captured using a mobile phone microphone and coded using lexical analysis to examine use of approach and avoidance words in social contexts. Preliminary results of the EMA data indicated that people with schizophrenia reported more overall enjoyment of social interactions than controls ( $b = 2.00$ ,  $SE = 0.63$ ,  $p < 0.01$ ), while the two groups did not differ in number of interactions per person ( $SZ = 20.55$ ;  $HC = 20.85$ ,  $p = 0.68$ ). We are currently coding audio data, for which we will examine the association of approach and avoidance affect word usage during interactions with EMA-reported enjoyment of interactions.

### POSTER A-36

#### OPTIMAL DECISION MAKING WITHIN GAIN AND LOSS CONTINGENCIES

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*Descriptors: gain/loss, decision making, reinforcement learning*

Optimal decision making is dependent upon the identification of an ideal choice from competing options. Previous research has investigated optimization on the basis of outcome probability, value, and feedback, but task designs often conflate the impact of gain outcomes with reinforcement and loss outcomes with punishment, failing to isolate their individual impacts on optimal decision making. The current study introduces a novel two-armed bandit task that investigates how reinforcement learning establishes relative (i.e. depending on competing outcomes) choice value by providing subjects with varying magnitudes and probabilities of gain-only and loss-only outcomes within task conditions. This untapped approach allows for learning via decision making to be modeled as a parameter of relative gain/loss optimization. While data collection is on-going, preliminary ( $n = 25$ ) results implicate that optimal decision making plateaus at an average of  $\sim 85\% \pm 10\%$  accuracy within the gain condition and  $81\% \pm 9\%$  accuracy within the loss condition. While the current findings suggest no significant differences within healthy individuals, performance in gain and loss conditions was not correlated ( $r = .09$ ,  $p = .67$ ), suggesting that results within each condition are not driven by the cognitive demands of the task alone. This task may provide insight into learning in mentally ill populations characterized by aberrant reward and punishment processing.

### POSTER A-37

#### IMPULSIVE RESPONSES TO EMOTION DECREASE DURING TREATMENT IN A PARTIAL HOSPITAL PROGRAM

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*Descriptors: impulsivity, depression, urgency*

While many psychiatric disorders are characterized by impulsive behavior, impulsivity is a broad construct with many different facets. One specific dimension of impulsivity, impulsive responses to emotion (also called urgency), is robustly correlated with psychopathology. However, little is known about how urgency responds to treatment. In the present study, we tested whether urgency would decrease in response to treatment in a naturalistic, transdiagnostic cohort. We also tested the hypothesis that higher levels of emotion-relevant impulsivity at discharge would correlate with higher residual depression symptoms. 384 patients seeking treatment at McLean Hospital's partial hospitalization program completed the Negative and Positive Urgency scales of the short form of the UPPS-P scale during their second day in treatment and at discharge. Participants also completed the Center for Epidemiologic Studies-Depression (CES-D) scale. As predicted, average scores on the negative urgency measure decreased during treatment,  $t(383) = 11.16$ ,  $p < .001$ , Cohen's  $d_z = 0.57$ ; positive urgency decreased as well,  $t(382) = 7.07$ ,  $p < .001$ , Cohen's  $d_z = 0.36$ . Despite this improvement, negative urgency was correlated with higher levels of depression symptoms at discharge,  $r = 0.41$ ,  $p < .001$ . These findings suggest that impulsive responses to emotion are responsive to treatment in a partial hospital setting. However, given the relationship between residual negative urgency scores and depression, additional treatments may be necessary for individuals who struggle with this form of impulsivity.

### POSTER A-38

#### MONEY MATTERS: PUTTING COUPLES' EMOTION IN SOCIOECONOMIC CONTEXT

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*Descriptors: relationships, socioeconomic status, emotion regulation*

Affective scientists have long been interested in how emotions predict real-world adjustment. Yet, we have only recently begun to examine how these effects may differ by socioeconomic status (SES). This laboratory-based study examined married couples ( $N=54$ ) from diverse SES backgrounds (income range:  $< \$20K$  to  $> \$150K$ ) who engaged in dyadic (i.e., marital conflict discussion) and individual (i.e., sadness reactivity, reappraisal) trials with continuous physiological recording. Spouses completed post-trial emotion checklists for self and spouse and reported on their marital satisfaction ( $\alpha=.76$ ), anxiety ( $\alpha=.85$ ), and SES (i.e., income and education). Findings from the marital conflict discussion showed that (1) greater negative emotion (experience-physiology composite;  $\alpha=.83$ ) predicted lower marital satisfaction at low ( $p=.011$ ) but not high (ns) SES; (2) greater positive emotional experience predicted greater marital satisfaction at high ( $p=.018$ ) but not low (ns) SES; and (3) greater empathic accuracy for spouse's negative emotion predicted lower anxiety at low ( $p<.001$ ) but not high (ns) SES. Results from the reactivity/reappraisals trials showed that (4) greater sadness reappraisal success (experience) predicted lower anxiety at low ( $p=.012$ ) but not high (ns) SES. These findings provide some of the first evidence that low SES magnifies the effects of negative and minimizes the effects of positive emotional functioning on couples' adjustment. They highlight the importance of person-by-context models and socioeconomic diversity in affective and relationship science.

### POSTER A-40

#### THE EFFECT OF GENDER IN VIRTUAL REALITY AFFECTIVE INTERACTION

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Northeastern University

*Descriptors: virtual agents, human-computer-interaction, gender*

What aspects of non-verbal communication and affective signals are being perceived by individuals interacting with a virtual reality environment? How does changing the gender of the virtual agent modulate the perception judgment? To answer these questions, physiological biomarkers such as muscle contraction (EMG), heartbeat (ECG), and electro-dermal activity (EDA) of 10 human perceivers (5 female- mean age of 28.5 years) during a non-dynamic human-computer interaction (HCI) were recorded. Our HCI is based on manipulating three specific non-verbal channels of communication of a male virtual agent: gaze pattern, facial expression, and gesture. The data from  $2 \times 2 \times 2$  ANOVAs was analyzed using three factors: gaze (on vs. off), gesture (on vs. off), facial configuration (smile vs. furrowed brow). Participants' pleasure, arousal, and dominance ratings were examined separately as the dependent variables. Assessment of the behavioral data revealed a significant and complex three-way interaction between gaze, gesture, and facial configuration on the dimension of pleasure, as well as a main effect of gesture on the dimension of dominance. This work initiates advances in social psychology and computing research by: (1) exploring HCI in a cutting-edge VR environment; (2) understanding gender bias (or lack thereof) in various scenarios; (3) generating a multi-modal dataset of human responses in different affective context. Increased knowledge of human interactions can lead to eventual rehabilitation of individuals with social disorders, such as Autism Spectrum Disorder.

### POSTER A-41

#### EFFECTS OF SELF-COMPASSION AND ADVERSE EXPERIENCE ON SAD SELF- VS. OTHER-FACE PROCESSING: AN FMRI STUDY WITH DEPRESSED ADOLESCENTS

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*Descriptors: depression, self-compassion, adolescent*

We examined whether self-compassion (SC) moderates the neural correlates of adverse experience (AE) during sad self- vs. other- face processing in depressed adolescents. Eighty-two eligible participants (Age  $M = 14.93$ ,  $SD = 1.67$ ; Female 67.1%) completed a visual task in the fMRI scanner recognizing their own or an unfamiliar matched face with sad expressions. Depression severity was measured via the Child Depression Rating Scale and SC was measured via the Self-Compassionate Reactions Inventory. A cumulative score for AE was derived by adding the number of negative events the participant experienced (e.g. abused, neglected, bullied;  $M = 2.66$ ,  $SD = 1.95$ , Range: 0 - 7). Results showed main effects of SC and AE such that higher AE is associated with lower activities in the right frontal lobe (BA4), and higher SC is associated with lower activities in the left insula and cerebellum. Controlling for depression severity, an SC by AE interaction effect showed that when AE is relatively low, higher SC was associated with lower activities in posterior cingulate (PCC), left superior temporal gyrus (STG; BA40), left insula, right STG (BA22), left fusiform, and cerebellum. Lower activities in insula, PCC, fusiform, and STG suggest diminished pain, as well as introspective and self-referential processing of sad self faces among participants with low AE/high SC. The findings indicate that SC may be associated with distinct neurophysiology of processing negative self-referential information depending on the AE context. Implications for adolescent depression interventions are discussed.

### POSTER A-42

#### EMOTION MALLEABILITY BELIEFS AND COPING WITH A STRESSFUL LIFE TRANSITION

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*Descriptors: emotion beliefs, emotion regulation, psychopathology*

First-year students navigating the transition to undergraduate life experience an increase in mental health issues such as depression, anxiety, and substance use (Cleary, Walter, & Jackson, 2011; Schulenberg & Zarrett, 2006). One cognitive factor that could influence how first-year college students respond to this stressful life transition could be beliefs about emotion's malleability or fixedness, also called emotion malleability beliefs. First-year college students completed a battery of self-report questionnaires at Time 1 (the start of college) and Time 2 (the end of the first semester). As expected, students who held more malleable views of emotion at the start of the semester reported more of a decrease in depression and rumination ( $p=.04$  and  $p=.04$ , respectively) during the fall semester and more of an increase in the use of cognitive reappraisal ( $p=.01$ ). Additionally, students who held more malleable emotion beliefs at the start of the college transition reported less binge drinking ( $p=.03$ ) and less of a desire to seek mental health treatment ( $p=.02$ ), yet interestingly were more likely to actually seek mental health treatment during the first semester, although this analysis was marginally significant ( $p=.06$ ). Taken together, these results suggest that emotion malleability beliefs predict emotion regulation, mental health, and treatment seeking during this stressful life transition.

### POSTER A-43

#### VARIATION IN IDEAL AFFECT AND DISPLAY RULES FOR AMERICAN, GERMAN, AND CHINESE CULTURES

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*Descriptors: culture, ideal affect, display rules*

Research has shown that there are similarities and differences in emotion, namely display rules and ideal affect, across cultures. The current study investigated cross-cultural variation in ideal affect and display rules in two different contexts: in general and at work. Data were collected from 105 college student participants from three countries: 70 American, 21 German, and 14 Chinese ( $M_{age}=21.15$ ,  $SD=3.78$ ; 48.5% female). Participants completed a survey consisting of the Affect Valuation Index (Tsai, Knutson, & Fung, 2006) and the Display Rules Assessment Inventory (Matsumoto, Yoo, Hirayama, & Petrova, 2005) which were modified to ask about affect in general and at work. Multiple 3-way ANOVAs indicated several effects of country, context, and gender (those involving country are described here for examples). Americans desired more frequent ideal High Arousal Positive states  $F(2, 90)=3.23$ ,  $p=.04$  than Chinese (Germans did not differ from either group). Germans thought people should express more sadness  $F(2, 97)=5.90$ ,  $p=.004$  and anger  $F(2, 94)=6.96$ ,  $p=.002$  than both Americans and Chinese. Germans thought people should express more disgust than Americans, but not Chinese. Finally, an interaction with context for anger  $F(2, 93)=8.671$ ,  $p<.001$  indicated German and American participants thought anger should be expressed less at work than in general (this was not found for Chinese). Overall, the study contributes to the limited research on ideal affect and display rules across contexts and to the comparison of two individualistic yet differing cultures (i.e., American and German).

### POSTER A-44

#### AFFECT ENHANCES OBJECT-BACKGROUND ASSOCIATIONS: EVIDENCE FROM BEHAVIOR AND MATHEMATICAL MODELING

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*Descriptors: association-memory, mathematical modeling, scenes*

Emotional details are often recognized better than neutral ones, but this enhancement sometimes occurs at the cost of recognition memory for peripheral details. Here, participants incidentally encoded neutral backgrounds with a positive, negative, or neutral foreground object. Participants' memory of the object-background associations was tested using cued recall, with either the object or background used as the memory cue. With either cue, recall was enhanced for negative associations relative to neutral associations. By including both cue types (object and background) and valence conditions within-subject, we were able to implement a mathematical modeling approach whereby we estimated parameters corresponding to the relative influence of cue type, emotionality, valence, as well as interactions of these components. Model fits suggest that this emotional enhancement was predominantly explained by an enhancement of association-memory, rather than retrieval of the cued recall targets. While this result is at odds with some prior findings, we suggest that object-background congruity may be a crucial mediator on the role of affect on association-memory. Behavioral data and mathematical modeling results further indicated an interaction involving emotional valence, where negative objects were more readily recalled than positive objects, but functioned equivalently as memory cues. These findings demonstrate that positive or negative affect can enhance association formation during encoding, but that negative targets may be more accessible in memory.

### POSTER A-46

#### IS ANGER APPROACH RELATED OR AVOIDANCE RELATED? INDIVIDUAL DIFFERENCES IN THE MOTIVATIONAL DIRECTION OF ANGER

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*Descriptors: anger, motivational direction*

Some studies have found that anger is approach motivated, whereas other studies have found that anger is avoidance motivated. This study used a novel approach to investigate this ambiguity. Undergraduates ( $N=138$ ) completed the behavioral inhibition/activation system (BIS/BAS) scales, followed by a diary study in which they rated 20 current discrete positive and negative affects (PA/NA) daily for seven days. Using multi-level modeling, we examined the within-person relations between anger-relevant NA and two classes of emotion—those typically associated with approach motivation (PA) and those typically associated with avoidance motivation (fear-relevant NA). We also examined whether trait BIS/BAS accounted for individual differences in these relations. Some participants exhibited significant positive relations between anger-relevant NA and PA, whereas others exhibited significant negative relations between anger-relevant NA and PA. Additionally, some participants exhibited significant positive relations between anger- and fear-relevant NA, whereas others exhibited no relation between anger- and fear-relevant NA. Subsequent analyses revealed that it was those with heightened BAS who exhibited positive relations between anger-relevant NA and PA. Furthermore, it was those with heightened BIS who exhibited positive relations between anger- and fear-relevant NA. Our findings indicate that anger is neither approach- nor avoidance-related. Instead, our findings indicate that the motivational direction of anger depends upon individual differences, including trait BIS/BAS.

### POSTER A-47

#### NEGATIVE AFFECT AND ALEXITHYMIA IN SOMATIZATION AND DISSOCIATION

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*Descriptors: negative affect, dissociation, somatization*

Experiencing emotions and having an awareness of one's own emotional state impacts physical experiences, such that a lack of the former leads to pathological somatization. While negative affect and affect awareness have been associated with depression and anxiety, the present study explores how negative affect and alexithymia are related to physical consequences and dissociation. A sample of 151 patients and controls completed self-report measures of alexithymia (TAS-20), trait-level dissociation (DES) and negative affect (PANAS); observer ratings of somatic symptoms of alexithymia (OAS) were also collected. Results demonstrate that high negative affect scores predicted dissociation,  $b=0.418$ ,  $t=7.148$ ,  $p<0.001$ , and somatization,  $b=0.093$ ,  $t=7.284$ ,  $p<0.001$ . In addition, alexithymia predicted dissociation,  $b=0.418$ ,  $t=7.148$ ,  $p<0.001$ , and somatization,  $b=0.076$ ,  $t=4.275$ ,  $p<0.001$ . Looking at their interaction effect, negative affect and alexithymia together predicted both dissociation,  $b=0.006$ ,  $t=10.239$ ,  $p<0.001$ , and somatization,  $b=0.001$ ,  $t=6.163$ ,  $p<0.001$ . A moderation regression also revealed the interaction between somatization, alexithymia, and negative affect accounted for significantly more variance than the three variables did alone, ( $F_{change}(2, 119) = 13.19$ ,  $p<0.001$ ), with an  $R^2$  change of 0.059. Our findings demonstrate that a lack of emotional awareness and negative affect strengthen the relationship between somatization and dissociation. This association raises the question of whether distancing from painful affect is a mechanism that causes somatic concern.

### POSTER A-48

#### REGULATING ANXIOUS APPREHENSION: AN ERP STUDY OF ANTICIPATING UNCERTAIN THREAT

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*Descriptors: uncertainty, anticipation, anxious apprehension*

Daily life is rife with uncertainty—a reality that is distressing for anxious individuals. The emotional experience of anticipating uncertainty, anxious apprehension, has been highlighted in models of anxiety disorders and is often accompanied by worry. The current study investigated anxious apprehension by examining whether the brain produces distinct anticipatory responses to uncertain threat, certain threat and safety. We investigated whether these anticipatory responses are related to habitual worrying. In a community sample, we measured the stimulus preceding negativity (SPN), an event-related potential component that indexes anticipation. Participants ( $n = 65$ ) completed a card game task in which losses were associated with uncertain shocks, and the probability of losing was based on the value of the card they drew. Anticipation during uncertain threat (50% chance of shock) was characterized by a more negative SPN ( $M = -2.03$ ,  $SD = 3.99$ ) than were certain threat ( $M = -1.09$ ,  $SD = 4.44$ ) and certain safety ( $M = 0.15$ ,  $SD = 3.21$ ),  $F(2, 114) = 7.63$ ,  $p = .001$ . Worry was associated with blunting of the SPN under uncertain threat ( $r = .29$ ,  $p = .03$ ) but not certain threat or safety ( $ps > .05$ ). In a regression model, after controlling for threat sensitivity measured as the difference between the SPN on certain threat versus safety trials, the SPN under uncertain threat was significantly associated with worry ( $R^2$  change = .08,  $p = .03$ ). These results show that individuals who worry have blunted anticipatory responding at the neural level to uncertain, but not certain, threat.

### POSTER A-49

#### UNCERTAINTY INDUCED HOPE: PHENOMENOLOGY AND RELATED MENTAL STATES

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*Descriptors: affect, hope, uncertainty*

We readily recognize hope when we feel it and prize it as a component of human flourishing. Yet it is elusive to definition and poorly understood scientifically. Perhaps the most-widely cited psychological research on hope has viewed it as a largely agential capacity. Contrary to this account, others have argued that when we hope, we want something, think it's at least marginally possible, and feel licensed to imagine and fantasize about it. But these stances are concomitants or conditions of hoping; they are not constitutive of it. Still wanted is a thoroughgoing account of what we are doing when we are hoping. Unlike the most commonly researched emotions—such as anger, disgust, sadness, surprise, and happiness—hope falls within a subset of affective states, i.e., those attendant to uncertainty. The center of my program is the experimental exploration of hope, in which my initial line of studies employ a paradigm that elicits the affect. These experiments consider hope's relation to certain non-hope cognitions, ones attendant to uncertainty, such as expectation and desire, and what effect retranslation of one's hopes into those other cognitions has on the phenomenological experience. Our prediction was that, because the constituents of wanting something and thinking it possible do not fully specify hope, a translation of the feeling into those terms would deflate the feeling. Testing suggests the intervention might have the opposite effect: that stating one's aspirations and one's grounds for hope—but not the hope itself—might stoke, rather than dissipate, the hope.

### POSTER A-50

#### AGE DIFFERENCES IN ANTICIPATORY EMOTION REGULATION

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*Descriptors: lifespan, emotion regulation, choice*

Theoretically, older adults are thought to attain positive emotional outcomes by using proactive strategies to manage their emotions (Urry & Gross, 2010). However, studies of emotion regulation throughout the lifespan typically focus on how individuals manage their emotions during or after emotional events, which may be more challenging for older adults. In this study, we examined age differences in anticipatory emotion regulation. Fifty young and 43 older participants selected an affective video as a way to regulate their emotions while anticipating an upcoming social stress task. Interestingly, although prior research suggests older adults prefer low arousal stimuli (Sands & Isaacowitz, 2016; Sands, Garbacz & Isaacowitz, 2016), there were no age differences in emotion regulation selections,  $\eta^2(6) = 6.87$ ,  $p = .334$ . However, negative selections were associated with greater increases in stress leading up to the social evaluative stress task,  $F(1,92) = 6.02$ ,  $p = .016$ , across age groups. Additionally, people that selected negative videos in the emotion regulation task reported higher levels of arousal during the stress task if the negative video was low (rather than high) in arousal,  $F(1,92) = 4.08$ ,  $p = .047$ . Overall, anticipatory emotion regulation behavior was similar across age groups in this context.

### POSTER A-51

#### PARENTS VERSUS PEERS: ASSESSING THE IMPACT OF SOCIAL AGENTS ON DECISION MAKING DURING EMERGING ADULTHOOD

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*Descriptors: decision making, development, emerging adulthood*

Emerging adulthood marks a time in which individuals find themselves transitioning from being intertwined with their families to living more independent, peer-centric lives. Such situations may present emerging adults with trade-offs, as they must consider how their decisions affect their parents and friends, especially when deciding to do something that will benefit one while potentially harming the other. The present study investigated the perceived weight that emerging adults give to parents and friends when making decisions on their behalf. To investigate this, a sample of 75 emerging adults (Mage=19.71 years) completed two runs of the Columbia Card Task. For one run, individuals were told to play as if all the points from gain cards would benefit a parent, while the potential losses from loss cards would be incurred by a close friend. Afterwards, they completed another run as if the opposite were true (counterbalanced). Trial-by-trial data were analyzed using hierarchical linear modeling. We modeled the decision to turn over a card—earning a reward for one individual at the potential expense of another—as a function of condition (Parent gain/Friend lose v Friend gain/Parent lose), while controlling for the expected value (return) and outcome variability (risk) of each decision ( $B=.24, SE=.04, p<.000$ ). Results showed that individuals were more likely to take a risk when it benefited their parent at the potential expense of a friend compared to the opposite. These findings show that emerging adults may value their parents more than peers.

### POSTER A-52

#### LANGUAGE FACILITATES EXPERTISE FOR EMOTIONAL FACIAL EXPRESSIONS

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*Descriptors: emotion perception, language, concept acquisition*

Most adults are experts at perceiving emotions on the faces of others. Yet, questions remain about how we acquire this skill in the first place. Growing evidence suggests that language is integral to emotion perception (Lindquist et al., 2015). In the present study, we used novel emotion stimuli to demonstrate that words facilitate the acquisition of perceptual expertise for emotion. First, participants (N=148) learned two novel emotion categories, with or without nonsense emotion labels. Next, we used a categorization task to test participants' acquisition of the novel emotion categories. Finally, we inverted the faces to assess engagement in configural processing, which is indicative of perceptual expertise (Diamond & Carey, 1986). Although all participants were faster to categorize the novel emotions when they were presented upright,  $F(1, 146) = 55.99, p < .001$ , participants in the label condition relied more on configural processing, as evidenced by larger differences in reaction times for categorizing inverted v. upright faces,  $F(1, 146) = 6.90, p = .010$ . These findings suggest that associating novel facial expressions with labels prompts configural processing, a hallmark of perceptual expertise. The link between language and expertise for facial expressions might explain developmental differences in emotion perception (Brace et al. 2001) and emotion perception deficits in individuals with Autism Spectrum Disorder (Behrman et al. 2006). More generally, our findings suggest that associating facial expressions with words influences how people perceive the social world.

### POSTER A-54

#### MORE DISTRACTORS, LESS DISTRACTION: MULTIPLE VALENCE-MATCHED DISTRACTORS IMPROVE TARGET PERCEPTION

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*Descriptors: attention, perception, distraction*

Emotional distractors in the environment have the ability to impair our visual perception of goal-relevant items, a robust phenomenon known as emotion-induced blindness (EIB; Most et al., 2005). While many EIB studies have consistently shown this impairment in target perception, very few studies, using any paradigm, have examined the effect of multiple emotional distractors on target perception. Considering that the world is full of distractions, it is necessary to investigate the effect that multiple distractors have on perception and attention. In a lab experiment, participants (n = 40) viewed streams of rapidly presented upright images and searched for a rotated landscape target image within the stream. An emotional or neutral "critical" distractor appeared two items before the target. On half of the trials, two additional distractors of matching valence were inserted three- and six- items before the critical distractor. Consistent with previous research, emotional distractors produced poorer accuracy on the task than neutral distractors ( $p < .001$ ), across the two trial types. However, on trials where multiple distractors were presented, performance was significantly better than when only one single distractor was presented ( $p = .006$ ), across both distractor-types. A follow-up experiment (n = 41) showed that this boost in performance was only observed when all distractors in a single trial were matched on valence and not when they were mismatched ( $p < .001$ ). Within constraints, it appears that more distractors can sometimes lead to less distraction.

### POSTER A-55

#### THREAT-INDUCED AROUSAL INTERACTS WITH ATTENTION TO INFLUENCE PERCEPTUAL AWARENESS

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*Descriptors: attentional blink, arousal, fear conditioning*

The attentional blink (AB) task finds that emotional stimuli interact with attentional resources to influence perceptual awareness such that emotional T2 stimuli reduce the AB, and emotional T1 stimuli enhance it. Some suggest this effect is due to effects of arousal, yet no research has manipulated state arousal independent of the target stimuli. The arousal-biased competition model posits arousal will influence perception depending on the priority (i.e., goal relevance and/or perceptual salience) of competing stimuli. We manipulated arousal using a differential fear conditioning paradigm in which one tone predicted shock (CS+) and a second did not (CS-). We used two experiments to test the prediction that arousal interacts with stimulus priority to influence the AB. Experiment 1 (N = 65) measured the effect of arousal and a 200ms stimulus onset asynchrony on T2 accuracy when the T1 was also perceptually salient. During the dual task, when T1 is both the primary goal and perceptually salient, T2 accuracy was significantly greater on CS- compared to CS+ trials [ $t(64) = -2.18, p < .05$ ], while T2 accuracy on the single task was not. In experiment 2 (N = 49) the T2 image was made perceptually salient image rather than the T1, and we observed a different effect. T2 accuracy was not affected by arousal during either the dual or single task conditions. These preliminary findings provide partial support that threat-induced arousal amplifies the impact a goal-relevant and perceptually-salient stimulus has on attentional resources and subsequent perceptual awareness.

### POSTER A-56

#### IT HURTS TO SAY THIS: EMOTION AND RELATIONSHIPS IN VOCAL DISCOMFORT

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*Descriptors: shame, voice*

Shame is a profoundly negative self-conscious emotion (Tangney et al., 2013). Shame is associated with insecure attachment (Muris et al., 2014) and is enhanced by adverse factors such as childhood trauma (Kim et al., 2009). For instance, shame (unlike anxiety) is related to vagal tone, psychophysiological measure related to trauma (Freed et al., 2015). The purpose of this investigation was to explore the relationship between shame and the voice – which is both a physiological and communicative system – taking into account childhood trauma and attachment style. Data on these variables were collected online among 91 participants. A bootstrapped mediation analysis revealed that shame-proneness mediated the relation between childhood trauma and voice discomfort, as indicated by a significant indirect effect ( $b = .001$ ,  $SE = .001$ , 95% CI [.0001, .0039]). Also, shame-proneness mediated the relation between anxious attachment and voice discomfort (indirect effect:  $b = .028$ ,  $SE = .012$ , 95% CI [.0070, .0576]). By contrast, neither trait anxiety nor guilt-proneness mediated these relations. These findings highlight the importance of the study of shame in relation to voice. The difficulty in voicing shameful feelings may thus reflect more than an unwillingness to voice one's thoughts and feelings. The actual voice seems to be affected by the powerful feeling of shame.

### POSTER A-57

#### IS DAILY EMOTION REPORTING AS EFFECTIVE AS A POSITIVE AFFECT INTERVENTION FOR REDUCING STRESS?

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*Descriptors: stress, positive affect, intervention*

Background: Growing evidence indicates that interventions that target positive emotion (PE) may be uniquely effective in reducing perceived stress (PS). Methods: In a pilot study for those reporting elevated depressive symptoms, participants were randomly assigned to an online PE intervention + daily emotion reporting (DER) (N=26), a DER-only control condition (N=17), or a waitlist control (N=15). Participants in the intervention condition learned eight skills for increasing daily experience of PE (noticing/capitalizing on positive events, gratitude, mindfulness, positive reappraisal, behavioral activation, using personal strengths, doing acts of kindness). Outcome variables, including PS, were assessed at baseline, immediately post-intervention (approximately 6 weeks from baseline), 1 month post-intervention, and 3 months post-intervention. Results: PS decreased significantly in both the intervention (Pretest  $M = 3.87$ ,  $SD = 0.66$ ; 3rd f/u mean = 3.18,  $SD = 0.75$ ;  $p < .001$ ) and DER control conditions (Pretest  $M = 3.86$ ,  $SD = 0.72$ ; 3rd f/u mean = 3.38,  $SD = 0.75$ ;  $p = 0.01$ ), with no change in the waitlist control condition (Pretest  $M = 3.87$ ,  $SD = 0.68$ ; 3rd f/u mean = 3.56,  $SD = 0.71$ ;  $p = 0.28$ ). Differences between the three groups on change from baseline were not statistically significant. Conclusion: Within group analyses suggested that DER may be comparable to the PE skills intervention in terms of decreased PS. These findings have implications for determining key factors in PE interventions and suggest that DER may, in itself, be an active intervention for reducing PS.

