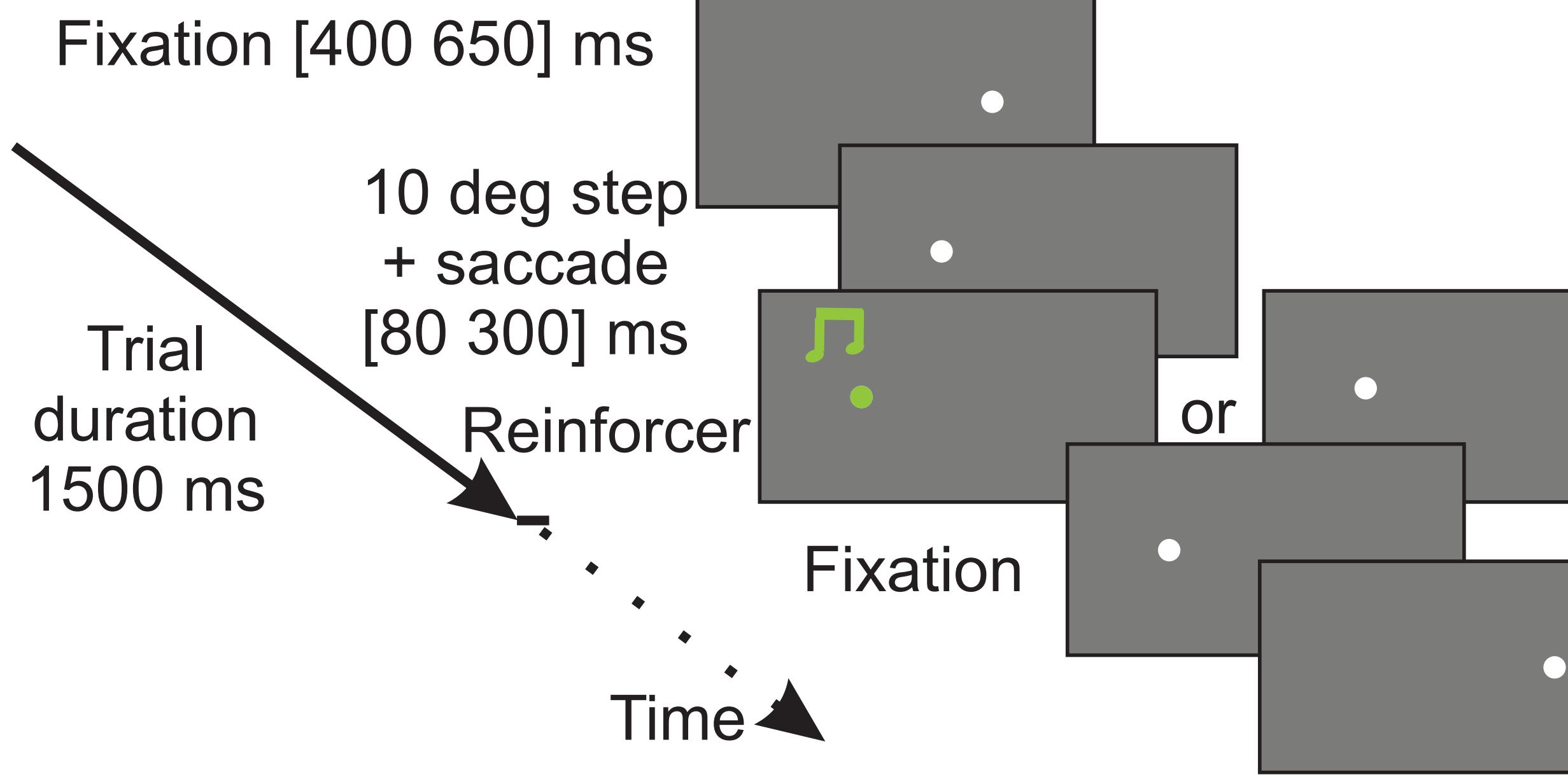


## INTRODUCTION

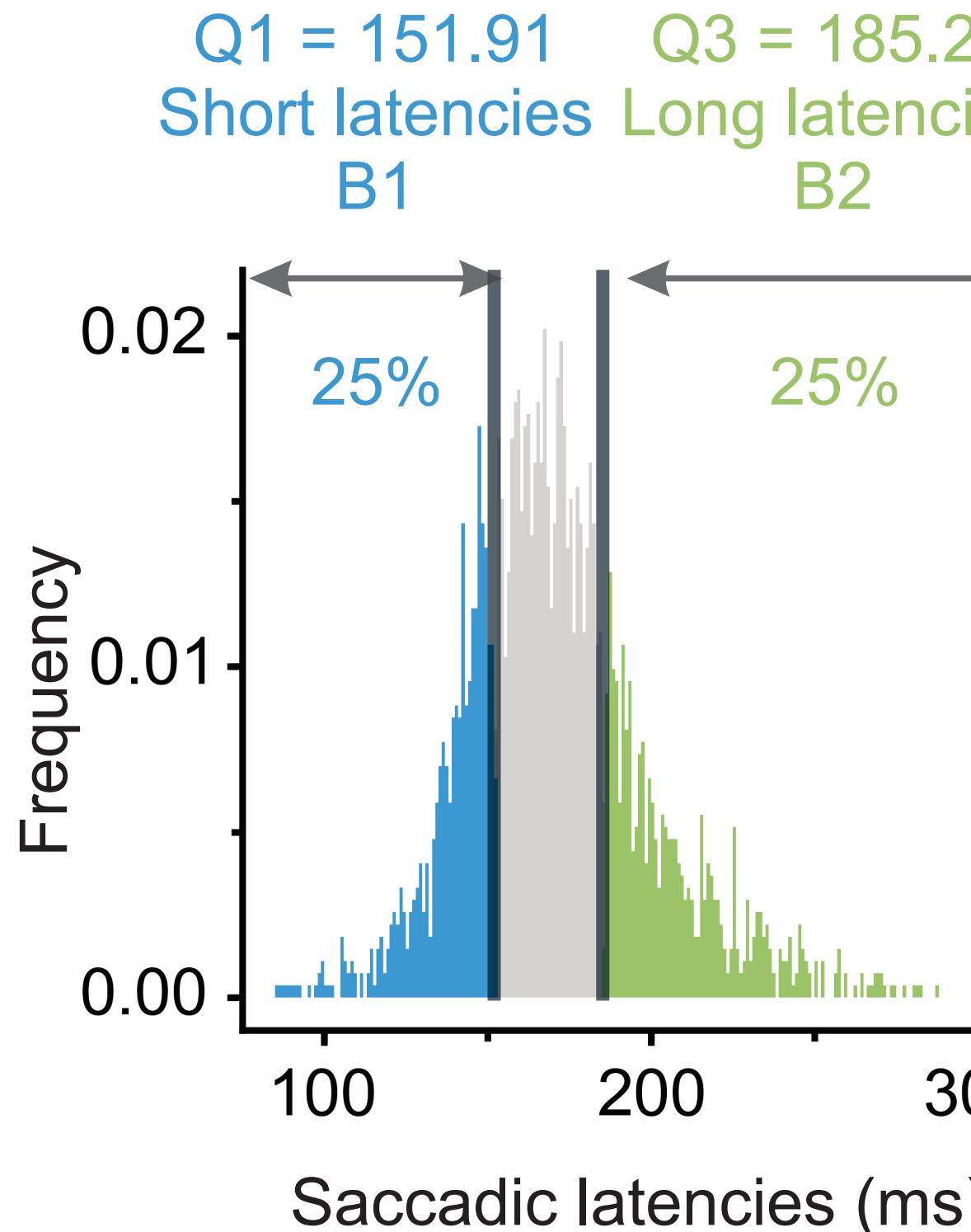
Saccadic latencies are conventionally viewed as reflecting the accumulation of information during decision-making process (e.g., Carpenter & Williams, 1995). Yet, saccadic latency distributions are known to be affected by reinforcement contingencies (Madelain et al., 2007).

Here, we probe whether one can voluntarily control one's latencies.

