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Transfer of solutions to conditional probability problems: effects of example problem format, solution format, and problem context.

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Summary: This study reports the results of a study examining how easily students are able to transfer frequency solutions to conditional probability problems to novel situations. University students studied either a problem solved using the traditional Bayes formula format or using a natural frequency (tree diagram) format. In addition, the example problem and the target problem presented for solution had matched or mismatched context. The results found better performance when students studied frequency solutions and when the content of the study problem and target problem were matched. Beyond solution to the target problem, students did not show any differences in performance on a subsequent multiple choice task. Results are discussed in light of *G. Gigerenzer* and *U. Hoffrage's* ["Overcoming difficulties in Bayesian reasoning: a reply to Keren (1999) and Mellers and McGraw (1999)", *Psychol. Rev.* 106, No. 2, 425–430 (1999; doi:10.1037/0033-295X.106.2.425)] claims about the effectiveness of using frequency solutions to help teach Bayesian conditional probability concepts.

Classification: K50 D50

Keywords: conditional probability; frequency; Bayes

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