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The advantage of fear stimuli in accessing visual awarenessN. Gomes¹, S. Silva², C. Silva³, J. Azevedo^{4,*}, S. Soares^{3,5}¹ Portuguese Catholic University, Institute of Health Sciences, Lisboa, Portugal² University of Aveiro, DETI/IEETA, Aveiro, Portugal³ Center for Health Technology and Services Research, University of Aveiro CINTESIS-UA, Department of Education, Aveiro, Portugal⁴ Faculty of Medicine, University of Coimbra, Psychological Medicine, Coimbra, Portugal⁵ Karolinska Institutet, Department of Clinical Neuroscience, Division for Psychology, Sweden, Sweden

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Introduction Several studies have shown that evolutionary relevant fear stimuli hold a privileged access to the fear module, an independent behavioral, psychophysiological and neural system that is automatically and selectively activated, and is relatively encapsulated from more advanced human cognition. However, to the best of our knowledge no study has yet directly assessed whether such stimuli are granted a facilitated access to visual awareness, compared to stimuli without such evolutionary relevance.

Objective In the present study we used an interocular suppression technique, the Continuous Flash Suppression, known to reduce the activity along the geniculostriate pathway and to strongly suppress processing in the visual cortex.

Aim Our goal was to investigate whether ecologically relevant fear stimuli (snakes and spiders) overcame suppression and accessed awareness to a larger extent than non-evolutionary relevant animal stimuli (birds).

Method Thirty university students volunteered to participate. Participants were asked to identify the screen quadrant in which the stimulus was presented in order to ensure that there was indeed a conscious processing.

Results The results confirmed our hypothesis by showing an advantage of fear stimuli (snakes and spiders) over the control stimulus (birds) in emerging from suppression into awareness, which was evidenced by significantly shorter response times.

Conclusions Our findings support the notion that evolutionary relevant stimuli hold a privileged access into awareness, most likely involving a direct brainstem-thalamic route to the amygdala. Importantly, they contribute to elucidate the functions and mechanisms of the fear system and may have important implications for understanding emotional disorders, since many of these involve the fear system.

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Alterations in retinal processing in regular cannabis usersR. Schwan^{1,*}, T. Schwitzer^{1,2}, A. Giersch², V. Laprevote¹¹ CPN Laxou, Psychiatry, Nancy, France² Inserm U1114, Psychiatry, Strasbourg, France

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Introduction Cannabis is one of the most prevalent drugs used worldwide. However, the neural consequences of cannabis remain poorly understood. There is a need for a rapid improvement of the scientific knowledge on the cerebral impact of cannabis use. Since the retina is an easy-to-access part of the central nervous system, it can reflect the neurochemistry of the brain.

Objectives Considering the anatomical and functional distribution of the cannabinoid system in the retinal ganglion cells, the

objective of this study was to assess whether the regular use of cannabis could affect the ganglion cells functioning.

Aims Assessment of the ganglion cells function in regular cannabis users compared to healthy controls.

Methods Recordings of pattern electroretinogram (PERG) were performed in regular cannabis users and healthy controls using standard of the International Society for Clinical Electrophysiology of Vision (ISCEV). The amplitude and implicit time of the PERG N95 were assessed.

Results The N95 implicit time of PERG was significantly decreased in regular cannabis users compared to healthy controls.

Conclusions We found alterations in the ganglion cells function in regular cannabis users, as showed by the increase in N95 implicit time. The ganglion cells represent the ultimate retinal relay before the visual information is relayed to the brain and, according to these results, we suppose that the signal elicited by these cells and transferred through the visual pathways is altered in cannabis users. A direct action of exogenous cannabinoids in the retinal glutamatergic transmission is discussed.

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Characteristics of selected cognitive functions in patients with systemic lupus erythematosus using Cambridge neuropsychological test automated batteryA. Bogaczewicz¹, J. Kowalski², J. Ząbek³, A. Woźniacka⁴, J. Bogaczewicz⁴, T. Sobow^{1,*}¹ Medical University of Lodz, Medical Psychology, Lodz, Poland² Medical University of Lodz, Internal Diseases and Cardiological Rehabilitation, Lodz, Poland³ Institute of Rheumatology, Microbiology and Serology, Warsaw, Poland⁴ Medical University of Lodz, Dermatology and Venerology, Lodz, Poland

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Introduction Cognitive dysfunction in patients with systemic lupus erythematosus affects 10–36% of them.

Objective To determine a profile of selected cognitive functions in systemic lupus erythematosus.

The aim To investigate and characterize selected cognitive parameters in patients with systemic lupus erythematosus (SLE) using a standardized, comparable and reproducible computer-based method.

Material and methods The study included 25 patients with SLE. For neuropsychological assessment, the Cambridge Neuropsychological Test Automated Battery was used. Following parameters were investigated: mean latency and mean error in motor screening (MOTML, MOTME), big little circle (BLC), paired associated learning (PAL), problems solved in minimum moves in stockings of Cambridge (SOC PSMM) and graded naming test (GNT). Results were referred automatically to determined ranges of norms matched according to age and gender.