### POSTER A-58

#### POOR VAGAL RECOVERY, BUT NOT TONE, PREDICTS ANXIOUS AROUSAL

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*Descriptors: vagal tone, vagal recovery, psychopathology*

Reductions in vagal tone have been reported, although inconsistently, across a number of co-occurring psychopathology types including anxiety and depression. Previous research may not have accounted for the influence of co-occurring symptoms on vagal tone. Furthermore, vagal tone may not adequately represent dynamic biological responses to environmental stimuli as previously theorized. In this vein, the relationships between three measures of vagal activity (vagal tone, vagal reactivity, vagal recovery) and psychopathology dimensions (Anxious Arousal, Anhedonia) were assessed in an adult sample (N=185, M(age) = 52.86) using multivariate regression analyses while controlling for sex, respiration, age, and body mass index. Poor vagal recovery was associated with higher levels of anxious arousal ( $t(174) = 2.32$ ,  $p < .022$ ) and more anhedonia ( $t(174) = 2.15$ ,  $p < .033$ ). Results for vagal tone mirror those for vagal recovery with regard to anhedonia ( $t(174) = 2.13$ ,  $p < .036$ ) but not anxious arousal ( $t(174) = .47$ ,  $p = .62$ ). Vagal reactivity was not associated with anxious arousal or anhedonia. These findings corroborate previous research indicating poor autonomic regulation associated with anxious arousal, while also highlighting the specificity of the relationship between vagal tone and anhedonia, but not anxious arousal. Future work should continue to investigate the potential role of divergent activity in central autonomic regions across transdiagnostic psychopathology dimensions in order to inform novel prevention and intervention methods.

### POSTER A-59

#### THE ASSOCIATION AMONG HEALTH LOCUS OF CONTROL AND TRAIT REAPPRAISAL AND SUPPRESSION

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*Descriptors: emotion regulation, health, locus of control*

Health-related locus of control (HLOC) signifies whether individuals perceive that their own choices and behaviors influence their health (Internal HLOC) or whether their health is controlled by chance or fate (Chance HLOC) or external individuals (Other HLOC), such as doctors or family members. HLOC is predictive of health behavior, yet some of the regulatory mechanisms that may contribute to an individual's HLOC are unclear. The present study assessed the relation between HLOC and the trait emotion regulation strategies of reappraisal and suppression. A national sample of participants ( $n = 235$ ) completed demographic measures, the Emotion Regulation Questionnaire, measures of health (e.g., body mass index [BMI]) and the multidimensional HLOC questionnaire. A series of hierarchical regressions controlling for age, gender, education, income and BMI in step one, and alternate HLOC subscales in step 2, revealed that reappraisal predicted significantly more variance in internal HLOC ( $\beta = .33$ ,  $p < .001$ ), yet had no association with Chance or Other HLOC. In contrast, suppression predicted significantly more variance in Chance HLOC ( $\beta = .19$ ,  $p < .001$ ), with no association with Internal or Other HLOC. Findings from this study suggest that: 1) trait reappraisal use, or reinterpreting a stimulus to change its meaning, may support beliefs of internal control in the context of one's health, and 2) trait suppression use, in which an individual tends not to fully process and express their emotions, may contribute to the belief that chance factors influence one's health.

### POSTER A-60

#### EMOTION REGULATION AND PROCESS OF CHANGE: WHEN PSYCHOTHERAPY TEACHES TO CHOOSE AND USE EMOTION REGULATION STRATEGIES IN THE RIGHT WAY

Steve Audet  
Laval University

*Descriptors: emotion regulation, process of change, psychotherapy*

Emotion regulation strategies (ERS) are recognized to have an impact on emotions, health and problems people have to deal with. But, how do ERS interact with each other? How do these interactions impact the process of change during psychotherapy? To explore these questions, we conducted 13 deep case studies. We had three sharing sessions with each participant (13 men) in order to reconstruct retrospectively their own process of change. Qualitative data was analyzed with MAXQDA-11 and interpreted based on the Linehan, Bohus and Lynch (2007) model of ER. The participants believed that psychotherapy helped them to identify maladaptive ERS (rumination, suppression, alcohol, etc.) and progressively replaced these by adaptive ERS (reappraisal, problem-solving, etc.): "I prefer to talk to someone than to ruminate. I prefer to take a time out than to stay inactive" (Participant 12). Furthermore, participants said they had learned to make a conscious choice to stop maladaptive ERS and took the risk to use new adaptive ERS (positive expression of emotion, acceptance, meeting their needs, etc.): "When I realized the benefits of evacuating frustration, sadness and negative emotions, I felt wow! I felt good when expressing my emotions, I felt better than when keeping them inside me" (Participant 6). Consequently, based on these case studies, we propose a new theoretical model to describe the transformation of the dynamics between ERS during the psychotherapeutic process.

### POSTER A-61

#### SKILLS TO ENHANCE POSITIVITY IN SUICIDAL ADOLESCENTS: FINDINGS FROM A PILOT RANDOMIZED CLINICAL TRIAL

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*Descriptors: positive affect, suicide risk, adolescents*

**Objective:** To develop a skills-based program "Skills to Enhance Positivity (STEP)" to enhance positive affectivity (PA) and the practice of PA skills for adolescents and to assess feasibility and acceptability in delivering STEP to adolescents admitted to an inpatient psychiatric unit due to suicide risk. The objective of STEP is to decrease suicidal behavior via increased PA. Modeled on the Broaden and Build theory of emotion, we purport that increased PA leads to improvements in problem solving, social support, and reasons for living. We hypothesize PA will directly and indirectly (through above mechanisms) decrease suicidal behavior. STEP focuses on 3 sets of skills: mindfulness meditation, gratitude, and savoring. There are 3 individual sessions and 1 family session delivered on the inpatient unit or shortly after discharge, followed by 1 month of daily text messaging (with optional extension to 3 months in RCT) and weekly phone calls to facilitate practice of mood monitoring and positive affect skills. **Method:** Participants were hospitalized adolescents, between 14-18 years old, admitted primarily due to suicide risk. Assessments were completed at baseline, 1- and 4-month follow-up (f/u), with final phone f/u at 6 months. We obtained assent/consent and enrolled 20 adolescents into the Open Development Trial (mage=15.9; SD=1.5), and 50 into the RCT (mage=15.6; SD=1.5). Participants were predominantly female (67%) and White (76.5%). **Results:** Average session attendance 81% in Open Phase and 89% in RCT, and mean daily response rate to text messages was 72.4% days in Open Phase and 70.2% in RCT with over 50% opting for the 3 month text extension, demonstrating high feasibility for both sessions and texts. STEP was described as good or excellent by 91.7% of parents and 100% of adolescents. There were no completed suicides, and only 1 suicide attempt in the open trial. Our preliminary data from the pilot RCT phase also appear promising, with 50% less suicidal events compared to Enhanced TAU (6 vs. 13) and 50% less participants reporting suicide events (5 vs. 10). There was also support for improvement in attention to positive affect on a dot probe task ( $F=3.55$ ;  $p=.05$ ) and non-judging, gratitude, and satisfaction with life (in which significant within group pre-post improvements were detected in the STEP condition only). **Conclusions:** The current data indicate preliminary acceptability of the STEP intervention and its efficacy in reducing suicidal behaviors, suicidal ideation, and depression. Furthermore, both adolescents and parents responded favorably to the text messaging component.

### POSTER A-62

#### COMPUTATIONALLY-DERIVED MARKERS OF VERBAL AND NONVERBAL AFFECTIVE EXPRESSION IN PSYCHOPATHY: A PRELIMINARY “QUALITATIVE” STUDY

Taylor L. Fedechko<sup>1</sup>, Dustin B. Wygant<sup>2</sup>, Paul J. Frick<sup>1</sup>, Julia E. Clark<sup>1</sup>, Tatiana M. Matlasz<sup>1</sup>, Thanh P. Le<sup>1</sup>, Alex S. Cohen<sup>1</sup>

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*Descriptors: psychopathy, lexical analysis, facial analysis*

Psychopathy is a personality construct defined by affective traits such as the absence of warmth, empathy, remorse, or anger control. Additionally, individuals with psychopathic traits present as superficially charming and glib, which facilitates manipulation (Cleckley, 1976; Hare, 1993). Evaluating different channels of communication, such as verbal and nonverbal cues, may be the key to understanding and objectifying the dichotomy between an individual's social skill and emotional experience. The present study evaluated computationally-derived facial and linguistic expressivity markers in four incarcerated individuals high in trait psychopathy. During a semi-structured interview, participants discussed the crime that led to their incarceration and provided a global assessment of their personality. Based on socio-communication theory, we hypothesized that facial expression and linguistic content would be more positive than negative during both topics. Contrary to expectations, qualitative analysis suggested that negative affect, compared to positive, was more prominent in both linguistic (an average increase of 83%) and facial expression (median increase of 130%) when discussing the crime. When discussing personality, facial expressions were more negative (a median increase of 68%), but linguistic expression was more positive (an average increase of 177%). Although preliminary, this suggests there is no isomorphic communication anomaly in psychopathy. Rather, emotion needs to be understood across verbal and nonverbal expressivity domains and across verbal contexts.

### POSTER A-63

#### DO AS I SAY, NOT AS I DO: FAMILY AND CHILD FACTORS PREDICT PARENTS' SADNESS AND GUILT IN RESPONSE TO CHILD WEIGHT-RELATED FILM CLIPS

Rebecca C. Blanchard, Laura M. Armstrong, Cecily Basquin, Laura M. Deem, Sara J. Sagui-Henson, Sara M. Levens  
University of North Carolina at Charlotte

*Descriptors: emotions, obesity, family*

Childhood obesity is a public health crisis. While interventions addressing child weight focus on implementing health behavior change within the family context, little is known about parent emotional processes in the context of child weight-related issues. To address this gap, parents (N=77, mean age=35 years) with children aged 6-12 years completed surveys and viewed 10 emotionally-arousing film clips of children facing weight-related challenges. Participants then rated emotions experienced during the clips. As negative emotions of anger, sadness, and guilt are commonly reported regarding weight-related struggles in children, analyses focused on determine how demographic factors, parent and child body mass index (BMI), family habits, and parent appraisals predicted parent report of these emotions during the film clips. Regression analyses indicate that parent education, parent BMI, and frequency of family fast food consumption significantly predicted parents' report of sadness while watching the video clips,  $R^2=.32$ ,  $F(14,69)=1.85$ ,  $p=.05$ . In contrast, child and parent BMI, child television time, and child dieting significantly predicted parent guilt,  $R^2=.37$ ,  $F(14,69)=2.35$ ,  $p<.05$ . The model predicting anger was not significant. Findings from this study indicate that family factors are associated with parental sadness, whereas child factors are associated with parental guilt. A better understanding of parent emotional processes elicited by child weight-related challenges may enhance intervention programs that support family health behavior change.

### POSTER A-64

#### MANAGING NEGATIVE EMOTIONS IN ONLINE MEETINGS. A MULTIMODAL APPROACH TO SOLVING TECHNICAL DIFFICULTIES

Simone Belli  
Yachay Tech

*Descriptors: online meeting, multimodal interaction, negative emotions*

The purpose of this paper is to identify how participants manage technical difficulties during online meetings. We analyze the participation framework in a corpus composed of 30 hours of online meetings between students of an Andean university, their professor, and international experts. The internet-based IT platform used was ZOOM. We present a multimodal interaction of verbal and body language in collaborative activity for the analysis of moment-by-moment evolving social interaction. Also using conversation analysis, we focus on the ways in which participants interact with their words and their non-lexical expression. Thanks to this methodology, we describe the moment-by-moment interactional work performed in collaborative activity. We have observed how technical difficulties generate social unrest and negative emotions shared between participants. In many cases, these difficulties generate conflicts between participants. We describe how negative emotions are shown in mixed contexts, and how users solved these during online meetings. This study contributes to previous knowledge on the importance of multimodal interaction in displaying engagement and organizing courses of action in meeting settings by analyzing the multimodal construction of one specific situation, that is, a conflict caused by technical issues and managed between users.

### POSTER A-65

#### EMOTION MATCHING AMONG 9-MONTH-OLD INFANTS

Marissa L. Ogren, Joseph M. Burling, Scott P. Johnson  
University of California, Los Angeles

*Descriptors: emotion matching, infancy, family expressiveness*

Perception and identification of emotions is imperative for successful social interactions. Emotion discrimination has been documented as early as 4 months (LaBabera, Izard, Vietze, & Parisi, 1976), yet little is known about what factors influence early emotion understanding development. Here, we investigate the relation between emotional expressiveness in the family environment of 9-month-old infants, and the infants' emotion matching across face and voice. 38 infants (20 male) participated in this eye tracking study. Parents completed the Family Expressiveness Questionnaire (Halberstadt, 1986). Infants then viewed an intermodal matching task (Spelke, 1976). Our task included happy, sad, angry, and neutral faces and voices presented out of synchrony, and the novel contribution of a silent baseline condition. An increase in looking time from the silent condition to the condition with an emotion-matched voice was viewed as emotion matching, which is interpreted as an early form of emotion understanding. We observed a positive correlation between family expressiveness and emotion matching, but only for expressions of happiness ( $\beta = .325$ ,  $p = .04997$ ). Categorization of happy faces develops earlier than for other emotions (Grossman, 2010). Thus, it is possible that family expressiveness impacts emotion matching for happiness earlier than other emotions. These results highlight the importance of environmental input in the development of infant emotional skills. These findings are a first step toward identifying a mechanism behind early emotion understanding development.

### POSTER A-66

#### USE OF ALTERNATIVE EMOTION REGULATION STRATEGIES IN LIGHT OF SITUATION SELECTION FAILURE

Lara Vujovic, Heather L. Urry  
Tufts University

*Descriptors: emotion regulation, situation selection, compensation*

Motivated by the Selection, Optimization, and Compensation with Emotion Regulation (SOC-ER) framework, we created a task to measure use of alternative ER strategies to compensate for ER failure. We hypothesized that people would display preference for either positive, negative, emotional over neutral, and/or neutral over emotional situations, and that people would use alternative ER strategies when their preferred situation failed to materialize. Ninety participants completed an online task where they viewed positive, negative, and neutral pictures. On each trial, participants indicated whether or not they wanted to see the picture again, our measure of situation selection. We manipulated the outcome of their selection to be successful 70% of the time. They then indicated which ER strategies they used after making their selection. As expected, when selecting situations participants showed positive > neutral > negative situation preference,  $B = 1.95$ , 95% CI [1.65, 2.25],  $p < 0.001$ , and a preference for emotional over neutral situations,  $B = -0.18$ , 95% CI [-0.30, -0.06],  $p < 0.01$ . Participants reported using reappraisal when situation selection failed compared to when it succeeded on negative trials,  $B = 0.62$ , 95% CI [0.07, 1.17],  $p = .03$ . They tended to use rumination more frequently when situation selection was successful on positive,  $B = -0.71$ , 95% CI [-1.05, -0.38],  $p < .001$  and neutral trials,  $B = -0.65$ , 95% CI [-0.93, -0.37],  $p < .001$ . Our results provide evidence of compensation for ER failure by using alternative ER strategies, as suggested by the SOC-ER framework.

### POSTER A-67

#### CHILD ABUSE AND EMOTION SOCIALIZATION AS PREDICTORS OF DEPRESSION IN YOUNG ADULTS

Sindhuja Shivaji<sup>1</sup>, Emily Edwards<sup>2</sup>, Peggilee Wupperman<sup>2</sup>  
<sup>1</sup>AICT, <sup>2</sup>John Jay College

*Descriptors: emotion socialization, child abuse, depression*

Past research suggests that abuse and emotion socialization occurring in early life may contribute to later onset of depressive disorders. The present study explored the independent contributions of these experiences to predictions of self-reported depressive diagnoses in young adults. As part of a larger study, 658 students self-reported current psychiatric diagnoses and completed measures of child abuse and early emotion socialization. Of these, 29 reported a current depressive disorder diagnosis. Healthy controls, matched on age, race, and gender, were randomly chosen from the sample as a comparison group. In comparison to healthy controls, depressed students were more likely to report experiencing neglectful home environments, physical punishment, and sexual abuse in childhood. Depressed students also reported less parental encouragement of emotional expression, emotion-regulation coaching, and problem-solving coaching. Reports of parental minimization, punishment or discomfort in response to emotional expression did not differ across groups. Reported experiences of child abuse and positive emotion socialization cumulatively predicted 32% of the variance in reported depressive diagnoses. Problem-solving coaching ( $B = -0.22$ ,  $p = .04$ ) and neglectful home environments ( $B = 0.29$ ,  $p < .01$ ) contributed significantly to these predictions. Results suggest that whereas experiences of child abuse may increase risk of depression in early adulthood, positive emotion socialization may serve as a protective factor against the development of this disorder.

### POSTER A-68

#### IRRITABILITY AND EMOTION PERCEPTION IN YOUNG ADULTS

Alexandra Roule, Rachel Wulff, Christen Deveney  
Wellesley College

*Descriptors: emotion, irritability*

The mechanisms of irritability are poorly understood and data on adults is limited. The present study examined how state and self-reported trait irritability impacted the intensity required to recognize face emotions in a sample of 100 undergraduates. Participants completed a frustrating or non-frustrating task (to elicit state irritability) followed by a face morphing identification task. Based on data from adults with trait anger and aggression, we hypothesized that state and trait irritability would be associated with greater emotional intensity needed to recognize non-angry facial expressions, but less intensity required to recognize angry emotions. Although frustration and non-frustration groups required equal intensity to recognize all emotions ( $F_s < 0.7$ ,  $p_s > .35$ ), they displayed different recognition patterns across emotions. Participants in the non-frustration group needed less intensity to recognize happiness than all other emotions ( $F = 35.76$ ,  $p < .001$ ). Participants in the frustration condition recognized happiness and anger with equal intensity and at lower intensity levels than other emotions ( $F = 23.26$ ,  $p < .001$ ). Higher self-reported trait irritability predicted greater intensity required to recognize anger ( $F = 4.34$ ,  $p = 0.02$ ) but also greater self-reported hostile attribution biases ( $r = .23$ ,  $p = 0.10$ ). This first study of face emotion recognition in young adults with a range of irritability symptoms suggests that the relationship between irritability and face emotion processing depends on how each variable is operationalized.

## POSTER SESSION B

Friday, April 28, 2017

## Poster Schedule

12:00 noon-1:00 p.m. .... Assemble your poster  
 1:00 p.m.-7:00 p.m. .... Poster viewing  
**5:30 p.m.-7:00 p.m. .... Author present**  
 7:00 p.m.-8:00 p.m. .... Take down your poster

## POSTER B-1

**INTEROCEPTIVE SENSITIVITY AND PHYSIOLOGICAL REACTIVITY DIFFERENTIALLY PREDICT EMOTIONAL AND SOMATIC EXPERIENCES**

Jennifer K. MacCormack, Jenna M. Perry, Kristen A. Lindquist  
 University of North Carolina at Chapel Hill

*Descriptors: interoception, emotion experience, psychophysiology*

Individuals with greater physiological reactivity tend to report more intense emotions and somatic sensations (Feldman et al., 1999); greater sensitivity to physiological cues (interoceptive sensitivity) also predicts reports of more highly aroused emotions (Barrett et al., 2004). Yet physiological reactivity and interoceptive sensitivity are often confounded in the literature. We thus examined the relative contributions of each on emotions and somatic sensations. In Session 1, 40 participants completed a heartbeat detection task (Kleckner et al., 2016), an objective measure of interoceptive sensitivity. In Session 2, subjects underwent the Trier Social Stress Test (TSST; Kirshbaum et al., 1993) with heart rate, cardiac impedance, and self-reported intensity of emotions and somatic sensations measured (Watson & Clark, 1999). Physiological reactivity scores for heart rate, cardiac output, pre-ejection period, and stroke volume were computed by comparing TSST change from baseline. Multiple regressions showed that when physiological reactivity and interoceptive sensitivity were entered in the same model, interoceptive sensitivity was the primary predictor of emotional intensity and high arousal, negative emotions (Betas=.22-.57, ps=.001-.020). However, physiological reactivity was a better predictor of somatic intensity (Betas=-.28-.31, ps=.011-.091). These findings suggest that interoceptive sensitivity may drive perceptions of emotional intensity more than physiological reactivity, whereas physiological reactivity may drive perceptions of somatic sensations during emotions.

## POSTER B-2

**DAMAGE TO NEURAL STRUCTURES FOR SEMANTIC PROCESSING IS ASSOCIATED WITH DIMINISHED SADNESS REACTIVITY IN FRONTOTEMPORAL DEMENTIA**

Alice Y. Hua<sup>1</sup>, Kuan-Hua Chen<sup>1</sup>, Casey L. Brown<sup>1</sup>, Sandy J. Lwi<sup>1</sup>, James J. Casey<sup>1</sup>, Howard J. Rosen<sup>2</sup>, Bruce L. Miller<sup>2</sup>, Robert W. Levenson<sup>1</sup>

<sup>1</sup>University of California, Berkeley, <sup>2</sup>University of California, San Francisco

*Descriptors: frontotemporal dementia, semantic knowledge, sadness*

Sadness is an emotion that requires the processing of semantic information, such as evaluating the gravity and permanence of loss. Frontotemporal dementia (FTD) is a neurodegenerative disease that targets emotion-relevant neural systems that may also impact the processing of semantic information. We examined the neural correlates of sadness and disgust reactivity in 69 patients with FTD and 24 healthy controls. Participants viewed film clips that elicited sadness and disgust while peripheral physiology was recorded. Whole brain voxel based morphometry revealed that gray matter atrophy in structures involved in processing semantic information (bilateral fusiform gyrus, right anterior temporal pole, and left posterior inferior temporal gyrus) and emotion generation (right amygdala, right hippocampus, right insula) was associated with diminished physiological sadness reactivity (pFWE <.05). No regions were significantly associated with physiological disgust reactivity. These findings suggest that the ability to generate sadness through physiology may depend on neural structures that support processing semantic information through context.

## POSTER B-3

**COHERENCE AMONG BEHAVIOR AND PHYSIOLOGY DURING SADNESS RESPONDING: ASSOCIATIONS WITH AGE AND WELL-BEING**

Deborah J. Wu<sup>1</sup>, Katherine K. Bae<sup>2</sup>, Ryan C. Svoboda<sup>2</sup>, Claudia M. Haase<sup>2</sup>  
<sup>1</sup>University of Massachusetts Amherst, <sup>2</sup>Northwestern University

*Descriptors: emotional coherence, age, well-being*

Affective scientists have long been interested in the coherence between different emotional response systems. The present study examined coherence between behavior and physiology in response to a sad film clip and associations with age and well-being. In a laboratory-based study of 48 younger (aged 20-35) and 41 older (aged 55-70) adults, we measured emotional coherence using cross-correlations between objectively coded sad facial expressions (Emotion Expressive Behavior coding system; kappa=.72) and heart rate in response to a sad film clip. Measures of well-being (alphas>.81) included positive to negative affect ratio (measured by the Positive and Negative Affect Schedule) and neuroticism and extraversion (measured by the Big Five Inventory). In line with previous studies, heart rate decreased in response to the sad film clip,  $t(89)=-2.14$ ,  $p=.04$ ; thus, greater sadness coherence was defined as lower heart rate accompanied by greater sad facial expressions. Results showed that (1) older adults exhibited greater sadness coherence,  $\beta=.25$ ,  $p=.02$  and (2) greater sadness coherence was linked to greater well-being (greater positive to negative affect ratio,  $\beta=.24$ ,  $p=.02$ ; lower neuroticism,  $\beta=-.27$ ,  $p=.01$ ; no links with extraversion,  $\beta=.10$ ,  $p=.36$ ). Results remained stable when controlling for sex, income, and education. These findings provide evidence of greater sadness coherence in late life, consistent with accounts of the importance of sadness in late life. Also, links between sadness coherence and well-being support evolutionary-functional accounts of emotions.

## POSTER B-4

**THE ROLE OF EMODIVERSITY IN CULTIVATING EMPATHY IN THE CONTEXT OF STRESS**

Elaine O. Cheung, Judith T. Moskowitz  
 Northwestern University

*Descriptors: stress, empathy, wellbeing*

We sought to understand the factors that promote empathy in the context of stress. Although stress tends to disrupt the capacity for empathy (Todd et al., 2015), certain professions are both high in stress and require empathy (e.g., physicians). In three studies, we examined whether emodiversity (Quoidbach et al., 2014), the tendency to maintain a rich and diverse emotional life, may serve to protect against empathy decline under stress. In Studies 1 and 2 (MTurk), we found that stress was negatively associated with empathy; however, emodiversity qualified this association. Specifically, individuals who were low in emodiversity exhibited reduced empathy under stress whereas those who were high in emodiversity exhibited high levels of empathy, regardless of stress. In Study 3, emergency residents who were low in emodiversity showed empathy decline over their first year in residency whereas those who were high in emodiversity maintained high levels of empathy over time. Ultimately, these findings may help researchers develop targeted interventions for cultivating empathy in high-stress contexts.

### POSTER B-5

#### EMOTION REGULATION IN PRESCHOOL CHILDREN: CONTRIBUTIONS OF WORKING MEMORY AND INHIBITORY CONTROL

Basak Oztahaci, Ashley M. St. John, Amanda R. Tarullo  
Boston University

*Descriptors: emotion regulation, working memory, inhibitory control*

Emotion regulation predicts children's academic success, however early cognitive skills that facilitate emotion regulation have not been fully explored (Hudson & Jacques, 2014). Adult research shows that emotion regulation involves reappraisal, thinking of an emotional event differently, and suppression, inhibiting the expression of emotion (Gross, 2001). The current study assessed the contributions of both working memory and inhibitory control to emotion regulation in children, which has not been well explored. Working memory was measured from children's (N=82; 34 boys; M=60.3 mo.) accuracy on a change detection game, where children remembered colors. Inhibitory control was measured using accuracy on a go/no-go game, where children pressed a button for every animal except orangutans. Emotion regulation was assessed using parent-ratings on the Emotion Regulation Checklist (Shields & Cicchetti, 1997). Better emotion regulation related to better working memory,  $r(56)=.33, p=.01$ , and better inhibitory control,  $r(73)=.25, p=.029$ . Emotion regulation was regressed on working memory and inhibitory control to assess unique contributions. The overall model was significant,  $F(2,54)=3.684, p=.032$ . Working memory uniquely predicted emotion regulation ( $\beta=.271, p=.048$ ), but inhibitory control did not. Results suggest that emotion regulation may require more than just inhibiting the expression of emotion. Working memory skills, including manipulating the information held in mind, may facilitate reappraisal of emotional events, promoting adaptive emotion regulation.

### POSTER B-6

#### CHRONIC PHYSIOLOGICAL STRESS AND NEGATIVE TEMPERAMENT IN INFANCY PREDICT EMOTION REGULATION SKILLS IN PRESCHOOLERS

Katie Kao<sup>1</sup>, Charu T. Tuladhar<sup>1</sup>, Jerrold S. Meyer<sup>2</sup>, Amanda R. Tarullo<sup>1</sup>  
<sup>1</sup>Boston University, <sup>2</sup>University of Massachusetts Amherst

*Descriptors: emotion regulation, chronic physiological stress, socio-emotional functioning*

Emotion regulation (ER) skills promote school adjustment by fostering social success with peers (Cole et al., 2004). Early individual differences predicting ER have not been well established. The current study (N=43) investigated infant chronic physiological stress and temperament as precursors to ER in preschool and examined how these ER skills relate to social competency. We collected hair cortisol, a biomarker of chronic hypothalamic-pituitary-adrenocortical activity, from 12-month-old infants and measured infant anger using the Toy-behind-the-Barrier task (LabTAB; Goldsmith & Rothbart, 1999). At 3.5 years, we measured ER and socioemotional functioning through the Emotion Regulation Checklist and Strengths and Difficulties Questionnaire. We assessed prosocial behavior through helping tasks (Svetlova et al., 2010). Lower hair cortisol ( $\beta=-1.47, p=.047$ ) and lower anger ( $\beta=-1.01, p=.023$ ) at 12-months both uniquely predicted better ER at 3.5 years, together accounting for 37.7% of the variance,  $F(2, 22)=6.04, p=.009$ . Infants with lower levels of cumulative cortisol exposure and less negative emotionality demonstrated better ER abilities at age 3.5 years. Further, children who were reported to have better ER showed more prosocial behaviors in the laboratory ( $r(36)=.41, p=.013$ ) and had fewer reported internalizing problems ( $r(42)=-.61, p<.001$ ). Findings suggest that as early as infancy, individual differences in temperament and biological stress predict trajectories of developing ER skills, which in turn have implications for psychosocial domains such as altruism and mental health.

### POSTER B-7

#### REWARD CUES BIAS AUDITORY ATTENTIONAL SELECTION AND SUPPRESSION

Erkin Asutay, Daniel Västfjäll  
Linköping University

*Descriptors: auditory attention, reward learning*

Auditory attention theories suggest that the auditory system decomposes acoustic input into separate auditory streams, which compete for attentional resources. However, the impact of emotional and motivational salience of sounds on attentional selection is not well-understood. We studied whether a positive value associated with sounds could bias attentional selection in a detection task, using a reward-dependent attentional learning paradigm. Participants (N=16) went through a reward-learning period (300 trials), where correct detection of one sound (CS+) led to high rewards, while correct detection of another sound (CS-) led to low rewards. However, they were instructed that the rewards depended on their performance. We assessed the impact of reward-learning by comparing perceptual sensitivity before and after the learning period when CS+ and CS- were presented as distractors for a control target. Performance decreased after reward-learning when CS+ was a distractor, while it increased when CS- was a distractor ( $F(1,13)=8.89, p<.05$ ). Thus, the findings show that sounds that were associated with high rewards capture attention involuntarily. Additionally, when successful inhibition of a particular sound (CS-) was associated with high rewards then it became easier to suppress it ( $F(1,13)=11.13, p<.05$ ). Our findings have important implications for the understanding of affective biases in auditory perception and provide, for the first time, behavioral evidence that reward-learning can modulate auditory attentional selection and suppression mechanisms in humans.

