**Instructions for simulating Maniscalco, Peters, & Lau 2016 (MPL2016)**

Fitting S to d’ (S1 Supporting Information, section S1.1.2)

1. Determine the value of SA that yields target level of d’ at the intermediate level of contrast i = 3 where CA = CB,3
   1. Set simulation parameter values in MPL2016/d\_search/TI\_MPL2016\_d\_search\_loop.m as desired
   2. Run MPL2016/d\_search/TI\_MPL2016\_d\_search\_loop.m
   3. Results stored in MPL2016/d\_search/results/
2. Determine the values of SB,i that yield target levels of d’ at the other conditions i = {1,2,4,5} where CA ≠ CB,i
   1. Set simulation parameter values in MPL2016/d\_search2/TI\_MPL2016\_d\_search2\_loop.m as desired
   2. In the same file, on line 21, manually set the value of sim.S1 based on the output of MPL2016/d\_search
   3. Run MPL2016/d\_search2/TI\_MPL2016\_d\_search2\_loop.m
   4. Results stored in MPL2016/d\_search2/results/

Fitting Ur to confidence probability distributions and τ to meta-d’ (S1 Supporting Information, section S1.1.3)

1. For the Cx model, determine the value of τ that yields target level of meta-d’ in the i = 3 condition, given Ur thresholds that yield target probabilities for confidence rating and S values that yield d’ in the i = 3 condition
   1. Set simulation parameter values in MPL2016/md\_Cx\_search/TI\_MPL2016\_md\_Cx\_search\_loop.m as desired
   2. In the same file, on line 20, manually set the value of sim.S based on the output of MPL2016/d\_search
   3. Run MPL2016/md\_Cx\_search/TI\_MPL2016\_md\_Cx\_search\_loop.m
   4. Results stored in MPL2016/md\_Cx\_search/results/
2. For the Cδ model, determine the value of τ that yields target level of meta-d’ in the i = 3 condition, given Ur thresholds that yield target probabilities for confidence rating and S values that yield d’ in the i = 3 condition
   1. Set simulation parameter values in MPL2016/md\_Cd\_search/TI\_MPL2016\_md\_Cd\_search\_loop.m as desired
   2. In the same file, on line 20, manually set the value of sim.S based on the output of MPL2016/d\_search
   3. Run MPL2016/md\_Cd\_search/TI\_MPL2016\_md\_Cd\_search\_loop.m
   4. Results stored in MPL2016/md\_Cd\_search/results/

Using parameter fits to perform the simulations of Figure 2 (S1 Supporting Information, section S1.1.4)

1. Run the Cx simulation using parameters derived from previous steps
   1. Set simulation parameter values in MPL2016/final\_fit\_Cx/TI\_MPL2016\_final\_fit\_Cx\_loop.m as desired
   2. In the same file,
      1. on line 18, manually set the value of param.tau based on the output of MPL2016/md\_Cx\_search
      2. on line 21, manually set the value of sim.S1 based on the output of MPL2016/d\_search
      3. on line 22, manually set the value of sim.S2 based on the output of MPL2016/d\_search2
   3. Run MPL2016/final\_fit\_Cx/TI\_MPL2016\_final\_fit\_Cx\_loop.m
   4. Results stored in MPL2016/final\_fit\_Cx/results/
2. Run the Cδ simulation using parameters derived from previous steps
   1. Set simulation parameter values in MPL2016/final\_fit\_Cd/TI\_MPL2016\_final\_fit\_Cd\_loop.m as desired
   2. In the same file,
      1. on line 18, manually set the value of param.tau based on the output of MPL2016/md\_Cd\_search
      2. on line 21, manually set the value of sim.S1 based on the output of MPL2016/d\_search
      3. on line 22, manually set the value of sim.S2 based on the output of MPL2016/d\_search2
   3. Run MPL2016/final\_fit\_Cd/TI\_MPL2016\_final\_fit\_Cd\_loop.m
   4. Results stored in MPL2016/final\_fit\_Cd/results/