

Supplementary Materials

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Abstract

1 Participants

Data was collected from 64 participants as originally planned. Four of these participants did not complete all parts of the experiment (either declining to participate in the second session, or could not be calibrated with the eye tracker), so four new participants were recruited to bring the total back up to 64.

1.1 Split-Half

Accuracy data from all participants is shown in Figure 1. From this we can see that there are a number of outliers: 4, 21, 33, 56, and 58. These participants, in at least one session, either missed the majority of easy targets, or responded with false positives on the majority of target absent trials. After removing these participants, the lowest accuracy in either session was 84.6% for the easy targets, and 76.9% for target absent trials. This leaves us with 59 participants for the split-half paradigm.

1.2 Adaptive Choice

1.3 Foraging

1.4 Comparisons across paradigms

Interestingly, it was not the same participants who had to be removed in each paradigm. This suggests that their poor performance in one paradigm is less likely to be due to low motivation. The number of participants available for each comparison between paradigms is given in Table 1.

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		Number of participants
Split-half	Adaptive Choice	
Split-half	Foraging	
Adaptive Choice	Foraging	

Table 1: Number of participants available for each comparison

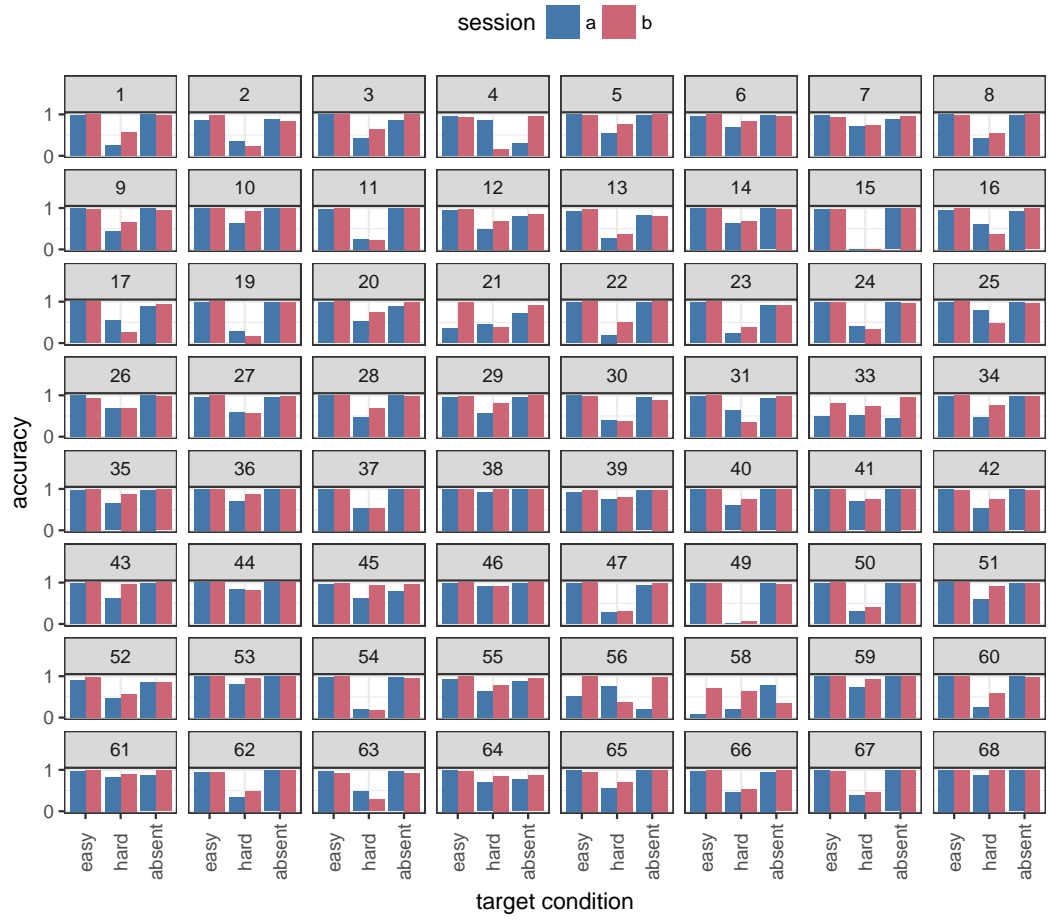


Figure 1: Accuracy data for each participant for the split-half paradigm.