### POSTER B-9

#### SENSITIVITY TO OTHERS' SUBTLE SOCIOEMOTIONAL SIGNALS IS MEDIATED BY DEGREE OF INTRINSIC CONNECTIVITY BETWEEN ANTERIOR INSULA AND INTEROCEPTIVE SALIENCE NETWORK NODES

Gianina Toller, Jesse Brown, Kelly A. Gola, Suzanne Shdo, Laura Bouvet, Clinton Mielke, Paul V. Sukhanov, Bruce L. Miller, Katherine P. Rankin  
Memory and Aging Center, University of California, San Francisco

*Descriptors: emotional sensitivity, salience network*

Consistent with the James-Lange theory of emotion, current models suggest that interoceptive information serves as the basis for emotional feelings. The right anterior insula (AI) is the key node of the salience network (SN), and functions to integrate sensory stimuli with interoceptive information represented in subcortical nodes of the network. We aimed to determine if variability in sensitivity to social cues is reflected in individual differences in SN connectivity, specifically between the right AI and "interoceptive" SN nodes. We related informants' ratings of participants' responsiveness to subtle emotional expressions on the Revised Self-Monitoring Scale (RSMS) questionnaire to functional connectivity between the right/left AI and cortical/subcortical SN nodes in 57 healthy older controls and in 103 patients with early neurodegenerative disease. A general linear model controlling for age, sex, education, diagnosis, and Mini-Mental Status Examination score showed that higher RSMS Total score significantly predicted higher connectivity between the right but not the left AI and both cortical (left AI, anterior cingulate cortex) and subcortical (thalamus, hypothalamus, amygdala, periaqueductal gray) SN nodes. These results demonstrate that the functional connections between the right AI and subcortical SN nodes underlie sensitivity and responsiveness to others' subtle emotional expressions, and confirm emotion models emphasizing that interoceptive signals are a primary mediator of other-related feelings.

### POSTER B-10

#### WHEN PAIN APPRAISAL IS NOT BASED ONLY ON THE PATIENT. THE ROLE OF SOCIAL CONFORMITY IN MEDICAL ENVIRONMENT

Giada Dirupo, Sabrina Totaro, Corrado Corradi-Dell'Acqua  
University of Geneva

*Descriptors: social conformity, pain recognition, medical practitioners*

Medical practitioners often underestimate patients' pain, sometimes regardless of their self-reports. We run four experiments (total N=87 participants) to assess whether this effect could be explained through the psychological mechanisms underlying social conformity, according to which individuals adjust their evaluations to match those of their peers but not of out-group members. Medical students and controls watched videos of facial expressions, and were requested to rate the pain unpleasantness felt by the person in the video. Subsequently, they were exposed to two independent social cues: the first was the self-report of the protagonist of the video, whereas the second was the average judgement of 20 emergency doctors. 30 minutes after, participants were unexpectedly required to rate the same faces again (without seeing any social cue). Our measure of interest was difference between the first and the second ratings. We found that controls adjusted their evaluation towards the social cue signaling the highest pain (regardless of whether it was from the video protagonist or emergency doctors – Experiments 1-3:  $t > 2.65$ ,  $p < 0.015$ ). Instead, medical students adjusted their evaluation towards those of emergency doctors, with an effect that increased linearly with the year of enrollment in medical faculty (Experiment 4:  $r = 0.76$ ,  $p = 0.001$ ). Our data suggest that medical practitioners take more into considerations evaluations from their peers than from the person in pain. This might provide a model for explaining pain underestimation in the healthcare system.

### POSTER B-11

#### CRAVING AND FOOD CUE REACTIVITY PREDICT EATING AND WEIGHT GAIN: A META-ANALYSIS

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*Descriptors: craving, meta-analysis, behavior*

Obesity is the second leading cause of preventable disease and death. Rates of obesity are rising in parallel with the increased availability of food cues, such as fast food advertising. Cues are known to induce craving, and it has been suggested that the experience of craving leads to increased eating and subsequent weight gain. However, evidence supporting this relationship has been mixed. We conducted a quantitative meta-analysis to assess the predictive effects of food craving and food cue reactivity on eating and weight-related outcomes. Across 69 reported statistics from 45 published reports representing 3,292 participants, we found an overall medium effect of food craving and cue reactivity on subsequent outcomes ( $r = 0.33$ ,  $p < 0.001$ ), suggesting that they predict eating behavior and weight gain (accounting for ~11% of variance). Follow-up tests showed that both scale-measured and cue-induced craving influence eating behavior with a medium effect size ( $r = 0.33$ ). We did not find significant differences in effect sizes based on body mass index, age, or dietary restraint. However, we did find that cue-induced craving following exposure to visual food cues (e.g. pictures and videos) predicted eating and weight gain with a similar effect size to real food exposure (and a stronger effect size than olfactory cues). Overall, the present findings suggest that cue-induced craving, scale-measured craving, and cue-exposure systematically and prospectively predict food-related outcomes. These results have theoretical, methodological, public health and clinical implications.

### POSTER B-13

#### THE NEURAL MECHANISMS OF THREAT PERCEPTION DURING A VIRTUAL INTRUSION

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*Descriptors: threat perception, virtual reality, fMRI*

Recent animal studies have shown that different neural circuits mediate fear responses according to the nature (conspecific, predator, inanimate) and proximity of the threat. In this study we investigated whether similar neural mechanisms are in place in humans. We simulated a threatening approach by an intruder using immersive virtual reality (IVR). Before functional magnetic resonance imaging measurements, twelve participants were embodied in an avatar that was located in a natural bedroom environment by a short session of concurrent head/environment movement using the Oculus Rift DK2. In the scanner participants viewed 3D scenarios of the bedroom from the first person perspective, where at a given time an intruder (predator, conspecific, non-threatening) entered the room and approached the participant closely. We analysed the preliminary data of five participants using a fixed-effects general linear model (FDR  $< 0.05$ ). Our results revealed that the perception of the threatening human intruder versus the animal predator showed increased activation in the insula, medial frontal cortex, and middle frontal sulcus. The perception of the animal predator versus the human intruder showed enhanced activation in the superior parietal lobe. The perception of conspecific and predator threat also activated a set of common areas including early visual cortex, inferior occipital gyrus around extrastriate body area and MT, and superior frontal gyrus. Our results indicate that humans have partially overlapping neural circuits that process threat on the basis of predator type.

### POSTER B-14

#### INTOLERANCE OF UNCERTAINTY AND ANXIETY IN PERCEPTUAL DECISION MAKING

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*Descriptors: perceptual decision making, intolerance of uncertainty, anxiety*

The ability to integrate multiple pieces of evidence is crucial for effective decision making. When making optimal decisions, it is important to consider both the strength (mean) and reliability (variance) of the evidence. Decisions are slower and less accurate when humans utilize evidence with high variance, and there is a tendency to de-emphasize extreme evidence as outliers. Anxiety is associated with impaired decision making due to uncertainty of potential threats in our environment possibly due to an intolerance of uncertainty. The present study examines whether intolerance of uncertainty is associated with an even more basic disruption in integrating the strength and reliability of evidence such that outlying evidence farther from the mean is over-emphasized. We used a two-alternative forced choice task in which participants observed 8 circles differing in color (redness and blueness) and decided if the average color across circles was more red or blue. The mean (strength of blueness or redness) and variance (variance in blueness or redness) of the color across the circles were predetermined. As expected, results showed that performance was worst when strength (mean) and reliability (variance) of evidence was poor. Furthermore, intolerance of uncertainty was associated with worse decision making performance when the strength of evidence was weak and the reliability was median. Computational modeling showed that this was due to overweighting of outlying evidence. This indicates that anxiety is associated with impairments in how evidence is utilized in decision making.

### POSTER B-15

#### CHARACTERIZING EMOTIONAL CORRELATES OF EMPATHY USING A NOVEL EMOTION INDUCTION PARADIGM

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*Descriptors: empathic concern, alexithymia, emotion induction*

Empathy is a multifaceted construct comprising affective responses and perspective taking. Intact awareness of one's emotions may be required for effective empathizing; alexithymia, the inability to identify and describe one's emotional state, is associated with abnormal empathy. We replicate this association, and further characterize behavioral aspects of emotional processing in empathy. We implemented a novel laboratory assessment, the INduction-based multiDimensional Emotional Experiences Paradigm (IN-DEEP) to measure emotional processing, in addition to self-report measures of alexithymia and empathy. Participants (n=108) viewed film clips standardized to elicit "target" emotions and were asked which emotion they experienced the most. Selection of target emotion reflects normative conceptual knowledge of emotion categories. IN-DEEP also assessed emotional granularity, clarity and dialecticism. Empathic concern (EC) was associated with greater selection of target emotion ( $r=.24, p<.01$ ) and alexithymia ( $r=-.38, p<.001$ ); regression analyses indicate that alexithymia and accuracy have independent effects on empathic concern, and furthermore, that the relationship between EC and alexithymia is only significant for women. EC is associated with greater likelihood of selecting the "target" emotion, but not with emotional granularity, dialecticism or clarity; while empathy may not relate to complexity of emotional processing, greater EC is associated with enhanced conceptual knowledge of emotions. EC is associated with greater alexithymia, but only for women.

### POSTER B-16

#### INCREASED ALEXITHYMIA MEDIATES THE EMERGENCE OF DEPRESSIVE SYMPTOMS FROM CHILDHOOD TO ADOLESCENCE

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*Descriptors: depression, alexithymia, development*

Adolescence has been identified as a key period for the onset of mood pathologies such as depression. Research shows that in both adolescence and adulthood there is a strong relationship between depression and alexithymia (i.e., difficulty recognizing and describing one's emotions). However, it is unknown whether increased alexithymia in adolescence contributes to the emergence of depressive symptoms during this period. We analyzed data from 79 participants aged 9-18 drawn from a larger study on emotional development (N = 203, ages = 4-25) to investigate whether changes in depressive symptoms across age could be explained by changes in alexithymia. We assessed depression using the Child Depression Inventory (CDI) and alexithymia using the Alexithymia Questionnaire for Children (AQC). Robust regression analyses showed that depression scores increased with age ( $B=.17, p=.018$ ), as did alexithymia (specifically the difficulty describing emotions subscale,  $B=0.36, p=.002$ ). Furthermore, depressive symptoms and alexithymia were highly correlated ( $B=.40, p<.001$ ), replicating prior research. A robust mediation analysis revealed that increases in depressive symptoms from childhood to adolescence were explained by increased alexithymia across this age range ( $p=.01$ ). These results suggest that increases in depressive symptoms during adolescence may result from adolescents' difficulties describing their emotions. This insight informs the mechanisms of adolescent-onset psychopathology and highlights the importance of emotional understanding in the development of mental health.

### POSTER B-17

#### NEGATIVE EMOTIONAL GRANULARITY PREDICTS DEPRESSIVE SYMPTOMS ACROSS CULTURAL GROUPS

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*Descriptors: cultural groups, culture, emotional granularity*

Prior work links high levels of negative emotional granularity to lower levels of depression. The direction of this association is poorly understood. We also do not know whether this pattern generalizes across cultural contexts with differing emotional norms. A group of 149 European Americans, Hispanic Americans, Asian Americans and Russian Americans participated in a 10-day momentary sampling study. Momentary levels of positive and negative emotions were assessed, yielding measures of positive and negative emotional granularity or the degree to which discrete emotions were distinguished by participants in their daily lives. Participants' levels of depressive symptoms, life satisfaction and perceived stress were assessed before and after the momentary sampling period. Analyses indicated that baseline levels of depression and life satisfaction did not account for participants' tendency to differentiate their positive and negative emotions. Controlling for baseline levels of depressive symptoms, negative emotional granularity but not positive emotional granularity contributed to post-session levels of depressive symptoms. Cultural group did not affect this pattern of results. Emotional granularity did not contribute to post-session levels of life satisfaction. These data indicate that the ability to distinguish negative emotions in discrete terms predicts lower levels of depressive symptoms across cultural groups. They have implications for developing psychological interventions for reducing symptoms of depression.

### POSTER B-19

#### INFATUATION IS ASSOCIATED WITH DISTRACTION: AN EVENT-RELATED POTENTIALS STUDY

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*Descriptors: romantic love, attention, brain*

Infatuated people think about their beloved very often and report to have trouble focusing on other tasks, such as work or homework. So, infatuation may be associated with loss of productivity. We examined whether thinking about the beloved is associated with distraction. Infatuated participants (n=24) performed a short-term memory task while their EEG was recorded. During encoding, beloved, friend, and stranger faces were presented as distractors alongside to-be-remembered shapes. Participants were instructed to ignore the faces because those were irrelevant to the task. Self-reported obsessive thinking about the beloved and the associated distraction correlated negatively with task performance across conditions,  $r = -.38, p = .03$  (one-sided), and positively with reaction times across conditions,  $r = .39, p = .03$  (one-sided). Task performance, reaction times, and P1 and N170 amplitudes did not differ between conditions. The Early Posterior Negativity, which reflects early selective visual processing of emotional information, and the Late Positive Potential, which reflects motivated attention, were largest in the beloved condition, all  $ps < .049$ . So, even though participants were instructed to ignore the faces, the beloved pictures were preferentially processed. In addition, although beloved pictures were not distracting, more obsessive thinking about the beloved was associated with poorer and slower overall task performance. More research is needed to clarify why infatuation is associated with distraction and how this negative effect of infatuation could be reduced.

**POSTER B-20****THE INFLUENCE OF PSYCHOPATHOLOGY ON ERQ SUBSCALES ITEM ENDORSEMENT**

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*Descriptors: emotion regulation, measurement invariance, anxiety*

The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) is routinely used to assess self-reported reappraisal and suppression. Differential item functioning (DIF) analyses reveal that ERQ item characteristics (factor loadings and intercepts) do not vary based on gender or race (Melka et al, 2011). Given that research demonstrates a relationship between the suppression and reappraisal subscales and psychopathology, we examined the ERQ for DIF across levels of psychopathology. As the ERQ is regularly used in both clinical and non-clinical samples, establishing how individuals respond differentially to items based on psychopathology is essential. Participants (N = 444) completed the 10-item ERQ, the Beck Depression Inventory (BDI), and the Beck Anxiety Inventory (BAI). Moderated nonlinear factor analysis was used to test for factor loading and intercept DIF, using BDI and BAI summed scores as covariates. For reappraisal, one item exhibited BDI-related factor loading DIF ( $t = 2.79, p = 0.01$ ) and one item exhibited BAI-related factor loading DIF ( $t = -2.68, p = 0.01$ ). For suppression, two items revealed BAI-related factor loading DIF ( $t = 2.10, p = .04; t = -2.59, p = .01$ ) and one item showed BDI-related intercept DIF ( $t = 2.06, p = .04$ ). The ERQ exhibits strong psychometric properties. Yet, psychopathology, particularly anxiety, alters how people respond to items. Thus, consideration should be given when assessing clinical samples' self-reported ER use.

**POSTER B-21****MODELS OF EMOTION IN BIPOLAR DISORDER: DO POSITIVE EMOTIONS OR NEGATIVE EMOTIONS PREDICT QUALITY OF LIFE, SYMPTOMS, AND RELAPSE OVER TIME?**

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*Descriptors: emotion, quality of life, bipolar disorder*

Emotion has been seen as central in bipolar disorder across neurobiological, psychological, and treatment literatures. Models conflict in emphasizing high positive or negative emotions as deleterious. We examined effects of positive and negative emotions on quality of life and symptom severity. Sixty-four persons diagnosed with Bipolar I Disorder per the SCID were followed with monthly symptom interviews until they achieved remission (Young Mania Rating Scale and Modified Hamilton Rating Scale for Depression), then completed the self-rated Dispositional Positive Emotions Scale (DPES), Positive Urgency Measure [a measure of impulsive responses to positive emotions] (PUM), Bryant Aggression Scale (BPA), and Quality of Life in BD (QOL-BD) scales. A subset (N = 30) completed the QOL and symptom measures at one-year follow-up. QOL significantly related to higher joy, contentedness, and pride (partial  $r = .40-.53$ ), lower positive urgency (partial  $r = -.40$ ), and lower hostility (partial  $r = -.36$ ). At follow-up, contentedness, pride, and love predicted higher QOL (partial  $r = .52-.56$ ), whereas physical aggression predicted lowered QOL (partial  $r = .50$ ). At follow-up, positive urgency predicted manic symptoms (partial  $r = .44$ ) and hostility predicted depressive symptoms (partial  $r = .39$ ). In sum, negative emotions predict poor QOL. Positive emotions such as contentedness, love, and joy appear protective for QOL, but the impulsive response to those emotions related to poor QOL and manic symptoms. Taken together, dysregulated facets of negative and positive emotions appear detrimental.

**POSTER B-22****THE CAPABILITY TO SAVOR IN THE MOMENT DISTINCTLY MEDIATES THE RELATIONSHIP BETWEEN LOW POSITIVE AFFECT AND DEPRESSION**

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*Descriptors: low positive affect, depression, savoring*

Depression is predominantly characterized by low levels of positive affect (PA) and high levels of negative affect (NA). Depression is also associated with a reduction in the perceived ability to savor past, present, and future events. The present study evaluates whether affect and depression are associated via a reduction in specific beliefs about savoring capabilities. Emerging adults (N = 738) completed online questionnaires. The Savoring Beliefs Inventory (SBI; Bryant, 2003) was administered to assess beliefs about the ability to enjoy past, present, and future positive events. PA and NA were assessed with the Mood and Anxiety Symptoms Questionnaire (Clark & Watson, 1991). Two parallel mediation analyses were conducted to evaluate whether temporal domains of savoring beliefs (i.e., past, present, future) mediate the relation between affect (PA and NA) and depression. The relation between PA and depression ( $\beta = -.07$ ) was mediated by the ability to enjoy positive events in the moment (CI  $-.11$  to  $-.04$ ). PA was positively related to savoring in the moment ( $\beta = .41$ ), and increased savoring was related to decreased depression symptoms ( $\beta = -.18$ ). The other temporal domains of savoring were not significant mediators. The relation between NA and depression was not significantly mediated by savoring. Low PA may represent a distinct, modifiable risk factor for depression. Interventions that increase the capability to savor positive events in the moment may mitigate depression outcomes for individuals who experience low PA.

**POSTER B-23****WHERE IS YOUR (MINDFULNESS)? IT MATTERS FOR SLEEP**

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*Descriptors: sleep, mindfulness, attention*

Past research on meditation and sleep has produced conflicting results indicating both sleep-enhancing and arousing effects on sleep. This discrepancy may be due to the divergent outcomes of different meditation practices. The present study compares the differential effects of focused attention (FA) meditation and open-monitoring (OM) meditation on sleep. Twenty-one individuals with mild-to-severe depression on antidepressant medication were randomized into an 8-week meditation course on either FA or OM meditation. Sleep Efficiency (SE) was measured with portable EEG devices (Z-Machines) on multiple nights before and after treatment. A significant group by time interaction indicated an increase in SE for the FA group and a decrease in SE for the OM group ( $F = 6.2, p = .02, d = 1.14$ ). Increases in mindful awareness were associated with worse sleep in the OM group ( $r = -0.60$ ) and with improved sleep in the FA group ( $r = 0.43$ ). In other words, attention directed towards thoughts and emotions (OM) increased insomnia, whereas focusing the attention away from thoughts and emotions towards a neutral object such as the breath (FA) was associated with improved sleep. These results suggest that the different meditation practices, despite both being called "mindfulness", may have opposite effects on sleep. Thus, for treating insomnia in a depressed population, the object of mindful attention matters.

### POSTER B-24

#### ATTENTIONAL BIAS FOR TABOO WORDS

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*Descriptors: attentional bias, dot-probe task*

The present study compares attentional bias for positive and threatening stimuli. However, the small number of studies used taboo words for Russian speaking people, although this material clearly reflects the emotional processing of information. Taboo words were included in dot-probe task. In our study, we tested the idea that taboo words, compared with neutral distracters, will impair emotional attention. Participants (n=43) performed dot-probe task (MacLeod, Mathews, Tata, 1986), then they were asked about words, which they remember. There was not statistically significant differences between the neutral and taboo words. We found a correlation between the number of correctly named words and attentional bias for presenting words on 100 ms ( $r = 0.431$   $p < 0.05$ ). Subsequent research will focus on procedure of dot-probe task. This research showed a need to control the emotionality of words for participants. Larger effects of attentional bias for taboo words can be obtained with the use of a large number of probes. 1. MacLeod, C., Mathews, A., & Tata, P. (1986). Attentional bias in emotional disorders. *Journal of Abnormal Psychology*, 95(October), 15–20. doi:10.1037/0021-843X.95.1.15

### POSTER B-25

#### DOES MEDITATION SPEED RECOVERY FROM ANGER?

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*Descriptors: meditation, compassion, physiological recovery*

Contemplative theories suggest that compassion practices are effective for reducing anger. To test this possibility, we examined cardiovascular recovery following a real-world orchestrated scenario designed to induce anger after participants completed eight weeks of compassion- or mindfulness-based meditation or an active control. We used a curve fitting approach to estimate the duration of time that passed between the peak response during the anger provocation and the final resting level post-anger. Partially consistent with predictions, some individuals experienced faster physiological recovery as a function of meditation training. However, contrary to prediction, some individuals experienced delayed recovery as a function of meditation. Discussion focuses on the importance of potential individual difference variables as moderators of the effect of meditation on recovery.

### POSTER B-26

#### DIMINISHED PAIN PERCEPTION FOLLOWING EMBODIED IMAGINATION OF A POSITIVE AUTOBIOGRAPHICAL MEMORY

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*Descriptors: pain, affect, embodiment*

The experience of pain is a multidimensional process involving sensory discriminative, affective, and cognitive dimensions. While pain is ubiquitous, for many it is a source of profound psychological distress. Not surprisingly, the use of pharmaceuticals for pain management is widespread. However, less-invasive psychological interventions are also known to effectively ameliorate pain. Cognitive and affective distraction, placebo analgesia, mindfulness practices, hypnotic suggestion, and positive mood induction have all shown promise in this regard. Another potentially efficacious method is a Jungian-based psychotherapeutic technique called embodied imagination (EI). EI utilizes interoceptive body awareness and engagement with somatosensory details and rich mental imagery from autobiographical memory as a means of adaptively shifting the experience of stress. As a psychotherapeutic practice, EI is currently employed to treat a number of symptoms resulting from physical and psychological traumas and chronic pain. However, this is the first experimental test of the effects of EI on physical pain experience in a controlled laboratory setting. Pain was induced via noxious thermal stimulation delivered to participants' volar forearm. Across three blocks (including a control baseline), subjective pain reports were captured following each stimulation (27 in total). Relative to a non-specific relaxation control group, participants who concurrently underwent the EI procedure exhibited marked reductions in reported pain across blocks. Results and possible mechanisms are discussed.

### POSTER B-27

#### HOW DOES LOCAL CONTEXT INFLUENCE ELECTROPHYSIOLOGICAL MARKERS OF EMOTION-DEPENDENT ATTENTION?

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*Descriptors: arousal, attention, list composition*

Emotional Enhancement of free recall ("emotional enhancement of memory"; EEM) can be context dependent. It is readily observed when emotional and neutral scenes are encoded and recalled together, in a 'mixed' list, but diminishes when these scenes are encoded separately, in 'pure' lists. Here, we test an attentional explanation for these list composition effects, specifically, the hypothesis that they stem from differential encoding of emotional and neutral stimuli in mixed and pure lists. Our findings contradict this hypothesis. We show that the emotional modulation of EEG markers of attention allocation is insensitive to list context. The magnitude of the Late Positive Potential (LPP) and the slowwave (SW) potential were equivalent in both mixed and pure-list presentations, even though list composition did moderate the EEM. There was no evidence for emotion doormen changed in response to neighboring stimuli because returned to baseline before the next stimulus was presented. The decoupling of the emotional effects on attention and memory support the hypothesis that the sensitivity of the EEM to the local context is a feature of the retrieval rather than the encoding context.

### POSTER B-28

#### USING THE SHARPEST TOOL IN THE SHED: THE FUNCTIONALITY OF EMOTION REGULATION STRATEGY PREFERENCES

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*Descriptors: emotion regulation, emotion regulation goals, emotional well-being*

Emotion regulation (ER) strategies occur at different times in the emotion generative process, and therefore have different affective and social consequences. Little is known about why people use different strategies but according to functionalist theories of emotion, strategies will be used when they are most effective. Given that antecedent-focused strategies (e.g., reappraisal) have been shown to effectively change emotional experience, we expected they would be linked to hedonic goals (e.g., feel better), while response-focused strategies (e.g., suppression) would be associated with social instrumental goals (e.g., impression management) given they are useful for changing emotional expression, but not necessarily emotional experience. To test these hypotheses about how strategy use varies by goal pursuit, 272 adults (ages 23-85) completed daily measures of ER strategy use, ER goals, and emotional experience for 9 days. Antecedent-focused strategies (situation selection, situation modification, distraction, and reappraisal) were used more on days with greater hedonic goal pursuit. In contrast, suppression was used more on days with greater social instrumental goal pursuit (i.e., impression management and getting other with others). Furthermore, people generally had greater emotional well-being on days when they exhibited these types of goal-strategy links, suggesting that typical ER strategy preferences might be functional.

### POSTER B-29

#### WHAT MOTIVATES YOU? GENDER DIFFERENCES IN THE EFFECTS OF PRAISE AND CRITICISM FOR ACADEMIC AND ATHLETIC PERFORMANCE

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*Descriptors: praise, criticism, feedback source*

Across settings, we frequently use praise or criticism to shape behavior. However, not all feedback is beneficial, and some has adverse effects. This study examined how different types of feedback – praise, constructive criticism, and destructive criticism – affected emotional response and task performance, and how these outcomes differed depending on source (supervisor vs. peer) and setting of the feedback (academic vs. athletic). Audio recordings were created to mirror real feedback given by coaches, professors, teammates and classmates. Participants (N=124) were randomly assigned to feedback type and source, listening to the associated comments for both academic and athletic scenarios. Participants then indicated their motivation and self-efficacy on academically- and athletically-associated tasks and completed the tasks: a pursuit rotor task to assess motor performance and a remote association test to measure convergent thinking. Across settings, females had stronger emotional responses to critical feedback, but they were more motivated to do well after receiving constructive feedback; males were more motivated after praise. Females also had lower self-efficacy than males for both tasks, but significantly outperformed males in the motor task. Overall females were more sensitive to feedback from supervisors than peers while males were not affected by source. These findings suggest that gender should be carefully considered as one constructs feedback meant to motivate future performance.

### POSTER B-31

#### THE INFLUENCE OF SELF-EFFICACY IN THE RELATIONSHIP BETWEEN VARIANTS OF SELF-BLAME AND PSYCHOLOGICAL DISTRESS

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*Descriptors: self-efficacy, PTSD, self-blame*

Sexual assault has consistently been found to be associated with depression and posttraumatic stress disorder (PTSD) symptomatology. Research shows that self-blaming attributions are directly linked to distress (Walsh, & Foshee, 1998; Walsh & Bruce, 2011). More specifically, the type of self-blame (i.e., behavioral and characterological) an individual associates with their experienced sexual assault, may influence their perceptions of avoidability of future assault and post-assault recovery. However, the role of self-efficacy in the relationship between behavioral and characterological self-blame in PTSD sexual assault survivors has been unexamined. The purpose of the proposed study is to assess the influence of self-efficacy in the association between variants of self-blame and post-assault distress. The proposed study considers the critical relationship between self-efficacy and self-blame, and aims to evaluate how these factors can ultimately influence posttraumatic adjustment in sexual assault survivors. Results revealed positive associations between behavioral self-blame and depression ( $r = .28, p < .05$ ). Positive associations were also found between characterological self-blame, PTSD ( $r = .42, p < .001$ ) and depression ( $r = .50, p < .001$ ). Findings revealed that characterological self-blame was associated with reduced self-efficacy ( $r = -.45, p < .001$ ) and self-efficacy was positively related to PTSD and depression symptom severity ( $r = -.27, p < .05; r = -.54, p < .001$ ). Mediation was found between characterological self-blame, self-efficacy and depression.

### POSTER B-32

#### PSYCHOLOGICAL FLEXIBILITY MITIGATES EFFECTS OF PTSD SYMPTOMS AND NEGATIVE URGENCY ON AGGRESSIVE BEHAVIOR IN TRAUMA-EXPOSED VETERANS

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*Descriptors: PTSD, negative urgency, psychological flexibility*

Recent literature suggests that PTSD symptoms can interact with personality factors to predict externalizing behaviors. Engagement in externalizing behaviors such as substance abuse and aggressive behavior may, in turn, increase risk for further trauma exposure and a more chronic course of PTSD. In order to better understand how to intervene on this cycle, the current study aimed to identify factors that could explain risk for externalizing behaviors among trauma-exposed veterans. Moreover, we aimed to identify whether psychological flexibility, a skill drawn from Acceptance and Commitment Therapy (ACT), may mitigate risk for engagement in externalizing behavior. Results indicated that PTSD symptoms indirectly predicted externalizing behavior via negative urgency, or the propensity to act rashly in the context of distress. Moreover, psychological flexibility moderated this relationship such that negative urgency was less strongly associated with aggressive behavior at high levels of psychological flexibility. These results highlight moments of intense distress as important targets for therapeutic intervention, and psychological flexibility as a potentially important therapeutic skill for reducing externalizing behavior among trauma-exposed individuals.

