Model fitting to human choice and accuracy data

"Accuracy increased across the block overall" :
Effect 01: "trial" F(6.87,116.86)=29.902, p=0.000

"but did so faster in blocks with familiar cues." :
Effect 01: "trial" F(6.87,116.86)=29.902, p=0.000
Effect 02: "novel" F(1.00,17.00)=149.680, p=0.000
Effect 03: "novel""trial" F(6.94,117.96)=2.899, p=0.008

"Participants began with a bias to respond `target` that abated across the block in roughly equal measure for the two conditions."
Effect 01: "trial" F(7.37,125.24)=46.063, p=0.000
Effect 02: "novel" F(1.00,17.00)=24.619, p=0.000
Effect 03: "novel""trial" F(6.78,115.25)=0.454, p=0.861
interaction between conditions

"specifically, mean values of alpha_R were" ... "for blocks with familiar and novel cues respectively, diverging reliably from the respective parameters" ... "that yielded maximal performance under this model in both cases"
mean fittings : 0.39 0.58
mean optimals : 0.08 0.11
std fittings : 0.27 0.23
std optimals : 0.02 0.05
familiar ttest : t(17) = +4.89, p = 0.000
novel ttest : t(17) = +8.10, p = 0.000

"similarly, mean values for tau were" ... "both showing a divergence from the performance-maximising parameters" ... "that was statistically reliable"
alpha_m
mean fittings : 0.91 0.96
mean optimals : 0.74 0.47
std fittings : 0.72 0.71
std optimals : 0.44 0.37
familiar ttest2 : t(17) = +0.84, p = 0.414
novel ttest2 : t(17) = +2.69, p = 0.016
tau
mean fittings : 0.38 0.56
mean optimals : 0.06 0.08
std fittings : 0.28 0.22
std optimals : 0.03 0.04
familiar ttest : t(17) = +5.03, p = 0.000
novel ttest : t(17) = +8.74, p = 0.000

"however, values of tau were smaller ... and values of alpha_R were larger" ... "in the familiar relative to novel cues condition"

alpha_M ttest : t(17) = -0.26, p = 0.798
alpha_R ttest : t(17) = -2.41, p = 0.028
tau ttest : t(17) = -2.54, p = 0.021

"interaction between fittings/optimal and familiar/novel"
alpha_R
Effect 01: "cue" F(1.00,17.00)=7.686, p=0.013
Effect 02: "optimal" F(1.00,17.00)=75.997, p=0.000
Effect 03: "optimal""cue" F(1.00,17.00)=3.936, p=0.064
tau
Effect 01: "cue" F(1.00,17.00)=8.002, p=0.012
Effect 02: "optimal" F(1.00,17.00)=73.070, p=0.000
Effect 03: "optimal""cue" F(1.00,17.00)=4.852, p=0.042

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RANKSUM TEST

adaptation between conditions
fittings on ta3
p(alpha_M) = 0.861
p(alpha_R) = 0.032
p(tau) = 0.044

optimals on ta3
p(alpha_M) = 0.005
p(alpha_R) = 0.082
p(tau) = 0.072

deviance from optimality
familiar on ta3
p(alpha_M) = 0.799
p(alpha_R) = 0.000
p(tau) = 0.000
novel on ta3
p(alpha_M) = 0.096
p(alpha_R) = 0.000
p(tau) = 0.000

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CORRELATION PARAMETER / PERFORMANCE

ALPHA M
r(familiar) = - 0.3481
r(novel) = -0.2434
p(familiar) = 0.1569
p(novel) = 0.3304

ALPHA R
r(familiar) = - 0.7253
r(novel) = -0.3711
p(familiar) = 0.0007
p(novel) = 0.1295

TAU
r(familiar) = - 0.6943
r(novel) = -0.4387
p(familiar) = 0.0014
p(novel) = 0.0658

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BIC SCORES

Fitting (familiar / novel)

BIC(human)	= 32.0413 ± 0.1759	= 32.7083 ± 0.0744
BIC(god)	= 38.6333 ± 0.3613	= 40.0568 ± 0.1324
BIC(hbm)	= 36.8194 ± 0.5052	= 38.6293 ± 0.2327
BIC(ta3)	= 37.8985 ± 0.2117	= 39.1219 ± 0.1770
BIC(ta3opt)	= 39.7748 ± 0.3826	= 41.7100 ± 0.2193
BIC(co3)	= 38.0386 ± 0.2196	= 38.9329 ± 0.1918
BIC(co3opt)	= 40.6822 ± 0.3417	= 41.7815 ± 0.2204
BIC(taco4)	= 39.0755 ± 0.1762	= 40.0401 ± 0.1637
BIC(taco4opt)	= 41.3003 ± 0.3899	= 43.1427 ± 0.2243

Test (familiar / novel)

BIC(human)	= 31.9841 ± 0.2089	= 32.7730 ± 0.0544
BIC(god)	= 38.2427 ± 0.4556	= 40.0047 ± 0.2188
BIC(hbm)	= 36.5909 ± 0.5426	= 38.3735 ± 0.2471
BIC(ta3)	= 39.5754 ± 0.3627	= 41.0839 ± 0.4033
BIC(ta3opt)	= 40.4352 ± 0.4451	= 41.6207 ± 0.3443
BIC(co3)	= 40.0569 ± 0.3723	= 41.0461 ± 0.3670
BIC(co3opt)	= 41.0717 ± 0.4175	= 41.7441 ± 0.3819

BIC(taco4)	= 41.2352 ± 0.3060	= 42.5176 ± 0.3498
BIC(taco4opt)	= 41.6794 ± 0.4745	= 43.1694 ± 0.3673