Assessing evidence accumulation and rule learning in humans with an online game
Supplementary materials

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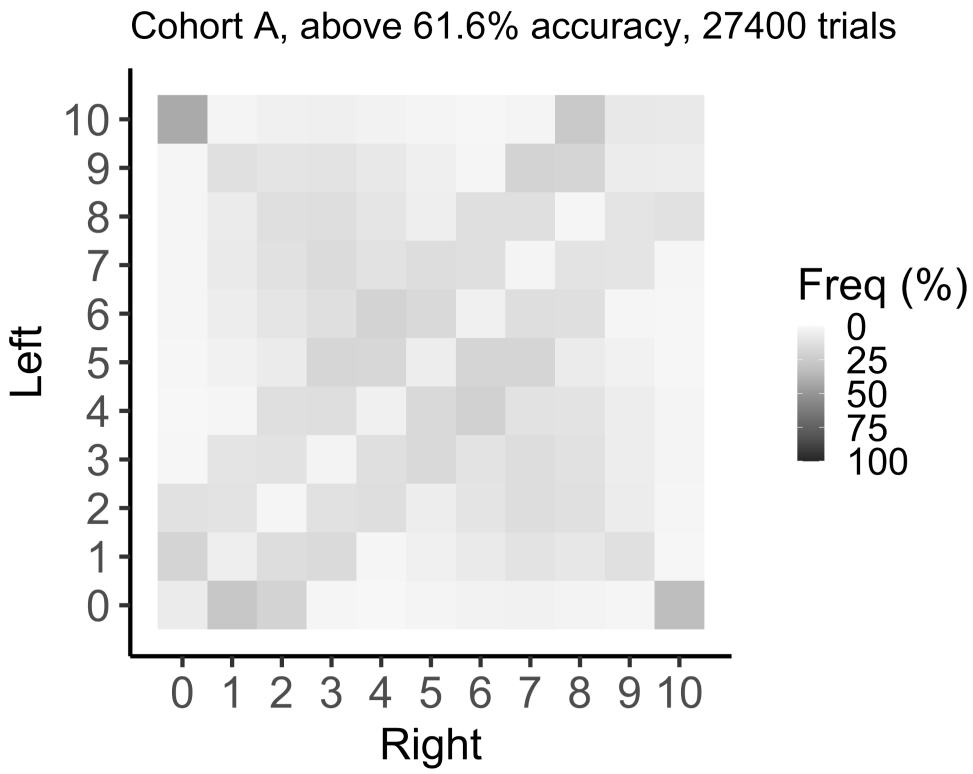
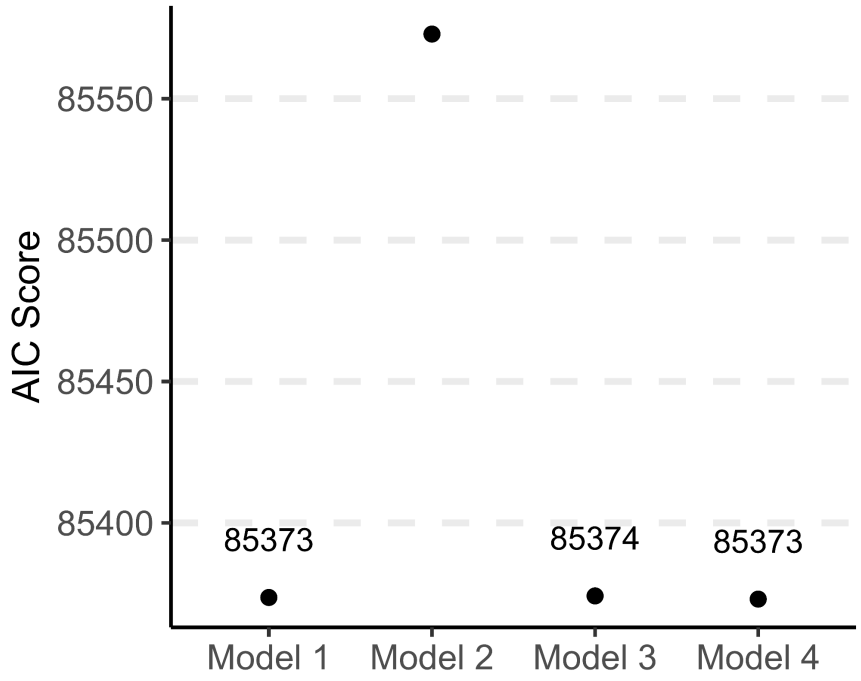
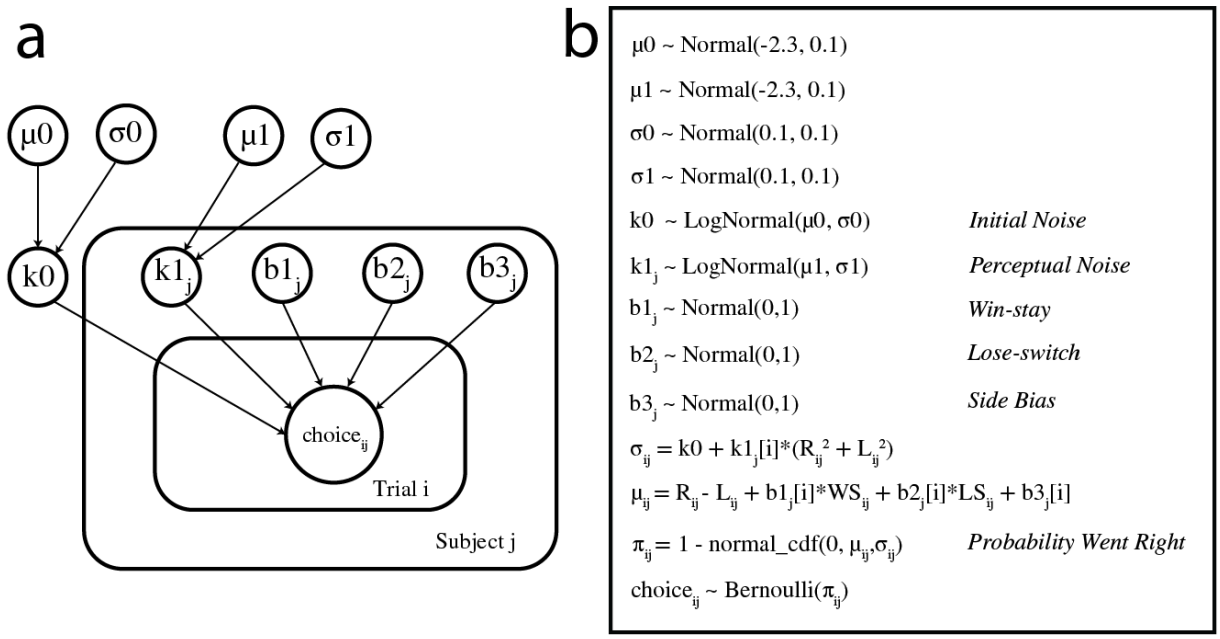


