Can Action Bias the Perception of Ambiguous Auditory Stimuli?

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Abstract

According to the theory of common coding, actions are represented in terms of their sensory effects. Hence, performing or anticipating an action biases perception. Previous studies provided evidence for this notion by showing how the perception of ambiguous visual stimuli can be affected by concurrent actions. Here we investigated whether performing a directed action can affect the perception of ambiguous auditory stimuli in a gamified dual-task. In an online study, participants had to avoid obstacles in an endless runner game while classifying the pitch shift in an ambiguous sequence of Shepard tones. Response times indicate interference between both tasks, but pitch shift classifications seem to be unaffected by the motor task. Meanwhile, participants showed a strong compatibility effect between base pitch and pitch shift classifications, in line with a typical SMARC effect. We discuss possible reasons for the absence of perceptual modulations and implications for common coding approaches.