

Effects of Time Pressure and Ambiguity Under Controlled Perceptual Conditions

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Decision-making under uncertainty often occurs with incomplete information and limited time for response. Prior work has highlighted two influential determinants driving choice under uncertainty: ambiguity aversion and time pressure effects. However, experimental designs are frequently confounded with perceptual difficulty, making it unclear whether observed preferences reflect true decisional bias or limitations in sensory encoding. In this study, we tested whether time pressure changes ambiguity preferences when perceptual clarity is controlled. In this within-subjects design, six undergraduate participants completed a decision task in which they chose between known probabilities and ambiguous lotteries displayed as calibrated visual grids. Ambiguity was manipulated by masking probability information while pressure varied using short and long response deadlines. A perceptual calibration procedure ensured that probability information was equally interpretable across conditions. Results showed a slight preference for ambiguous options under matched sensory conditions. Increased ambiguity shifted choices modestly towards the known option. Time pressure reduced reaction times and increased missed responses but did not amplify ambiguity aversion. These preliminary results suggest that ambiguity and time pressure may influence decision-making through distinct contributions. Increasing the sample size and extending to other sensory modalities may further clarify how uncertainty and urgency jointly shape perceptual and decisional processes under uncertain conditions.

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