**POSTER B-33****MULTIVARIATE ASSOCIATIONS OF IDEAL AFFECT AND TRANSDIAGNOSTIC SYMPTOMS**

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*Descriptors: ideal affect, transdiagnostic symptoms, structural equation modeling*

Ideal affect (i.e., the affective states that people value and would ideally like to experience) may be relevant to mental health outcomes (Tsai, Knutson, & Fung, 2006). In the present study, we modeled multivariate effects of ideal affect on symptoms of depression, anxiety, and alcohol abuse. Undergraduates ( $n = 293$ ) completed the Affect Valuation Index (Tsai, Knutson, & Fung 2006), the Mood and Anxiety Symptom Questionnaire (Watson & Clark, 1991), and the Alcohol Use Disorders Identification Test (Babor et al., 2001). Structural equation modeling was used to examine the unique effects of ideal affect on clinical syndromes, adjusting for covariation among symptom indices. The model that minimized AIC and BIC was identified using all-subset regression (Schumacker, 2006). Bootstrapped model fit indices and bias-corrected confidence intervals were estimated (Bollen & Stine, 1992). The final model demonstrated good fit (Bollen-Stine bootstrap  $p = .07$ ; adjusted RMSEA = .05; adjusted CFI = .99). Valuation of HAP was significantly associated with depression ( $b = -.22$ , 95% CI = [-.33, -.11]), anxiety ( $b = .14$ , 95% CI = [.04, .24]), and alcohol abuse ( $b = .22$ , 95% CI = [.12, .32]). HAN was associated with anxiety ( $b = .39$ , 95% CI = [.29, .48]). LAP and LAN did not survive in the final model. These findings support and extend prior research suggesting that ideal affect is implicated in clinical outcomes by highlighting the importance of jointly considering multiple facets of ideal affect—particularly high arousal states—as unique contributors to a range of clinical syndromes.

**POSTER B-34****WHAT IS DAXY? CHILDREN'S DEVELOPMENT OF EMOTION KNOWLEDGE**

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*Descriptors: emotion concepts, development, toddlers*

Emotion words are vital in emotion understanding and regulation. However, little work has examined how emotion words are acquired. Linguistic evidence suggests that syntactical structure is informative in concept learning and developmental research suggests that the physical context is key in emotion concept learning. Thus, we conducted two studies examining the role of syntactical structure and context in children's (ages 3-5) perception of the emotional meanings of novel "alien" words. In Study 1 ( $N=129$ ) children viewed a recorded puppet interaction wherein a novel "alien" word (e.g., daxy) was presented in one of three syntactic structures (is, feels, feels about). After each video, children selected the image they believed denoted the word in a picture-pointing task. Images depicted aliens as experiencing an emotion (e.g., sad), a physical state (e.g., itchy) or performing an action (e.g., running). In Study 2 ( $N=123$ ) children viewed cartoons depicting an emotional scenario. As in Study 1, the novel word was presented in one of three syntactic structures and followed by a picture-pointing task. A repeated measures ANOVA revealed a 4-way interaction between study, syntactic structure, age and image choice,  $F(7.17, 415.17) = 1.92$ ,  $p=.06$ . Significant 3-way interactions between age, syntactic structure and image choice,  $F(7.17, 415.17) = 2.25$ ,  $p=.03$ , and between study, age, and image choice,  $F(3.58, 415.17) = 3.44$ ,  $p=.01$ , suggest that emotion images are chosen consistently more with age, syntactic structure, and that physical context increases emotion choices.

**POSTER B-35****SLOWER HEART RATE DURING PRE- AND POST-STARTLE PERIODS IS ASSOCIATED WITH LESS BURDEN AND DEPRESSION IN CAREGIVERS OF PATIENTS WITH DEMENTIA**

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*Descriptors: caregiver, heart rate, startle*

Caring for a loved one with dementia can create significant levels of burden and depression in caregivers. Because not all caregivers have similar reactions, it is important to identify factors that are associated with greater resiliency to the negative effects of caregiving. In this study, we examined variations in resting and post-stress physiological levels in relationship to caregiver burden and depression. 96 caregivers of patients with dementia participated in two trials in which they were exposed to an acoustic startle stimulus (115 dB burst of white noise). Both trials consisted of a one-minute baseline period, the startle stimulus, and a one-minute recovery period. In the first trial, the startle stimulus was presented without warning. In the second trial, participants were instructed to suppress their reaction. Heart rate was monitored continuously throughout the experiment. Results indicated that in both trials, after controlling for caregiver age and sex, slower heart rate during the baseline and recovery periods was associated with less caregiver burden and fewer depressive symptoms (all  $p < .05$ ). These findings indicate that caregivers who are most relaxed at rest and most able to recover from the effects of the startle stimulus are least likely to experience these negative effects of caregiving. This suggests the potential value of interventions that train caregivers to maintain calm physiological states as a way to reduce the negative effects of caregiving.

**POSTER B-36****PSYCHOLOGICAL AND NEURAL CORRELATES OF VISCERAL PAIN IN WOMEN WITH DYSMENORRHEA**

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*Descriptors: somatization, depression, visceral pain*

Women with dysmenorrhea (i.e., menstrual pain) are more likely to have other visceral pain conditions. This susceptible population more frequently reports mood disorders and greater sensitivity to experimental pain, which are known risk factors for chronic pain. Frontal brain activity during pain has been linked to affective processing, with bilateral dorsolateral prefrontal cortices (dlPFC) negatively correlated with intensity perception and unpleasantness. Abnormal frontocingulate activity has been associated with dysmenorrhea, depression, and somatization. Given the emerging evidence supporting an association between affective symptoms and pain, research is needed to account for the potential effects on brain function that may be associated with co-occurring psychological symptoms. Women ( $N = 63$ ) with dysmenorrhea, but without comorbid pelvic pain, participated in the present study. Psychological symptoms were assessed using standardized questionnaire measures, and visceral pain was evaluated via induced bladder pain. The results showed that psychological symptoms and brain activity predicted increased levels of experimental visceral pain sensitivity. Results from a simultaneous regression showed that somatization, depression, and frontal beta activity were significant predictors of bladder pain ( $p$ 's  $< .05$ ). Somatization accounted for the largest amount of variance in this analysis ( $r^2 = 0.15$ ) and may be a primary risk factor for developing chronic pelvic pain. Somatic symptoms should be considered a key target for psychological prevention and intervention strategies.

**POSTER B-37****EXAMINING MATERNAL VOCAL ACOUSTIC FEATURES AS PART OF DYADIC REGULATION OF INFANT BIOBEHAVIORAL STATE**

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*Descriptors: regulation, vocalizations, infant-mother interaction*

Vocal acoustic features may help regulate physiological state via the ventral vagal complex (VVC), which functionally dampens body mobilization (Kolacz, Lewis, & Porges, in press). This study examined whether maternal vocal spectro-temporal modulation predicted infant physiological regulation and behavior. Sixty mothers and their 4-to-6 month-old infants participated in the Still Face Paradigm, during which mothers withdrew all expressive responses for 2 minutes (Still Face) before resuming normal interaction (Reunion). Infant physiological regulation by the VVC was indexed using respiratory sinus arrhythmia (RSA) derived from an ECG signal. Mobilization was measured as proportion of time infants squirmed and wiggled in Reunion. Maternal vocal spectro-temporal modulation depth was assessed using the Modulation Power Spectrum (Singh & Theunissen, 2003). Preliminary data from 20 dyads were analyzed (all dyads will be analyzed by end of 2016). Infants whose VVC regulation increased from Still Face to Reunion had mothers with more smoothly modulated voices ( $F(2, 18) = 12.28, p = .003, R^2 = .41$ ). Smooth maternal vocal modulation in Reunion was associated with less infant mobilization ( $B = -.45, SE = .18, p = .003, R^2 = .37$ ). The results provide preliminary support for vocal modulation as part of a mother-infant biobehavioral regulatory system. Consistent with the integrated Social Engagement System proposed in the Polyvagal Theory (Porges, 2007), mothers' smoothly modulated vocal features may promote infant VVC activation, decreasing physiological and behavioral mobilization.

**POSTER B-38****ENHANCING POSITIVE AFFECT IN POSITIVE CONTEXTS RECRUITS DIFFERENTIAL BRAIN REGIONS IN HEALTHY INDIVIDUALS AND MAJOR DEPRESSIVE DISORDER PATIENTS**

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*Descriptors: positive reappraisal, psychopathology, fMRI*

The experience of positive affect has numerous beneficial effects on physical and mental well-being and is diminished in major depressive disorder (MDD). As such, it is important to understand how individuals in general – and those with MDD in particular – can cognitively enhance positive experience using emotion regulation strategies. Here we used behavioral and fMRI methods to ask how one strategy – cognitive reappraisal – can enhance positive emotion in individuals with MDD ( $N = 19$ ) and controls ( $N = 20$ ). While fMRI data were collected, participants completed a novel variant of a well-established reappraisal paradigm. On each trial, participants were instructed to either positively reappraise or to respond naturally to neutral and positive IAPS images and subsequently rate their affect. Behaviorally, positive reappraisal dampened negative affect and increased positive affect in both groups. Neurally, although both groups recruited the dorsolateral prefrontal cortex (commonly implicated in cognitive emotion regulation) while reappraising, only healthy individuals recruited the striatum (a region associated with reward), while MDD patients recruited the precuneus (a region associated with perspective taking). Functional connectivity analyses revealed further group differences: though healthy individuals showed decreased amygdala-precuneus connectivity when looking naturally at the images and increased connectivity when reappraising, patients showed the opposite pattern. These analyses provide further insight into the mechanisms by which positive emotion can be enhanced.

**POSTER B-39****CONTRASTING THE EFFECTS OF POSITIVE AND NEUTRAL DISTRACTION ON REAPPRAISAL CHOICE IN THE EMOTION REGULATION CHOICE TASK**

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University of North Carolina at Charlotte

*Descriptors: emotion regulation choice, distraction, reappraisal*

The emotion regulation (ER) strategy of distraction is becoming increasingly investigated in the context of regulatory flexibility as it is ecologically valid and takes less effort than reappraisal. Interestingly, neutral distraction (ND), which may be used less naturalistically than positive distraction (PD) is often paired with positive reappraisal (PR) on choice tasks, leaving open the question of whether participants are choosing reappraisal because of strategy differences or frame differences. The aim of the present study was to assess if reappraisal choice changes when participants are given the option of choosing between PR and ND, or PR and PD. Participants ( $n=313$ ) completed a version of the emotion regulation choice (ERC) task, the first group ( $n=154$ ) completed the ERC task in which they choose between PR and ND, while the second group ( $n=159$ ) completed the ERC task in which they choose between PR and PD. Participants were instructed in how to use distraction and reappraisal, which they implemented to reduce their negative effects in response to pictures of low, medium, or high negative intensity. A repeated measures ANOVA revealed choice differences due to intensity ( $F(2,622) = 365.14, p < .001$ ), yet no effect of group ( $F(2,622) = .244, p = .78$ ). These findings suggest that choice behavior on the ERC task does not appear to be influenced by distraction framing and instead appears to be driven by whether participants have the cognitive resources or regulatory goal to implement the more effortful strategy of reappraisal.

**POSTER B-40****PSEUDOINEFFICACY: AFFECT AND THE DECISION TO HELP**

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*Descriptors: prosocial decisions, emotion, affect integration*

Decisions are strongly motivated by perceived efficacy. Inefficacy, real or perceived, shrivels response, even among those who have the desire and the means to protect and improve lives. It is especially troubling that efficacy sometimes goes unrecognized and vital aid that could be provided is withheld due to an illusion of ineffectiveness that we have named pseudoinefficacy. In our studies participants rated their feelings and indicated how much money they would donate to either one child (who would be helped for certain) or one of two children (1 child cannot be helped, but uncertain which child). In Study 2, we employed two experimental conditions where 1 child is helped and 5 other children cannot be helped. Study 3 introduced ratings of warm glow. Studies 4a and 4b employed within-subjects designs. Finally, Study tested whether including irrelevant neutral visual distractors or affect-inducing non-children pictures would produce dampening of warm glow for helping a child. The results show that donors pay attention not only to relevant information (children who can be helped), but also incorporate feelings from normatively irrelevant information (e.g., children who cannot be helped) when that information is brought to their attention. Irrelevant negative feelings associated with those not able to be helped appeared to blend with the good feelings for those who can be helped, leading to dampened warm glow.

### POSTER B-41

#### POOR EMOTIONAL RECOVERY IS ASSOCIATED WITH ATTENTIONAL AND MEMORY BIASES FOR NEGATIVE STIMULI

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*Descriptors: emotional recovery, attentional biases, memory biases*

Depressed individuals exhibit attention and memory biases for negative stimuli. In this study we examined whether similar biases would be associated with individual differences in the reactivity to and recovery from negative pictures. 134 healthy older adults participated in a psychophysiological paradigm measuring facial electromyography (facEMG) during and after the presentation of affective pictures (negative, neutral, and positive). They later completed an affective go/no-go test using negative, positive, and neutral target words, and free recall of the pictures presented during the earlier paradigm. We found no significant relations between reactivity to negative stimuli, as measured by facEMG in response to negative pictures, and the difference in reaction times, errors, or omissions to negative compared to positive targets nor in the difference between recall of the picture categories. However, poor recovery from negative stimuli, as indexed by greater facEMG after negative picture offset, was associated with more omissions when shifting to positive compared to negative targets ( $r = -.21$ ,  $p = .02$ ). Thus, those who recovered more poorly after negative picture provocation were also impaired in their ability to shift their attention to positive compared to negative information. Poorer recovery was also associated with a greater percentage of negative pictures of the total recalled ( $r = .22$ ,  $p = .02$ ). These findings suggest poorer recovery from negative provocation is associated with both attentional and memory biases for negative compared to positive stimuli.

### POSTER B-42

#### A SAD THUMBS-UP: SLOWER PROCESSING OF FACIAL EXPRESSIONS PAIRED WITH INCONGRUENT CONVENTIONALIZED GESTURES

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*Descriptors: facial expression, hand gesture, emotion processing*

Affective incongruence between facial expression and body posture interferes with emotion recognition. Existing research has focused on interference effects for universally recognizable bodily expressions, leaving open the question of whether even culturally-learned, conventionalized gestures can interfere with the processing of facial expressions. Participants ( $N=62$ ) categorized the valence of videos of actors producing positive (happy, positive surprise) and negative (sad, angry, fearful surprise, disgust) facial expressions accompanied by valence-congruent or incongruent positive (thumbs-up, a-ok) and negative (thumbs-down, shaking fist) gestures. Participants were alternately instructed to judge either the face or the gesture, ignoring the task-irrelevant expressive channel. A linear-mixed effect model with random effects for subjects and stimuli revealed that when the face and gesture were valence-incongruent (versus valence-congruent) participants were 55 ms slower to make a correct valence judgment,  $SE=17.17$ ,  $t=3.21$ ,  $p<.01$ . This effect was not moderated by instructed attention to the face or gesture, suggesting that culturally-learned, conventionalized gestures influence facial expression judgments and vice-versa. The current work demonstrates that the affective meaning of even culturally-learned, conventionalized gestures is processed automatically and unavoidably alongside facial expressions.

### POSTER B-43

#### MENTALIZING IMAGERY THERAPY FOR DEMENTIA CAREGIVERS: FEASIBILITY AND NEURAL MECHANISMS

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Background: Mentalizing Imagery Therapy (MIT) for dementia caregivers seeks to promote greater self and other understanding amid the complex interpersonal challenge of caring for a loved one who is losing their mind. We conducted a pilot study of MIT for depressed dementia caregivers to understand feasibility and candidate neural mechanisms. Methods: We enrolled 26 depressed caregivers in a controlled, single blind trial of MIT to determine a preliminary effect size relative to a minimal relaxation control condition (provision of a progressive muscle relaxation cd). Narrative interviews were conducted to ascertain subjective benefits. Resting state functional connectivity changes were assessed pre to post CMIT with fMRI. Results: Those completing CMIT ( $N = 11/13$ ) participated in 98% of the 4 meditation sessions, practiced at home  $5 \pm 2$  (SD) times per week, and exhibited moderate reductions in depression relative to control. Narrative interviews revealed benefits arising from contact with the instructor, increased perspective taking, and relaxation exercises. Functional connectivity analyses pre to post CMIT found reductions in bilateral subgenual cingulate connectivity with ventromedial prefrontal cortex, and increases in left dorsolateral prefrontal cortical connectivity orbitofrontal cortex. Conclusions: CMIT is a feasible intervention for dementia caregivers. Narrative reports suggest that MIT facilitates increased perspective taking along with greater relaxation. Neuroimaging suggests CMIT yields alterations in affective and executive network connectivity.

### POSTER B-44

#### CONTEXT-APPROPRIATE REAPPRAISAL DURING DAILY STRESSORS IS ASSOCIATED WITH BETTER PSYCHOLOGICAL HEALTH

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*Descriptors: emotion regulation, reappraisal, context*

Certain emotion regulation strategies (e.g., reappraisal) are associated with psychological health benefits. However, it is unlikely that any particular emotion regulation strategy is inherently beneficial, regardless of context. Indeed, reappraisal has greater benefits in the context of uncontrollable compared to controllable life stress. Thus, individuals who tend to use reappraisal in a context-appropriate way (i.e., more during uncontrollable stressors and less during controllable stressors) should experience psychological health benefits. To test this hypothesis, we used a daily-diary methodology that assessed covariation between the controllability of participants' daily stressors and the extent to which they used reappraisal during these stressors. Context-appropriate reappraisal was associated with greater psychological health, even when controlling for habitual reappraisal use. These findings support a theoretical model of emotion regulation in which the ability to selectively choose emotion regulation strategies that are appropriate for the context is a key ingredient in psychological health.

### POSTER B-45

#### TWO WAYS TO THE TOP BUT ONE WAY TO HEALTH: TRAIT DOMINANCE AND PRESTIGE DIFFERENTIALLY PREDICT SELF-REPORTED AFFECT, STRESS, AND HEALTH

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*Descriptors: dominance & prestige, stress, health*

Social status is robustly linked with health outcomes in most human societies. Individuals with higher SES live longer, experience increased well-being, and have lower rates of stress-linked disease. Recent work suggests that status can be earned by two, distinct sets of social behaviors: Dominance, a propensity to use force or intimidation to earn status, and Prestige, entailing the use of competence, success, or skills to earn status. But the extent to which these routes to status differentially predict affect, stress, and health has not been investigated. In this study, a college-aged sample ( $n = 600$ ) answered surveys regarding their trait levels of dominance and prestige, general affective states, and self-reported stress and health. Relationships between these variables were explored via bootstrap bias-corrected parameter estimates of indirect effects within structural equation models. In support of previous work linking social status to stress and health, trait prestige levels related to increased positive affect and reduced negative affect, reduced stress, and increased self-reported health. But trait dominance showed a distinct, opposing pattern of relationships: Trait dominance related to increased negative affect, increased stress, and reduced health. These results are discussed in terms of future research for understanding the social processes and putative biological mechanisms that underlie societal health gradients.

### POSTER B-46

#### PERSONALITY CHARACTERISTICS AND THE INFLUENCE OF ACTIVATED EMOTION REGULATION STRATEGY ON ANGER

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University of Warsaw

*Descriptors: emotion regulation, personality, anger*

We claim that adaptive emotion regulation depends on both: situational context and personality characteristics of the person who regulates. In our recent study we examined how personality characteristics relate to the influence of emotion regulation strategy (reappraisal or suppression) on experienced anger (elicited by a movie clip). The study consisted of two stages. In the first stage big five traits as well as the level of narcissism, and trait anger were measured by questionnaires. In the second one, participants (180 students) watched a fragment of a movie aimed at eliciting anger ("My bodyguard" - selected on the base of results of previous studies). Before watching the clip they got instructions to either reappraise or suppress their emotions or "just watch". The results showed that, as we predicted, several personality traits (specifically extraversion, neuroticism, openness to experience, narcissism and trait anger) mediated the influence of activated strategy on experiences level of positive and negative emotions, including anger. This suggests that the effectiveness of strategies used depend on personality characteristics rather than just the strategy itself.

### POSTER B-47

#### DISRUPTION OF SALIENCE BRAIN NETWORK IN SCHIZOPHRENIA

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*Descriptors: salience network, schizophrenia*

Schizophrenia is a chronic, severe, and disabling brain disorder characterized by disrupted interactions of large-scale brain networks. Recent neuroimaging findings have associated psychosis with abnormalities in the salience network. This network has two subsystems and has been implicated in attention (dorsal salience subsystem), affect and allostasis (ventral salience subsystem). Despite its importance in psychosis, previous studies have focused on the salience network as a single system and little is known about the abnormalities of its subsystems in schizophrenia. Using intrinsic functional connectivity magnetic resonance imaging (fMRI), we compared the dorsal and ventral salience subsystems in 14 patients with schizophrenia and 16 healthy controls. Our results showed that relative to the healthy controls, individuals with schizophrenia have preferential reductions in the dorsal salience subsystem, including dorsal anterior insula connectivity with mid-cingulate cortex ( $p < 0.05$ ). Notable increases in connectivity were observed in the ventral salience subsystem. Patients with schizophrenia had preferential increases in ventral anterior insula connectivity with posterior cingulate cortex and subcortical regions such as caudate and thalamus ( $p < 0.05$ ). Our findings show that salience network disruption is heterogeneous in schizophrenia. The findings are discussed with an active inference framework of brain function in schizophrenia.

### POSTER B-48

#### FINDING YOUR HAPPY PLACE: HIGH MINDFULNESS IS ASSOCIATED WITH INCREASED REAPPRAISAL OF INTENSE NEGATIVE STIMULI

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University of North Carolina at Charlotte

*Descriptors: emotion regulation, mindfulness, reappraisal*

Mindfulness is a form of metacognitive awareness that involves a process of decentering to allow for shifts in cognition that enable alternate appraisals of life events. Trait positive reappraisal, the positive reframing of negative events, has been associated with increased mindfulness and is effective for facilitating long-term adaption to negative stimuli. While mindfulness is postulated to be associated with an increased capacity for processing negative content, the regulatory implications of this in the context of emotion regulation choice (ERC) have yet to be tested. Accordingly, 159 participants completed the five facet mindfulness questionnaire and an ERC task in which they chose to implement a strategy (distraction or reappraisal) that would best lower their negative affect in response to low, moderate and high intensity negative pictures. We conducted a repeated measure ANOVA of reappraisal choice across intensity with mindfulness scores entered as a continuous independent variable. Results revealed a main effect of intensity ( $F(2,314) = 17.44, p < .001$ ) and a significant interaction with mindfulness ( $F(2,314) = 5.37, p < .005$ ) such that higher mindfulness was associated with increased reappraisal choice as negative intensity increased, (correlation = .21,  $p < .01$ ). These findings provide empirical support for the notion that individuals who are high in mindfulness have an increased propensity to process negative affect of high intensity. Findings also suggest that reappraisal of negative content could be a process central for achieving or maintaining mindfulness.

**POSTER B-49****POSITIVE AFFECT DEFICITS IN GENERALIZED ANXIETY DISORDER: TESTING DAMPENING AS A POTENTIAL MECHANISM**

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*Descriptors: positive affect, dampening, generalized anxiety disorder*

Generalized anxiety disorder (GAD) predicts deficits in positive affect (PA). These PA deficits tend to worsen in GAD treatment. Thus, it is crucial to understand the mechanism underlying PA deficits in GAD. Dampening, or intentional suppression of PA, is one possible mechanism. We tested the hypothesis that dampening mediates the observed relationship between high worry and low PA. 96 high-worry adults (GAD analogs) completed four daily measurements of worry, dampening, and PA for a week ( $M = 24.2$  observations per person). Structural equation models were applied individually to each person's data to test the hypothesized mediation path. For each person, the hypothesis would be supported if worry at time ( $t-2$ ) positively predicted dampening at time ( $t-1$ ), and dampening at ( $t-1$ ) negatively predicted PA at time ( $t$ ). Surprisingly, fit statistics (RMSEA, SRMR, CFI) revealed that the model was well-fit for only 37/96 individuals (38.5%); of those, the hypothesized mediation path was present in only 6 (6.3% of the sample). This null result, although surprising given current theories of emotion in GAD, is a new and important contribution to our understanding of PA deficits in this population. Specifically, this finding highlights the possibility that PA deficits in GAD are not from intentional suppression as presumed, but instead arise from unconscious bottom-up processes (e.g., neural circuitry of reward sensitivity). Understanding dampening as a mechanism of PA deficits in GAD has important implications for GAD treatment; new hypotheses and future directions will be discussed.

**POSTER B-51****SUSTAINED PUPIL DILATION TO SAD FACES IS ASSOCIATED WITH SELF-REPORTED RUMINATION IN ADULTS WITH AUTISM SPECTRUM DISORDER AND ADULTS WITH DEPRESSION**

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*Descriptors: autism spectrum disorder, depression, rumination*

Autism spectrum disorder (ASD) is a population marked by both repetitive thinking and high rates of depression. We aimed to (1) to compare ASD to typically developing depressed (DEP) and never-depressed controls (TDC) on depressive rumination and on pupil measures of sustained neural response to social-emotional material; and (2) to assess whether rumination is related to sustained cognitive-affective response in general, and within ASD specifically.  $N=53$  adults aged 18-35 with verbal  $IQ>80$  were recruited from three cohorts (ASD,  $n=21$ ; DEP,  $n=13$ ; TDC,  $n=19$ ). Participants completed diagnostic assessments, self-reported on depressive rumination with the Ruminative Response Scale (RRS), and provided pupillary response data within a passive-viewing task in which emotionally expressive faces were displayed for 400 ms, followed by an 8 second mask. On RRS scores ( $F(2,47)=18.8, p<.001$ ), the ASD group ( $M=42.3, SD=13.4$ ) was significantly higher than TDC ( $M=30.6, SD=8.0$ ) and significantly lower than DEP ( $M=53.3, SD=7.0$ ). For 3 of 4 emotion conditions, ASD pupil magnitudes were significantly lower than DEP at second 2; by second 8, ASD was significantly higher than TDC and not different from DEP following Happy and Angry faces. In ASD ( $F(7, 105)=2.11, p=0.048$ ) and more robustly in the total sample, higher RRS groupings had greater pupil dilation over time to Sad faces. This work locates ASD rumination scores on a continuum and suggests that individuals who endorse ruminating (both ASD and non-ASD) are more likely to exhibit sustained neural activity following dysphoric stimuli.

**POSTER B-52****THE EVIL OF BANALITY: WHEN CHOOSING BETWEEN THE MUNDANE FEELS LIKE CHOOSING BETWEEN THE WORST**

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*Descriptors: anxiety, choice, conflict*

What kinds of choices worry us most? In our previous research we asked this question using sets of items with moderate to high value for the decision-maker. In that work, we found that choices between higher value options were most attractive, but also provoked the most anxiety. Here, across three studies ( $Ns = 12-26$ ), we tested whether choice anxiety would continue to decrease when considering sets of low or "zero" value items. Participants made hypothetical choices between sets of four goods (constructed based on earlier ratings of each item), and then retrospectively rated their experience of anxiety and liking for each set. Surprisingly, we found that choice anxiety is a U-shaped function of set value: high for choices between the least valuable items, lower for moderate-value sets, and high again for high-value sets. These results decouple anxiety from set liking, since liking instead decreased monotonically with decreasing set value. Moreover, when having participants separately rate the choice options on a bipolar scale (negative to positive) we found that liking for the low-value sets was actually negative, suggesting that such items might be perceived as aversive rather than simply unpreferred. In relation to this bipolar scale, anxiety corresponded to the distance of the average set value from the zero point on the scale (all  $ps < 0.01$ ). Collectively, our findings are consistent with the possibility that choice anxiety scales with the motivational salience of one's choice set, and that such sets can acquire negative value even in the range of hypothetical gains.

