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New This Year

An exciting new feature of this year's conference is the inclusion of five "clustered" poster presentations. As a group, the clustered posters present related research on a defined topic of interest. Our hope is that clustering each set of posters together will facilitate discussion of shared research interests during the poster sessions. The clustered posters will be presented as the final poster numbers at Poster Sessions II, III, and IV.

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SPR

 WILEY-BLACKWELL

C4). During EEG recording, 31 White participants watched videos of ethnic ingroup and outgroup members performing an action and then performed the action themselves. Supporting our hypothesis, participants showed mu suppression when performing the action and when observing ingroup members. Importantly, they did not show mu suppression when observing outgroup members. Moreover, individual level of prejudice predicted mu suppression in response to outgroup members. These findings provide evidence from brain activity for the concept of bounded empathy: Empathy may be restricted to close others and, without active effort, may not extend to outgroups, making them likely targets for prejudice and discrimination.

Poster 138

EMOTIONS IN VOICE AND MUSIC: SAME CODE, SAME EFFECT?

Nicolas Escoffier, Jidan Zhong, Anqi Qui, & Annett Schirmer
National University of Singapore

Descriptors: voice, music

Scientists and philosophers have highlighted many similarities in the way humans convey emotions through voice and music. Some have speculated that these emotional messages recruit similar perceptual processes and affect listeners in the same way. We investigated this proposition in a functional magnetic resonance imaging (fMRI) study during which participants listened to musical excerpts and spoken sentences composed of pseudowords. Musical excerpts and the pseudospeech could vary in emotional connotation from neutral to sad or from neutral to happy. In two different tasks, participants tracked either pitch or emotion changes in these stimuli by using a joystick. Subtracting the low-level pitch task from the emotion task revealed an area in the medial prefrontal cortex that was activated for both music- and voice-emotion judgments, which prior research has implicated in the ability to infer others' emotional and mental states. However, contrasting stimuli rated as neutral, happy or sad indicated differential effects for music and voice. Thus, it seems that although the mechanism of extracting emotional information from these two types of stimuli is comparable, its effect on the listener is not. Moreover, differential responses to emotional messages conveyed in music and voice may point to the different roles these two media play in human communication.

Poster 139

EFFECTS OF COMPLETELY PREDICTABLE AND UNPREDICTABLE AVERSIVE STIMULI ON STARTLE RESPONSES

Brady D. Nelson, & Stewart A. Shankman
University of Illinois, Chicago

Descriptors: emotion, predictability, startle reflex

Anticipation of aversive stimuli can yield two types of emotional states: fear and anxiety. One characteristic of aversive stimuli that differentiates these emotions is whether the stimuli are predictable or unpredictable, such that fear is elicited by predictable aversiveness and anxiety is elicited by unpredictable aversiveness (Davis, 1998; Grillon et al., 2004). When empirically examining predictability, it is important to include conditions where the aversive stimuli are either completely predictable or unpredictable. However, in most studies the predictable condition contains aversive stimuli that are more predictable than the unpredictable condition, but their occurrence is not certain. Therefore, we examined fear and anxiety-potentiated startle in 51 participants who anticipated no (N), predictable/certain (P), and unpredictable (U) aversive stimuli. This study also examined whether the effects of predictability were similar for two types of aversive stimuli (shocks and unpleasant noises). Startle blink reflex was measured using the orbicularis oculi muscle and elicited using a 95 dB acoustic white noise probe. Results indicated that completely predictable shocks (but not unpleasant noises) potentiated fear, while unpredictable shocks and unpleasant noises potentiated anxiety. Our results support predictability as an important feature of aversive stimuli that can differentiate fear and anxiety. However, not all aversive stimuli will induce fear when completely predictable.

Poster 140

EMOTION REGULATION AND THE CHRONOMETRY OF EMOTION-EVOKED ZYGOMATICUS MAJOR ACTIVITY PATTERNS

Ashley Warren, & Keith W. Burton
University of Illinois, Springfield

Descriptors: affective chronometry, emotion regulation

The role played by individual difference variables in the processing of emotional stimuli and their subsequent emotional outputs (e.g., facial expressions) has been relatively unexplored. Emotion regulation is one such individual difference variable and describes efforts undertaken to modulate the experience of emotions, often with the goal of downregulating negative emotion. We examined the role that emotion regulation strategies play in the types of emotional expressions elicited by a standard set of emotional pictures, and in the time course of those emotional expressions. Sixty-three participants (32 women) were recruited, and we assessed two major methods of emotion regulation: cognitive reappraisal and expressive suppression. Participants viewed 36 emotionally salient pictures (12 positive, 12 neutral, and 12 negative) while electromyographic recordings were made of their zygomaticus major muscle activity (i.e., the "smiling" muscle along the cheek). Self-re-

port ratings of the emotion experienced while viewing the images was also recorded. We found that expressive suppression was unrelated to facial expression patterns or time course. Cognitive reappraisal interacted significantly with picture type to produce different patterns of activity over time, with a "grimace" pattern of zygomaticus major activity seen during the first three seconds of picture viewing in those who were less likely to engage in cognitive reappraisal to regulate their emotions. This was not seen in those more likely to engage in cognitive reappraisal.

