Deciding Whether or Not to Guess the Answer Predicts Subsequent Learning

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Abstract: In a study on the effects of incorrect guessing on subsequently learning from feedback, we found confidence for wrong responses on an initial test was positively associated with correct final recall (higher confidence errors corrected better; Butterfield & Metcalfe, 2001). One explanation for this hypercorrection effect is that subjects are surprised by their error and thus pay more attention to the feedback (Fazio & Marsh, 2009). Inconsistent with this surprise hypothesis, however, was our finding that the decision to volunteer a low-confidence guess, even when the response was wrong, was associated with better subsequent learning of the correct answer than when a response/guess was withheld. We propose that the willingness to venture a guess, even when confidence is low, may reflect a higher state of learning, relative to choosing to omit a response. We present additional behavioral data and an error-correction neural network model in support of our alternative hypothesis.