

Effects of Category Learning Strategies on Recognition Memory

Supplementary Information (SI)

Kevin O'Neill¹, Audrey Liu¹, Siyuan Yin^{1,6}, Timothy Brady², and Felipe De Brigard^{1,3,4,5}

1. Center for Cognitive Neuroscience, Duke University
2. Department of Psychology, University of California in San Diego
3. Department of Philosophy, Duke University, Durham
4. Department of Psychology and Neuroscience, Duke University
5. Duke Institute for Brain Sciences, Duke University
6. Department of Marketing, University of Pennsylvania

Correspondence

Kevin O'Neill, Center for Cognitive Neuroscience, Duke University, Durham, NC 27708

Email: kevin.oneill@duke.edu.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

Parameter	Median	HDI	pd	ROPE	% in ROPE
Intercept	0.29	[0.15, 0.43]	1	[-0.15, 0.15]	0.01
P	-0.08	[-0.29, 0.13]	0.76	[-0.15, 0.15]	0.76
I	-0.08	[-0.27, 0.12]	0.78	[-0.15, 0.15]	0.79
L	0.33	[0.10, 0.53]	1	[-0.15, 0.15]	0.04
NL	0.18	[-0.03, 0.38]	0.95	[-0.15, 0.15]	0.4
P:I	0.17	[-0.12, 0.46]	0.88	[-0.15, 0.15]	0.44
P:L	0.08	[-0.23, 0.42]	0.68	[-0.15, 0.15]	0.61
I:L	0.05	[-0.26, 0.33]	0.62	[-0.15, 0.15]	0.69
P:NL	-0.07	[-0.37, 0.24]	0.67	[-0.15, 0.15]	0.65
I:NL	0.05	[-0.22, 0.34]	0.64	[-0.15, 0.15]	0.71
L:NL	-0.12	[-0.48, 0.24]	0.75	[-0.15, 0.15]	0.51
P:I:L	-0.18	[-0.62, 0.26]	0.79	[-0.15, 0.15]	0.39
P:I:NL	0.01	[-0.40, 0.43]	0.52	[-0.15, 0.15]	0.55
P:L:NL	-0.17	[-0.74, 0.34]	0.73	[-0.15, 0.15]	0.37
I:L:NL	-0.01	[-0.51, 0.47]	0.51	[-0.15, 0.15]	0.47
P:I:L:NL	0.33	[-0.41, 1.07]	0.82	[-0.15, 0.15]	0.23

Table S1: Posterior medians, 95% HDIs, *pds*, ROPEs, and % in ROPE for hits.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

