

Perception of humor and perception of ambiguous figures both require the recipient to find out the second meaning of a stimulus presented. This second meaning is usually unobvious and requires some extra mental effort, if compared to perception of non-ambiguous stimuli (Shcherbakova, 2010; Filippova, 2011). The aim of this study was to test whether the perception of these two kinds of ambiguity had common components of evoked potentials (ERP). Participants (N = 24, 16 female, mean age 23,6) went through two similar experimental procedures with 2 types of stimuli: 1) 36 ambiguous (matching two different semantic categories) and 36 non-ambiguous figures; 2) 14 verbal jokes and 14 similar but non-humoristic short stories (specially composed by changing the punch line of the jokes in order to make them look as a description of everyday activities). ERP corresponding to the perception of non-ambiguous figures and non-humoristic stories were recorded in the control condition, ERP corresponding to the perception of ambiguous figures and verbal jokes were recorded in the experimental condition. At the first stage of the experiment, participants were presented figures of both types. The task was to identify whether each figure was ambiguous or non-ambiguous. The recording of the ERP started at the same moment the figure was displayed on the computer screen. At the second stage of the experiment, participants were presented with the verbal stories and the task was to identify whether each story was a joke or not. The recording of the ERP started when the key phrase (the punch line) of a joke started being presented word-by-word on the computer screen. The results show that perceiving of both ambiguous figures and punch lines of verbal jokes corresponds to the increase of N400 amplitude (within the time window of 250 – 500 ms), if compared to the control conditions. These differences are statistically significant for both figures ($F(1; 1105) = 4, 74; p = 0,03$) and verbal stories ($F(1; 2084) = 3, 9; p = 0,05$). The increase of N400 amplitude is usually associated with the increased complexity of semantic processing and more intense neuronal activity (Federmeier, Kutas, 2001; Soldan et al., 2010; Gotts et al., 2012). We interpret the increase of N400 amplitude which was observed in our experiment as a marker of successful conflict resolution while perceiving ambiguous information (ambiguous figures and verbal jokes). The research was supported by the grants of RFBR №14-06-00302A and №14-06-00374A.

doi:10.1016/j.ijpsycho.2016.07.297

283

Emotional memory in anxiety: Behavioral and electrophysiological data

Gabriel Barg^a, Sandra Hoyos^a, Thomas Roche^a, Alejandra Carboni^b, Luis Carretié^c

^aUniversidad Católica del Uruguay, Montevideo, Uruguay

^bUniversidad de la República, Montevideo, Uruguay

^cUniversidad Autónoma de Madrid, Madrid, Spain

Background and Objectives: Recognition memory in anxiety is crucial since association with past experience is particularly important to manage emotional situations. A recognition bias can be the first step in cognitive anxiogenic distortions. The objective of this research was to evaluate the effect of anxiety on recognition memory, including consolidation and retrieval. This is the first study to date to assess recollection and familiarity through an independent remember/know paradigm in anxious participants, both behaviorally and electrophysiologically.

Methods: Two groups of 17 participants with low and high anxiety level performed an experimental task of visual recognition memory, using neutral, pleasant and threatening pictures. The

experiment was carried out two times, with an interval of 24 hours. The pattern of recognition was analyzed, behaviorally (through an independent Remember/Know paradigm) and with event-related potentials (ERP).

Results: Subjects with higher levels of anxiety developed a bias in recognition of arousing stimuli (threatening and pleasant) compared with less anxiety level group. This bias was observed in the subprocess of familiarity and produced a positive modulation of a parietal late positive component (LPC) at approximately 620 milliseconds of latency. This effect was not found 24 hours later.

Limitations: A reduced post-study interval limited the experimental effect on consolidation. Anxiety was assessed only dimensionally.

Conclusions: The familiarity bias in recognition found in this experiment is a promising way of explaining the memory distortion in anxiety. The way in which an individual recognizes a situation determines their reaction; the recovery of a past experience is essential to manage the present one. According to the familiarity bias, the anxious subject can recognize the arousing stimuli with accuracy but exhibits difficulty in discriminating whether the item is pleasant or potentially dangerous. In addition, anxious individuals cannot recover contextual information that helps them resolve this conflict. In this regard, the process described could be a symptom as well as a factor that perpetuates the anxiety disorders.

Keywords: Anxiety- Emotional memory- ERP- Recognition.

doi:10.1016/j.ijpsycho.2016.07.298

289

Electrophysiological changes after rehabilitation auditory in deaf and deafblind children of Cuban cochlear implants programs

Lidia E. Charró Ruíz

Cuban Neuroscience Center, Havana, Cuba

Introduction: The hearing loss is a serious health problem, because as the sense of hearing is critical for language acquisition and is the substrate on which develops thinking and intelligence. Many of these omissions can be minimized through early diagnosis and intervention.

Objective: Identify electrophysiological changes (level cortical) in deaf children after implantation cochlear.

Methods: We studied 61 deaf and deafblind children with Electroaudiometry. We performed Cortical Auditory Evoked Potentials, P300, Somatosensory Evoked Potential (SSEP-N20) and EEG. Electrophysiological findings were correlated with the results of clinical examination after implantation.

Results: All children had a bilateral profound hearing loss according to Electroaudiometry. CAEP and P300 showed significant changes after implantation, being more frequent change latency of P1 in the CAEP, consistent with rehabilitation results. In general, the P300 showed normal characteristics (pattern distribution), only a few children have abnormal responses in those test. SSEP-N20 showed evidence of the neuroplasticity after rehabilitation. While the EEG showed abnormalities, by presence of paroxysmal activity, fundamentally in children with neurological examination positive.

Conclusions: These findings show that CAEP and P300 are interest to the functional study of sensory pathways and cortical reorganization. CAEP evidence change in the auditory pathway could help characterize outcome after auditory rehabilitation. SSEP-N20 show electrophysiological changes, evidences of brain reorganization after rehabilitation.

doi:10.1016/j.ijpsycho.2016.07.299