Multisensory interactions for motor control

My research examines how the brain uses sensory information, gathered from multiple senses, for motor control and learning. In my talk, I will discuss whether the brain uses information from one sense to recalibrate other senses to produce consistent representations for motor control. More specifically, does recalibrating the arm motor system based on information from one sense, like vision, also recalibrates other senses such as kinaesthesia - the sense of joint and limb motion? We know that when subjects reach along a straight path, but their vision is distorted so they see their hand curving rightward, they come to move the hand along a leftward-curving path that looks straight. After this adaptation, we tested subjects' kinaesthetic sense in darkness to see whether vision merely overrules kinaesthesia or recalibrates it so curved paths feel straight. We also tested whether this adaptation affects how other motor systems (such as that of the opposite hand) track the recalibrated effector. These studies provide us with some important clues to the interaction of vision and body-position sense in shaping the brain's motor-control systems.

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