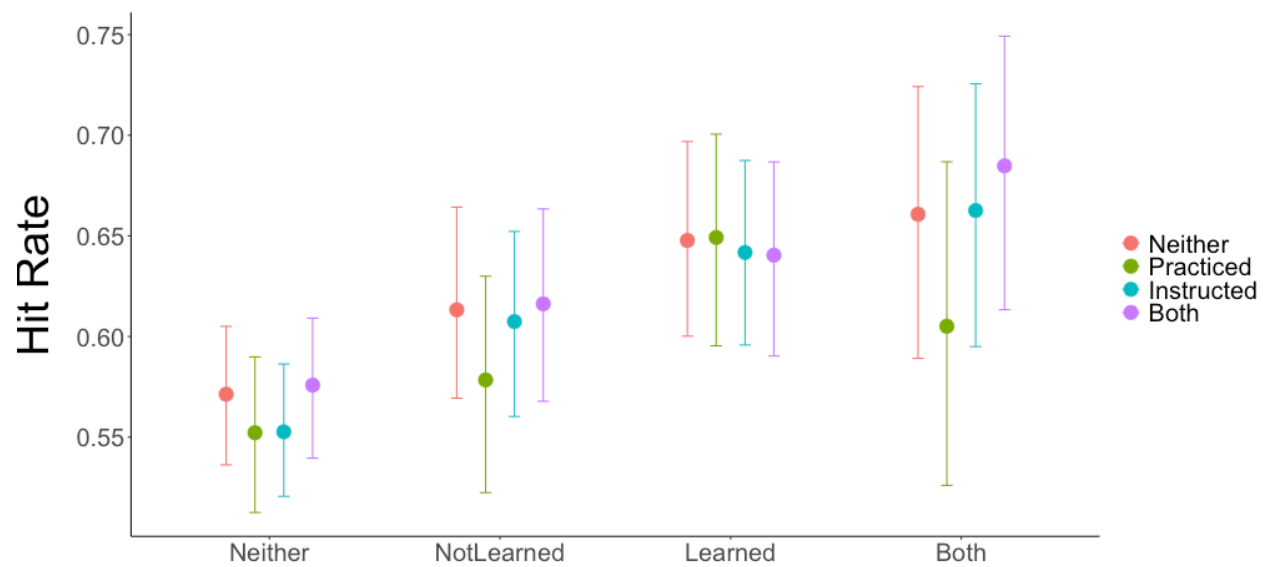


Table S2: Fitted posterior medians and 95% HDIs for hits.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

Parameter	Median	HDI	pd	ROPE	% in ROPE
Intercept	-0.15	[-0.28, -0.02]	0.99	[-0.15, 0.15]	0.53
P	-0.03	[-0.23, 0.16]	0.62	[-0.15, 0.15]	0.89
I	0.11	[-0.07, 0.28]	0.88	[-0.15, 0.15]	0.67
L	0.26	[0.08, 0.43]	1	[-0.15, 0.15]	0.09
NL	0.09	[-0.06, 0.24]	0.86	[-0.15, 0.15]	0.82
P:I	-0.03	[-0.30, 0.24]	0.59	[-0.15, 0.15]	0.75
P:L	0.04	[-0.21, 0.31]	0.61	[-0.15, 0.15]	0.76
I:L	0.05	[-0.19, 0.29]	0.66	[-0.15, 0.15]	0.77
P:NL	0.01	[-0.21, 0.24]	0.53	[-0.15, 0.15]	0.85
I:NL	-0.19	[-0.38, 0.02]	0.96	[-0.15, 0.15]	0.36
L:NL	-0.08	[-0.32, 0.17]	0.75	[-0.15, 0.15]	0.71
P:I:L	-0.14	[-0.50, 0.21]	0.78	[-0.15, 0.15]	0.49
P:I:NL	0.31	[0.00, 0.61]	0.98	[-0.15, 0.15]	0.14
P:L:NL	-0.04	[-0.41, 0.32]	0.59	[-0.15, 0.15]	0.59
I:L:NL	0.04	[-0.29, 0.38]	0.6	[-0.15, 0.15]	0.63
P:I:L:NL	0.15	[-0.35, 0.64]	0.72	[-0.15, 0.15]	0.41

Table S3: Posterior medians, 95% HDIs, *pds*, ROPEs, and % in ROPE for false alarms.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

