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response of 31 socially anxious adults to brief cognitive behavioural group therapy (CBGT). Measures of resting RSA and self-reported anxiety, depression, and emotion regulation strategies were collected prior to, at mid-treatment, and at the end of 12 weeks of CBGT. Self-reported use of cognitive reappraisal increased over the course of therapy and endorsement of anxious and depressive symptoms declined. By mid-treatment, resting RSA was positively associated with cognitive reappraisal and inversely associated with depressive symptoms. These relations did not endure to the end of therapy, although anxiety symptoms continued to decline to the end of treatment and persisted at follow-up. Findings suggest that the central modulation of autonomic regulation may be integral to the acquisition of cognitive reappraisal skills that contribute to reducing anxiety in adults with social anxiety disorder.

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### Poster 3-42

#### RELEVANCE OF THE P3 EVENT-RELATED POTENTIAL AND EXECUTIVE FUNCTION ASSESSMENTS TO CHILDREN'S SOCIAL-EMOTIONAL FUNCTIONING IN KINDERGARTEN

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*Descriptors: ERP, executive function, social-emotional problems*

The P3 event-related potential has been implicated as a biomarker of vulnerability for a range of externalizing behavior problems. Deficits in executive function (EF) skills are also implicated in risk for externalizing disorders, and it remains unclear whether the P3 indexes EF-related cognitive function or whether it reflects a distinct risk factor. This study examines the associations of P3 amplitude and EF with measures of behavioral control in early childhood. The sample consists of 339 children recruited in kindergarten to participate in a study of early-onset aggressive behavior. Children were assessed on working memory, inhibitory control, and set shifting to index overall EF. EEG was recorded during an emotional Go/No-Go task composed of two reward blocks flanking one loss block. Children were rated on behavioral self-control by a researcher, and teachers completed measures of child learning behaviors and social-emotional functioning. Results indicate that P3 amplitude is not associated with children's scores on the overall EF assessment. However, a larger mean P3 amplitude is associated with better teacher-rated learning behaviors, higher researcher-rated self-regulation, and more teacher-rated peer acceptance of the child. Additionally, lower P3 amplitudes during the loss block relative to the reward blocks is associated with poorer researcher-rated self-regulation. These findings suggest that the P3 provides information relevant to children's social-emotional functioning that is independent of the information provided by performance-based EF assessments.

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### Poster 3-43

#### PLAYING THE MUSIC: DIFFERENT BRAIN RESPONSES FOR TECHNIQUE OR EXPRESSIVENESS

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*Descriptors: fMRI, cognition, emotion*

A previous study concerning the influence of cognition and emotion on piano performance indicates that attention to the emotional aspects of performance results in intuitive playing and enhances expressiveness, but impairs cognitive and motor skills. In contrast, attention to the technique aspects constrains expressivity and automatism. Because the brain mechanisms underlying these modulations are not well known, we employed fMRI with 17 pianists playing piano with the same repertoire in two different conditions: (1) with attention focused on technical aspects of their performance, and (2) with attention focused on affective aspects. Comparing these conditions ( $p < 0.05$ , FDR-corrected), the results showed more activation of anterior cingulate cortex (ACC) and medial prefrontal cortex for the affective condition. It is suggested that the medial prefrontal cortex is related to high-level cognitive tasks and that it may be involved in intuition. Furthermore, the ACC is related to motor expression and may be involved in expressiveness. For the technical condition, we found more activation in dorsolateral prefrontal cortex and supplementary motor areas, related to cognitive processing and to motor control respectively. In this condition, there was still a recruitment of amygdala and insula that might reflect the task unpleasantness reported by the participants. Our results show brain mechanisms related to different cognitive and affective integration during motor control for piano performances.

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### Poster 3-44

#### SOCIAL DISTANCE AND FRN

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*Descriptors: Error monitoring, Feedback processing, FRN*

The Feedback Related Negativity (FRN) is a negative deflection, which occurs after the subject is informed about their performance. Most of the authors have found the FRN mainly with contingent (dependent upon current performance) feedback about one's own errors. However, few studies have reported FRN with non-immediate feedback regarding one's own and someone else's performance. Using the Social Networks Inventory (SNI) to estimate social distance 14 healthy young female adults classified their relationships within the school group they belong to. In a first session they all performed a category formation task (CFT). Regarding the results from SNI, they passively reviewed later three, randomly presented, sequences of CFT performances from: (a) their own, (b) someone close, and (c) someone distant, with simultaneous feedback information and EEG recording. Electrophysiological results show a prominent FRN peaking over 300 ms on central-parietal region, slightly greater on the right hemisphere, which was significantly greater for the condition in which subjects reviewed their own errors, when compared to other conditions. Furthermore, the FRN component was also significantly greater for the condition in which subjects reviewed errors from someone close with respect to someone distant. In addition, an apparent P300 component appeared, being significantly greater for condition a), in comparison to the supplementary conditions. Present results seem to emphasize that error-related processes depend upon complex relationships between several variables beyond those considered so far.

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### Poster 3-45

#### THE EFFECT OF DIFFERENT ORTHOGRAPHIC RECOGNITION ABILITIES ON LEXICAL DECISION: AN EVENT-RELATED POTENTIALS PERSPECTIVE

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*Descriptors: Word recognition, Visual priming, Event Related Potentials*

The processes underlying the learning and recognition of the correct orthography of the words are associated with text exposure. The present study was conducted with the aim to evaluate changes in early components of the ERPs related to the frequency of the words in Spanish and their exposure rate, while detecting spelling errors. Thirty healthy young adults were divided into two groups according to their orthographic knowledge (H: High and L: Low). In a first session they were instructed to make a lexical decision (pseudo-words versus words with different exposure rates), with simultaneous EEG recording. In a second session, subjects determined if there was an orthographical error or not, in the same words of the first session, but half of them turned into pseudohomophones. When deciding on low frequency words in the first session, H showed more correct responses and lower reaction times than L. In addition, N170 appeared more lateralized to the left and with greater amplitude in H than in L. The voltage amplitude of the P220 component significantly varied as a function of the exposure rate only in H. In the second task, the amplitude of P220 significantly decreased when orthographic errors were processed, but only in H. Finally, a prominent negative component peaking around 350 milliseconds was observed for misspelled words, showing significant differences between groups related to both word-frequency and exposure rate. Results suggest that visual word recognition could be based on complex functional associations, which are far to be completely elucidated.

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### Poster 3-46

#### THREAT TRIGGERS MOTOR PREPARATION

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*Descriptors: Threat stimuli, Emotion and motor preparation, fMRI*

Detection of threat signals is essential to select the appropriate defensive strategy. Actually, one should expect that emotional stimuli trigger adaptive action tendencies. However, the interactions between emotional perception and motor preparation are still unclear. The aim of this study was to investigate whether threatening stimuli drive the activity of brain networks that might indicate a direct link between emotions and movement. Then, we used fMRI to investigate brain responses of 31 volunteers (14 women) during a simple motor task while they viewed a set of pictures displaying scenes of human attack and a set of matched neutral pictures as control condition. Each picture was presented for 5 sec and an overlapped central circle appeared 3.7 to 4.2 s after picture onset. Participants were instructed to press a button quickly when they detected the circle. Three pictures of the