**POSTER B-53****THE IMPACT BIAS IN SELF AND OTHERS: UNDERSTANDING AFFECTIVE AND EMPATHIC FORECASTING IN INDIVIDUALS WITH SOCIAL ANXIETY**

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*Descriptors: affective forecasting, empathic forecasting, social anxiety*

Research finds that people overestimate the intensity of negative affect (i.e., impact bias) when making predictions about their own and others' responding, termed affective and empathic forecasting, respectively. Although social anxiety is associated with other cognitive biases, its association with impact biases has not been examined. A sample ( $N=68$  dyads) of undergraduates with ranging social anxiety symptom severity were randomized to one of two roles (Subject vs. Partner) and conditions (Disappoint vs. No-Disappoint). Dyads were told they would be working together to win/lose money. In the Disappoint condition, the Subject was set up to lose money for their team. In the No-Disappoint condition, the team lost money, but it was unclear who was responsible. As hypothesized, Subjects' estimates of their Partners' post-task affect revealed a Condition x Social Anxiety interaction ( $b=.55, p=.006$ ). In the Disappoint condition, Subjects' social anxiety was associated with an overestimate of their Partners' post-task negative affect ( $p<.001$ ), but in the No-Disappoint condition it was not ( $p=.31$ ). Evidence of an affective forecasting bias emerged, but was not related to social anxiety ( $p=.48$ ). Evidence of an empathic forecasting bias also emerged, and was related to social anxiety symptoms across conditions ( $b=.50, p=.02$ ). Social anxiety was linked with Subjects' overestimation of their Partners' post-task negative affect, particularly in the context of perceived responsibility. Impact biases may contribute to the social avoidance that characterizes social anxiety disorder.

### POSTER B-54

#### DON'T MIND THE MATTERS: THE ADVANTAGE OF MINDFULNESS IN MOTOR PERFORMANCE COMPETITION

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*Descriptors: mindfulness, anxiety, motor performance*

Performance pressure can promote anxiety. The accompanying increase in physiological arousal and reallocation of attentional resources can result in underperforming, known as choking under pressure. Research suggests the extent to which pressure influences motor performance may depend on individual differences in the degree to which anxiety increases while performing under pressure. Mindfulness represents a mental mode whereby attention is self-regulated in an emotionally nonreactive manner. As dispositional mindfulness can attenuate anxiety in stressful environments, it may reflect an individual difference in performers' susceptibility to choking under pressure. Specifically, individuals with high degrees of dispositional mindfulness may be less likely to experience increases in anxiety under pressure and therefore less likely to choke. The present study tested this hypothesis by having 83 participants perform a novel, closed-motor task (rolling a ball 100 cm to a target) under low- and high-pressure conditions. Self-reported state anxiety was assessed just prior to each condition, and mindfulness was indexed at the end of each data collection. Results revealed mindfulness attenuated choking under pressure ( $t(81) = 4.33, p < .001, \text{Beta} = 0.194$ ), but changes in state anxiety did not mediate this relationship. Although the mechanisms remain unclear, this is the first experimental evidence that mindfulness attenuates choking under pressure during motor performance. These results implicate mindfulness training as a tool that may be beneficial to alleviate choking under pressure.

### POSTER B-55

#### NEGATIVE MEMORY BIAS AS A VULNERABILITY FOR DEPRESSION: RELATIONSHIP BETWEEN MOMENTARY STRESS-REACTIVE RUMINATION AND EVENT RECALL

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Temple University

*Descriptors: depression, rumination, memory*

Despite the large body of research identifying rumination as a vulnerability for depression, considerably less work has examined mechanisms through which rumination exerts its deleterious effects on mood. Rumination may contribute to depression by increasing the encoding and availability of negative memories. While cross-sectional studies have demonstrated links between rumination and negative memory biases, the current study is the first to utilize ecological momentary assessment to examine the role of rumination directly after the experience of daily life stress in predicting improved stressor recall at follow-up. 121 participants received 4 smartphone alerts per day for 1 week in which they indicated negative life event (NLE) occurrence since the last alert and levels of rumination and depressed mood after each event. Memory for NLEs was tested at a 2-week follow-up and depressive symptoms were measured again 2 weeks later. Using hierarchical linear modeling, it was found that NLEs followed by increased rumination relative to individuals' means were significantly more likely to be recalled ( $B = .02, \text{OR} = 1.02, p < .05$ ). An interaction also emerged between the number of NLEs experienced and proportional recall score, such that individuals who endorsed and recalled greater numbers of stressors during the EMA week displayed increased depressive symptoms at follow-up ( $B = 1.08, p < .05$ ). Findings support the role of rumination and memory biases as vulnerability factors for depression, and suggest potential clinical benefits of modifying ruminative response styles to daily stress.

### POSTER B-56

#### IS THERE REALLY A SOCIAL COST TO EMOTIONAL SUPPRESSION?

Philippa-Sophie Connolly, George A. Bonanno  
Columbia University, Teachers College

*Descriptors: context, suppression, flexibility*

Expressive suppression has generally been classified as maladaptive and incurring of social costs. However, emerging concepts of regulatory flexibility (Bonanno & Burton, 2013) suggest that the ability to suppress in concordance with contextual demands may produce adaptive benefits and ameliorate social consequences. The current study investigated this idea by examining social judgments of suppression across three contexts. Following Szczurek et al. (2012), we asked participants to evaluate individuals either suppressing or expressing in response to images eliciting negative or positive emotion without contextual information. We also extended our study to include two different context conditions, each providing justification for the suppression behavior. We observed a significant social cost of suppression, replicating Szczurek et al. (2012). Contrary to our predictions, however, suppressors were judged more harshly than expressors regardless of context condition. This indicates that although suppression may produce adaptive benefits, the social costs of this behavior appear to be pervasive.

### POSTER B-57

#### BASELINE PSYCHOPATHOLOGY PREDICTS ADVERSE EFFECTS IN MINDFULNESS-BASED INTERVENTIONS

Kaia Sargent, Willoughby Britton  
Brown University

*Descriptors: mindfulness*

Background: Mindfulness-based interventions are used to treat a variety of mental health concerns. However, there is currently very little information on the prevalence of meditation-related adverse effects (AEs) or risk factors that might predict them. Methods: In a recent study, we systematically assessed AEs using the Meditation Experiences scale (MEDEX) in a randomized controlled trial of Mindfulness-Based Cognitive Therapy ( $n = 104$ ). In the current study, hypothesized risk factors for MEDEX scores included a diagnosis of major depressive disorder (MDD) and schizotypal personality disorder (SPD), which were assessed with a Structured Clinical Interview at baseline. Results: Participants with a pre-treatment diagnosis of MDD had a significantly greater MEDEX score at a 3-month post-treatment assessment, both for negatively-valenced experiences ( $t(89) = -2.419, p = 0.018$ ) and for experiences of any valence ( $t(79) = -2.436, p = 0.017$ ). Participants with a high pre-treatment SPD score had a significantly greater MEDEX score for experiences of any valence ( $t(79) = -2.175, p = 0.033$ ), although means did not differ for negatively-valenced experiences ( $t(89) = .040, p = 0.968$ ). These results indicate that baseline diagnosis of MDD or SPD predicts a greater number of adverse effects as a result of meditation. However, these experiences are not negatively appraised for individuals with SPD, who may already have a predisposition for psychotic-like experiences.

### POSTER B-58

#### WHEN THE GOING GETS TOUGH: EMOTION REGULATION AND SUBSTANCE USE IN SEXUAL MINORITIES

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The Ohio State University

*Descriptors: emotion regulation, substance use, LGB mental health*

Introduction: Lesbian, gay, and bisexual (LGB) individuals experience higher rates of mental illness than heterosexuals (Gilman et al., 2001), which is likely due to sexual orientation-specific discrimination (Meyer, 2003). Indeed, such stressors have been linked to excessive alcohol and substance use (Willoughby et al., 2010). Although adaptive emotion regulation (ER) has been proposed as a buffer between experiences of discrimination and psychopathology (Hatzenbuehler et al., 2009), few studies have specifically examined this relationship for substance-related pathology. Method: LGB Participants (N=406, 53% female) were recruited via mTurk and Facebook for three online studies investigating ER and completed self-report measures: Short Michigan Alcohol Screening Test (SMAST), Drug Abuse Screening Test (DAST), Difficulties with Emotion Regulation Scale (DERS), Daily Heterosexist Experiences Questionnaire (DHEQ). Results: DHEQ-Victimization and DERS scores individually predicted clinical SMAST and DAST scores ( $p$ 's < .01). A significant DHEQ-Family Rejection by DERS interaction predicted SMAST scores ( $p = .039$ ), where high DERS scores were associated with greater alcohol use ( $\beta = .169$ ,  $p = .003$ ) and low DERS scores were not ( $\beta = .003$ ,  $p > .05$ ). Discussion: Findings suggest that ER difficulties might exacerbate the link between minority stress and alcohol use. Future work should seek to elucidate the potential protective role of ER in the context of minority stress. These results begin to highlight intervention targets to decrease alcohol and substance use in LGB individuals.

### POSTER B-60

#### STRESS-INDUCTION DISRUPTS AMYGDALA RESTING-STATE FUNCTIONAL CONNECTIVITY IN INDIVIDUALS EXPOSED TO VIOLENCE

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*Descriptors: resting state functional connectivity, stress response, violence exposure*

Stress-induced changes in the brain impact susceptibility to internalizing disorders like anxiety and depression. Specifically, prolonged exposure to stress can elicit changes in brain connectivity patterns that affect psychological functioning. Resting state functional connectivity (rsFC) is a widely used metric to examine changes in functional brain connectivity. While rsFC as a function of prior life stress and stress induction have been examined independently, few studies have examined these in concert, and few have examined the effects of violence exposure (VE) as a chronic stressor. The present study examined the relationship between rsFC and VE following lab-induced stress. Participants ( $n = 160$ ) completed two resting state fMRI scans, one before and one after completing the Montreal Imaging Stress Task to determine changes in rsFC post-stress. A linear mixed effects model was conducted to determine whether there was a linear or curvilinear relationship between VE and rsFC pre- to post-stress. There were significant amygdala-inferior parietal lobule (IPL), and amygdala-right dorsomedial prefrontal cortex changes in rsFC as a function of VE pre- to post-stress ( $p < .001$ ); and significant hippocampus-IPL changes in rsFC as a function of VE ( $p < .001$ ) pre- to post stress. Participants with low and high VE exhibited greater changes in rsFC compared to those with moderate VE. These results elucidate the relationship between VE and individual variability in the neural networks that mediate emotion regulation processes.

### POSTER B-61

#### MOOD CONGRUENT EFFECT ON 5-YEAR-OLDS' ATTENTION

Ji Yong Cho  
University of Pennsylvania

*Descriptors: young children, mood, attention*

Attention giving is not only the initial step but also a crucial part of learning for youngsters who are in the process of developing self-regulation, considering that people in general tend to pay more attention to and better remember emotionally consistent information (Schimid & Mast, 2010). The present study focused on mood congruent effect on young children's attention. Face-emotional Stroop task, developed with Python and implemented via laptop, was conducted on 95 5-year-olds (Female = 55, Male = 40, Mean = 5.41 years, SD = 0.25) in South Korea. Children were randomly assigned to an emotion group: happy, neutral, and sad. In the task, while listening to induction music, the individual child was asked to push a color button corresponding to the color of the stimulus. The stimuli pool consisted of 3 types (happy face, sad face, and chair) in 2 colors (red and blue). A longer reaction time was expected when induction music matched the emotional stimuli. Multivariate Analysis of Variance showed no main effects of music and gender in reaction time. However, the interaction effect between music and gender was statistically significant ( $p = 0.048$ ), especially in happy face ( $p = 0.008$ ). Girls in happy and sad groups and boys in the neutral group took more time to react to happy face. The mood congruence effect was only found with happy emotion for girls. This result suggests that girls paid more attention to positive emotional information in emotional states, while boys paid more attention to positive emotional information when they were not in an emotional state.

### POSTER B-62

#### BEYOND INFORMATION: THE ROLE OF EMOTION AND HUNGER IN PERCEPTIONS OF CALORIC CONTENT

Talya Lazerus, Julie Downs  
Carnegie Mellon University

*Descriptors: emotion, hunger, food*

Most food choice interventions involve providing nutritional information to consumers, with the expectation that more information will lead to better-informed choice. However, there has been little work directly investigating how people's beliefs operate in the absence of explicit nutrition information and how they process provided nutrition information. This paper investigates how people interpret and make decisions about common food items when no explicit information is given and how emotion and hunger affect those perceptions. Three exploratory studies delve into which elements affect perceptions of food, specifically estimations of calories in foods in the absence of any nutrition information. In Study 1a (N = 101), the presence of negative affect predicted estimating more calories, only when self-reported hunger is low,  $F(1, 89.76) = 5.70, p = .019$ , and positive affect was associated with lower calorie estimates, especially for higher-calorie foods,  $F(1, 1318) = 4.77, p = .029$ . Study 1b (N = 121) replicated the pattern of Study 1a for negative affect,  $F(1, 111) = 2.73, p = .1$ . Additionally, experimentally-manipulated hunger led to estimating fewer calories in food, but when positive affect was high, the effect was attenuated,  $F(1, 110) = 4.50, p = .036$ . Study 2 (N = 104) replicated Study 1a's finding that positive emotion is associated with lower calorie estimates, especially for higher-calorie foods,  $F(1, 110) = 4.50, p = .036$ . The results suggest a complicated relationship between hunger and emotion for calorie estimations.

### POSTER B-63

#### BROODING OVER BELONGING: THE DETRIMENTAL EFFECTS OF RUMINATION IN CONTEXTS OF LOW SOCIAL BELONGING

Nathan Huebschmann, Robbi Melvin, Mahal Alvarez-Backus, Mollie Rich, Erin Sheets  
Colby College

*Descriptors: rumination, depression*

Integration into college life is a difficult process that students tackle with varying degrees of success. Previous studies have shown the important role that forming a sense of belonging plays in the physical and mental health of young adults. It is evident that poor social belonging increases risk for depression and anxiety, but it is less clear what cognitive processes may contribute to or protect against these effects. The present study (N=256) examined ruminative brooding and reflective pondering as potential mediators or moderators of the effect of sense of belonging on depressive symptoms in emerging adults. Hierarchical regression models indicated that brooding moderated, but did not mediate, the association, such that a brooding cognitive style exacerbated the effects of low belonging on depressive symptoms,  $t(253) = 9.67, p < 0.001$ . Similarly, reflective pondering moderated the effects of belonging on depressive symptoms. Moderation was specific to emotional health. Neither brooding nor reflective thinking affected the impact of poor social belonging on alcohol use or alcohol-related consequences. These findings underscore the importance of prevention and intervention efforts that enhance social engagement and target ruminative thinking in emerging adults.

### POSTER B-64

#### ALEXITHYMIA AND AROUSAL BASED DEFICITS IN SERIOUS MENTAL ILLNESS

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Louisiana State University

*Descriptors: serious mental illness, alexithymia, arousal*

Alexithymia, a personality trait characterized by difficulties in identifying and describing, is a persistent feature in serious mental illness (SMI). It is still unclear whether alexithymia represents abnormally low levels of physiological and subjective components of emotional arousal, or if alexithymia is better understood as discordance in these systems. We tested the hypothesis that as arousal levels in emotional stimuli increases, physiological and subjective components of emotional arousal would decrease in those with higher alexithymic traits. The current study examined individuals with SMI (n=43) and non-patient controls (n=27) on the Toronto Alexithymia Scale, which consists of three subscales: difficulties identifying feelings, difficulties describing feelings, and externally oriented thinking. Participants also produced natural speech during separate low and high arousal positive narrative tasks, for which, measures of self-reported state arousal and objectively-defined acoustic energy were collected. Contrary to expectations, difficulties identifying feelings were related to an increase in physiological responses in controls,  $r(25) = .49, p = .01$ , while difficulties describing feelings were related to an increase in subjective arousal responses in SMI,  $r(41) = .37, p = .02$ . Furthermore, difficulties describing feelings in SMI were related to a discord among these two response systems. Results suggest that alexithymia is best conceptualized hyper-reactivity in physiological and subjective responses, as well as discordance between the two systems, to emotional arousal.

### POSTER B-65

#### HAIRY AND SCARY: BEARDS INFLUENCE EMOTION RECOGNITION

Belinda M. Craig<sup>1</sup>, Nicole L. Nelson<sup>2</sup>, Barnaby J. W. Dixon<sup>2</sup>  
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*Descriptors: beards, emotion recognition, person construal*

Beards are a sexually dimorphic masculine facial feature. The presence of a full beard on the face has been found to increase perceived aggressiveness and dominance; however, research is yet to investigate whether and how beards influence the recognition of facial emotional expressions. To address this, participants categorized facial expressions of happiness and anger (Experiments 1 and 2) or sadness (Experiment 3) as quickly and accurately as possible. These expressions were posed by the same individuals photographed with at least four weeks of untrimmed facial hair growth and again when clean-shaven. A sample of 76 participants tested in the laboratory (Experiment 1) and a sample of 144 participants tested online (Experiment 2) were faster to categorize expressions of anger than happiness on bearded faces, but faster to categorize expressions of happiness than anger when the faces were clean-shaven. In a third experiment (N = 91), participants tested online were faster to categorize happiness than sadness on bearded faces, but were no faster to categorize happiness or sadness on clean-shaven faces. These patterns suggest that beards influence our earliest impressions of others—enhancing expressions of aggression but concealing sorrow. These findings provide further evidence that beards may be an evolved signal of dominance and status and may also have implications for the effective communication of certain emotions in cultures or subcultures where beards are fashionable or prescribed.

### POSTER B-67

#### WHEN GOOD THINGS MAKE YOU FEEL BAD: NEURAL AND BEHAVIORAL CORRELATES OF NEGATIVE AFFECT INTERFERENCE

Sarah Herzog<sup>1</sup>, Jonathan DePiero<sup>2</sup>, Amanda Collier<sup>3</sup>, Tony Cao<sup>3</sup>, Steven Freed<sup>1</sup>, Ashley Doukas<sup>1</sup>, Erin Stafford<sup>1</sup>, Vivian Khedari<sup>1</sup>, Nadia Nieves<sup>1</sup>, Reese Minshew<sup>1</sup>, Marlee L. Pyzewski<sup>3</sup>, Sarah Caligiuri<sup>2</sup>, Thomas E. Kraynak<sup>4</sup>, Marcus Min<sup>4</sup>, Melissa Milbert<sup>3</sup>, Joshua Feldmiller<sup>3</sup>, Michele Feingold<sup>3</sup>, Luann Shutt<sup>4</sup>, Lydia Leichter<sup>4</sup>, Greg J. Siegle<sup>4</sup>, Wendy D'Andrea<sup>1</sup>

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*Descriptors: emotion reactivity, fMRI, PTSD*

Growing evidence suggests that some individuals report negative affect in situations that might normally bring pleasure, a phenomenon called Negative Affect Interference (NAI). NAI has been associated with clinical phenomena, yet little is known about the neural systems associated with this experience. The present multisite study examined relations among NAI, psychiatric symptoms, and behavioral and neural metrics of emotion reactivity. Eighty-five participants with diverse clinical diagnoses viewed positive, negative, neutral and trauma-related words during fMRI; and rated emotionality and personal relevance of the words post-task. fMRI analyses were done with an anatomical ROI approach, focusing on areas implicated in affect reactivity and regulation. In the Site 1 sample (n=27), NAI was related to greater amygdala reactivity to positive (r=.38\*) and neutral words. At Site 2 (n=58), NAI was related to less DLPFC reactivity to negative words (r=-.37), a possible indication of dysregulated responding, while higher positive emotionality was associated with greater DLPFC activation to negative words (r=.43\*\*). Behaviorally, NAI was related to lower valence and personal relevance ratings for positive words across sites. Although dysregulated affective responding is endemic to psychopathology in general, NAI was uniquely related to PTSD symptoms, and predicted valence ratings for positive words above PTSD, borderline and depressive symptoms. Findings provide evidence for unique contributions of NAI to alterations in behavioral and neural responses to emotional stimuli.

### POSTER B-68

#### EMOTIONAL MEMORY IN SCHIZOPHRENIA

Lauren P. Weittenhiller<sup>1</sup>, Janelle M. Painter<sup>2</sup>, Erin K. Moran<sup>3</sup>, Ann M. Kring<sup>4</sup>  
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*Descriptors: schizophrenia, memory*

Emotional memory may play a key role in decision making and motivation. The emotion enhancement effect, in which memory is improved for emotionally evocative relative to neutral stimuli, has been observed in nonclinical populations, but results are mixed in schizophrenia. To explore memory for emotionally evocative stimuli, thirty-three people with schizophrenia and thirty-four nonclinical control participants rated their emotional experience using a novel emotional memory task. We presented positive, neutral, and negative pictures and jellybeans to assess responses to visual and taste stimuli. After a 48-hour delay, participants' memory of the stimuli and their emotional experiences were assessed (free recall and recognition). Although participants with and without schizophrenia evidenced similar in-the-moment emotional experiences, participants with schizophrenia remembered negatively valenced stimuli as more unpleasant than they had in-the-moment (p < .05), and this might contribute to elevated trait negative affectivity in schizophrenia. Control participants showed greater recall for emotionally evocative compared to neutral stimuli (p < .05), whereas participants with schizophrenia recalled neutral and emotional stimuli equally well. Diminished emotion enhancement in schizophrenia may contribute to avolition.

## POSTER SESSION C

Saturday, April 29, 2017

## Poster Schedule

12:00 noon-1:00 p.m. .... Assemble your poster  
 1:00 p.m.-4:15 p.m. .... Poster viewing  
**2:45 p.m.-4:15 p.m. .... Author present**  
 4:15 p.m.-5:15 p.m. .... Take down your poster

## POSTER C-1

## TRAIT POSITIVE AFFECT, RESTING CARDIAC VAGAL TONE AND EXECUTIVE BRAIN FUNCTION

Wei Lü, Zhenhong Wang  
 Shaanxi Normal University

*Descriptors: trait positive affect, cardiac vagal tone, executive brain function*

Positive affect has been associated with favorable health outcomes, and it is likely that several biological processes mediate the effects of positive affect on physical health. Evidence showed that trait positive affect was associated with resting cardiac vagal tone. Recently, a study found that resting cardiac vagal tone index of resting-state vagally mediated heart rate variability (vmHRV), was related to intraindividual reaction time variability (IIV), defined as the variability in trial-to-trial response times, and reflects executive brain function. However, it is unclear what the relationships among trait positive affect, resting vmHRV and IIV. The present study is to examine this issue. One hundred-twenty participants were administered PANAS first, and then completed a 5-min resting baseline period during which resting-state vmHRV was assessed, and then completed an attentional (target detection) task, where reaction time, accuracy, and trial-to-trial IIV were obtained. Results showed trait positive affect was significantly related to resting vmHRV and IIV, such that higher trait positive affect predicted higher resting vmHRV and lower IIV on the task ( $\beta=0.32$ ,  $p=.002$ ;  $\beta=-0.28$ ,  $p=.01$ ). Meanwhile, resting vmHRV was also significantly negative related to IIV ( $\beta=-0.30$ ,  $p=.001$ ). Overall, our results provide evidence for the link among trait positive affect, resting cardiac vagal tone and executive brain function.

## POSTER C-2

## THE LATE POSITIVE POTENTIAL TO IMAGINED NEGATIVE SCENES

Annamarie MacNamara  
 Texas A&M University

*Descriptors: late positive potential, event-related potential, imagery*

The late positive potential (LPP) can be used to assess neural response to feared objects and is typically elicited using emotional pictures of faces or scenes. Knowing how the brain responds when people are asked to imagine feared scenarios (instead of perceiving a feared object) may help in understanding the mechanisms underlying mood and anxiety disorders, and might help to refine treatment. For example, exposure therapy was devised around the notion that imagining feared scenarios would induce both subjective emotional response and objective physiological responding similar to that elicited when a person encounters a feared object. Here, 25 participants (14 female) listened to auditory descriptions of negative and neutral scenes, prior to imagining these scenes for 10 seconds. EEG was recorded and participants also rated each scene on valence and arousal dimensions. Compared to neutral scenes, negative scenes elicited more unpleasant (Neg:  $M = 5.03$ ,  $SD = 1.46$ ; Neut:  $M = 2.39$ ,  $SD = .84$ ) and more arousing (Neg:  $M = 6.16$ ,  $SD = 1.82$ ; Neut:  $M = 1.91$ ,  $SD = 1.27$ ) ratings ( $t_s > 8.81$ ;  $p_s < .001$ ). In addition [ $F(1,24) = 10.0$ ,  $p = .004$ ], the LPP was larger for negative ( $M = 7.07$ ,  $SD = 9.50$ ) compared to neutral scenes [ $M = -.73$ ,  $SD = 7.23$ ;  $t(24) = 2.68$ ,  $p = .01$ ] during the imagine period only (10-20 seconds after the description). Results provide the first evidence of an LPP to imagined auditory scenes and pave the way forward for convergent work incorporating other measures of defensive reactivity that have been assessed during negative imagery (e.g., fMRI BOLD, eyeblink startle).

## POSTER C-3

## RESPIRATORY SINUS ARRHYTHMIA IS ASSOCIATED WITH IMPULSIVITY IN PRESCHOOLERS

Zhenhong Wang, Wei Lü  
 Shaanxi Normal University

*Descriptors: RSA withdrawal, impulsivity, preschoolers*

The association between respiratory sinus arrhythmia (RSA) and impulsivity was examined in previous studies; however, the findings were inconsistent. The present study aims to further examine the association between respiratory sinus arrhythmia (resting RSA and RSA withdrawal) and impulsivity in preschoolers. Physiological data were collected from 93 preschoolers ages 4-6 years during baseline and fear film clips-viewing period in the lab, and their impulsivity data were collected in 2 waves within a 1-year lag (before and one year after physiological data collection) through parents-report questionnaire of children's impulsivity. Results indicated that RSA withdrawal was significantly negatively correlated with the level of impulsivity (time 1  $r = -0.35$ ,  $p=.02$ ; time 2  $r = -0.38$ ,  $p=.01$ ) and was a negative predictor of impulsivity temporally in children (time 1  $\beta=-0.29$ ,  $p=.01$ ; time 2  $\beta=-0.30$ ,  $p=.003$ ). However, the association between baseline RSA and impulsivity was not found in the present study. The findings of this study showed that vagal regulation (RSA withdrawal) may be an important physiological marker of impulsivity in preschoolers.

## POSTER C-4

## THE ASSOCIATION BETWEEN MATERNAL BONDING AND INTER-BRAIN SYNCHRONIZATION IN THE ANTERIOR PREFRONTAL CORTEX DURING MOTHER-INFANT TACTILE INTERACTION

Tange Akiko<sup>1</sup>, Kikuno Yuichiro<sup>2</sup>, Suga Ayami<sup>1</sup>, Ishikawa Hiroki<sup>1</sup>, Shinohara Kazuyuki<sup>2</sup>

<sup>1</sup>Unicharm Corporation, <sup>2</sup>Nagasaki University

*Descriptors: NIRS, attachment, tactile sensation*

Previous studies using near-infrared spectroscopy (NIRS) reported that gentle touching of pleasant tactile stimuli (e.g., velvet) activates reward-related cortical regions, including the anterior prefrontal cortex (APFC), in mothers and infants. Our previous hyperscanning NIRS study further revealed that gentle touching of a mother's hand synchronizes the APFC in mothers and infants. Although APFC activation is known to be associated with mother and infant profiles (e.g., a mother's attachment to her infant), no studies have ever investigated the relationship between inter-brain synchronization of the APFC in mothers and infants and their profiles. We therefore examined the association between inter-brain synchronization of the APFC in mothers and infants and their profiles (36 dyads, infant mean age:  $3.3 \pm 0.6$  months, mother mean age:  $30.1 \pm 7.2$  years). Results showed that a mother's attachment to her infant was negatively correlated with synchronization of brain activation induced by gentle touching of a mother's hand. This finding regarding the synchronization of the APFC in mothers and infants disproves the hypothesis that stronger bonding between mothers and infants has a high correlation with higher synchronization of the APFC in mothers and infants.

### POSTER C-5

#### CARDIAC INTERACTION BETWEEN MOTHER AND INFANT (1): INFANT HEART RATE VARIABILITY ENHANCED BY INCREASED MATERNAL HEART RATE VARIABILITY

Suga Ayami<sup>1</sup>, Uraguchi Maki<sup>2</sup>, Tange Akiko<sup>1</sup>, Ishikawa Hiroki<sup>1</sup>, Ohira Hideki<sup>2</sup>  
<sup>1</sup>Unicharm Corporation, <sup>2</sup>Nagoya University

*Descriptors: mother-infant interaction, heart rate variability, development*

Vagal tone in infants has been correlated with mental regulation and increased bodily interaction synchrony. Activating vagal tone in infants may encourage their socioemotional growth. We enhanced the low frequency (LF) component of maternal heart rate variability (HRV) using slow breathing, and examined whether the change in maternal HRV could affect the LF component in infants. Thirty dyads (infant age: 3-8 months) participated in this study. Mothers breathed at a rate of 6 cpm for 15 min while holding their infants in their arms. A 5-min rest period was provided, with infants lying in a sleeping position. A control condition was established on alternate days, with mothers breathing at a normal rate. Slow breathing significantly increased the maternal LF component power of HRV, suggesting validity of the experimental manipulation. More importantly, the LF component power in infants was significantly enhanced by an increase in maternal LF component power, but only in infants at an earlier developmental stage (3-5 months). Analyses of transfer entropy showed a causal influence of maternal cardiac activity on infant HRV. These results suggest that maternal HRV can affect infant HRV, and can increase mother-infant cardiac synchrony.

