Biological motion perception in perceptual decision-making framework: ERP evidence in humans

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Abstract

Neurophysiological studies in non-human primates suggest that perceptual decision-making consists of two stages of information processing: sensory evidence accumulation and response selection. Recent work with humans shows that the sensory evidence accumulation process can be tracked with the CPP component derived from EEG. As most studies in the field use simple motion stimuli, it remains unclear whether these processes generalize to more complex and socially important stimuli such as biological motion. In the present study, we used point-light displays with 4 levels of coherence and recorded EEG as human subjects (N=14) performed a perceptual decision-making task. Our results show that biological motion elicited a CPP component whose peak rate tracks the coherence level of the stimuli, albeit with a later onset than observed previously. These results suggest that similar decision-making mechanisms may play a role in biological motion perception.