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Multiple Strategies in Conjunction and Disjunction Judgments: Most People are Normative Part of the Time

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Abstract: Do people use a single strategy or sample from multiple strategies when estimating the conjunction and disjunction of two independent events? Here we address this tension directly by comparing individual level Bayesian simulations of multi and single strategy models using data from a frequency estimation experiment. Participants were shown two statements describing attributes and asked to estimate how many people had either one attribute, conjunction, or disjunction of attributes. In our Bayesian simulations we compare models in which participants either adopt a single strategy or sample from a set of strategies when forming estimates of both conjunctions and disjunctions. We compared every permutation of models in which a participant is responding based on a single component, a weighted average of the two events, probability theory, or combination of strategies. Our findings show that people sample from multiple strategies and are sampling from the normative strategy some of the time.