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Is there something special with probabilities? – Insight vs. computational ability in multiple risk combination.

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Summary: While a wealth of evidence suggests that humans tend to rely on additive cue combination to make controlled judgments, many of the normative rules for probability combination require multiplicative combination. In this article, the authors combine the experimental paradigms on probability reasoning and multiple-cue judgment to allow a comparison between formally identical tasks that involve probability vs. other task contents. The purpose was to investigate if people have cognitive algorithms for the combination, specifically, of probability, affording multiplicative combination in the context of probability. Three experiments suggest that, although people show some signs of a qualitative understanding of the combination rules that are specific to probability, in all but the simplest cases they lack the cognitive algorithms needed for multiplication, but instead use a variety of additive heuristics to approximate the normative combination. Although these heuristics are surprisingly accurate, normative combination is not consistently achieved until the problems are framed in an additive way.

Classification: K55 M65

Keywords: risk integration; probability reasoning; multiple-cue judgment

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