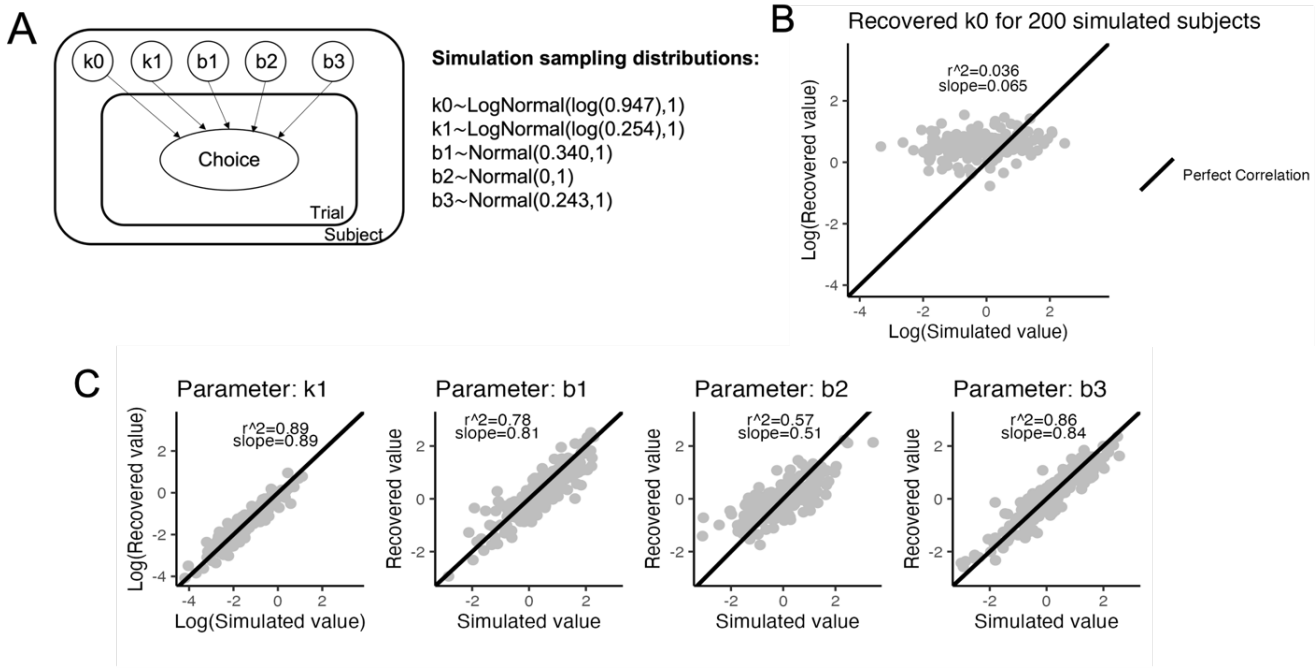
Supplementary Figure 1. Heatmap showing the frequency of flashes pairings reflecting a Poisson sampling process as well as upsampling of difficult pairings (flash difference of 1 and 2).



