

# A COMPARISON OF ELICITATION METHODS FOR PROBABILISTIC MULTIPLE HYPOTHESIS REVISION

Craig Emby

## ABSTRACT

*The evaluation of competing hypotheses is an essential aspect of the audit process. The method of evaluation and re-evaluation may have implications for both efficiency and effectiveness. This paper presents the results of a field experiment using a case study set in the context of a fraud investigation in which practicing auditors were required to engage in multiple hypothesis probability estimation and revision regarding the perpetrator of the fraud. The experiment examined the effect of two different methods of facilitating multiple hypothesis probability estimation and revision consistent with the completeness and complementarity norms of probability theory as it applies to the independence versus dependence of competing hypotheses and with the prescriptions of Bayes' Theorem. The first method was to have participants use linear probability elicitation scales and receive prior tutoring in probability theory emphasizing the axioms of completeness and complementarity. The second method was to provide a graphical decision aid, without prior tutoring, to aid the participants in expressing their responses. A third condition in which participants used linear probability elicitation scales but received no tutoring in probability theory, provided a benchmark against which to assess the effects of the two treatments.*

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