PHYSIOLOGICAL AND SUBJECTIVE ASPECTS OF POSITIVE MOOD IN RELATION TO EXECUTIVE FUNCTIONING:

THE POTENTIAL MODERATING ROLE OF PERSONALITY

By

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Abstract

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Positive affect has been demonstrated to improve aspects of cognition. However, recent studies reveal that positive affect may hinder the same cognitive processes, such as executive functioning, memory and creativity. These discrepant findings may be due to differing levels of physiological arousal, a component of the circumplex model of affect, which has been largely ignored in affective research. For example, one recent study suggests that positive valence coupled with varying levels of physiological arousal (i.e., low, moderate, and high) may differentially affect performance on tasks of verbal fluency and memory. Furthermore, one other explanation for these inconsistent findings may relate to individual differences (i.e., personality), which have been demonstrated to be associated with differences in susceptibility to certain affective states as well as cognitive performance. The goal of the proposed study was to assess the effects of a positive-mood induction (using the International Affective Picture Scale [IAPS] and/or a musical excerpt) aimed at inducing varying levels of physiological arousal (low, moderate and high) on performance of cognitive tasks of semantic and phonemic fluency, as a function of personality (specifically, neuroticism and extraversion). 160 adults (80M/80F) were randomly assigned to one of four mood induction conditions that included presentation of IAPS images varying in valence and arousal level, a musical excerpt or a combination of IAPS images with a musical excerpt; specifically: 1) neutral, low-arousal IAPS, 2) positive, low-arousal IAPS,
3) a moderate-arousal musical excerpt and 4) simultaneous presentation of low-arousal IAPS and music (i.e., high-arousal). Physiological reactivity was measured using skin conductance (SC), affect was assessed using the Self Assessment Manikin (SAM), and personality was assessed using the NEO-Five Factor Inventory Short Form (NEO-FFI-S). Results suggested that the mood induction was largely successful in eliciting changes in subjective valence and physiological arousal in the anticipated directions. Regarding the influence of personality, a higher degree of extraversion, coupled with increasing SCL reactivity, negatively affected executive functioning performance; no such relationship was found for introversion. In relation to neuroticism, lower neuroticism scorers demonstrated better executive functioning performance with increasing SCL reactivity in conjunction with greater changes in SAM valence change scores. However, higher neuroticism scorers demonstrated opposing results depending on the administered executive functioning task. While greater SAM valence change scores (regardless of SCL reactivity) improved verbal fluency scores, greater SAM valence change scores with increasing SCL reactivity impaired task-switching scores. Overall, results helped to elucidate the potential moderating influence of extraversion and neuroticism personality dimensions on the relationship between affect (including subjective valence and physiological arousal) and executive functioning performance.