

PSYCHOPHYSIOLOGICAL ASSESSMENT OF MOTIVATIONAL PROCESSING
DURING HABIT LEARNING IN PARKINSON'S DISEASE

Samuel T. Mattox

Dr. Steven A. Hackley, Thesis Supervisor

ABSTRACT

Mesencephalic dopamine pathways have been shown to play an important role in procedural learning and motivation. Individuals with disrupted dopamine transmission due to Parkinson's disease show selective deficits in non-motor habit learning, which may be the results of impaired motivational processes. The stimulus-preceding negativity (SPN), an electrophysiological correlate of motivational anticipation, was recorded to test whether Parkinson's disease patients show reduced responsiveness to feedback and reward stimuli during a probabilistic classification task. Patients exhibited a reduced SPN compared to controls when relatively large monetary incentives were expected. Results suggest that impaired processing within the reward system may contribute to implicit learning deficits in Parkinson's disease and that the SPN reflects the activity downstream from dopaminergic pathways.