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Central-tendency bias is domain-general and dynamic

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Abstract: Reproduction errors are biased towards the mean of a stimulus set that varies along a perceptual dimension (Gu & Meck, 2011; Huttenlocher et. al., 2000). We investigated A) whether this central-tendency bias exists across sensory modalities (vision and audition), and B) how the bias unfolds over time. Visual and auditory stimuli were presented for durations ranging from 300 to 2800 ms. Participants reproduced the stimulus durations following a variable delay period (200-6200 ms). Errors for individual items were biased towards the mean of the stimulus set in both vision and audition. Moreover, the magnitude of the bias was positively associated with the duration of the delay, becoming more pronounced over time, especially for vision. Together, these results provide evidence that the central-tendency bias is present in multiple sensory modalities, and that it unfolds over time, reflecting a dynamically evolving rather than discrete cognitive process.