Prediction vs. Control: Which is best for learning about a dynamic environment?

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Abstract: Multiple cue probabilistic environments have been used to examine how people learn to predict an event, but also how they learnt to control it. Of the few studies that have directly compared these modes of learning, the evidence suggests an advantage for control over prediction. However, these modes of learning have not been compared in a dynamic environment. To address this, a yoking design was used in which one group leant to predict the outcome based on cue patterns generated by a second group that learnt to control the outcome by manipulating cues. Experiment 1 and 2 revealed that there were limited gains in control performance if learning was initially control based rather than predictive. Also, in Experiment 2, when compared on tests of knowledge of cue-outcome relations, predictive learners were more accurate than control based learners.