### POSTER C-6

#### DECISION MAKING IN INFANTS: TACTILE PREFERENCES EVALUATED BY REACHING AND PREFERENTIAL LOOKING

Matsuyo Akane<sup>1</sup>, Suga Ayami<sup>1</sup>, Tange Akiko<sup>1</sup>, Ishikawa Hiroki<sup>1</sup>, Uraguchi Maki<sup>2</sup>, Ohira Hideki<sup>2</sup>

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*Descriptors: infants, decision making, tactile sensation*

On the basis of previous findings of cognitive abilities in infants, even in the neonatal period, we investigated the capability for value-based decision making in infants. We hypothesized that softer tactile sensations would be more comfortable and rewarding for infants, as it is known that pleasant tactile sensation is critical for mental and physical growth. For manipulation of tactile sensation, we used softer and less soft diapers. The participants were 33 infants (ages: 4-8 months) who could identify red and green. We used an associative learning paradigm, where infants experienced the softer diaper and less soft diaper with a red or green patch as a cue. After the learning process, we evaluated preferences for diapers in infants through reaching and preferential looking. Softer diapers were chosen by 70% of infants who could reach. Regardless of ability to reach, looking time toward the softer diaper was significantly longer than that toward the less soft diaper. The softer diaper was chosen by preferential looking in 65% of younger infants who could not reach. Differences in looking time toward the chosen diaper and unchosen diaper were greater in younger infants who could not reach than in older infants who could reach. The present study clearly showed that infants are capable of tactile value-based decision making. Interestingly, we found that even younger infants, who could not choose by reaching or language, can manifest preferences by duration of gaze.

### POSTER C-7

#### FICTIONAL TRANSPORTATION: ASSOCIATIONS AMONG READING, INTEREST IN EMOTION, AND GENRE PREFERENCES

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*Descriptors: emotion, fiction, reading*

Beloved fantasy author Terry Pratchett named human beings Pan narrans, the storytelling ape. We crave fiction, spending countless hours bingeing on tales of vampires and the travails of female inmates dressed in orange, but motivation for fiction exposure is relatively unexplored. Narratives are often emotional, which raises two competing possibilities: people may seek fiction to expose themselves to emotion (exposure) or to distract from the emotions of their daily lives (escapism). We investigated the associations between reading fiction and interest in emotional stimuli. Fifty participants from Amazon MTurk viewed 60 negative, neutral, and positive images and rated how interesting they found each. How long they viewed each image and self-reported fiction experiences were also recorded. We discovered several interesting relationships between experience of fiction and interest in emotion. For instance, regression analyses revealed that controlling for how long participants viewed neutral images, spending less time processing emotional images was predicted by how transported one feels while reading fiction ( $p = .027$ ), perhaps consistent with the escapism hypothesis. Genre preferences were related to task performance: frequently choosing popular or literary fiction was associated with lower ratings of interest in all pictures (highest  $p = .011$ ), whereas frequently choosing speculative fiction was only associated with lower ratings of interest for positive pictures ( $p = .04$ ). Future research should explore motivations for reading and longitudinal effects of fiction exposure.

### POSTER C-8

#### MORAL FOUNDATIONS AND THE EXPERIENCE OF JEALOUSY IN ROMANTIC RELATIONSHIPS

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Lesley University

*Descriptors: jealousy, morality*

According to Moral Foundations Theory (Graham, Haidt, & Nosek, 2009), the five moral foundations can be categorized as either binding (i.e., ingroup/loyalty, authority/respect, and purity/sanctity) or individualizing (i.e., harm/care and fairness/reciprocity). In contrast to the individualizing moral foundations, which emphasize a respect for the autonomy of individuals, the binding moral foundations imply that individual autonomy must often be constrained for society to function optimally. In other words, the binding moral foundations stress the importance of upholding social norms, even if autonomy must be sacrificed as a result. Consequently, we hypothesized that endorsement of binding morals would be positively correlated with experiencing the emotion of romantic jealousy, as romantic jealousy is predicated on the perception that established social norms about monogamy are being flouted (Daly, Wilson, & Weghorst, 1982). In a study of 180 individuals in romantic relationships, we found that endorsement of binding morals (but not individualizing morals) was positively correlated with the likelihood of experiencing jealousy in hypothetical scenarios in which jealousy could potentially be aroused (e.g., their partners are talking with an attractive member of the opposite sex, going to a bar with friends, and/or making plans to meet up with an ex-partner). Subsequent analyses revealed that this was fully mediated by beliefs thematically consistent with binding morals, specifically that "in a good relationship, it is important to know what your partner is doing at all times."

### POSTER C-9

#### FEAR BROADENS ATTENTION: FEAR AND HAPPINESS MOTIVATE ATTENTIONAL FLEXIBILITY IMPAIRING SPLIT ATTENTIONAL FOCI

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*Descriptors: attention, flexibility, fear*

Generally, negative compared to positive affect narrows attention; however, these findings rely on the outdated spotlight model of attention. Newer models propose a more flexible, temporal-oriented attentional system that allows for split foci of attention across multiple, non-contiguous locations requiring active inhibition of irrelevant stimuli. Moreover, new research has observed that fear expands the visual field and increases detection of targets in the periphery and saccade speed, all of which suggests that fear may increase attentional flexibility. Under the guise of a new attentional paradigm, we argue fear, like happiness, may increase attentional flexibility compared to sadness. Two studies were conducted inducing individuals into a fear, happy or sad emotional state followed by the attentional task. This task required individuals to identify two, non-contiguous targets surrounded by distractors (Exp. 1,  $n=83$ ) or not (Exp. 2,  $n=92$ ). In a majority of trials (valid) cues predicted location of the targets to be identified, but on remaining trials (invalid) cues did not predict location of targets. As predicted, fear,  $p<0.01$ , and happiness,  $p<0.01$ , conditions were more accurate at reporting targets at invalid locations compared to sadness. Critically, this was true both when targets were in between and further away from the two cued locations. Notably, removal of distractors eliminated the effect,  $p=0.96$ . In sum, fear and happiness may 'broaden' attention by increasing attentional flexibility and reducing attentional inhibition processes.

### POSTER C-10

#### FUNCTIONAL INTEGRATION BETWEEN THE BRAIN'S INTRINSIC CONNECTIVITY NETWORKS

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*Descriptors: network integration, functional connectivity*

Affective neuroscience studies often focus only on specific brain regions, such as the fronto-amygdala circuitry or the cingulo-opercular network. This stems from a common assumption that the brain is composed of spatially segregated neural networks with specialized functions. We hypothesized the brain is organized into interdependent networks that share territories at functional hubs. Using resting state fMRI data from 2 samples of 150 healthy young adults, we generated functional connectivity maps of 113 literature-based seeds that anchored canonical networks and calculated their pairwise similarity. We applied a multidimensional scaling algorithm to the resulting adjacency matrix and determined that a 3-dimensional solution optimally captured the similarity between connectivity profiles (stress index=.02, 98.4% variance explained). The three dimensions seem to index internal/external processing, attention, and cortical lamination. Mapping the 3 dimensions in coordinate space revealed a clear circumplex structure that suggested network interdependence, since the change in one dimension is tied to the change in another dimension. In addition, nominally different networks overlapped one another, confirming that seeds do not form completely distinct networks. Our findings demonstrated that the integration and segregation between intrinsic connectivity networks could potentially be explained by 3 organizing principles. Adopting an integrated network approach could enhance our understanding of affective processes at the whole brain level instead of as isolated phenomena.

### POSTER C-11

#### FRONTAL EEG ASYMMETRY AND COMPASSION IN PATIENTS WITH SOCIAL ANXIETY DISORDER

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*Descriptors: social anxiety, compassion, frontal EEG asymmetry*

Considering the known effects of kind acts on reduction of avoidance goals in socially anxious individuals, it can be assumed that cultivating compassion might decrease the severity of social anxiety symptoms. In addition, previous research has demonstrated that socially anxious individuals exhibit greater relative right frontal electroencephalogram (EEG) activity at rest; however, no study has investigated the association among compassion for others, positive and negative affect, and frontal EEG asymmetry in patients with social anxiety disorder (SAD). In this study, regional EEG activity was measured at rest in adults with SAD ( $N=28$ ) and in demographically matched healthy controls ( $N=12$ ). Participants completed self-reports of social anxiety, compassion for self and others, and differential positive affect. Consistent with findings of previous research, right-sided activation in the anterior temporal and lateral prefrontal scalp regions was positively correlated with negative affect in controls. Further, compassion for others was positively associated with greater left frontal EEG activity at rest in the SAD group, although positive affect was not related to the brain activity. These findings indicate greater right-sided anterior cortical activation in SAD patients and provide evidence that cultivating compassion may reduce SAD symptoms in patients.

### POSTER C-12

#### INCREASED DISTRACTION EFFECTIVENESS IN RESPONSE TO NEGATIVE EMOTIONAL CONTENT IS ASSOCIATED WITH REDUCED EMOTIONAL EATING

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*Descriptors: emotion regulation, emotional eating, distraction*

Previous research has found that emotion regulation (ER) is associated with emotional eating; the tendency to eat for emotional rather than physical reasons. Both reappraisal and distraction, two common ER strategies, have been associated with emotional eating. The present study sought to investigate whether ER choice and implementation ability while managing distressing emotion in response to negative photos of varying intensity was associated with emotional eating behaviors. A sample of young adult women ( $N=100$ ) completed an emotional eating questionnaire and an ER choice task in which they chose to implement either positive reappraisal (PR) or positive distraction (PD) in response to low, moderate, and high intensity negative photos. Emotion change scores were calculated by subtracting post strategy from pre strategy photo ratings. A Strategy by Intensity repeated measure ANOVA on emotional change scores was conducted with emotional eating scores entered as a continuous independent variable. Results revealed a strategy by emotional eating interaction ( $F(1,96)=5.48, p<.05$ ), in which more effective implementation of PD was associated with reduced emotional eating (correlation=.24,  $p<.05$ ). These findings suggest that PD, which is aimed at redirecting attention to positive memories/stimuli, may reduce the processing of negative emotional stimuli in a manner that reduces emotional eating. This work clarifies the effect of differential ER strategies on disordered eating behavior and suggests avenues for mitigating disordered eating.

**POSTER C-13****PUTTING THE SELECTIVITY BACK IN SOCIOEMOTIONAL SELECTIVITY THEORY: WHEN FUTURE TIME PERSPECTIVE PREDICTS EMOTIONAL WELL-BEING**

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Stanford University

*Descriptors: life span, emotional experience*

According to socioemotional selectivity theory (SST; Carstensen, 2006), perceiving time as limited (correlated with age) shifts preferences from goals about expanding horizons to ones about emotionally meaning. This focus on emotionally meaningful goals leads to more positive, and less negative, emotion over time, as observed in older adults (Carstensen et al., 2011). To our knowledge, however, no studies have tested the moderating role of selectivity. We hypothesized that limited time horizons are associated with positive emotional experience but only when people can be selective. In Study 1, 177 community adults (aged 18-93,  $M=56.8$  years,  $SD=21.8$ ) reported their emotional experience on 35 occasions randomly sampled over one week. We operationalized positive emotional experience as positive minus negative affect. We operationalized selectivity as participants' reported level of environmental mastery (Ryff, 1989). Future time horizons were also assessed (Carstensen & Lang, 1996). Limited future time horizons predicted increased positive emotional experience only for people who reported greater mastery of their environments ( $B=.15$ ,  $SE=.07$ ,  $p=.04$ ), but not for those who reported less mastery ( $B=-.06$ ,  $SE=.08$ ,  $p=.44$ ). Results from a related study of emotional experience and social selectivity among family caregivers (Study 2) also will be presented. Findings support SST's postulate that enhanced emotional experience in older people is associated with selectivity, which may help clarify our understanding of age-related improvements in emotional functioning.

**POSTER C-14****FREQUENCY OF WORRY THOUGHTS IS PREDICTED BY COGNITIVE FLEXIBILITY SKILLS**

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*Descriptors: worry, emotion regulation, cognitive flexibility*

Worry is an uncontrollable thinking in which a person imagines negative outcomes of actions or events. Excessive worry impairs problem-solving strategies and may lead to anxious symptoms. Worrying frequency can be decreased through adaptive emotion regulation strategies (ERS). Selection of adaptive ERS is promoted by cognitive skills that foster cognitive flexibility. We aimed to assess which cognitive skills may promote lower worry frequency. For this we translated into Spanish and validated three self-report measures (alphas ranging from .77-.91) that assess processes related to cognitive flexibility and worry frequency, and administered them to 210 college undergraduates. We used the Anxious Thoughts Inventory to assess frequency of worry thoughts, the Decentering subscale of the Experiences Questionnaire to assess the ability to disengage oneself from negative thoughts, and the Cognitive Control subscale of the Cognitive Flexibility Inventory to measure the ability to generate alternate solutions to difficult situations. Multiple regression analysis showed that the predictors explained 37% of the variance in the frequency of worrying thoughts ( $R^2=.365$ ,  $F(2,208)=59.9$ ,  $p<.001$ ). Decentering and cognitive control may facilitate the consideration of various alternatives to explain difficult situations. This in turn, may diminish the tendency to focus in one possible negative outcome that may be the source of the worry. Thus, the variables mentioned should be the target of training in psychological interventions, since they may increase the chances of employing adaptive ERS.

**POSTER C-15****POSITIVE EMOTION, NEGATIVE EMOTION, AND CAREGIVER OUTCOMES IN FAMILY CAREGIVERS OF PEOPLE WITH DEMENTIA**

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*Descriptors: dementia, caregiving, positive emotion*

Previous research on the impact of caregiving for an individual with dementia has focused on negative emotion and dementia severity as predictors of caregiver outcomes. Given the growing literature showing the positive emotion is uniquely beneficial in the context of stress, we examined the relationships of positive and negative emotions, collected by the Differential Emotions Scale (DES), with caregiver outcomes in a sample of 146 caregivers of individuals with dementia (e.g., Alzheimer's disease, Parkinson's disease, frontotemporal dementia). We conducted hierarchical regressions, with dementia severity, age, and gender entered in the first step; positive and negative emotions were entered in the second step. Caregiver outcomes were measured by the Zarit Burden Interview and Positive Aspects of Caregiving. Results indicated that positive and negative emotion independently contributed to each outcome: higher levels of positive emotion were significantly associated with lower levels of burden ( $\beta = -.30$ ,  $p < .01$ ) and higher levels of Positive Aspects of Caregiving ( $\beta = .52$ ,  $p < .01$ ), while higher levels of negative emotion were significantly associated with higher levels of burden ( $\beta = .20$ ,  $p < .01$ ) and lower levels of Positive Aspects of Caregiving ( $\beta = -.16$ ,  $p = .03$ ). These findings highlight the unique role that positive emotion plays, independent of negative emotion, in various caregiver outcomes and suggest that interventions aimed at boosting the experience of positive emotion should be a focus for improving caregiver outcomes.

**POSTER C-16****THE SOCIAL VALUE OF POSITIVE AUTOBIOGRAPHICAL MEMORY RETRIEVAL**

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*Descriptors: social context, memory, reward*

Positive memory retrieval elicits pleasant feelings that can combat negative affective states and enhance wellbeing. However, not all positive memories are created equal. When thinking about our most treasured memories from the past, they are likely experiences we shared with other people (e.g., birthday party) rather than by oneself (e.g., receiving a good grade). Yet, the inherent value associated with the social context of positive autobiographical memory has not been explored. In study 1, participants ( $N=47$ ) were asked how much they would be willing to pay to re-experience a positive memory that occurred with socially close others (high-social), with acquaintances (low-social) or alone (nonsocial). When controlling for how positive each memory made them feel, participants were still willing to pay 1.9 times more to re-experience high-social memories relative to low-social memories and 2.6 times more relative to nonsocial memories. Likewise, participants chose to reminisce about high-social memories more frequently (56% of the time) than less social ones of equal positive feeling ( $p=.025$ ). In study 2 ( $N=20$ ), we examined the benefit of social context by asking participants to recall social and nonsocial memories after acute stress exposure. Participants whose memory recall included higher social context showed a greater dampening of the physiological stress response (i.e., cortisol). Together, these data suggest that the social context inherent in a positive memory may increase its value and may be a mechanism by which recalling positive memories aids coping with stress.

**POSTER C-17****REPLICATING THE POSITIVITY EFFECT IN EXPLICIT MEMORY IN JAPANESE ELDERLY**

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*Descriptors: positivity effect, emotional memory, age-related differences*

Older adults tend to recall more positive than negative materials when compared with younger adults (positivity effect), and this is also reported in East Asian participants (Ueno et al., 2013; Kwon et al., 2009). Ueno et al. (2013) reported that though positivity effect was shown in explicit memory, it was not seen in implicit memory. This study examined the impact of replicating the positivity effect in explicit memory in Japanese elderly when compared with college students. Participants were 25 older adults (68 ± 4.18 years old) and 25 younger adults (21 ± 2.82 years old). The material was 90 non-emotional words and 90 word-paired emotional pictures. All stimuli were equally divided by the standardized emotional valence of pictures into positive, negative, and neutral conditions. The participants were presented 45 stimuli from each condition every 6 seconds randomly to encode words. After the encoding phase, participants completed the word-stem completion task (N = 26) or category exemplar generation task (N = 24) as implicit memory task and free-recall task as explicit memory task. A 2 (Group) x 3 (Valence) repeated ANOVA was conducted on implicit and explicit memory performance. There were no significant group and valence differences in implicit memory performance. There were significant differences in interaction in explicit memory performance; older adults recalled similar number of positive and negative words, but younger adults recalled more number of negative words over positive words. This study replicated positivity effect in explicit memory in Japanese elderly.

**POSTER C-18****IN ON THE JOKE: PERCEPTION OF TEASING IN GIRLS WITH ADHD**

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*Descriptors: ADHD, teasing*

Teasing is a common yet complex social behavior involving provocation accompanied by off-record markers that render it playful (Keltner, Capps, Kring, Young, & Heerey, 2001). Prior research has shown that children with autism have difficulty producing and perceiving the playful, prosocial aspects of teasing, and that these deficits are related to impaired theory of mind (ToM) (Heerey, Capps, Keltner, & Kring, 2005). Given that there is some evidence of impaired ToM in children with ADHD (Bora & Pantelis, 2016), we investigated whether girls with ADHD perceive teases as less playful than their typically developing peers, and how perception of teases varies with age in both groups. Girls with ADHD (n = 39) and typically developing girls (n = 22) ages 6-13 were shown 11 video clips depicting brief teasing interactions and asked to rate how funny and mean each tease was on a scale from 1 to 5. We found that girls with ADHD rated teases as similarly mean (average rating for girls with ADHD = 2.73; average rating for girls without ADHD = 2.74) and funny (average rating for both groups = 3.16) as their typically developing peers. In both groups, age was significantly, inversely correlated with the perceived funniness of the teases (p = 0.01 for girls with ADHD; p = 0.002 for girls without ADHD), but not significantly correlated with the perceived meanness of the teases. These results suggest that girls with ADHD perform similarly and show a similar developmental pattern as their typically developing peers in perceiving complex social behaviors that draw on ToM.

**POSTER C-20****COMPARING RACIAL/ETHNIC EMOTIONAL PROCESSES LINKED TO STRESS BY FIRST UNCOVERING THE GROUP-SPECIFIC CAUSAL STRUCTURES**

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*Descriptors: health disparities, perceived stress, causality*

The development of theories of human behavior, rests on gradually adding and refuting evidence for the existence of causal relationships between a rather limited number of concepts. Assumptions regarding the universality of such causal links, between for example anxiety and perceived stress, often break down when investigations of differences between racial/ethnic (R/E) or cultural groups reveal that measures differ by R/E groups. Less evident is that the very causal structure of key processes, like mechanism of coping with stressful life events, may also differ. If for instance perceived stress may be the effect of anxiety in white Americans, it could end up being a cause of it in African-Americans. Generally, investigations of R/E differences in affective processes implicitly assume a common causal sequencing across R/E groups, like when including R/E grouping as a predictor, along with other covariates, impacting an outcome of interest. We present an approach that first explores the very causal structure of pairs of variables in three R/E US groups; we ask whether anxiety causes or is caused by stress, and similarly whether negative affect causes or is caused by anxiety, and whether negative causes or is caused by stress, but do so in each R/E separately. We then test the simple 3-variable emerging models in each group, and contrast their findings. We present implication for health disparities research in general, and on emotional processes in particular.

**POSTER C-21****OPENNESS TO EXPERIENCE AND RESPONSE TO TREATMENT IN A PARTIAL HOSPITAL**

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McLean Hospital

*Descriptors: openness to experience, depression, anxiety*

Openness to experience (O), a dimension of the Five-Factor model of personality, is defined as an individual's willingness to engage with new experiences and information. O is related to cognitive exploration as well as creativity and flexibility in cognitive processing. Past research has shown that O is a protective factor for mortality and is associated with improved decision making and resilience to stress. In addition, recent investigations indicate that O shows significant within-person variability and can change over short periods of time. More research is needed in order to understand how this personality trait changes in response to treatment for acute psychopathology, and how it relates to changes in symptoms. We collected data from 271 adult patients (Mage = 34.09 years, 52% female, 87.1% White) enrolled in a partial hospital treatment program. At both admission and discharge, participants completed measures of depression, anxiety, and functioning. O increased significantly over the course of treatment (T1 M = 4.16, SD = 1.29; T2 = 4.51, SD = 1.31, Cohen's d = .27). Changes in O during treatment were associated with changes in anxiety and depression (p < .05). The personality state of openness to experience therefore appears to be meaningfully associated with treatment outcomes of individuals presenting for partial hospitalization. This study, which was limited by the use of self-report measures and a naturalistic design, highlights the potential of examining how important dimensions of personality relate to psychopathology.

## POSTER C-22

**EMOTIONAL REACTIVITY IN MAJOR DEPRESSION:  
UTILIZING THE LATE POSITIVE POTENTIAL TO EVALUATE  
EMOTION CONTEXT INSENSITIVITY**

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*Descriptors: depression, ERP*

Emotion context insensitivity (ECI) theory characterizes depression by a dampening of reactivity to emotional stimuli, regardless of valence. This theory has received substantial support from self-report, behavioral, and physiological data, although neural data is limited. This project applies structural equation modeling (SEM) to a neural measure of emotional reactivity in order to contrast ECI with two competing perspectives: negative potentiation and positive attenuation. The neural measure used here was the late positive potential (LPP), an event-related potential that tracks motivated attention to emotional information. Participants (n=125) passively viewed affective images while the LPP was recorded, then completed the Depression Anxiety Stress Scales to evaluate symptoms. To assess emotional reactivity's relation to depression, 3 latent variables were constructed: Internalizing Symptoms (common variance across depression, anxiety, and stress), Visual Reactivity (LPP variance common to neutral, unpleasant, and pleasant stimuli) and Emotional Reactivity (LPP variance unique to unpleasant and pleasant stimuli). Our hypothesis was that Emotional Reactivity would covary specifically with Depression, after accounting for the shared variance with anxiety and stress. This model fit the data well (Chi-square (df= 5)=6.408, p=0.269; CFI=0.989; RMSEA=0.047) and the key path of Emotional Reactivity to Depression symptoms was negative (B=-4.36, Beta=-0.39 p=0.025). Competing models did not adequately fit the data. These results provide support for ECI in a non-clinical sample.

## POSTER C-24

**KEEP YOUR EYE ON THE PRIZE: THE RELATION BETWEEN  
BIASED ATTENTION AND REWARD PROCESSING AMONG  
DYSPHORIC INDIVIDUALS**

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*Descriptors: attention, reward, depression*

Sustained negative affect and deficits in positive affect are considered the hallmark features of depression. Theories of depression posit that biased attention contributes to the cardinal symptoms of the disorder. Indeed, difficulties disengaging attention from sad stimuli are associated with increased stress reactivity among depressed individuals. There is a paucity of research, however, examining the link between attention biases and reward processing abnormalities. Thirty-six people completed a time-estimation task in which they could attain monetary reward, and event-related potentials (FRN, P3, LPP) were used to index sensitivity to reward. Participants also completed an eye-tracking task in which they viewed neutral-emotional image pairs to assess attention biases. Delayed disengagement from sad stimuli was associated with greater reactivity (i.e., heightened P3 and LPP amplitudes) following failure to attain reward. Importantly, depressive symptoms moderated the relation between attention and reward processing. Only among individuals reporting elevated depressive symptoms, greater difficulty disengaging attention from sad stimuli was linked to increased FRN amplitude when failing to attain reward. Findings provide preliminary support for the link between biased attention and reward processing within the context of increased depressive symptoms.

## POSTER C-25

**EMOTIONAL NORMS FOR RUSSIAN NOUNS: THE  
DATABASE ENRUN**

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*Descriptors: emotional words, database*

Normative ratings of the affective meanings of words are necessary for research on emotions, moods, affective information processing, and text-based sentiment analysis. Such ratings do not exist in Russian although they are in great demand not only for the Russian-based studies but also for the cross-cultural comparisons. The aim of this study was to develop a database with normative affective ratings of emotional and nonemotional Russian nouns. We selected 378 nouns with supposedly varied emotional meanings and obtained ratings for them using both categorical and dimensional approaches. Participants (Russian native speakers, university students, mean age 19.2) rated relatedness of each word to five emotional categories – happiness, sadness, anger, fear, and disgust (N=100) – and two affective dimensions – valence and arousal (N=190). Cronbach's alphas for the seven analyzed parameters vary from .97 to .99. The obtained data was organized into the database ENRuN (Emotional Norms for Russian Nouns). Means, standard deviations, and minimum and maximum values are provided for each of the five emotional categories and two dimensions, as well as word frequency and word length. Ratings for the four negative categories (sadness, anger, fear, and disgust) positively correlate with each other (.39-.74) and negatively correlate with the happiness ratings (.53-.61). The relation between valence and arousal yields the typical V shape if arousal is taken as a function of valence. The database ENRuN can be used free by researchers and is available online DOI: 10.13140/RG.2.2.33177.62566.

## POSTER C-26

**IDENTIFYING PSYCHOLOGICAL AND PHYSIOLOGICAL  
PREDICTORS OF ACUTE STRESS RECOVERY**

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*Descriptors: recovery, prediction, startle*

Individuals operating in dangerous environments are exposed to repeated stressors (often in rapid succession); it is critical that they are able to recover quickly and efficiently to prepare for upcoming events. Because performance can have life-threatening consequences, it would be useful to identify metrics that predict which individuals might be most susceptible to the deleterious effects of poor stress recovery. Previous research has shown that physiological responses to startling tones predict long-term recovery from trauma. Here we tested whether these responses also predict acute stress recovery. 47 participants completed an acoustic startle task while we measured heart rate, electrodermal and facial muscle activity (orbicularis and corrugator). Participants then underwent a psychosocial stressor (Trier Social Stress Test). To characterize stress anticipation, reactivity, and recovery, we measured self-reported anxiety and physiological activity (blood pressure) across the hour preceding and following the stress test. Consistent with previous research, we found that increased anticipatory stress immediately preceding the stressor predicted faster physiological recovery (greater % recovery of mean arterial blood pressure),  $r(45)=-.29$ ,  $p=.049$ . Additionally, heart rate acceleration to startling tones predicted faster recovery,  $r(45)=.36$ ,  $p=.012$ . That is, people with greater cardiac reactions also recovered more efficiently. These findings suggest that startle responses might be a useful metric for predicting individual differences in acute stress recovery.

## POSTER C-27

## MOOD-BASED IMPULSIVITY AND ITS EXPRESSION IN DAILY LIFE

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*Descriptors: affect, impulsivity*

The UPPS-P model of impulsivity proposes that there are two facets of mood-based impulsivity. Negative urgency (NU) is characterized by impulsive behavior in response to negative affect whereas positive urgency (PU) is in response to positive affect. Previous studies have suggested that PU and NU are distinct facets; however, the overlap and differentiation of these facets has yet to be examined in daily life. A non-clinical sample ( $n=294$ ) completed the UPPS-P Scale and 7 days of experience sampling on smartphones. ESM questionnaires assessed affect, cognition, and impulsive behavior 8 times a day. PU and NU were highly correlated ( $r=.77$ ,  $p<.001$ ). Consistent with our hypothesis, NU was associated with elevated negative affect in daily life ( $\gamma=.35$ ,  $p<.001$ ) and NU moderated the association of negative affect and impulsivity in the moment ( $\gamma=.04$ ,  $p<.01$ ). Contrary to our hypothesis, PU was associated with and reactive to negative not positive affect. Intraclass Q-Correlations showed that the similarity between the daily life profile of NU and PU was almost identical ( $Q=.97$ ). These results suggest that NU and PU may be better represented by a unitary construct rather than separate facets. Additionally, given that PU was associated with negative, not positive, affect, the PU subscale may not be adequately capturing the theoretical construct originally proposed. Future research needs to further examine the mechanisms underlying urgency to better understand mood-based impulsivity in psychological disorders such as bipolar, borderline personality, and substance use.

