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The role of anxiety in learning under uncertainty in social and non-social contexts

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Abstract

Navigating social situations is complex due to others' hidden intentions and evolving strategies, requiring learning from past experiences. Anxiety complicates adaptation to uncertainty, especially in non-social settings. However, research on the anxiety's impact on learning within social uncertainty remains scarce. In a preregistered study (N = 190), we investigated whether individuals with higher trait anxiety struggled to adjust learning rates in a social context with stable or volatile outcomes utilizing various learning models (e.g., additive, multiplicative, betrayal). Participants engaged in a modified trust game with stable and volatile players, alongside a non-social task with slot machines. Participants showed higher learning rates in social than non-social contexts, with notably elevated social learning rates in individuals with heightened fear of negative evaluation (FNE)—a crucial trait linked to anxiety, especially social anxiety. This suggests individuals with increased FNE might be more sensitive to learning under social uncertainty.