Neuropsychological Trends

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The Neuropsychological Trends publishes original contributions to scientific knowledge in neuropsychology and neuroscience, and it provides an interdisciplinary forum on new trends on neuropsychology and psychophysiology. There is a growing dissatisfaction with fragmentation in theoretical perspectives on neuropsychology and without doubt there is a felt need for a journal containing articles which aim to integrate these fragmented ideas, theories and methods. We place particular emphasis on the fact that informed discussion of neuropsychology needs to be interdisciplinary.

The journal aims to introduce new ideas on the field of biological bases of behaviour and of the neurological perspectives applied to psychological processes. Specifically it intends to offer an ample space for innovative research methodologies and new theoretical views on the neuropsychological discipline. Methodological discussion will constitute a main topic of the journal. Specific attention will be given to the development of new theories and/or research methodologies applicable to group and single-case studies.

The journal is interested in basic and applied research and aims at opening up new avenues for the understanding, explaining, and treatment of neuropsychological issues. Specifically, Neuropsychological Trends will consider articles from any area of neuropsychological and neuroscience research, including, but not limited to: cognitive neuropsychology, clinical neuropsychology, neurophysiology, psychophysiology, and research techniques (fMRI; ERPs, PET).

The main topics proposed are:
- sensation and perception
- consciousness
- learning and memory
- communication and language
- motivation and emotion
- methodology of research (electroencephalography; brain imaging; behavioural measures)

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Laparoscopic Sleeve Gastrectomy (LSG) is a bariatric surgery procedure to promote weight-loss in severe obese individuals. Beyond homeostatic needs, several non-homeostatic mechanisms contribute to overeating, which may in turn lead to weight gain and obesity. Attentional bias toward food-related cues has been suggested in obese individuals, possibly reflecting altered reward-sensitivity within the brain reward network. From the other hand, cognitive control exerted by frontal brain regions is necessary to inhibit overeating and pursue long-term goals (i.e. weight loss), and reduced frontal activation has been shown in obese individuals. Both attentional processing and top-down cognitive control might correspond to a decrease in impulsive symptoms after bariatric surgery and contribute to successful weight-loss. Initial evidences for cognitive improvement after bariatric surgery exist, however neurophysiological correlates of these processes are poorly investigated and longitudinal studies are needed. Thus, the aim of the present study was to assess changes following LSG in 17 obese individuals, evaluated in fasted state before LSG (pre-LSG) and one year after-surgery (post-LSG). Cognitive control and attentional bias toward food were investigated with a modified Simon task with central presentation of distracting food and non-food images, and a neutral condition without distractors. Stimulus-response spatial compatibility was assessed analyzing spatial corresponding and non-corresponding trials. Behavioral measures and Event-Related Brain Potentials (ERPs) were recorded during task execution. Behavioral results showed reduced cognitive control in trials with food, with longer reaction times and lower accuracy in the non-corresponding condition both pre- and post-LSG. Frontal N2 showed an increase in amplitude from pre- to post-LSG, in all conditions. Furthermore, in pre-LSG N2 latency for distractors was shorter than neutral whereas this difference was no longer present post-LSG. P3 analysis did not reveal any significant effect of surgery, however, a significant difference between corresponding and non-corresponding trials was detected only for food. Increased N2 amplitude after surgery may suggest higher recruitment of frontal resources during conflict detection processes post-LSG, whereas changes in N2 latency post-LSG can be interpreted as an overall reduction of attentional bias during conflict detection. In contrast, higher P3 amplitude for food may indicate a food-specific attentional bias.