Assessing the influence of dopamine and mindfulness on routines in visual search - supplemental materials

Response types by drug session

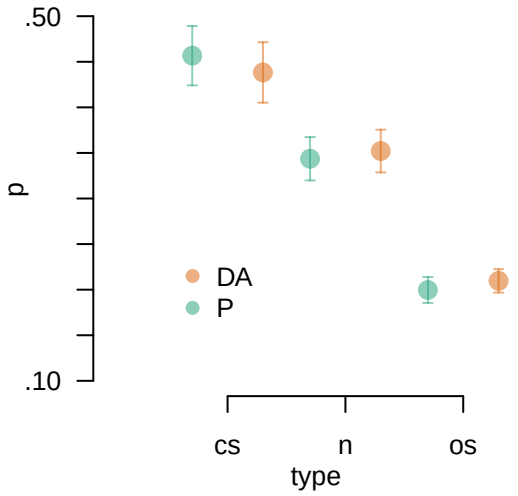

Figure 1: Group average probability (p) for each response type for each session. Circles reflect observed average accuracy, error bars reflect within-subject standard error of the mean [SE]. DA = dopamine, P = placebo, cs = current setting, n = none, os = other setting

Model comparison tables

The first set of tables show the outcomes from the first stage of the LOO model selection procedure, where we identified the best combination of the block (b) and drug (drg) factors to explain the data. fx = fixed effects, rfx = random effects. Note that all models contained a subject intercept term.

Table 1: accuracy model comparisons

model	elpd_diff	se_diff
fx-b+drg_rfx-b+drg	0.0	0.0
fx-b x drg_rfx-b+drg	-0.2	0.5
fx-b+drg_rfx-b	-674.1	80.8
fx-b x drg_rfx-b	-674.8	80.5
rfx-b	-677.8	81.3

model	elpd_diff	se_diff
fx-b_rfx-b	-679.3	81.7
fx-b	-1224.6	118.0

Table 2: setting accuracy model comparisons

model	elpd_diff	se_diff
fx-b+drg_rfx-b+drg	0.0	0.0
fx-b x drg_rfx-b+drg	-0.7	0.4
fx-b+drg_rfx-b	-553.8	66.3
fx-b x drg_rfx-b	-554.4	66.1
fx-b_rfx-b	-570.3	68.2
rfx-b	-571.3	68.2
fx-b	-868.8	91.0

Table 3: stereotypy model comparisons

model	elpd_diff	se_diff
fx-b+drg_rfx-b+drg	0.0	0.0
fx-b x drg_rfx-b+drg	-0.3	0.2
fx-b+drg_rfx-b	-130.1	16.9
fx-b x drg_rfx-b	-130.7	16.9
fx-b_rfx-b	-131.1	17.4
rfx-b	-132.5	17.4
fx-b	-205.9	19.4

Having identified the best combination of block and drug regressors, we next sought to understand if adding the mindfulness factor improved the fit of the model. The below tables reflect the ways that mindfulness was added to the winning model identified in the preceding stage. m = mindfulness

Table 4: accuracy + mindfulness

model	elpd_diff	se_diff
m x b x drg + m	0.0	0.0
b x m + m	0.0	0.7
drg x m + m	-0.2	0.8
b x m + m	-11.8	6.4
+ m	-11.9	6.4
b + drg	-12.0	6.4

Table 5: setting accuracy + mindfulness

model	elpd_diff	se_diff
+ m	0.0	0.0
b + drg	-0.1	1.0
b x m + m	-1.1	0.8

model	elpd_diff	se_diff
drg x m + m	-1.9	0.4
drg x m + m	-2.1	0.7
m x b x drg + m	-2.5	0.8

Table 6: stereotypy + mindulness

model	elpd_diff	se_diff
drg x m + m	0.0	0.0
b x drg x m + m	-0.4	1.5
b x m + m	-2.2	3.1
+ m	-2.3	3.0
fx-b+drg_rfx-b+drg	-133.3	17.4

Last we checked whether adding the BIS regressor improved the model. Note that our conclusions would have been the same regardless of whether we had used the winning model from the previous stage, or the one with the addition of the BIS regressor.