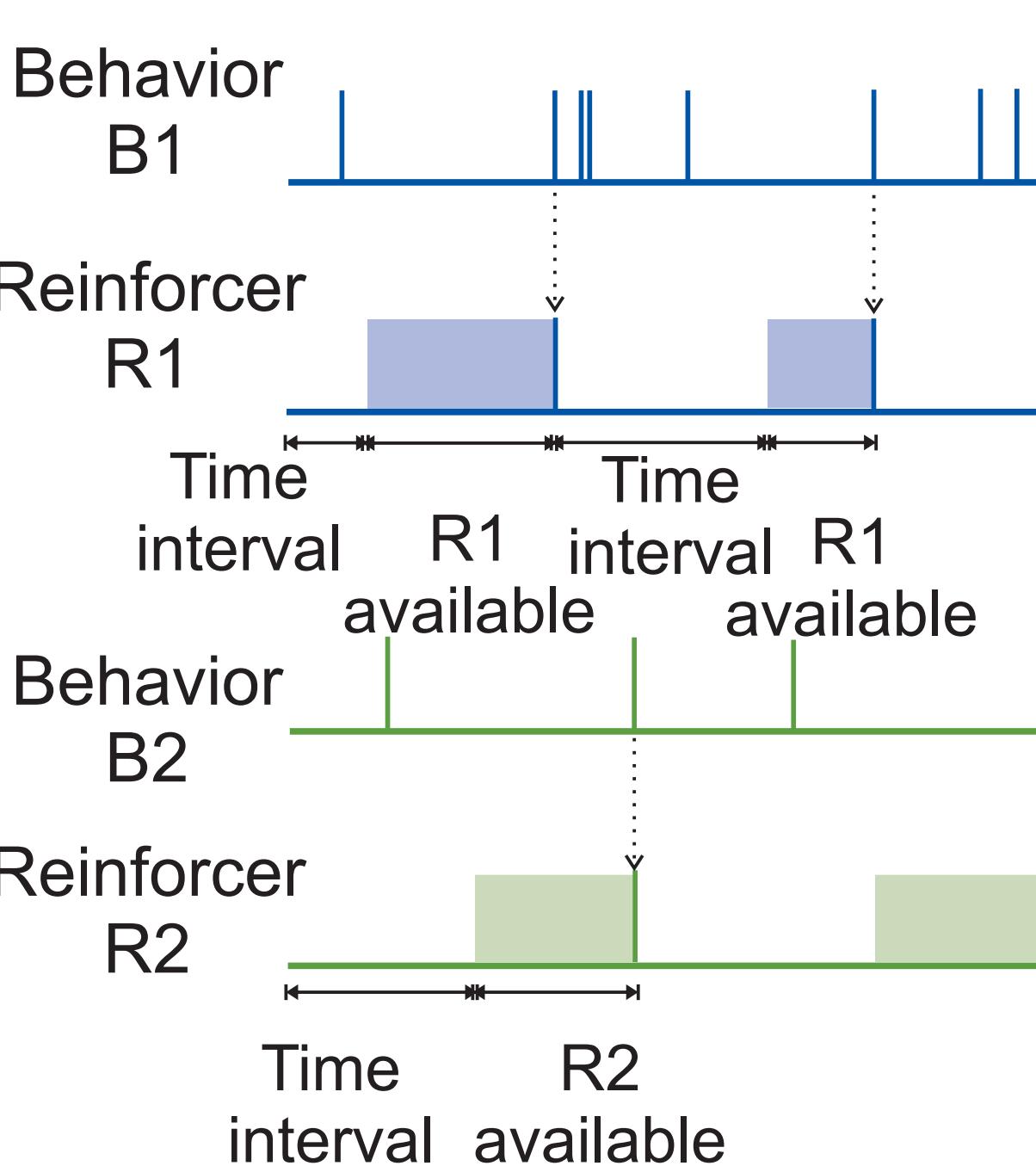
## METHODS



Using the individual baseline latency distributions, we defined short and long latencies



Latencies are independently reinforced and reinforcers are available until collected



