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Preprint

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Actions, intentions and environmental constraints in biological motion perception

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Paper 244					
Title:	Actions, intentions and environmental constraints biological motion perception				
Track:	Invited contribution to symposium				
Author keywords:	biological motion, intention recognition, attention, social cognition				
Abstract:	<p>In many ways, human cognition is importantly predictive. We predict the sensory consequences of our own actions, but we also predict, and react to, the sensory consequences of how others experience their own actions. This ability extends to perceiving the intentions of other humans based on past and current actions. We present research results that show that social aspects and future movement patterns can be predicted from fairly simple kinematic patterns in biological motion sequences. The purpose of this presentation is to demonstrate and discuss the different environmental (gravity and perspective) and bodily constraints on understanding our social and movement-based interactions with others.</p> <p>In a series of experiments, we have used psychophysical methods and recordings from interactions with objects in natural settings. This includes experiments on the incidental processing of biological motion as well as driving simulator studies that examine the role of kinematic patterns of cyclists and driver’s accuracy to predict the cyclist’s intentions in traffic. The results we present show both clear effects of “low-level” biological motion factors, such as opponent motion, on the incidental triggering of attention in basic perceptual tasks and “higher-lever” top-down guided perception in the intention prediction of cyclist behavior.</p> <p>We propose to use our results to stimulate discussion about the interplay between expectation mediated and stimulus driven effects of visual processing in spatial cognition the context of human interaction. Such discussion will include the role of context in gesture recognition and to what extent our visual system can handle visually complex environments.</p>				
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Symposium selection	<p>Proponent: Mehul Bhatt</p> <p>Symposium: Mind. Movement. Moving Image (part II): On Visuo-Auditory Perception and the Moving Image</p>				
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