

Poster 3-53**NEUROCOGNITIVE ASSESSMENT OF REGULATORY FLEXIBILITY**Jean M Quintero^{1,2}, Peter Luehring-Jones³, Laura J O'Toole², George A Bonanno⁴, & Tracy A Dennis^{1,2}¹The Graduate Center, The City University of New York, ²Hunter College of The City University of New York, ³City College of The City University of New York, ⁴Teachers College, Columbia University,*Descriptors: emotion regulation, flexibility, event-related potentials*

Regulatory flexibility, or the ability to respond sensitively to context by drawing on a repertoire of strategies, may represent the most adaptive approach to emotion regulation. Few methods exist, however, for assessing emotion regulation (ER) flexibility. The present study examined links between biobehavioral measures of context sensitivity and repertoire flexibility in relation to self-reported adaptive ER among 73 adults. Event-related potentials (ERPs) were used to measure sensitivity to emotional context during the go/no-go task (N170) and regulation strategies during the reappraisal task (late positive potential; LPP). Performance was sensitive to emotional context during the go/no-go task: Correct go responses were faster for happy versus fear faces [$t(73) = 3.32, p = .001$] and greater N170 amplitudes to no-go fear faces were associated with faster correct responses to self-report of more adaptive ER strategy use (acceptance and positive refocusing; $r_s = .27, p_s = .03$). Reappraisal was also sensitive to emotional context: LPPs were larger in the increase ($p = .03$) and maintain ($p = .02$) versus the decrease condition for pleasant images [$F(2, 144) = 3.11, p = .048$]. Larger LPPs to pleasant images in the increase versus decrease condition were associated with greater use of several ER strategies (reappraisal: $r = .25, p = .04$; positive refocusing: $r = .35, p = .003$; flexibility in strategies following difficult events: $r = .27, p = .03$). Taken together, findings provide support for a neurocognitive approach to conceptualizing and assessing regulatory flexibility.

Poster 3-54**A GAMIFIED ATTENTION BIAS MODIFICATION APP REDUCES STRESS REACTIVITY DURING PREGNANCY**Peter T Luehring-Jones¹, Jean M Quintero^{2,3}, Laura J Egan³, Margaret Altemus⁴, Shari Gelber⁴, & Tracy A Dennis^{2,3}¹City College of The City University of New York, ²The Graduate Center, The City University of New York, ³Hunter College of The City University of New York, ⁴Weill Cornell Medical College*Descriptors: attention bias modification, gamification, pregnancy*

Prenatal stress affects health outcomes for both the mother and the developing fetus. Cost-effective and accessible treatments to reduce such stress are needed for pregnant women. The present study explored whether four weeks of mobile, gamified attention bias modification training (ABMT) versus placebo training (via an iOS application, or app) reduced subjective anxiety, threat bias, and stress reactivity in a group of pregnant women ($n = 19$) between their 15th and 25th week of pregnancy. The ABMT group showed less stress reactivity than the placebo training group following app play [$F(1,15) = 5.06, p = .04$]. Event-related potentials were used to measure whether discrete stages of threat processing [attention allocation (P1), discrimination (N170), affective evaluation (P2), cognitive control (N2)] were associated with anxious or depressed mood prior to app play. At baseline, greater trait anxiety was associated with enhanced discrimination of threat (N170: $r = -.48, p = .04$), depression was associated with dampened emotional evaluation of threat (P2: $r = -.55, p = .01$), and both anxiety and depression were associated with reduced controlled processing of threat (N2: $r = .60, p = .009$ and $r = .76, p < .001$). Taken together, these results indicate that extended use of a mobile, gamified ABMT app effectively reduced behavioral stress reactivity during pregnancy. In addition, patterns of neurocognitive responses to threat varied with anxious and depressed mood, suggesting that ERPs could serve as treatment-relevant measures of threat processing in ABMT research.

Poster 3-55**THE INFLUENCE OF MOTOR IMAGERY ON THE LEARNING OF A SEQUENTIAL MOTOR SKILL**Jagna Sobierajewicz^{1,2}, Anna Przekoracka-Krawczyk², Wojciech Jaśkowski³, Willem Verwey⁴, & Rob van der Lubbe^{1,4}¹University of Finance and Management in Warsaw, ²Adam Mickiewicz University, ³Poznan University of Technology, ⁴University of Twente*Descriptors: motor imagery, motor learning, event-related potentials, lateralized readiness potential*

Motor imagery has been argued to affect the acquisition of motor skills and to improve performance in sports disciplines and rehabilitation. The present study examined whether motor imagery induces the learning of a sequential motor skill by employing a modified discrete sequence production (DSP) task: the Go/NoGo DSP task. In our task, sequences of five stimuli signaling a specific response sequence were presented. After an informative cue, the cued response sequence had either to be executed, to be imagined or to be withheld. To establish an effect of motor learning, the experiment was divided into a practice phase, and a final test phase. In the latter phase we compared mean response times and accuracy during the execution of new sequences, old imagined sequences and old executed sequences. The electroencephalogram (EEG) was measured to compare activity between motor imagery, motor execution, and motor inhibition in the practice phase. Event-related potentials (ERPs) and event-related lateralizations (ERLs) in the practice phase showed strong similarities on trials requiring motor imagery and motor execution, while a major difference was found on trials for which the response sequence should be withheld. Behavioral results in the test phase revealed that the accuracy for imagined sequences in the practice phase was improved relative to new sequences, which confirms the idea that motor imagery induces motor skill learning.

Poster 3-56**TEMPORAL DYNAMICS OF POSITIVE EMOTION REGULATION**Emmanuel Garcia¹, Jean M Quintero¹, Laura Fonseca², & Douglas S Mennin¹¹The Graduate Center, City University of New York, ²Hunter College of The City University of New York*Descriptors: positive emotion regulation, affective disorders, event-related potentials*

Affective disorders are commonly associated with negative emotion regulation strategies, while positive emotion regulation (PER) remains under-explored. To address this gap in research, we examined the temporal nature of PER using event-related potentials (ERPs). Healthy undergraduates ($n = 25$) passively viewed emotional (affiliative, erotic, threatening, mutilation) and neutral images, while an electroencephalogram (EEG) was recorded. Responses to Positive Affect, a self-report measure of trait PER, were used to examine how the degree of PER may impact the late positive potential (LPP; 400ms-1000ms post-stimulus onset) responding. We expected people scoring higher on trait PER to display greater differences in activation between neutral and emotional images than those who scored lower. Overall, emotional images elicited significantly greater mean activations than neutral images. Significant interactions were found between activation to emotional images and high-versus-low levels of PER. People higher in trait in PER were better able to distinguish between emotional and neutral images. People lower in trait PER had elevated reactivity to neutral and threatening images, with blunted reactivity to affiliative, erotic, and mutilation images. Combined, these results suggest that PER may modulate elaborative emotional processing, highlighting the importance of further investigating the underlying mechanisms of PER. ERP investigations of PER may contribute to a more comprehensive understanding of emotion regulation and improved treatment of emotional disorders.

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