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Cardiac signals increase decision caution in moral judgements of fairness

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Abstract

Cardiac interoceptive signals have been shown to influence social cognitive processes, yet their impact on moral judgements remains under-explored. We investigated whether cardiac signals modulate moral judgements of fairness by time-locking offers in a modified Dictator's Game to systole or diastole in 58 participants. Generalized Linear Mixed Models revealed that while cardiac phase did not influence binary fairness judgements ("Good"/"Bad")—which were driven solely by offer value—it significantly modulated reaction times. Specifically, we found a heart-phase-by-offer interaction where participants responded faster during diastole for high offers. Bayesian Hierarchical Drift-Diffusion Modelling clarified the mechanism behind this behavioural pattern: systole increased the decision boundary and led to a decrease in drift rate when compared to diastole. The model that included cardiac phase predictors surpassed the "offer value only" model in comparative analysis. Our results indicate that afferent cardiac signals may regulate moral judgement by implementing a state of increased caution.

Keywords: Social cognition; moral judgement; cardiac interoception; decision-making; drift-diffusion model.

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