Poster 141

SUBLIMINAL EXPOSURE TO BIOLOGICALLY RELEVANT STIMULI ON AFFECTIVE AND PHYSIOLOGICAL STATES

Pedro J. Rosa^{1,2}, Patricia Arriaga², & Francisco Esteves²
¹Universidade Lusófona de Humanidades e Tecnologias, ²Instituto Superior de Ciências do Trabalho e da Empresa (ISCTE)

Descriptors: subliminal exposure, fear of snakes, anxiety

A large body of evidence indicates that conscious perception of a stimulus is not a required condition to obtain an emotional response. Exposure to fear-relevant stimuli, even when presented very briefly, can produce an intense negative emotional response. Research also suggests that repeated subliminal exposure to phobic stimuli may lead to affective habituation. Based on the reciprocal inhibition principle, the aim of the present study was to test if subliminal exposure to snakes paired with supraliminal incongruent stimuli (pleasant) might reduce negative affective experience (anxiety and subjective report) and physiological arousal. The role of fear of snakes as a moderating variable was analyzed. Eighty participants, 22 male and 58 female, were randomly assigned to one of the following three experimental conditions: 1) supraliminal exposure to pleasant images preceded by subliminal snake images; 2) supraliminal exposure to neutral images preceded by subliminal snake images; and 3) supraliminal exposure to pleasant images with no subliminal exposure). Heart rate (HR) and skin conductance response (SCR) were recorded. Participants who were exposed to snakes subliminally showed a higher SCR compared to the condition with no subliminal exposure. However, no significant differences were found between the three groups on subjective emotional responses. Taken together, the results are in line with research that suggests an emotional processing of fear-relevant stimuli below threshold of consciousness.

Poster 142

PSYCHOPHYSIOLOGICAL MEDIATION EFFECTS OF EMOTIONAL FACES IMPACT IN TIME PERCEPTION

Alexandre C. Fernandes, & Teresa Garcia-Marques
Instituto Superior de Psicologia Aplicada

Descriptors: time perception, emotion, faces

The duration of emotional stimuli is frequently overestimated (in comparison with duration estimates of neutral stimuli). This effect has been attributed to physiological arousal. According to internal-clock and attention-gate timing models, attention focus on stimulus and arousal elicited by the stimulus have opposite impacts on time perception. It is likely the main reason of why previous research reveals inconsistent effects on time perception of emotional valence and arousal manipulations. The present study sought to clarify these inconsistencies in an examination of the physiological mediation effects of emotional dimensions' impacts on time perception. Using a 7-point timing scale, participants estimated the duration (.4 to 1.6 s) of negative and positive emotional faces (valence) with low and high expressivity (arousal). Heart rate (HR), skin conductance (SC) activity, and facial EMG activity of corrugator supercilii (CS) and zygomatic major (ZM) muscles were measured. Duration ratings were higher for high arousing faces, but no overall effect for valence was found. As expected, negative faces, as compared to positive faces, evoked a larger CS activity, whereas positive faces evoked a larger ZM activity. Furthermore, HR deceleration was higher for negative faces, and SC was greater for high emotional faces. Regression analysis only showed an overall mediation effect of SC between stimuli intensity and time perception. These data demonstrated that SC response (arousal index) evoked by emotional stimuli mediates its impact in time perception; and suggests a central role of arousal over attention and valence.

Poster 143

UNCONSCIOUS AFFECT AND ECONOMICS BEHAVIOR: FMRI EVIDENCE FOR STRONGER SUBLIMINAL THAN SUPRALIMINAL AFFECTIVE PRIMING EFFECTS ON FINANCIAL CHOICES

Julie L. Hall¹, Richard Gonzalez¹, Chandra Sripada¹, & Oliver C. Schultheiss²
¹University of Michigan, ²Friedrich-Alexander University of Erlangen

Descriptors: affect, unconscious processes, neuroeconomics

Traditional economic models assume that individuals are always rational when they make financial decisions. However, the current study suggests that affect plays an important role in financial decisions and that these processes are occurring at an unconscious level.