### 3 blocked experimental conditions

9/1 9 R1 for 1 R2

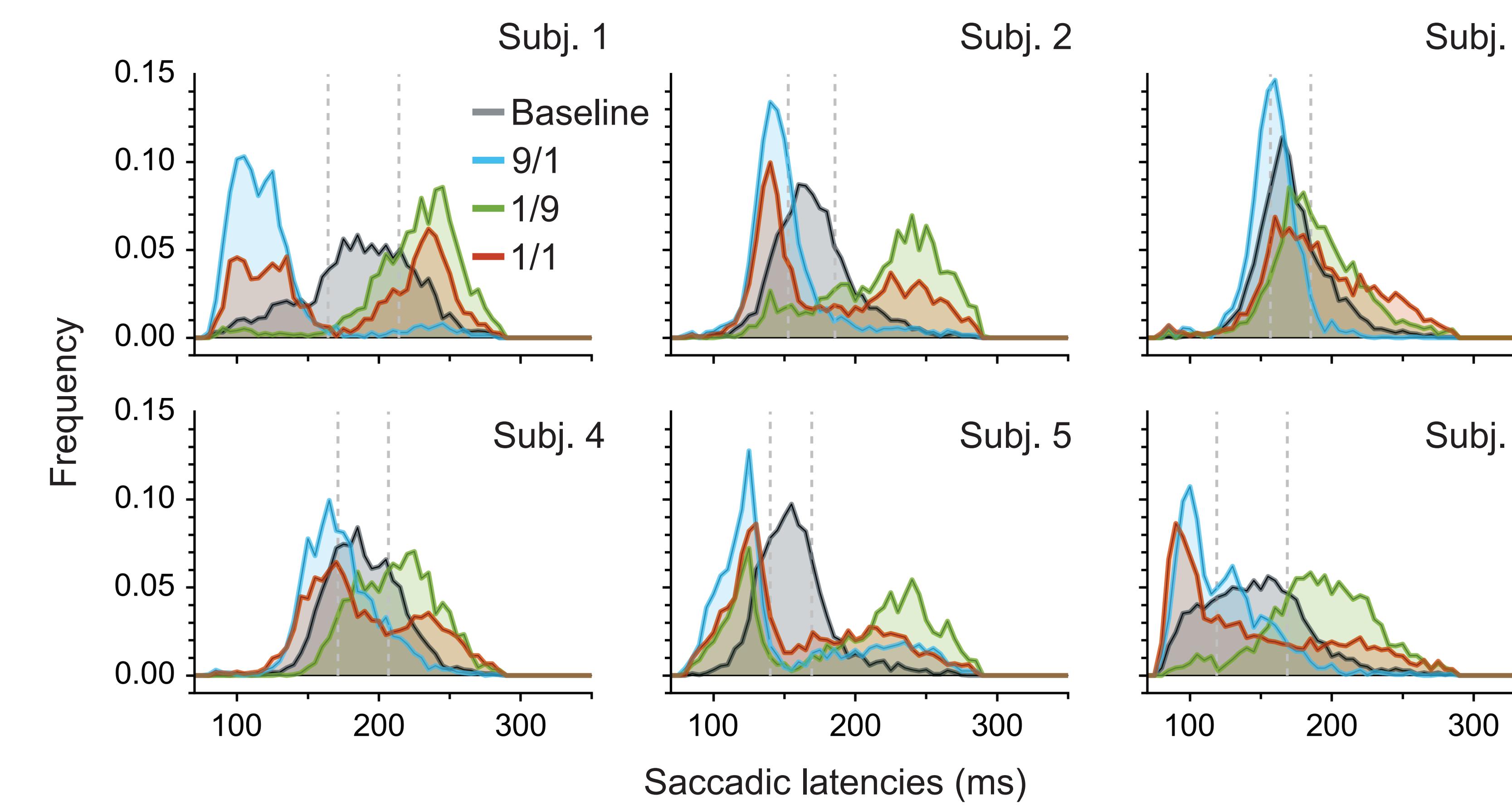
1/9 1 R1 for 9 R2

1/1 1 R1 for 1 R2

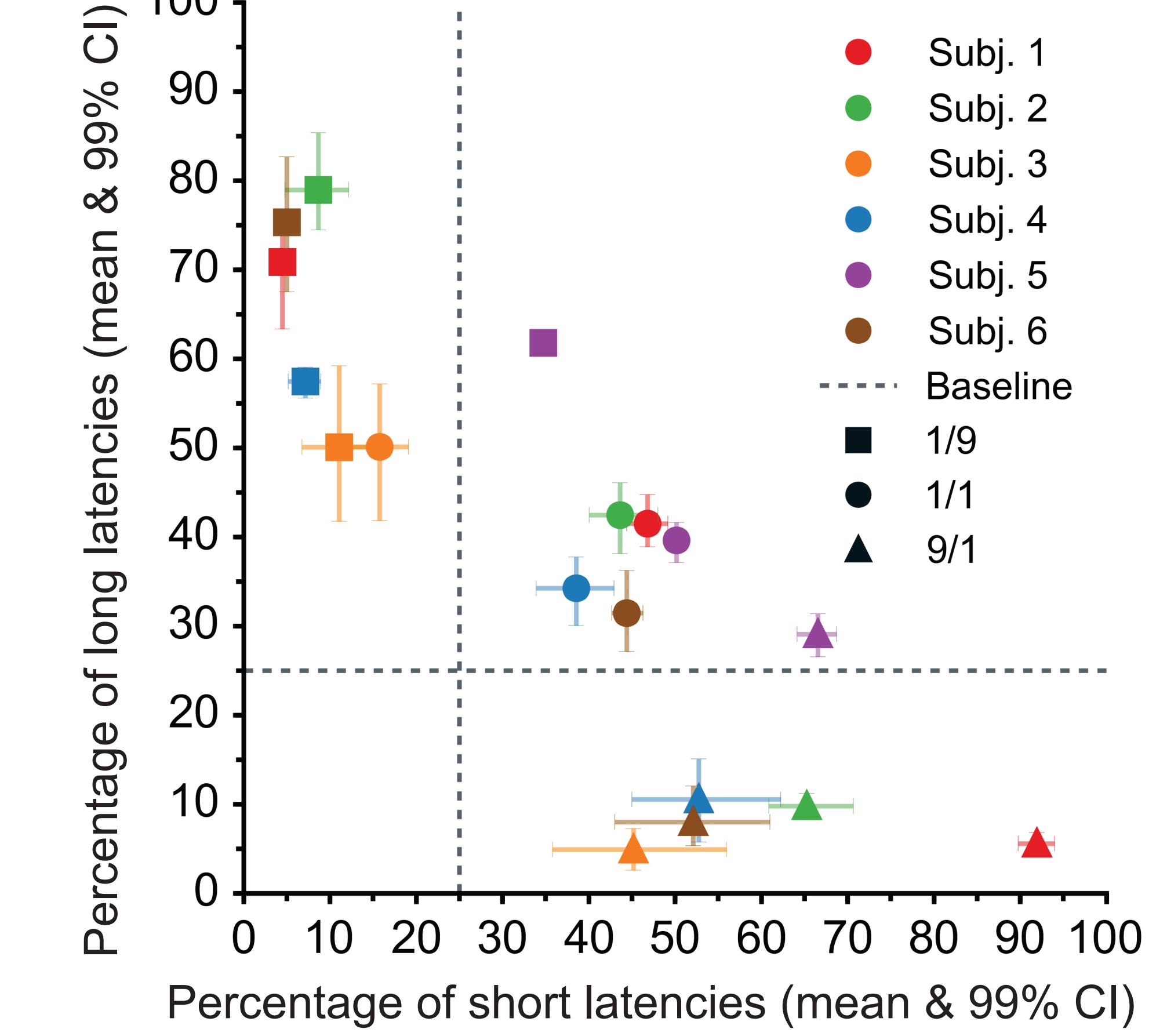
- 400 trials per session
- 60 sessions per subject
- Change-over delay = 1 trial
- Reinforcer = 0.02 €
- Each participant experienced all four conditions (1/1, 9/1 and 9/1)

