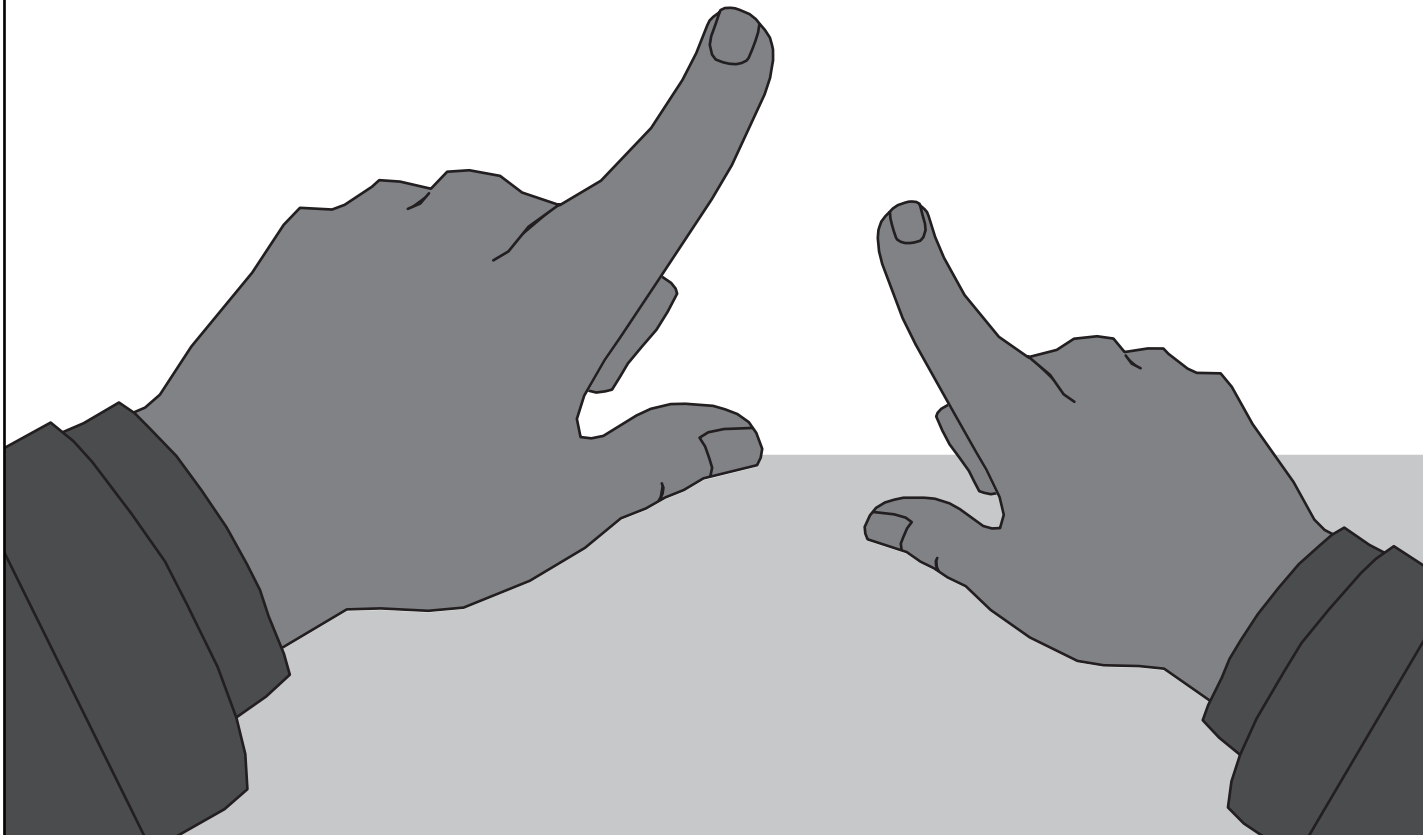
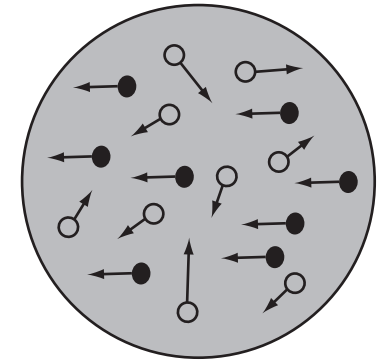
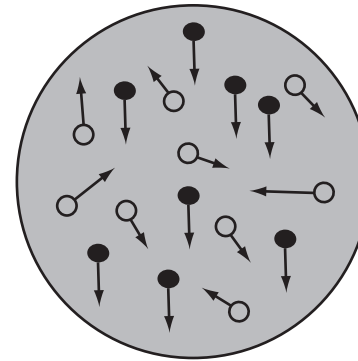
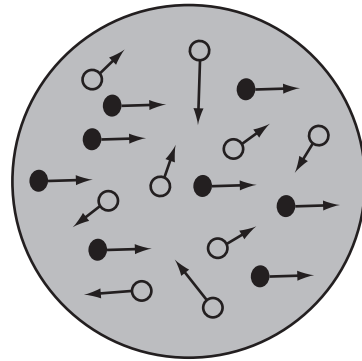
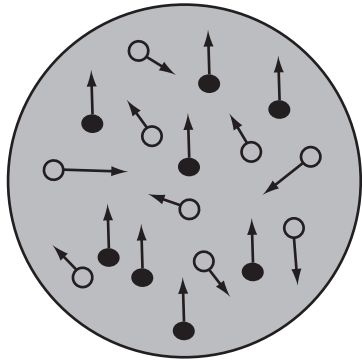


# Tough choices: Decision-making with more than 2 alternatives



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Simple perceptual tasks have laid the groundwork for understanding the neurobiology of decision-making. Here, we challenge this foundation to explain how decision-making circuitry adjusts in the face of a more difficult task. We measured behavioral and physiological responses on a 2- and 4-choice direction discrimination decision task. For both tasks, firing rates in the lateral intraparietal area appeared to reflect the accumulation of evidence for or against each choice. Evidence accumulation began at a lower firing rate for the 4-choice task, but reached a common level at the end of the decision process. The larger excursion suggests that subjects required more evidence before making a choice. Further, on both tasks, we observed a time-dependent rise in firing rates that may impose a deadline for making a decision, preventing the monkey from taking too long on any one trial. These physiological observations constitute an effective strategy for handling increased task difficulty. Importantly, the differences appear to explain subjects' accuracy and reaction times.

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