Table 7: accuracy + bis

model	elpd_diff	se_diff
win	0	-0.2
+ bis	0	0.5

Table 8: setting accuracy + bis

model	elpd_diff	se_diff
win	0	0.0
+ bis	0	0.5

Table 9: stereotypy + bis

model	elpd_diff	se_diff
win	0.0	0.0
+ bis	-0.5	0.4

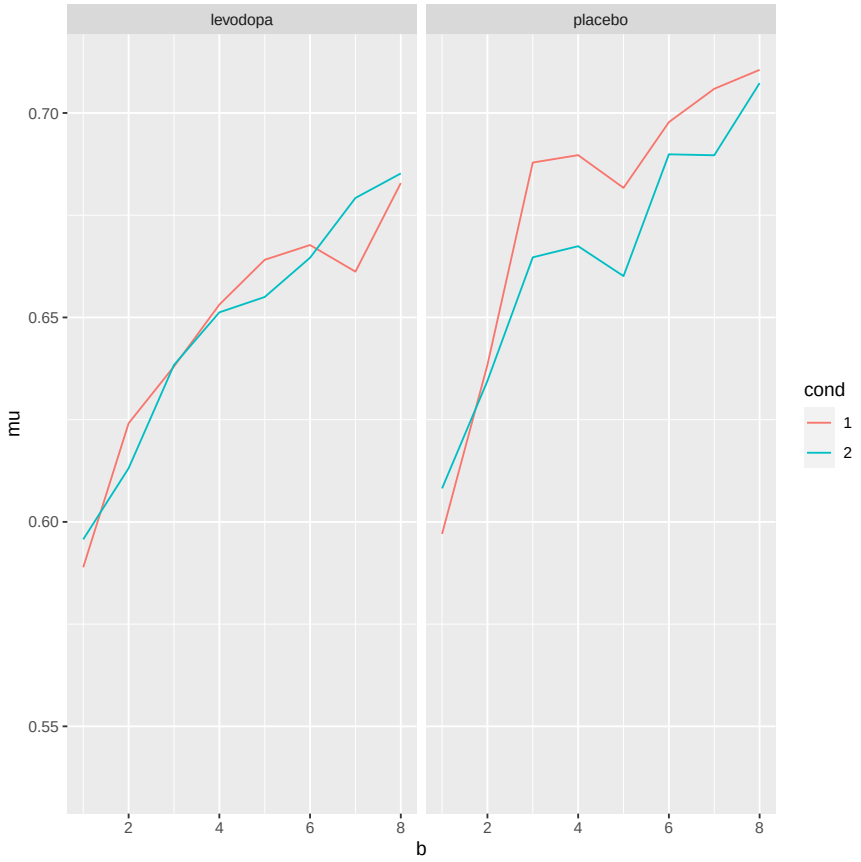

Figure 2: Group average setting accuracy for each block x setting, broken down by session. mu = mean setting accuracy

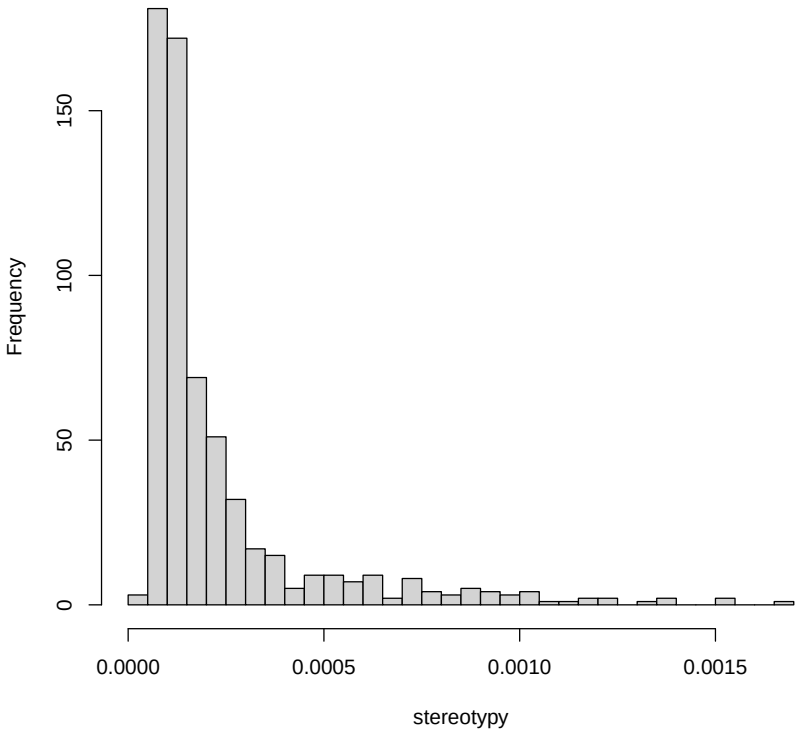

Figure 3: Distribution of stereotypy scores