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# Social experience affects decision making and learning: empirical and computational analysis

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# *Social experience affects decision making and learning: empirical and computational analysis*

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Understanding how social factors influence nervous system function is of great importance. Using zebrafish as a model system, we demonstrate how social experience affects decision-making and learning to enable animals to produce socially appropriate behavior. Based on experimental evidence and computational modeling, we show that behavioral decisions reflect the interplay between competing neural circuits whose activation thresholds shift in accordance with social status. Our computational model of the escape and swim circuits replicates our findings and suggests that social status-related shift in circuit dynamics could be mediated by changes in the relative excitability of the escape and swim networks. We further explore how the changes of neurotransmitters in the escape and swim networks affect the behaviors of the animals.