## POSTER C-28

## REMOTE VERSUS ONE-TO-ONE TUTORING: EXAMINING DIFFERENCES IN EMOTION EXPRESSION AND TASK PERFORMANCE

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*Descriptors: learning, performance, context*

Expression of emotion is important to the ability to cope and also facilitates insight. Thus, a context that encourages students to openly express emotions may be beneficial to their performance. This study examines differences in emotion expression and task performance across learning contexts in a sample of 63 college students (mean age = 20 years old). Students were randomly assigned to either one of three contexts; one-to-one with tutor, tutor not present with video access to students' faces, or tutor not present without video access to students' faces. A multivariate analysis of variance examined whether students differed on the type of emotions expressed during a learning task, number of errors and number of items correct on the task, as well as total feedback attempts from the tutor (i.e., hints and prompts). Results revealed a significantly large multivariate effect across the three contexts, Wilks' Lambda = .526,  $F(10, 112) = 4.24$ ,  $p < .001$ , partial eta squared = .275. Post-hoc univariate analyses of variance revealed that compared to students in the contexts where the tutor was not present, students in the one-to-one context expressed more positive emotion (i.e., automated analysis of joy and surprise) and made less errors on the task, even though they received less tutor feedback. No significant differences between groups on expression of negative emotions or number of items correct emerged. Results have implications for building student-teacher relationships that support expression of positive emotions and thus cognitive engagement.

## POSTER C-29

## PSYCHOPHYSIOLOGICAL RESPONSES TO SOCIAL STRESS PREDICT OTHERS' EMOTIONAL PERCEPTIONS

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*Descriptors: emotion perception, psychophysiology, social stress*

Emotions are composed of experiential, behavioral, and physiological components. Behavioral components of emotions are often thought to be the primary means for others to decipher affective information, which is important for social relationships. In the current research, we examined whether targets' physiological reactivity during a stressful task could be detected in perceivers' ratings of targets' affect. We focused on targets' change in heart rate (HR), respiratory sinus arrhythmia (RSA), cardiac output (CO), and ventral contractility (VC). Perceivers ( $n=94$ ) watched videos of targets ( $n=8$ ) completing a Trier Social Stress Test where we obtained targets' physiological responses. We predicted (1) greater sympathetic nervous system reactivity (i.e., higher HR and VC) of targets would be associated with perceivers' ratings of higher NA, and (2) greater parasympathetic reactivity (i.e., higher RSA) and more efficient cardiac activity (i.e., higher CO) of targets would be perceived as higher PA. Analyses were conducted using HLM with targets nested within perceivers. Consistent with our hypotheses, higher HR ( $\beta=.11$ ) and VC ( $\beta=.09$ ) of targets were significantly related to perceivers' ratings of higher NA. Higher CO, but not RSA, was positively related to perceptions of PA ( $\beta=.16$ ). The findings suggest other's physiological reactivity to social stress is related to how people perceive their emotional experiences. The findings have implications for aspects of relationships involving emotion perception including physiological synchrony and interpersonal emotion regulation.

## POSTER C-30

## THE INFLUENCE OF COGNITIVE REAPPRAISAL AND EXPRESSIVE SUPPRESSION ON AN AUDITORY DISCRIMINATION TASK PERFORMANCE

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 University of Manchester

*Descriptors: cognitive reappraisal, expressive suppression, auditory discrimination task*

It has been suggested that expressive suppression but not cognitive reappraisal is an effortful emotion regulation (ER) strategy (Richards & Gross, 2000). However, some authors claim that the latter requires stimulus elaboration (Dillon, Ritchey, Johnson & LaBar, 2007), which would imply a computational cost of this ER strategy. However, there has been little direct investigation of whether ER requires cognitive resources. Thus, following Ortner, Zelazo and Anderson (2013) we tested whether ER impairs a consecutive cognitive task. While performing an auditory discrimination task (ADT) 43 participants down- or up-regulated their emotions evoked by images via cognitive reappraisal or suppressed their facial expressions. Valence and arousal self-reports, as well as reaction times in ADT, were measured. Electromyographic activity was recorded. In a control condition participants reported stronger negative emotion experience and arousal when viewing unpleasant as compared to neutral images. Viewing unpleasant images resulted in longer reaction times than viewing neutral images. Up- and down-regulation via both cognitive reappraisal and expressive suppression modulated negative emotion experience. When presented with unpleasant images, participants took more time to perform the ADT only in the cognitive reappraisal up-regulation condition compared to the control condition ( $F(1, 37) = 4.14$ ;  $p = .049$ ). The results suggest that increasing emotions via cognitive reappraisal may have different consequences than decreasing emotions and require further investigation.

**POSTER C-31****ADAPTIVENESS OF NEGATIVE REAPPRAISAL VARIES ALONG THE SOCIOECONOMIC STATUS GRADIENT TO PREDICT BODY MASS INDEX**

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*Descriptors: emotion regulation, socioeconomic status, health*

Emotion regulation (ER) can help individuals change their reactivity to a stimulus. While positive reappraisal ability (PRA) is thought to be helpful for reducing reactivity, negative reappraisal ability (NRA) may be helpful for heightening reactivity to facilitate behavioral change. Critically, socioeconomic status (SES) is associated with access to health services, suggesting that ER of health-focused information could interact with SES to predict health risk factors, such as body mass index (BMI). To examine ER and health along the SES gradient, 152 adults were assessed on demographics, SES (i.e. income, education, subjective social status), health, and health locus of control (HLOC). Participants also completed an ER ability task where they positively and negatively reappraised health-focused film clips featuring adults struggling with obesity. PRA and NRA scores were calculated by subtracting negative emotion ratings to the reappraised films from baseline films. Moderation analyses indicated that SES predicted BMI in both models (betas=-.28, -.30,  $p < .01$ ), yet only SES and NRA interacted to predict BMI beyond covariates (beta=-.27,  $p < .05$ ). The interaction revealed that at lower NRA, SES and BMI were not associated (beta=-.08); however, at higher NRA, greater SES predicted lower BMI (beta=-.48). This suggests that greater NRA enhances the positive influence of SES on BMI, yet greater NRA in low SES individuals increases BMI. Findings suggest NRA in the context of health has the capacity to magnify the positive and negative influences of SES on health risk factors.

**POSTER C-32****EFFECT OF COGNITION ON RESILIENCE TO RELAPSE IN DEPRESSION**

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*Descriptors: depression, working memory, resilience*

There is evidence for impairment in cognitive function during an episode of major depressive disorder (MDD); however, it is not known if impairment continues into remission. Although cross-sectional studies suggest cognitive dysfunction is associated with increased likelihood of relapse, research has not examined if impairment varies with length of remission between episodes. Study sample consisted of euthymic individuals remitted from MDD (rMDD, N=67) as well as individuals with no personal or family history of mental illness (NMI, N=36). After a screening visit that included a diagnostic interview, participants completed computerized tasks to assess working memory across different levels of difficulty (0,1, 2, 3-back). After controlling for age, education, and IQ, there was a significant difference,  $F(357)=74.75$ ,  $p < .001$ , in working memory efficiency (response accuracy/ response time); rMDD remitted for more than one year demonstrated better efficiency than both NMI, CI [.006, .030] and rMDD remitted under one year [.014, .037]. There was no difference in performance between NMI and rMDD who had been remitted for less than one year, CI [-.002, .017]. Results held when controlling for number of depressive episodes, lifetime duration of depression, age at onset of first episode, and age at last episode. Findings are the first to suggest a compensatory process in rMDD who remain resilient to relapse and support work on the neural bases of resilience to identify targets of remediation as well as longitudinal studies of time to recovery.

**POSTER C-33****POSITIVE POSSIBILITIES OR NEGATIVE CONSEQUENCES: HEALTH-FOCUSED EMOTION REGULATION ABILITY IN ADULTS AND PARENTS**

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*Descriptors: emotion regulation ability, health, obesity*

To address the role of emotion regulation in health processes, the present series of studies developed two health-focused tasks, an emotion regulation ability (ERA) task targeting adults, and a parental ERA (PERA) task targeting parents of school-age children. Two national community MTurk samples completed the ERA task (N=154, mean age=37 years) and PERA task (N=158, mean age=35 years). For each task, participants viewed health-focused film clips featuring adults or children struggling with obesity and weight-related behaviors. During each film, participants were asked to implement one of four strategies: positive reappraisal (PR) or positive distraction (PD) to downregulate negative emotion, or negative reappraisal (NR) or negative distraction (ND) to upregulate negative emotion. ERA and PERA scores were calculated by subtracting negative emotion ratings after employing each strategy from baseline film ratings. In both tasks, ability scores were found to be orthogonal by frame, with strong positive correlations between PR and PD (correlations=.50 to .55,  $p < .001$ ), and NR and ND (correlations=.55 to .65,  $p < .001$ ), and negative correlations between positive and negative frames (correlations=-.11 to -.38,  $p < .05$ ). These findings, replicated in two tasks, suggest that in general individuals are able to regulate their emotions by either contemplating the positive possibilities or the negative consequences of health-focused stimuli, but not both. Flexibility in framing ability may therefore be critical for understanding individual differences in health behavior motivation.

**POSTER C-34****EMOTION STIMULI MEDIA RATING RESEARCH**

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*Descriptors: affect, stimuli norming, emotionality*

Background: Musical and sentence stimuli are effective for inducing emotional states, particularly together. Negative musical selections are available; normed positive musical selections and sentences are not. To facilitate emotion induction studies we normed positive music selections and positive and negative sentences. Methods: Using Amazon's MTurk website, anonymous US citizens rated 17 musical selections (N=100) and 55 sentences (N=102) nominated by researchers and lab members on how they made participants feel (1 (very negative) - 5 (very positive)), and checked emotion descriptor adjectives for each item. Stimuli with mean ratings Positive $\geq$ 3.5 and Negative $\leq$ 2.5, and standard deviation  $<1$  were considered effective at generating emotions. Linguistic characteristics of sentences were examined via LIWC. Results: Effective stimuli included 10 positive musical selections, 22 positive, and 23 negative sentences. Sentence mean ratings correlated with LIWC analysis ratings for positive ( $r=.46$ ) and negative traits ( $r=-.44$ ). Checked adjectives were associated with highest rated positive ( $r=.82$ ) and negative items ( $r=-.84$ ). G-theory analysis found high variance accounted for by sentences (79%) and musical selections (61%), minimal variance from individuals ( $<4\%$ ), and moderate individual x content interactions (20% for sentences, 34% for music). Conclusion: We provide normed positive musical stimuli and positive and negative sentences for use in emotion induction studies. Unlike corpora rated on emotionality, these stimuli are normed to be effective at inducing emotional states.

## POSTER C-36

## MULTILEVEL ANALYSIS OF HUMAN LIMBIC CORTICES REVEALS A HIGH-LEVEL DOMAIN-GENERAL NEURAL WORKSPACE

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*Descriptors: limbic cortices, neuroimaging, gene expression*

Limbic cortices have been associated with emotions and motivation but recent studies suggest more domain-general roles. A systematic approach to the ensemble of limbic cortices, with a similar cytoarchitectural structure, is missing, limiting a general understanding of how the cerebral cortex is organized. We present a multilevel analysis of human limbic cortices, including gene expression (molecular level) and neuroimaging (system level) data, and reveal new insights into their role in the brain's functional architecture. Gene expression analyses involved a dataset of RNA-seq of two neurotypical brains from the Allen Institute. Analyses using DESeq2 (including a false discovery rate correction) and PANTHER showed that limbic cortices preferentially express genes related to plasticity and slow temporal dynamics, as compared to primary sensory areas, which preferentially express genes associated with temporal precision and control. Neuroimaging analyses involved a dataset of resting-state data from 150 healthy young adults and consisted of stepwise functional connectivity analyses (including a false discovery rate correction to avoid choosing arbitrary cutoffs). These analyses were consistent with observations on gene expression, further revealing a limbic high-level central organization within two core intrinsic networks, the default mode and salience networks. Taken together, these findings show that limbic cortices exhibit functional features of a high-level domain-general neural workspace and support a novel view of these areas in cortical function.

## POSTER C-37

## SELF AND OTHER ORIENTATIONS OF EMOTIONS ON THE RMET

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*Descriptors: social cognition, emotion, dissociation*

For individuals who have difficulty experiencing affective states, as in alexithymia, perception of others' emotional signals may also be impaired, impacting one's ability to navigate the social world efficiently. As proposed by previous studies, guilt, which is necessary for social repair, may be experienced less in individuals with decreased emotional awareness. In the present study, participants completed self-report measures of alexithymia, social emotions of guilt and shame, and the Reading the Mind in the Eyes Test (RMET), a task of social cognition. Results demonstrate that lower performance on the RMET was related to more externally-oriented thinking (TAS; Toronto Alexithymia Scale), which is described as focusing on external rather than internal events to inform experiences,  $b = -0.545$ ,  $t(52) = -3.7$ ,  $p < 0.001$ , but it was not related to difficulties describing or identifying feelings. These individuals also expressed less trait-level guilt (TOSCA; Test of Self-Conscious Affect),  $b = -0.326$ ,  $t(52) = -2.05$ ,  $p < 0.05$ . Our findings indicate that those who tend towards externally-oriented thinking have more difficulties experiencing their own, as well as others', social emotions. Thus, traversing the social world requires not only reading others' social cues but also acknowledging one's own affective states.

## POSTER C-38

## INTERPRETATION BIASES AND STRESS REACTIVITY AS MEASURED BY SALIVARY CORTISOL

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*Descriptors: social anxiety, depression, stress*

Social anxiety disorder (SAD) and major depressive disorder (MDD) are highly comorbid and share several vulnerability factors, including increased reactivity to stress. With this in mind, studies that examine underlying vulnerabilities from a disorder-non-specific (i.e., transdiagnostic) perspective are critically needed. Negative interpretation biases have been implicated in the etiology of both SAD and MDD. However, studies have yet to investigate the effect of interpretation biases on biological measures of stress reactivity. Sixty participants at risk for social anxiety and depression (i.e., reporting elevated levels of repetitive negative thinking) completed the Word Sentence Association Paradigm to assess social anxiety- and depression-related interpretation biases and a modified version of the Trier Social Stress Test (TSST). Salivary cortisol was collected at baseline and immediately following the (TSST). As expected, salivary cortisol values ( $\mu\text{g/L}$ ) increased from baseline ( $M = .35$ ,  $SD = .15$ ) to post-stress ( $M = .39$ ,  $SD = .16$ ;  $t = 3.22$ ,  $p = .002$ ). Area under the curve above baseline (AUC<sub>ab</sub>) was calculated to examine change in cortisol values from baseline to stressor. Cortisol reactivity (i.e., AUC<sub>ab</sub>) was positively correlated with both social anxiety-related ( $r = .45$ ,  $p = .001$ ) and depression-related ( $r = .36$ ,  $p = .008$ ) interpretation biases. Findings suggest that interpretation biases are transdiagnostic risk factors for stress dysregulation among persons at risk for social anxiety and depression.

## POSTER C-39

## AFFECT REGULATION AND COGNITIVE CONTROL IN CHILDHOOD TRAUMA: AUTONOMIC UNDERPINNINGS OF SELF-REGULATION IN PSYCHOPATHOLOGY

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*Descriptors: childhood trauma, executive control, heart rate variability*

Affect dysregulation and neurocognitive deficits in attentional control and inhibition are both implicated in the development of psychopathology, and play a prominent role in the presentation of PTSD. Childhood trauma has also been associated with cognitive control deficits in adulthood. The neurovisceral integration model suggests that heart rate variability (HRV) can indicate the degree to which the prefrontal cortex exerts inhibitory control over subcortical regions of the brain, reflecting adaptive self-regulatory capacities involving executive control. The present study included 60 participants from a community sample and used the Attention Network Test (ANT), Childhood Trauma Questionnaire (CTQ), PTSD Checklist (PCL-4), and autonomic physiological measures. Child sexual abuse (CSA) was negatively correlated with both cognitive control ( $r = -.30$ ,  $p = .021$ ) and baseline HRV ( $r = -.38$ ,  $p = .004$ ). BL HRV was positively correlated with executive control ( $r = .34$ ,  $p = .010$ ), and mediated the relationship between CSA and low cognitive control. Affect-related PTSD symptoms of avoidance and numbing were associated with heightened cognitive control ( $r = .33$ ,  $p = .019$ ), possibly reflecting executive over-regulation that results in a restricted range of affect. Results highlight the role of cognitive control in affect-related PTSD symptoms, and provide evidence for HRV as an indication of impairment in self-regulation related to childhood trauma. Clinical implications include the use of HRV as a point of intervention in the treatment of trauma-related regulatory difficulties.

### POSTER C-40

#### INCREASED RISK FOR DEPRESSION AMONG FIRST GENERATION TO COLLEGE STUDENTS STRUGGLING WITH SOCIAL BELONGING

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*Descriptors: depression, social belonging, stress*

Even as four-year colleges and universities put greater effort into forming diverse student bodies, inequities in college experience persist for matriculated first generation to college students. Despite adequate academic preparation, these students may experience greater social stress and greater sense of isolation within the campus community. Yet, relatively little is known about the connection of social belonging and risk for depression in first generation students. The present study (N=256) employed several measures of sense of belonging to examine whether this experience was a particularly salient risk factor for depression and other mental health concerns. Hierarchical regression models indicated that lower social belonging predicted depressive symptoms; first generation to college status moderated this relationship with first generation students demonstrating a significantly stronger negative association of social belonging and depressive symptoms than that of continuing generation students, e.g.  $t(252)=2.93, p=0.003$ . Poorer sense of belonging within academic spaces also exacerbated perceived stress in first generation students, relative to others. This heightened risk was specific to emotional health. First generation status did not impact the association of social belonging with alcohol use or alcohol-related consequences. These findings highlight the critical nature of campus programs that support first generation to college students through enhanced orientation, proactive advising, and peer-to-peer support.

### POSTER C-41

#### THE ROLE OF POSITIVE REAPPRAISAL ABILITY IN WEIGHT-RELATED HEALTH BEHAVIOR CHANGE

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*Descriptors: positive reappraisal, health behavior change, weight management*

Health behavior change (HBC) interventions vary in their efficacy for helping individuals initiate and maintain health behaviors. For those struggling with weight-related HBC, seeing the positive in stressful situations could prove beneficial for diminishing barriers. This study investigates the moderating role of positive reappraisal ability (PRA) in weight-related HBC, drawing on the Transtheoretical Model's processes of change. Overweight and obese adults (N=85, mean age=39) completed health demographics and a weight management processes of change scale assessing emotional re-evaluation (EMR; emotional reactions to being overweight) and weight consequences evaluation (WCE; awareness of the consequences of being overweight). They also completed a novel emotion regulation ability task where they viewed health-focused film clips and were asked to reframe the clips in a positive way. PRA scores were calculated by subtracting negative emotion ratings after reappraising from those at baseline. Moderation analyses revealed that at higher PRA, use of EMR and WCE was negatively related to weight management actions (betas=-.14, -.36). At lower PRA, use of EMR and WCE was positively associated with weight management actions (betas=.54, .42). This pattern suggests that PRA is most beneficial for individuals not as engaged in HBC, whereas for those who had already begun the HBC process, PRA was less helpful. Findings contribute to research exploring the role of emotion regulation in HBC with implications for individualized approaches to weight management interventions.

### POSTER C-42

#### IMPLICIT THEORIES OF EMOTION IN HIGH RISK ADOLESCENTS

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*Descriptors: implicit theories, adolescents, aggression*

Adolescents exposed to adverse family environments, particularly maltreatment in the home, tend to exhibit high levels of aggression. The present research assessed whether these aggressive tendencies are influenced by the adolescents' implicit theories about the controllability of emotion. Maltreated (n=112) and community-matched (n=69) adolescents were interviewed about their beliefs about whether or not emotions are controllable and about their aggressive behaviors. In both groups, viewing emotion as less controllable predicted higher self-reported proactive and reactive aggression, higher levels of internalizing problems, and poorer global mental health. Maltreated youths reported higher reactive and proactive aggression than non-maltreated youths. Viewing emotion as less controllable moderated the difference between maltreated and non-maltreated youth's levels of reactive, but not proactive, aggression. Importantly, these effects remained even when controlling for hyperactivity, suggesting that implicit beliefs about emotion exerted an independent influence on aggression beyond a generalized lack of behavioral control. These findings indicate that adolescents' mindsets regarding emotional controllability may be shaped by adverse family experiences and have important implications for their aggressive behaviors. Maltreatment may promote the belief that emotion is not controllable, placing youths at risk for aggressive behaviors. Finally, implicit theories of emotion may be an important predictor of emotion regulation competence and strategy use.

### POSTER C-43

#### SHORT-TERM EFFECTS OF STRESS-RELIEVING AND PROSOCIAL VIDEO GAMES ON EMOTION PERCEPTION, SOCIAL BEHAVIOR AND STRESS

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*Descriptors: video game, social behaviour, physiological arousal*

While there has been extensive research on the negative effects of violent video games (VVG), we know little about the positive effects of prosocial VG (PVG) and stress relieving games (SRVG) on social behavior, on emotion perception and on physiological arousal. We assigned 130 individuals to 10mn sessions where they played VVG, PVG, or SRVG. Before and after they played, we measured emotion recognition using faces morphed between neutral-anger, -happiness, -pain or -sadness expressions. We measured reactive aggression and prosocial behavior using games. We recorded heart rate variability (HRV) which is an index of calmness and parasympathetic activation. We found no specific effect of videogame on emotion perception, prosocial or aggressive behavior. However, playing a stress-relieving VG or a prosocial VG dramatically increased heart rate variability compared to playing with a violent VG ( $F=3.4527, p=0.0348$ ). This indicates that specific VG content can increase calmness via the activation of the parasympathetic system.

**POSTER C-44****THINKING ABOUT THE FUTURE IS ASSOCIATED WITH ADAPTIVE EMOTION REGULATION**

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Thompson Rivers University

*Descriptors: emotion regulation, future thinking, well-being*

Considering the future consequences of one's current choices is beneficial for self-regulation in the areas of eating behaviours, alcohol use, exercise behaviours, and coping. However, a relatively unexplored question is whether future-oriented thinking predicts adaptive emotion regulation (ER). We tested the relation between thinking about future consequences and ER. Participants (N = 210, n = 182 after removing random responders) completed the Consideration of Future Consequences Scale (CFCS), the Zimbardo Time Perspective Inventory (ZTPI), the Emotion Regulation Profile-Revised (ERP-R), and measures of well-being. In addition, we adapted the CFCS to create a version that focuses on feelings (CFCS-Feelings, e.g., "The way I think and behave is only guided by the immediate effects on my feelings."). The ZTPI-Future subscale, CFCS, and CFCS-Feelings correlated positively with adaptive down-regulation of negative emotions ( $r = .24$ ,  $r = .26$ ,  $r = .315$ , all  $p$ 's  $< .001$ ), as well as with several measures of well-being (Carefreeness, Elevated, Self-connected, and Meaningful experiences,  $r$ 's from  $.176$  to  $.299$ , all  $p$ 's  $< .01$ ). CFCS-Feelings and ZTPI-Future also predicted depression ( $r = -.154$ ,  $r = -.129$ , all  $p$ 's  $< .05$ ). Future thinking did not reliably predict up-regulation of positive emotions or hedonic well-being. Therefore, considering future consequences is associated with more adaptive down-regulation of negative emotions, better eudaimonic well-being, and better mental health outcomes. Future research should examine the causal connections among these variables.

**POSTER C-45****ARE MEN FROM MARS? A SIGNAL-DETECTION APPROACH TO GENDER DIFFERENCES IN FEELING**

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Ben-Gurion University

*Descriptors: feeling generation, signal detection, gender differences*

A literature review suggests that from adolescence, females tend to react more strongly to stressors than males. In order to shed light on this phenomenon, we applied a new conceptualization of a specific component in emotional reaction - feeling generation, based on Signal Detection Theory (SDT). Employing this conceptualization, we were able to explore gender differences in feeling generation via two parameters. These include: Sensitivity ( $d'$ ), or the ability to emotionally differentiate between external stimuli, and the criterion ( $c$ ), or the "report threshold", the point along the emotional evidence continuum above which reportable feelings exist. Performance of 78 participants (40 men, 38 women) in a tailored SDT paradigm indicated no gender difference in  $d'$  ( $t(76)=0.55$ ,  $p=.58$ , 2-tailed). In other words, men and women did not differ in their basic ability to perceive nuances in the intensity of negative feelings. However, a significantly higher  $c$  (report threshold) was found for men, ( $t(76)=4.92$ ,  $p<.01$ , 2-tailed), meaning that men required more (negative) emotional evidence to report negative feelings. These results imply that men and women differ only in the tendency to report (and consciously experience) negatively valenced feelings. Implications for both neurological and behavioral past findings are discussed.

**POSTER C-46****BLINDED BY OUR EMOTIONS: THE RELATIONSHIP BETWEEN AFFECT AND EMOTION RECOGNITION SENSITIVITY**

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*Descriptors: emotion recognition sensitivity, affect, depression*

Empathy is a dynamic, social process between individuals and yet little is known about how our own emotional states can influence our ability to recognize other people's emotions. Furthermore, problems with emotional dysfunction could potentially alter the interplay between our feelings and those of other people. As such, we investigated how people's current emotional state, or affect, impacts emotion recognition performance and whether symptoms of depression moderate this relationship. Our mixed sample of 118 clinical and healthy adults filled out self-report measures before completing a new, ecologically-valid virtual assessment of emotion recognition sensitivity. We found that both positive and negative affect predict lower sensitivity to expressions of anger, fear, sadness, and happiness, all  $p<.05$ . Additionally, the relationship between negative affect and overall emotion recognition sensitivity varied as a function of depression severity. Specifically, when the severity of depression is low (lowest 10% of scores in our sample), negative affect significantly predicts emotion recognition sensitivity,  $b=.73$ ,  $t=2.99$ ,  $p<.01$ . However, this relationship is not significant at high levels of depression severity,  $p=.37$ . Our findings suggest that elevated emotional states can impair emotion recognition abilities, except within those who suffer from severe depression.

**POSTER C-47****WHEN IS DISCRIMINATION MOST HARMFUL? LINKS BETWEEN DISCRIMINATION, EMOTION REGULATION, AND DISCLOSURE IN SEXUAL MINORITIES**

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The Ohio State University

*Descriptors: sexual minorities, emotion regulation, behavior*

Despite recent increased acceptance, lesbian, gay, and bisexual (LGB) individuals continue to encounter sexual orientation-related discrimination (Bostwick et al., 2014). Few studies have experimentally tested how discrimination influences the decision to disclose one's sexual orientation and the role of emotion regulation (ER) in facilitating disclosure. This is critical because concealing one's sexual orientation has been linked with poor mental health (Pachankis, 2007). Thus, we examined the role of both ER and prior disclosure in moderating the link between discrimination and spontaneous disclosure. LGB adults (N=158) completed the Outness Inventory (OI), and then received ER instructions (either distancing or immersion). They watched a two-minute film clip (either discriminatory or affirming), before spending four-minutes reflecting on the film in a writing task (designed to capture spontaneous disclosure). When predicting words until disclosure, a significant interaction emerged between film type and ER condition, moderated by a three-way interaction with OI,  $p=.011$ . Specifically, among those less "out" in their daily lives, immersing in a discriminatory clip was associated with greater avoidance of coming out (compared to immersing in an affirming clip),  $p=.018$ . These results suggest anti-LGB discrimination may be most harmful among those early in the disclosure process, especially when combined with immersion as an ER strategy. More work is needed to determine how ER can be leveraged to reduce the negative effects of discrimination on disclosure and mental health.

**POSTER C-48****A LONGITUDINAL MEDIATION MODEL EXAMINING COPING AS A MEDIATOR OF PARENTAL WARMTH AND WELL-BEING**

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West Virginia University

*Descriptors: parental warmth, coping, well-being*

Previous work has shown that early life experiences effect well-being later in life. Additionally, early life experiences have been linked to the development of coping abilities which in turn have been associated with indices of well-being. The present study used data from three waves, across 20 years, of the Midlife Development in the US Study (N=2,387) to examine the link between retrospectively-reported parental warmth in childhood and positive affect (PA) and negative affect (NA) in adulthood by exploring two distinct coping strategies (emotion- versus problem-focused coping) as possible mediators. We hypothesized that reports of more parental warmth in childhood would predict greater PA and less NA in adulthood, via more problem-focused coping and less emotion-focused coping, respectively. Two cross-lagged panel models were conducted in Mplus and exhibited good fit, PA model: RMSEA=.06 [CI=.04, .08], CFI=.99, TLI=.91, NA model: RMSEA=.06 [CI=.04, .07], CFI=.99, TLI=.91. Significant indirect effects were observed with problem-focused coping partially explaining the association between parental warmth and PA (beta=.007), but not NA. Conversely, emotion-focused coping partially explained the association between parental warmth and NA (beta= -.003), but not PA. These findings suggest that it is important to consider early life experiences when examining well-being in adulthood. Also, by examining distinct coping styles as explanatory mechanisms, our understanding of the link between early life experiences and well-being across the lifespan is strengthened.

