

# Analysis of Temporal Discrimination Task

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## **1 Introduction**

This document provides an analysis of the temporal discrimination task, focusing on two key aspects: mean bias and accuracy rate.

## **2 Analysis of Temporal Discrimination Task**

### **2.1 Mean Bias as a Function of Interval Duration**

### **2.2 Accuracy Rate as a Function of Interval Duration**

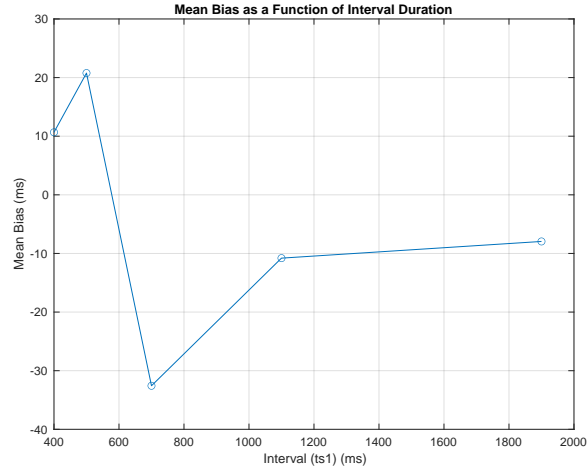


Figure 1: Mean Bias as a Function of Interval Duration.

The *Mean Bias* plot illustrates the relationship between the mean bias and the interval duration ( $ts1$ ). Mean bias represents the systematic deviation in participants' reproduction of time intervals. A mean bias close to zero indicates accurate reproduction of time intervals, while positive or negative deviations suggest overestimation or underestimation of the interval, respectively. In this experiment, we observe a tendency for the mean bias to vary minimally around zero across different intervals, though minor fluctuations are visible. These fluctuations may be attributed to inherent variability in perception or to the influence of central tendency effects, where participants' reproductions tend to regress toward the mean duration of all intervals.

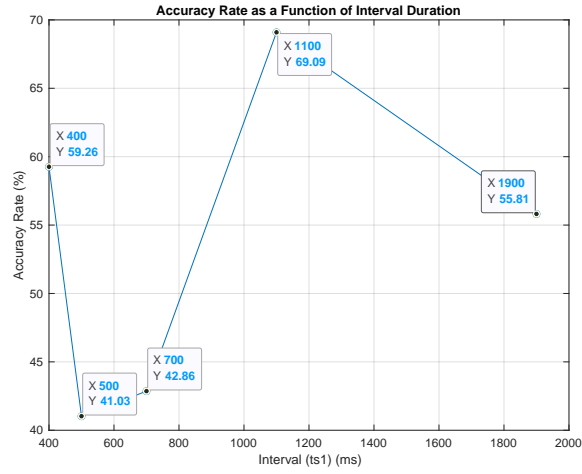


Figure 2: Accuracy Rate as a Function of Interval Duration. The *Accuracy Rate* plot shows the percentage of correct responses across different interval durations ( $ts1$ ). This metric reflects participants' performance in accurately distinguishing between intervals. As observed, accuracy rate varies with the interval duration, suggesting that certain durations are more challenging for participants to judge accurately. Higher accuracy rates at specific intervals may indicate that participants find these intervals easier to discriminate, while lower accuracy rates could suggest increased difficulty or potential biases in temporal perception at those intervals. This analysis helps understand the relationship between interval duration and perceptual accuracy.