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The Effects of Session Time and Satiation on the Form of the VI Response Function

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THE EFFECTS OF SESSION TIME AND SATIATION ON THE FORM OF THE VI RESPONSE FUNCTION.

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There has been considerable controversy over the empirical form of the function relating response rate to reinforcement rate on simple Variable Interval (VI) schedules. Traditional theories predict monotonic functions, while more recent economic and regulatory theories predict bitonic functions. Two experiments examined the effects of session time and satiation on the form of the VI response function. In Experiment 1, rats pressed bars for food on a series of VI schedules differing in reinforcement rate. All sessions were 10-minutes long, but occurred at either the start or at the end of a larger 30-minute session. Bitonic functions were found in both conditions, although response rates were generally higher when responding occurred at the end of the 30-minute block. In Experiment 2, rats experienced the same series of schedules during 10-minute sessions, but received pre-session feedings before half of the sessions. Again, bitonic functions were found under both conditions, although the functions were more strongly bitonic in the prefeeding condition. The present experiments support regulatory and economic theories over traditional theories because bitonic functions predominated.