Inference rule Knowledge:

Conclusion drawn from experiment 2.

Knowing if the item is in the focus of attention or not matters the most. The model fits better when the inference rule knows if the item is in the focus of attention or not.

Knowledge of trial-specific s\_p or experiment specific doesn’t matter that much. Experiment specific s\_p performed slightly better, but only 5 AIC in difference.

Bias:

Experiment 1

Experiment 2

Model Name: Mixture model with Bayes v1.01.01, AIC: 23383.269482503663

Parameters median:

37.632, 0.008,

25.826, 0.136,

19.117, 0.376,

14.574, 0.531,

Model Name: Mixture Model Boundary v1.01.01, AIC: 23297.6664677937

Parameters median:

47.133, 0.013, 22.908,

23.968, 0.096, 24.816,

14.499, 0.320, 25.001,

9.163, 0.483, 30.937,

Model Name: Mixture model with Bayes and bias v1.01.01, AIC: 23313.61971975166

Parameters median:

47.846, 0.013, 0.911,

26.231, 0.123, 0.223,

15.646, 0.325, -0.270,

10.204, 0.520, -0.146,

Same story as experiment 3.

However, adding bias into IMBayes only improved the AIC slightly but do not affect the precision parameters:

Model Name: Interference Model with Bayes v1.02.02, AIC: 19651.40735769616

Parameters median: 0.014 0.139 2.792 17.482 43.962 0.071

Parameters mean: 0.033 0.207 5.367 20.073 48.467 0.161

Model Name: Interference Model with Bayes and Bias focus experiment\_specific v1.00.00, AIC: 19672.478512441714

Parameters median: 0.024 0.185 9.927 17.775 44.843 0.071 0.639

Parameters mean: 0.034 0.275 8.585 28.208 51.545 0.160 0.556

The bias parameter still estimated non zero, and a and b parameter changed slightly. However, the precision parameters stay the same.

Experiment 3

Comparing to the parameters measured from recall trials.

Mixture model with Bayes inference rule measured lower precision in recognition trials than recall trials.

Mixture model with “boundary” decision rule measured the same precision and p-guessing in both recall and recognition trials. The boundary increases when the set size increases.

Mixture model with Bayes inference rule and bias measured the same precision and p-guessing in both recall and recognition trials. The bias switched from preferring “change” response to preferring “no-change” response as the set size increases.