Results In patients with SLE results displayed by median and upper and lower quartiles were as follows: MOTML = 1.1 (0.9–1.34), MOTME = 0.41 (0.31–0.52), BLC = 0.16 (0.16–0.18), PAL = –0.43 (–1.28; –0.18), SOCPSMM = –0.62 (–1.19–0.04), and GNT = –0.8 (–1.6; –0.32).

MOTML correlated negatively with MOTME ($r = -0.51$), MOTME correlated with SOCPSMM ($r = 0.41$), and PAL correlated with GNT ($r = 0.48$) ($P < 0.05$).

Conclusions In our study, predominant abnormalities were those related to lexical and semantic memory, revealed by the GNT, spatial planning and spatial working memory, assessed by the SOC,

together with visual memory and new learning, assessed with the PAL.

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EV357

Cognitive characteristics of unipolar (major depressive disorder) and bipolar depression

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Introduction Impairment in cognitive performance is an important characteristic in many psychiatric illnesses, such as Bipolar Disorder and Major Depressive Disorder. Initially, cognitive dysfunctions were considered to be present only in acute depressive episodes and to improve after symptoms recovered. Reports have described persistent cognitive deficits even after significant improvement of depressive symptoms.

Aims/Objectives We wanted to understand the dimension of cognitive impairment in unipolar and bipolar depression and also to underline the differences between cognitive profiles of patients diagnosed within the two mentioned disorders.

Method This review examined recent literature about unipolar and bipolar depression.

Results Both depressed patients presented cognitive deficits in several cognitive domains. Different aspects of attention were altered in both patients but impairment in shifting attention appeared specific to unipolar disorder while impaired sustained attention was particular for bipolar disorder. Both types of patients showed memory deficits that were associated with poor global functioning. Two recent studies described that bipolar depressed subjects were more impaired across all cognitive domains than unipolar depressed subjects on tests assessing verbal memory, verbal fluency, attention and executive functions. The most consistently deficits were displayed on measures of executive functioning – such as tasks requiring problem solving, planning, decision making – suggesting that this cognitive domain is a trait-marker for depression.

Conclusions Cognitive deficits are present in both disorders during a depressive episode but they display slightly different patterns of impairment.

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EV358

Clinical neuroscience and psychosocial rehabilitation

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There is a physical world and a world of meanings, symbols and social relationships. Neuroscience considers brain as a biological machine. Social science studies the human relationships. Nowadays we know cerebral processes underlying several aspects of social behavior.

Cerebral damages or dysfunctions can influence the social behavior, as well as the social experiences can shape the development, structuring and functioning of the brain and, consequently, condition the further responses of the individuals to the social events. Humans are embodied subject. In an objective sense we are bod-

ies with a brain, in a subjective sense we are individuals in a social world. This is a relevant matter for all the medical sciences, not only for psychiatry.

The real-life functioning of individuals with schizophrenia shows deficits in several daily-life abilities, in social relationships and in the work activities. According to literature and clinical practice, basic criterions are: bio-psycho-social vulnerability, stressful life events, coping strategies as well as social and relational competence.

Neurocognitive activity shows a straight correlation, albeit indirect, with the real-life functioning. Positive symptoms, negative symptoms and disorganized behavior can considerably influence the real-life functioning. While social and relational competence, the general functioning and resilience are protective factors that can positively condition real-life functioning. Moreover, welfare services (i.e. assisted job placement; disability subsidies; etc.) and a good family and social network can considerably influence the results.

According to the results above, we can affirm the importance to adopt integrated and personalized therapeutic-rehabilitative program for the treatment of schizophrenia and other serious mental disorders.

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Neuropsychological rehabilitation training in residential mental health services

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The neuropsychological rehabilitation in our mental health service is a central pillar of psychosocial rehabilitation. These interventions are integrated into a more complex program of psychosocial rehabilitation based on cognitive behavioral method.

We devote particular attention to the empowerment of the cognitive functions: attention, memory, language, logical and abstract reasoning.

The aim of this research is to evaluate efficacy of neuropsychological rehabilitation training in cognitive rehabilitation of psychotic patients.

The subjects that took part to the training were psychotics patient, residents in a mental health Community. Patients were both females and males, aged between 18 and 55 years. They were divided in two experimental groups and a control group. The instrument used was a battery of neuropsychological standardized tests. Tests were managed by an eye-tracker specialist.

Preliminary results seem to confirm a certain degree of improvement due to the training. Eye tracking integration during assessment appears to be a powerful tool as well, in order to define more patient-tailored strategies.

The training based on the empowerment of cognitive functions (attention, memory, language, logical and abstract reasoning) seems to change significantly the cognitive functions of the psychotic patients.

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The role of mirror neurons in autism impairment

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