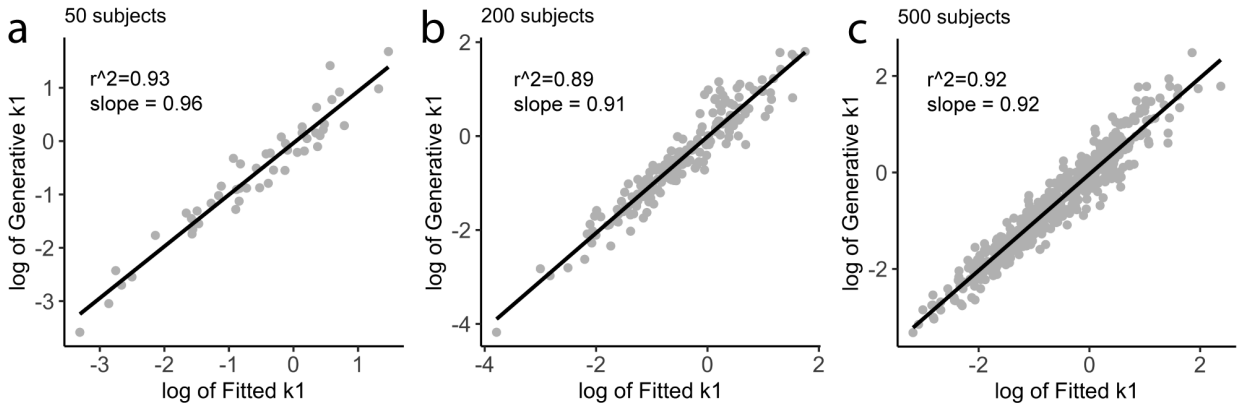
Supplementary Figure 2. Model comparisons for participants in cohort A, B and C, ignoring the first 30 trials to remove any learning dynamics. Fitted parameters returned by Model 1 (k1 = 1.679, k0 = 0.284), Model 2 (k2=1.58e-05, k0 = 1.85), Model 4 (k1 = 1.328, k2 = 0.255, k0 = 0.209), Model 3 (k = 0.343, k0 = 1.498, ki = 1.903).



Supplementary Figure 3. A) Schematic of the Bayesian hierarchical model - signal detection theory model of perceptual uncertainty. **B)** Fitted parameters and prior distributions for each parameter in the model



Supplementary Figure 4. A) This model fits all parameters, including k0, k1, b1, b2 and b3, on subject level for 200 simulated subjects. Each parameter has its distribution listed in the graph. **B)** and **C)** Log scaled recovered k0 and k1 values on subject level versus log scaled simulated values. Recovered b1, b2 and b3 against simulated values.



Supplementary Figure 5. Effect of the number of participants on the accuracy of the recovered parameter using the Bayesian Hierarchical Model. **A-C)** Fitted k1 from the Hierarchical Model versus Generative k1 in log-scaling for 50 participants, 200 participants and 500 participants doing 200 trials each.