

82/04 - "Detecção de informação emocional e sua interferência no processamento neurocognitivo: um estudo em criminosos reincidentes" - "Detection of emotional information and interference in neurocognitive processing: a study of recidivist offenders"

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Abstract:

Objectives: this research project aimed to test several hypotheses including that recidivist offenders show lower sensitivity to the intensity of emotional stimuli than controls, and that emotional stimuli that elicit identical arousal in both groups produce higher interference on the neurocognitive processing of control subjects.

Methods: to test the aforementioned hypotheses, we put forward an experiment based on the Signal Detection Theory, in which 120 slides from the International Affective Picture System were exhibited to 38 male recidivist offenders and 30 non-criminal controls. Subjects were asked to rate each slide in a 9 point scale for the perceived arousal. Based on the above experiment, a subset of slides of identical emotional arousal was presented to 20 subjects from each group, with simultaneous ERP recordings by means of an auditory odd-ball paradigm.

Results: Receiver Operating Characteristic curves from the first experiment show that mean Az values for recidivist offenders are lower than for controls considering different categories of emotional arousal ($F_{(1,64)} = 9.84, p < .01$). Results from the second experiment show that when both groups are under emotional stimulation of equivalent arousal, the controls evidence a higher reduction of P300 amplitude ($F_{(1,17)} = 8.857, p = .008$) than offenders (ns).

Conclusions: in this study we verified that recidivist offenders are less sensitive than controls for different categories of emotional intensity, requiring stimuli of increased intensity to perceive the same arousal as controls. Furthermore, even if groups are submitted to stimulation of matched arousal, the interference of such emotional stimuli on neurocognitive processes seems to be higher in controls. However, further analysis will be required to measure the single effects of the emotional stimulation, independently of mental resources involved on sensorial processing.

Publications: Almeida, P. R., Marques-Teixeira, J. & Barbosa, F. (2007). *Sensibilidade à estimulação emocional em reclusos reincidentes: uma abordagem à luz da Teoria de Detecção de Sinal. Proceedings of the 2º Encontro Nacional da APPE*. Porto: FPCEUP/APPE.; Almeida, P. R., Barbosa, F., Santos, F. R. & Marques-Teixeira, J. (under review). How Much Arousal do Antisocials Need to Get Aroused? An Experimental Study of the Emotional Sensitivity on Criminal Recidivists through SDT. *Cognition & Emotion*.; Marques-Teixeira, J., Barbosa, F. & Almeida, P. R. (under review). A SDT Based Framework for the Experimental Manipulation of Emotional States. *Methodology*.

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