## RESULTS

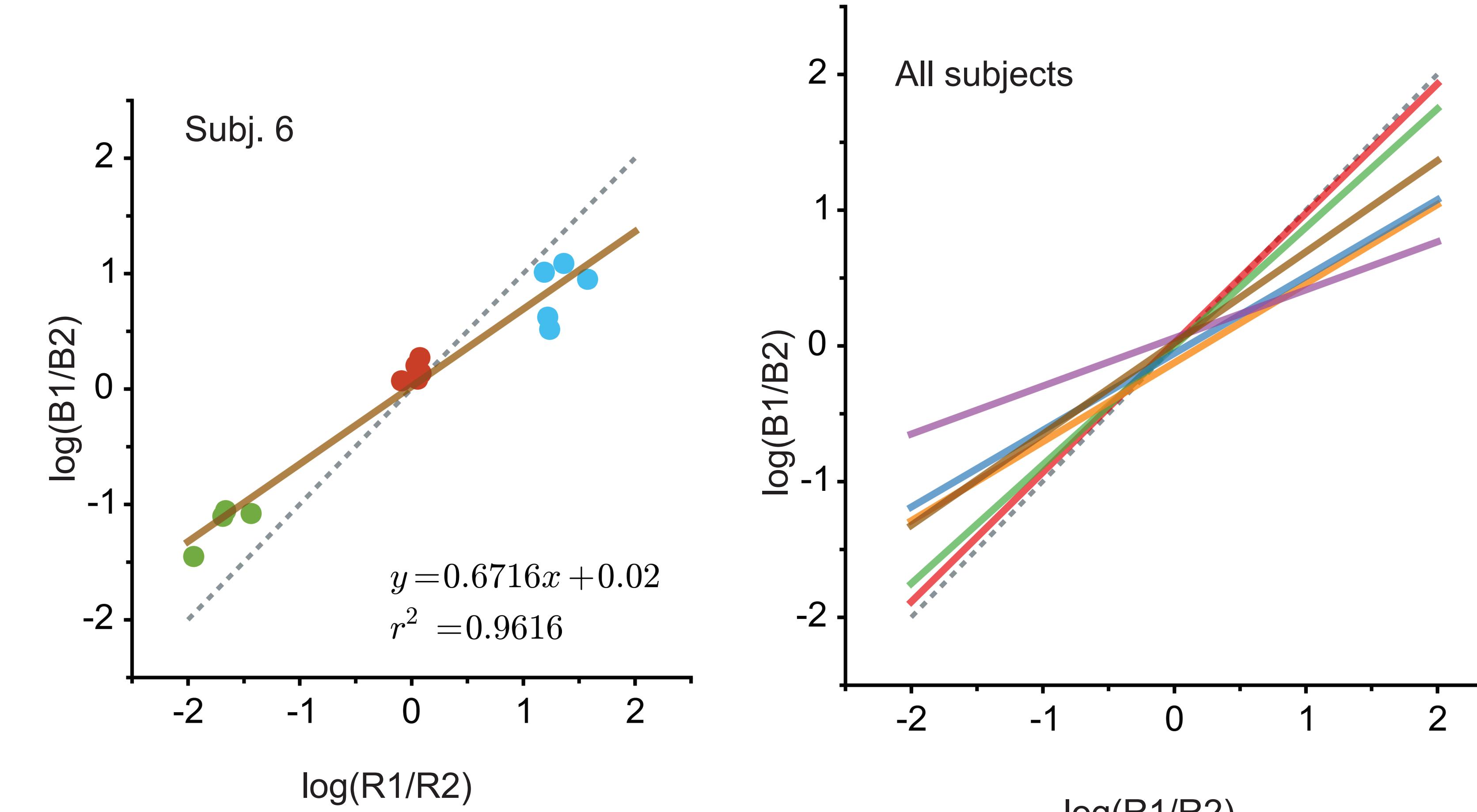
### Saccadic latencies are voluntarily controlled



### Rates of short and long latencies depend on reinforcement contingencies



### The relative rates of latencies match the relative rates of reinforcers



## CONCLUSION

- Saccadic latency distributions changed as a function of reinforcement contingencies.
- Choices between short and long latencies matched reinforcement contingencies.
- Learned contingencies affect the allocation of saccades in time, demonstrating a voluntary control of saccadic latency.

## REFERENCE

Carpenter & Williams (1995). Neural computation of log likelihood in control of saccadic eye movements. *Nature*.  
Madelain, Champrenaut & Chauvin (2007). Control of Sensorimotor Variability by Consequences. *Journal of Neurophysiology*.

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