**POSTER C-49****MODELING APPRAISAL RELATIONS TO MULTIMODAL EMOTIONAL EXPERIENCES**

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Vanderbilt University

*Descriptors: appraisal theory, emotion generation, mixture modeling*

Predicting emotions requires better mapping of appraisals-emotion relationships. Our previous application of latent profile analysis (LPA) examined whether multiple appraisal profiles related to a single emotion. However, since people do not usually feel isolated emotions, we now investigate how patterns of appraisal are related to multimodal patterns of emotion. With an aggregated dataset (N=1700) that widely samples appraisals and emotions, we apply parallel process LPA and find 3 appraisal profiles and 6 common emotion profiles. The conditional probabilities from the parallel process model allow us to identify which emotion profiles typically arise with which appraisal profiles. An appraisal profile with high relevance and low congruence has a 92.7% chance to induce a mixture of high negative emotion and low positive emotion, and a minimal chance to induce medium to low negative emotion. Another appraisal profile that involves high relevance, medium congruence, high self-accountability, and high accommodative focused coping potential has a 37.7% chance to evoke low positive and negative emotion, a 35.3% chance to evoke low negative and medium positive emotion, and a 23.2% chance to evoke low negative and high positive emotion. Our analyses benefit affective computing with data-driven emotion generation patterns that account for natural multimodal emotional experiences. The patterns we present will become more predictive with further sampling of appraisal and emotion.

**POSTER C-50****OFF-COLOR HUMOR'S INFLUENCE ON EMOTION AND ATTITUDES TOWARDS RACIAL OUTGROUPS**

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*Descriptors: intergroup relations, emotion, humor*

Off-color humor targeting racial differences has not been thoroughly examined in the context of intergroup relations. This type of humor is considered a socially acceptable outlet for aggression and societal criticism, but it remains unclear how it affects emotion and attitudes towards outgroups. People may consider it to be inappropriate but socially corrective, causing them to experience negative emotion but become more receptive to engaging with outgroups. We predicted that after listening to a comedian targeting a racial outgroup, participants would feel more negative emotion but be more tolerant toward and affiliative with outgroups. To test this idea, undergraduates (N=118) were randomly assigned to view a clip of 1) a White comedian targeting Black Americans (outgroup), 2) a Black comedian targeting Black Americans (ingroup), or 3) a Black comedian discussing a non-racial topic (control). Participants viewing clips targeting Black Americans reported more negative and less positive emotion compared to those in the control condition. Gender and race moderated condition's effect on attitudes: White females reported less tolerant attitudes towards Black Americans than did their non-White counterparts after viewing the control or outgroup clips; this response was eliminated with the ingroup clip. Condition did not predict affiliative preferences. Overall, racial humor appears to negatively impact emotion experience regardless of the comedian's race. However, routines featuring ingroup comedians may boost outgroup tolerance, at least for certain types of audience members.

**POSTER C-51****PRIDE'S ROLE IN PERCEPTIONS OF INDIVIDUALS AND WORK PARTNERSHIPS**

Leah R. Dickens  
Bowdoin College

*Descriptors: pride, person perception*

The present research investigated how people perceive proud individuals, and how proud individuals perform in a partnership. In Study 1, 77 participants were run opposite a confederate. After an emotion writing task (neutral, pride, gratitude), the pair talked for five minutes, before both filled out evaluations of the exchange. Significant differences were found when comparing proud and neutral participants. Confederates interacting with a proud participant rated her as more dominant,  $F(2, 74) = 3.59, p = .03$ . Additionally, they rated her as less anxious,  $F(2, 74) = 3.67, p = .03$ . The gratitude condition did not significantly differ from either group (lending some support to the idea that pride—rather than simply positive valence—has a unique effect). Study 2 manipulated emotion (neutral, pride) and power (high, low) to investigate how a dyad worked together. Ninety-six participants took part. We induced pride with positive feedback (no feedback in neutral), paired participants with confederates, and assigned them to act as supervisor/assistant in a problem-solving partnership. Following the task, both partners evaluated their partnership. For supervisors, the more proud they felt, the more in charge they felt,  $r(44) = .35, p = .02$ , and the more successful they considered themselves,  $r(46) = .31, p = .03$ . In addition, the more proud they felt, the more successful their confederate partners rated their strategy,  $r(46) = .38, p = .01$ . Taken together, these findings suggest that pride influences perceptions of the individual, as well as the work partnership.

## POSTER C-52

**EMOTION REGULATION FLEXIBILITY IN ANGER: EMOTIONAL INTENSITY, AGE AND TRAIT REAPPRAISAL MATTER**

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*Descriptors: emotion-regulation, anger, ageing*

Successful anger regulation is vital for mental and physical health. Many studies assume emotion regulation (ER) preference to be a stable personality trait but recent findings suggest that an emotional state's intensity determines how it is regulated. Emotional processing and ER preference also change over the lifespan. Here, we investigated the influence of trait ER, an emotional state's intensity, and age on anger regulation. Fifty young (30 males, mean age: 24.62) and 42 older healthy participants (27 males, mean age: 67.02) remembered 4 autobiographical anger memories of varying intensity and in random order. They were then asked to choose either reappraisal (R) or distraction (D) to regulate their anger during recall. Trait reappraisal was assessed with the Emotion Regulation Questionnaire. Here we show, that elderly prefer to distract from high intensity and reappraise low intensity anger (Wald chi-square(1)=5.075, p=.024), elderly high in trait reappraisal show a general tendency to regulate with R (Wald chi-square(1)=5.528, p=.019) and that elderly high in trait reappraisal and young adults low in trait reappraisal show a regulation preference for R in low intensity anger and for D in high intensity anger (Wald chi-square(1)= 6.727, p=.009). Our results indicate that older adults flexibly regulate anger according to emotional intensity and psychometric constitution. This study extends previous research in testing the discrete emotion of anger and including trait ER. Our results thereby clarify the dynamic interplay of state, trait, and age in anger regulation.

## POSTER C-53

**CHANGES IN RESTING-STATE FUNCTIONAL CONNECTIVITY ASSOCIATED WITH DEPRESSIVE SYMPTOM AND FATIGUE DECREASES IN CHINESE PATIENTS WITH MDD AFTER 10-WEEK TAIJI INTERVENTION**

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*Descriptors: major depressive disorder, Chinese, mind-body*

Chinese patients with major depressive disorder (MDD) often complain that fatigue disrupts their daily activity. While physical activity has been shown to be effective in alleviating MDD symptoms, previous studies have shown contemplative practices (e.g. mindfulness, yoga) to be effective as well. Taiji is a contemplative exercise that combines slow movements and deep breathing to facilitate energy flow in the body. Here, we explore whether Taiji can also be effective in treating MDD symptoms in Chinese elderly patients (N=16) through self-reported surveys and resting-state functional magnetic resonance imaging (rs-fMRI). Following a 10-week Taiji intervention, we found a decrease in depression scores measured by Beck Depression Inventory (BDI) as well as an increase in vitality scores measured by the vitality subscale (VT) from the Short-Form survey. These changes in scores were inversely correlated. Changes in BDI scores inversely correlated with changes in VT scores. Additionally, we found increased functional connectivity between the anterior insula and occipital pole correlating with decreased BDI scores but increased functional connectivity between posterior insula and the superior parietal lobule, superior frontal gyrus, and cerebellum correlating with increased VT scores (cluster-corrected p<0.05). Our results suggest Taiji may be effective in alleviating MDD symptoms. Furthermore, we report two distinct neural dimensions in MDD that expand on the relevant literature differentiating somatic symptoms from other symptoms in MDD.

## POSTER C-54

**WHAT'S BAD FOR YOU IS GOOD FOR ME: POSITIVE GAINS FROM NEGATIVE STIMULI**

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*Descriptors: high arousal negative stimuli*

Engaging with "negative" stimuli, or in activities or behaviors that increase negative affect are typically thought of as symptomatic of pathology. This study examines whether engaging with high arousal negative experiences (VANE) may positively impact mood. Methods: Survey data were collected from individuals who had purchased tickets to attend an "extreme," interactive haunted attraction. Pre and post self-report ratings were collected on emotional state and experience variables (scaled 0-5). Results: In 97 adult participants (53 women, 44 men) mood significantly increased from pre to post, and Stressed and Anxious decreased. Increasing mood was positively associated with "Challenged their fears" and ratings on: Scary, Thrilling, Intense, Uncomfortable, Learned about self, and change in Happy, Tired, Anxious. Conclusion: This study suggests that allegedly negative stimuli can yield positive mood gains. These findings could have clinical implications; for some people negative high arousal stimuli may be the most effective method of achieving positive mood gains. This study highlights the importance of distinguishing in research and discussion between negative affect, negative stimuli, and negative outcomes (e.g., pathology).

## POSTER C-55

**AUTONOMIC CORRELATES OF PROSOCIAL ALTERATIONS IN BEHAVIORAL VARIANT FRONTOTEMPORAL DEMENTIA AND ALZHEIMER'S DISEASE**

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*Descriptors: psychophysiology, psychopathology*

Prosocial behaviors prioritize the needs of others over one's own and promote social relationships. Whereas socioemotional impairment is a hallmark feature of behavioral variant frontotemporal dementia (bvFTD), social preservation—and even enhancement—may characterize Alzheimer's disease (AD). We measured prosocial behavior in 30 patients with bvFTD, 25 patients with AD, and 20 older healthy controls (HC) during a laboratory task in which participants watched an experimenter struggle to find a lost key. Participants' verbal and non-verbal behaviors were later coded from videotape. Respiratory sinus arrhythmia (RSA), a parasympathetic measure, and skin conductance (SCL), a sympathetic measure, were measured continuously. Exploratory factor analysis identified four distinct factors in the behavioral coding data: empathic concern, consolation, disengagement, and impatience. There was a significant main effect of diagnosis on all four factors,  $F(2,70) = 3.35, p < .05$ . Post hoc tests revealed that patients with bvFTD displayed less empathic concern and consolation and more disengagement and impatience than patients with AD ( $p < .05$ ). Patients with bvFTD also exhibited less empathic concern ( $p < .05$ ) and more impatience ( $p < .05$ ) than HC. Greater consolation was correlated with higher baseline RSA in HC and bvFTD,  $r(50) = .36, p < .05$ , and higher baseline SCL in AD,  $r(25) = .49, p < .05$ . These findings offer behavioral evidence that prosocial behavior is differentially affected in bvFTD and AD, and that prosocial tendencies may have distinct autonomic correlates in each disease.

**POSTER C-56****INDIVIDUAL DIFFERENCES IN WORRY AND BEHAVIORAL INHIBITION ARE PREDICTED BY CONNECTIVITY OF NEURAL CIRCUITS MEDIATING HEDONIC EVALUATION**

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University of California, San Francisco, Memory and Aging Center

*Descriptors: worry, behavioral inhibition, semantic appraisal network*

Individuals respond in highly divergent ways to implicit threat, error, and punishment cues. Some characteristically worry more and vigilantly avoid mistakes, with higher behavioral inhibition and anxiety traits. We hypothesized that these individuals may show functional differences in neural networks involved in hedonic evaluation, ambiguity resolution, and envisioning the future. To investigate this, we obtained informant reports with the Behavioral Inhibition Scale (BIS) in 57 healthy older controls and in 103 patients with very early neurodegenerative disease, and evaluated resting state connectivity in two networks: the semantic appraisal network (SAN), a normally-occurring intrinsically connected network (ICN) involved in hedonic evaluation, comprised of the temporal poles (TP), ventromedial prefrontal cortex (VMPFC), amygdala, and ventral striatum (VS); and the default mode network (DMN), an ICN involved in memory, comprised of hippocampus, retrosplenium, and rostral pregenual cortex. SAS Proc GLMs controlling for group differences in sex and age revealed that higher BIS was predicted by lower mean SAN connectivity ( $F=4.66$ ,  $p<0.05$ ), but not mean connectivity in the DMN or a somatomotor control network. Thus, individual differences in behavioral inhibition are directly predicted by degree of intrinsic connectivity in a network involved in reward (VMPFC), personalized semantics (TP), and resolving ambiguity (VS) during hedonic evaluations, suggesting trait worry derives in part from ineffective semantic appraisal.

**POSTER C-57****WHAT IS A JAMESIAN EMOTION?**

Jordan C.V. Taylor  
University of Pennsylvania

*Descriptors: William James, emotion theory, embodiment*

William James's theory of emotions is seldom given serious attention these days. When it is discussed positively, it is portrayed as a work-in-progress for psychology, one that requires significant conceptual updating. Little discussion is afforded to its fine details. This presentation is part of an attempt to clarify James's theory of emotions. I offer corrections to two misconceptions of the theory that can be found in contemporary literature on James. The first mistake is a conflation of his theory with a superficially similar one published by Carl Lange, forming the so-called "James-Lange theory." This conflation removes James's theory from its context and leads readers to draw false implications from it. The second mistake is a failure to acknowledge James's distinction between physiological changes and behaviors. This results in an implausible hypothesis that spreads the term "emotion" too thinly across distinct ranges of phenomena. In correcting these misconceptions, I show that James's theory should not be rejected as quickly as many commentators believe. Instead, James offers a means of thinking of emotions as strongly embodied phenomena. Jamesian emotions weave through our perceptual systems and help to shape the world as we perceive it. While considered "noncognitivist" by today's common standards, a Jamesian emotion is intentional, not epiphenomenal, and aids its organism in navigating the features of the world as it impacts that organism. This charitable portrayal is unavailable to those who would misconceive James's theory in the ways mentioned above.

**POSTER C-58****STATE RUMINATION PREDICTS AFFECTIVE REACTIVITY TO AND EXAGGERATED MEMORY FOR STRESSOR**

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*Descriptors: rumination, affective reactivity, memory*

Rumination influences how people respond to and later remember stress. The differential influence of trait rumination (an individual's overall tendency to ruminate in their lives) and state rumination (rumination regarding a specific stressor) on responses to and memory for stress is less well understood. The current study employed a stressful speech task to examine emotional reactivity, measured as the change in positive and negative affect (PA and NA) from baseline to post-speech, and memory for PA and NA experienced during the task. Regression analyses included trait rumination and state rumination as moderators, with depression (measured using the CESD) included as a covariate. After adjusting for trait rumination and CESD, state rumination predicted decreases in PA,  $b = -.03$ ,  $t(103) = -2.77$ ,  $p = .01$ , and increases in NA,  $b = .07$ ,  $t(103) = 7.30$ ,  $p < .001$ , from baseline to post-speech. State rumination also predicted remembering the task as more negative than actually reported when asked at the end of the session,  $b = .04$ ,  $t(103) = 3.31$ ,  $p = .001$ , and when asked again one week later,  $b = .02$ ,  $t(88) = 1.94$ ,  $p = .06$ . After adjusting for state rumination and CESD, trait rumination was not related to task reactivity but was related to over-remembering NA one week following the task,  $b = .02$ ,  $t(88) = 2.37$ ,  $p = .02$ . These results demonstrate that state rumination, independent of trait rumination and depression, is not only related to worse affective reactivity following a stressful event, but also exaggerated memory for negative emotions experienced during the event.

**POSTER C-59****MORE THAN MOOD: REWARD SENSITIVITY DEFICIT FOR EMOTIONAL CUES AND ANHEDONIA IN MAJOR DEPRESSIVE DISORDER**

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Queen's University

*Descriptors: depression, anhedonia, reward learning*

Background: Anhedonia is treatment-resistant and predicts disability in Major Depressive Disorder (MDD). Depressed individuals with greater anhedonia demonstrate blunted sensitivity and avoidance of pleasurable stimuli. Little is known about how blunted reward sensitivity in depression may be influenced by the emotional valence of cues similar to those found in social contexts. Methods: In a modified Pizzagalli reward learning paradigm, MDD individuals ( $n = 20$ ) and age- and gender-matched controls ( $n = 19$ ) were presented a randomized series of happy and sad faces and indicated if the length of mouth was either long or short (in reality nearly indistinguishable). One response was randomly assigned to receive relatively three times more reward. This design aimed to train a response bias for the more reinforcing response. Results: Depressed participants with higher anhedonia demonstrated greater learning of response bias within sad ( $r = .54$ ,  $p = .02$ ), but not within happy face trials ( $r = .11$ ,  $p = .66$ ). Stepwise regression was performed with symptom and cognitive variables entered as predictors. Anhedonia severity significantly predicted response bias learning for negative emotional stimuli ( $b = .08$ ,  $p = .02$ ),  $R^2 = .35$ ,  $F(1,15) = 8.44$ ,  $p = .01$ . Conclusion: Depressed individuals adjust their behavior according to an implicit pattern of rewards for negative emotional cues. Future research should explore training of reward learning flexibility for positive and negative stimuli as a treatment target for anhedonia.

**POSTER C-60****NEGATIVE AND DISSOCIATIVE AFFECTIVE STATES PREDICT INTERPERSONAL VS. INTERPERSONAL FUNCTIONS OF NON-SUICIDAL SELF-INJURY**

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The New School

*Descriptors: dissociation, Non-suicide self-injury, depression*

Non-suicidal self-injury (NSSI) is associated with affect regulation, specifically as a maladaptive mechanism for coping with symptoms of depression, post-traumatic stress and depersonalization, or affective numbing. However NSSI may serve different functions for different people, depending on symptomatology. Thus, understanding which functions of, as well as motivations for, NSSI is crucial for successful intervention. To explore how intrapersonal vs. interpersonal functions of NSSI are related to depression, post-traumatic stress, and depersonalization, two regression models were conducted with intrapersonal and interpersonal function as dependent variables, and the depressive, post-traumatic stress, and dissociative symptoms entered simultaneously as predictors. An online sample (55.6% women) completed measures of NSSI and depressive, post-traumatic stress, and dissociative symptoms. The regression models were significant for both interpersonal and intrapersonal functions,  $F(3,95)=12.17$ ,  $p<.000$ ,  $R^2=.28$ , and  $F(3,95)=7.72$ ,  $p<.000$ ,  $R^2=.17$ , respectively. Nevertheless, only depressive symptoms came out as a significant predictor for interpersonal functions,  $b=.46$ ,  $t=3.41$ ,  $p=.001$ , whereas post-traumatic and dissociative symptoms significantly predicted intrapersonal NSSI functions,  $b=.019$ ,  $t=2.36$ ,  $p=.02$ , and  $b=.016$ ,  $t=2.09$ ,  $p=.04$ , respectively. Thus, different affective symptoms are related to different motivations to self-harm. Interpersonal motivations are related to depressive symptoms, whereas intrapersonal motivations are related to post-traumatic and dissociative symptoms.

**POSTER C-61****INVESTIGATING THE SENSITIVITY OF THE PIT PROCEDURE TO DIFFERENTIATE THE “WANTING” OF REWARDING OLFACTORY STIMULI DIFFERENT IN CONSUMMATORY PLEASURE**

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University of Geneva

*Descriptors: wanting, odor perception, consummatory pleasure*

The incentive salience theory (IST) argues that the pursuit of a positive outcome (reward) is influenced by the liking (the pleasure felt during the consumption of a reward), the wanting (the motivation to obtain a reward) and the learning (the pavlovian or instrumental associations and cognitive representations of a reward). These components have widely been studied in rodents, but are only little investigated in humans. A promising test used to investigate liking and wanting in animal and human is the Pavlovian-Instrumental Transfer (PIT). The procedure enables to study experimentally the wanting outside the reward consumption phase. We questioned whether the PIT could measure the liking and the wanting in the presence of multiple olfactory rewards. Particularly, we compared the sensitivity of the PIT procedure in two situations: by using two rewards with different reinforcing properties; and by using two rewards with similar reinforcing properties. The results of the first experiment ( $N=45$ ) suggest that the PIT is sensible enough to measure the wanting for rewards with different reinforcing properties ( $t(44) = 2.07$ ,  $p=0.04$ ). However, in the second experiment ( $N=54$ ), the PIT does not measure the “wanting” for rewards with similar reinforcing properties ( $t(53) 0.85$ ,  $p=0.33$ ). These findings provide helpful information concerning the ability of the PIT procedure to measure the motivation for olfactory stimuli that differ in consummatory pleasure.

**POSTER C-62****EMOTIONAL AND BIOLOGICAL STATES IN RECOVERY FROM TRAUMATIC INJURY: CONNECTING EXPRESSIVE SUPPRESSION, PTSD, AND THE ENDOCANNABINOID SYSTEM**

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*Descriptors: PTSD, expressive suppression, endocannabinoid*

Research on quality of life after traumatic injury points strongly to the negative effects of PTSD, as 25-40% of survivors develop the disorder. Given the connections of emotion regulation (ER) to PTSD, investigating ER post-injury will increase understanding of recovery. Additionally, research has yet to fully connect stress buffering systems, such as endocannabinoids, to ER and PTSD. The current study presents novel findings on ER and biological states following traumatic injury. During initial hospitalization (baseline,  $n = 280$ ) and 6 months post-injury (follow-up,  $n = 166$ ), adult survivors of traumatic injury were assessed for symptoms of PTSD, ER (ERQ; expressive suppression [ES], cognitive reappraisal [CR]), and endocannabinoid levels (2-arachidonoylglycerol [2-AG]). ERQ subscale totals were trichotomized to categorize individuals as using low, moderate, or high levels of each strategy. At baseline, ES was related to 2-AG ( $F = 5.09$ ,  $p = .007$ ) and PTSD symptoms ( $F = 9.37$ ,  $p < .001$ ); specifically, individuals with moderate ES had the greatest 2-AG levels, and high ES was related to greater PTSD. CR analyses were non-significant. At follow-up, 2-AG decreased across the sample ( $F = 87.30$ ,  $p < .001$ ) and was equivalent across ES groups. Still, high ES continued to relate to greater PTSD ( $F = 4.11$ ,  $p = .018$ ), and increased ES from baseline to follow-up predicted increased PTSD severity over time ( $F = 6.32$ ,  $p = .013$ ). The findings on ER after traumatic injury is limited. The current results represent novel findings relating ES to post-injury recovery in this population.

**POSTER C-63****REAPPRIASAL ABILITY: THE ROLE OF EXECUTIVE CONTROL UNDER STRESS**

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*Descriptors: executive control, reappraisal, stress*

The failure to effectively regulate emotions following stressful life events contributes to a range of symptoms of psychopathology. Research further suggests that the ability to effectively regulate emotions may depend on executive control. Executive control declines following stress exposure and individuals differ in the extent to which this occurs. Thus, for some individuals, when executive control is needed to regulate emotions during a stressful event, executive control is compromised. The current study examined whether executive control measured under conditions of acute stress is associated with reappraisal ability. Sixty-five participants were assigned to a stress or control condition. All participants completed a reappraisal ability task in which they were asked to use reappraisal to down regulate negative affect elicited by viewing negative pictures. Participants in the stress condition then completed the Trier Social Stress Test to induce stress. Participants in the control condition completed a control version of this task. Executive control was measured after the stress or control task. Results demonstrate that executive control was related to reappraisal ability only for participants in the stress condition,  $\beta = -.10$ ,  $p < .001$ . Results suggest that a stress-induced decline in executive control may partially explain ineffective patterns of emotion regulation which are thought to contribute to symptoms of various psychological disorders.

**POSTER C-64****USING A PROTOTYPE CLASSIFICATION TASK AND MODEL TO ASSESS ATTENTIONAL BIASES IN DEPRESSION**

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*Descriptors: depression, attentional bias, classification model*

Attentional bias (AB) assessment in depression is characterized by inconsistent results, and concerns about reliability and validity. In the light of these challenges, we propose a new method, inspired by the cognitive sciences, to assess AB's in depression. In particular, we used a well-studied categorization task and the associated model to assess the attentional weight healthy participants devoted to negative information. In an exploratory study, we investigated whether certain variables of interest, such as depression and anxiety symptomatology, depressive rumination, neuroticism, and the current mood, could be linked to an AB towards negative information. Participants were asked to complete categorization tasks in which pictures of human faces had to be classified into two categories. Participants could base their classifications either on the facial expression (slightly - very sad), negative dimension, or on the hair color (light - dark), neutral dimension, of the pictures. Applying a prototype classification model, we extracted attentional weights (AW) for each dimension, reflecting attentional preferences. Though a clear distinction could be made between two groups: a 'sad' group, with a mean AW for sadness of .84, and a 'hair' group, with a mean AW for sadness of .20, the AW's were not found to correlate with any of the assumed predictors (N = 222). This study confirms earlier work arguing that AB's in depression cannot be understood as engagement with negative material, but rather as difficulties in disengaging attention away from negative material.

**POSTER C-65****REAPPRAISAL USE BUFFERS AGAINST THE NEGATIVE PSYCHOLOGICAL CONSEQUENCES OF EXPLICIT WEIGHT BIAS IN OVERWEIGHT AND OBESE INDIVIDUALS**

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*Descriptors: weight bias, reappraisal, mental health*

Weight bias includes negative attitudes, beliefs, and discrimination toward overweight and obese individuals. In such individuals, this bias is associated with negative psychological outcomes, yet effective emotion regulation has the potential to mitigate weight stigma's effect on mental health. The present study investigated if reappraisal use buffers against the detrimental effects of weight bias in overweight and obese (body mass index [BMI]>25 kg/m<sup>2</sup>) individuals. Adults (N= 119, mean age=38 years, 55% female, mean BMI=32 kg/m<sup>2</sup>) on Amazon MTurk completed a measure of explicit weight bias with dimensions of: dislike (negative evaluations of overweight/obese people) and fear of fat (concerns about weight's self-relevance). Measures of depression, mindfulness, psychological flexibility (PF) and reappraisal use were also assessed. Regression analyses indicated that dislike and fear of fat were respectively associated with greater depression (betas=.22, .29, ps<.05), and lower PF (betas=-.23, -.34, ps<.05) and mindfulness (betas=-.18, -.22, ps<.05). Moderation analyses revealed that reappraisal use mitigated the negative influence of dislike and fear of fat on depression and PF (ps<.05). Findings suggest that using reappraisal as a habitual emotion regulation strategy to reinterpret the meaning of an emotional stimulus may be an effective way to combat the negative consequences of weight bias. For overweight and obese individuals, this reduced psychological harm has the potential to free resources that would facilitate engagement in healthier behavior and attitudes.

**POSTER C-66****DOES PSYCHOSOCIAL STRESS IMPACT COGNITIVE REAPPRAISAL? BEHAVIORAL AND NEURAL EVIDENCE**

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*Descriptors: fMRI, reappraisal, stress*

Cognitive reappraisal (CR) is regarded as an effective emotion-regulation strategy. Acute stress, however, is believed to impair the functioning of prefrontal-based neural systems, which could result in lessened effectiveness of CR under stress. This study directly tested the behavioral and neurobiological impact of acute stress on CR. While undergoing fMRI, adult participants (n=54) passively viewed or used CR to regulate their response to negative and neutral pictures, and provided ratings of their negative affect in response to each picture. Half of participants experienced an fMRI-adaptive acute psychosocial stress manipulation similar to the Trier Social Stress Test, and a control group received parallel manipulations without the stressful components. Relative to the control group, the stress group exhibited heightened stress as indexed by self-report (t=-3.72, p<0.001), heart rate (t=-6.03, p<0.001), and salivary cortisol (t=-2.22, p=0.032) throughout the scan. Contrary to our hypothesis, we found that reappraisal success was equivalent in control and stress groups (F(1,52)=2.3, p=0.14), as was activity in cognitive control systems implicated in CR. However, the stress group exhibited a paradoxical increase in amygdala activity during reappraisal. Together, these findings suggest that both the self-reported and neural effects of CR may be robust to at least moderate levels of stress, informing theoretical models of stress effects on cognition and emotion.

**POSTER C-67****ATTENUATING SYMPATHETIC ACTIVITY USING PROGRESSIVELY SLOWER MOVEMENT**

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*Descriptors: biofeedback, emotion regulation, stress*

It has been classically demonstrated that physiology entrains and adjust to accommodate metabolic demand. Movement is the primary driver of metabolic demand and has been shown to up-regulate or down-regulate based on movement type. The current study demonstrates that simple hand movements can be used to down-regulate metabolic demand and decrease sympathetic arousal. Participants were assigned to either a control group (n = 16) or to a group that tapped progressively slower and softer with their dominant hand (n = 12). Throughout the study electrocardiogram, respiration and electrodermal activity was recorded. From the beginning to the end of the 6 min tapping procedure, slow tapping participants indicated significant decreases in HR F(1,26) = 7.774, p = .010 and SCL F(1,26) = 32.519, p < .001. The results demonstrate that with minimal training, an individual could use simple movements to regulate the sympathetic nervous system.

### POSTER C-68

#### YOUNGER AND OLDER ADULTS SHOW SIMILAR LEVELS OF OPTIMISM FOR THE FUTURE IN VERY OLD AGE

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*Descriptors: aging, emotion, future*

Research has suggested that optimism about the future declines as people become older. However, these studies have allowed younger and older adults to forecast to different ages and stages of life. The current study examined whether these age group differences would be eliminated when younger and older adults are explicitly instructed to project to the exact same age. To investigate this, we asked 44 younger and 51 older adults to predict how relevant positive and negative words would be to either their own life or the average person's life at age 85. Both younger and older adults rated significantly more positive than negative words as relevant to their own future in very old age, and this positivity did not differ between age groups,  $F(1, 91) = 28.57, p < .001$ . Additionally, both younger and older adults rated their own future as more positive ( $t = 2.15, p < .05$ ) and less negative ( $t = 5.68, p < .001$ ) than the average person's future in very old age. This pattern of results suggest that younger and older adults have a similarly optimistic view of the future in very old age and this optimism tends to remain stable across the lifespan. These findings emphasize the need to control the age and stage of life that is being considered when assessing age group differences in optimism for the future. Previous research suggesting that older adults have reduced optimism could simply reflect people's expectations for life in old age. This distinction is crucial for determining when older adults' expectations and preparations for the future are maladaptive.

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