

O-52 - INFLUENCES OF SOCIAL HIERARCHY ON A VISUAL DISCRIMINATION TASK. "I AM A BETTER COMPETITOR IF YOU ARE A GOOD COMPETITOR"

H.Santamaría García, M.Pannunzi, G.Deco, N.S.Gallés

Brain and Cognition Unit, University Pompeu Fabra, Barcelona, Spain

Previous research shows that social aspects can affect high level neural processing. Until now it was unclear if social aspects such as hierarchical rank could influence sensory/ perceptual cognitive processes in primary areas. We evaluated the effects of social comparisons with members of a hierarchy using a basic visual task, which is a priori unaffected by social aspects. Initially, in a computerized game we constructed a strong social hierarchy based on the skills on a visual (Numerosity) task, participants performed the task comparing their results with two covertly simulated players, one superior and the other one inferior. Participants were significantly better and faster when they performed the task simultaneously with the high status player. In a follow up experimental procedure we analyzed the time course of the event related potential response. Two time windows were studied, analyzing early perceptual/sensory processes (< 350 ms) and the late /attentional decisional processes around 350 and 700 ms. We observed significant hierarchical effects even in the early stages of sensory - perceptual processing (0 - 350ms); suggesting early top-down modulations of social aspects. Those differential neural responses of primary cognitive processes also translated into differences in behavioural measures. Furthermore we found specific personality traits related with performance supporting a possible explanation about how human beings act in social comparisons.