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Forming Action-Effect Contingencies Through Observation

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Abstract

Recent research reveals overlaps of perception and action-planning areas of the brain, both in the act of doing and the act of observing. The Theory of Event Coding (TEC) suggests we create action-effect contingencies when performing an action. However, this study was designed to assess whether these action-effect contingencies could be formed by participants simply observing different levels of the action effect contingency. The experimenter performed a dot-control task, using the A and L keys (each keypress was paired with one of two tones). Participants watched the screen and listened to the tones either with or without access to the actions of the experimenter, and afterwards took a compatibility test to assess response times when presented compatible or incompatible action-effect pairings. Participants without access to the experimenters actions showed greater compatibility effects than participants with access, indicating action-effect contingencies can be learned simply through observation.