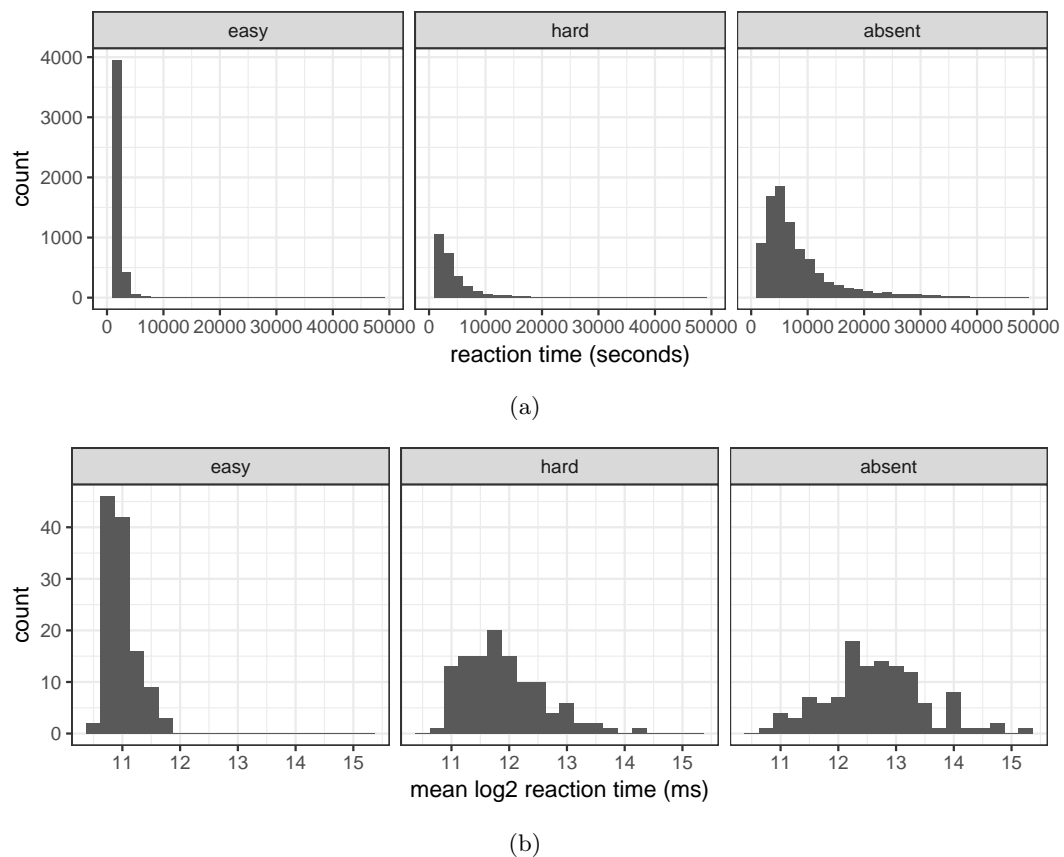


Figure 2: Distribution of reaction times in split-half paradigm.

2 Data processing

2.1 Split-Half

179 trials with invalid key responses were removed. After removing data from the five outlier participants (see above), all remaining incorrect trials ($n = 2529$) were removed, leaving a total of 16187 trials over 59 participants.

2.1.1 Reaction Times

As expected, reaction times were highly skewed (Figure 2), so were \log_2 transformed (in ms units) before the participant means were calculated for each session and target condition (Figure)

2.1.2 Eye movements

340,138 fixations were recorded. Of these, 7701 fell outside of the stimuli area and were removed. Fixations landing within a vertical strip consisting of 10% of the stimuli's width were classed as *central*. All remaining fixations were then classed as landing on the *homogeneous* or *heterogeneous* half of the stimulus. Initial fixations were not included in the analysis. Numbers of fixations are given in Table 2.

2.2 Adaptive Choice

2.3 Foraging

		$1 < n$	$2 \leq n \leq 5$	$2 \leq n \leq 3$
easy	central	3931	3689	
	homogeneous	12452	8312	
	heterogeneous	5955	3241	
hard	central	3804	2439	
	homogeneous	8781	3188	
	heterogeneous	29912	5294	
absent	central	16885	8303	
	homogeneous	41356	12576	
	heterogeneous	192348	5763	

Table 2: Number of fixations recorded for each condition.