Rapid emotion discrimination in the infant brain

Alexandra Marquis
Ryerson University

Bruno Rossion
University of Louvain (UCL)

Margaret Moulson
Ryerson University

Abstract: The ability to recognize facial expressions of emotion in social partners is important for successful social interactions. It is unknown how accurately and rapidly the infant brain discriminates between emotions with different valences (e.g., happy vs. fearful) and between emotions with similar valences (e.g., fearful vs. angry). The current study uses a novel approach—Fast Periodic Visual Stimulation (FPVS)—to evaluate emotion discrimination in infancy. FPVS is an electrophysiological technique that relies on rapid presentation of stimuli to create corresponding oscillations in the brain that can be measured at the scalp surface. Preliminary results (n = 6) indicate that infants are indeed sensitive to the visual stimulation: EEG power, averaged over occipital and occipitotemporal areas, was 11.55 times larger at 6Hz compared to surrounding frequencies. This study aims to shed light on a longstanding theoretical debate of whether emotion recognition is innate or learned through experience.