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The strength and weight of evidence in choice and confidence

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Abstract: Although in computational models of judgment and decision making evidence is generally assigned a single value denoting its quality, it can often be dissociated into its extremeness or strength (sample proportion) and its reliability or weight (sample size). We show that by independently manipulating each of these dimensions, we can examine how each one contributes to decisions and judgments. Using 2 simple perceptual tasks, we show that while people tend to give equal credence to both strength and weight when making decisions – reflected by choice response times – they overemphasize the strength of incoming evidence relative to its weight when making confidence judgments. In addition, we analyze the decision rules of sequential sampling models and show that stopping conditions for choice depend on the strength and weight of incoming evidence, suggesting that they are dynamically adjusted during a trial rather than set prior to a trial as most models assume.