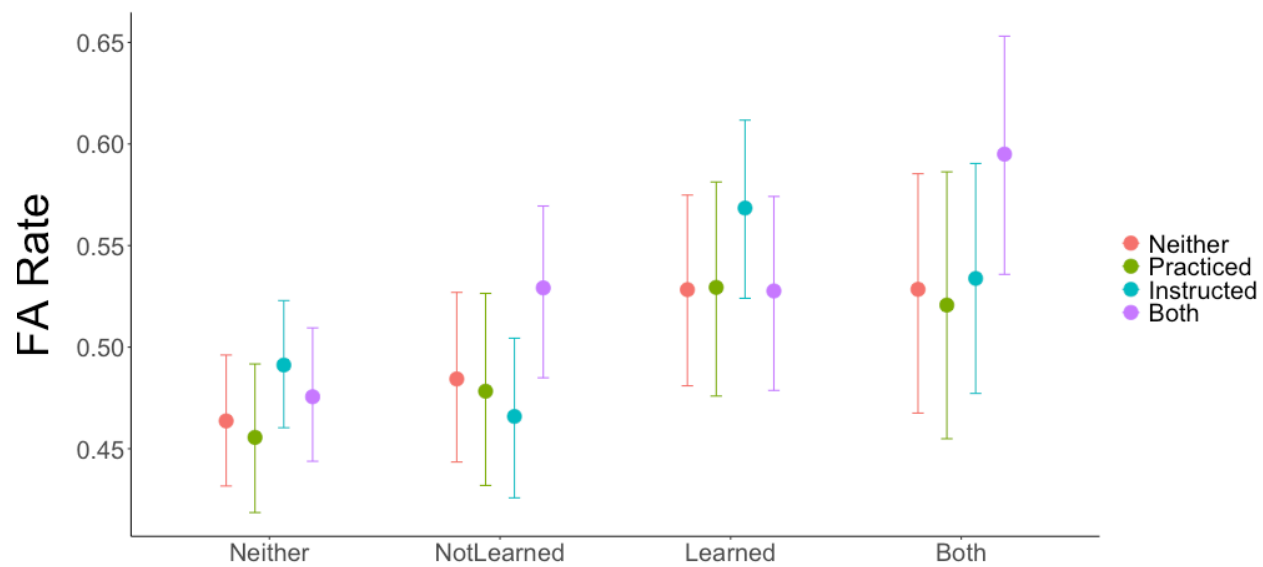


Table S4: Fitted posterior medians and 95% HDIs for false alarms.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

Parameter	Median	HDI	pd	ROPE	% in ROPE
Intercept	-0.08	[-0.16, -0.01]	0.99	[-0.07, 0.07]	0.4
P	-0.02	[-0.13, 0.09]	0.65	[-0.07, 0.07]	0.81
I	0.07	[-0.04, 0.17]	0.89	[-0.07, 0.07]	0.57
L	0.16	[0.05, 0.26]	1	[-0.07, 0.07]	0.04
NL	0.05	[-0.04, 0.14]	0.86	[-0.07, 0.07]	0.71
O	0.27	[0.18, 0.36]	1	[-0.07, 0.07]	0
P:I	-0.02	[-0.17, 0.13]	0.58	[-0.07, 0.07]	0.7
P:L	0.03	[-0.13, 0.18]	0.64	[-0.07, 0.07]	0.66
I:L	0.03	[-0.11, 0.17]	0.66	[-0.07, 0.07]	0.69
P:NL	0.01	[-0.13, 0.15]	0.54	[-0.07, 0.07]	0.75
I:NL	-0.11	[-0.23, 0.02]	0.96	[-0.07, 0.07]	0.29
L:NL	-0.05	[-0.19, 0.09]	0.76	[-0.07, 0.07]	0.62
P:O	-0.03	[-0.17, 0.10]	0.66	[-0.07, 0.07]	0.7
I:O	-0.11	[-0.24, 0.01]	0.96	[-0.07, 0.07]	0.28
L:O	0.04	[-0.10, 0.19]	0.69	[-0.07, 0.07]	0.67
NL:O	0.06	[-0.09, 0.20]	0.78	[-0.07, 0.07]	0.59
P:I:L	-0.09	[-0.31, 0.11]	0.8	[-0.07, 0.07]	0.41
P:I:NL	0.18	[-0.00, 0.37]	0.97	[-0.07, 0.07]	0.11
P:L:NL	-0.03	[-0.24, 0.19]	0.62	[-0.07, 0.07]	0.51
I:L:NL	0.03	[-0.17, 0.22]	0.6	[-0.07, 0.07]	0.55
P:I:O	0.12	[-0.07, 0.31]	0.89	[-0.07, 0.07]	0.32
P:L:O	0.03	[-0.18, 0.25]	0.62	[-0.07, 0.07]	0.5
I:L:O	0.01	[-0.19, 0.21]	0.53	[-0.07, 0.07]	0.57
P:NL:O	-0.05	[-0.26, 0.16]	0.68	[-0.07, 0.07]	0.48
I:NL:O	0.15	[-0.05, 0.35]	0.92	[-0.07, 0.07]	0.23
L:NL:O	-0.04	[-0.28, 0.23]	0.6	[-0.07, 0.07]	0.44
P:I:L:NL	0.09	[-0.19, 0.40]	0.74	[-0.07, 0.07]	0.34
P:I:L:O	-0.04	[-0.32, 0.27]	0.6	[-0.07, 0.07]	0.39
P:I:NL: O	-0.18	[-0.46, 0.14]	0.88	[-0.07, 0.07]	0.21
P:L:NL:O	-0.08	[-0.45, 0.31]	0.67	[-0.07, 0.07]	0.3
I:L:NL:O	-0.04	[-0.38, 0.31]	0.58	[-0.07, 0.07]	0.33
P:I:L:NL:O	0.14	[-0.39, 0.65]	0.7	[-0.07, 0.07]	0.2

Table S5: Posterior medians, 95% HDIs, *pds*, ROPEs, and % in ROPE for the SDT model.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

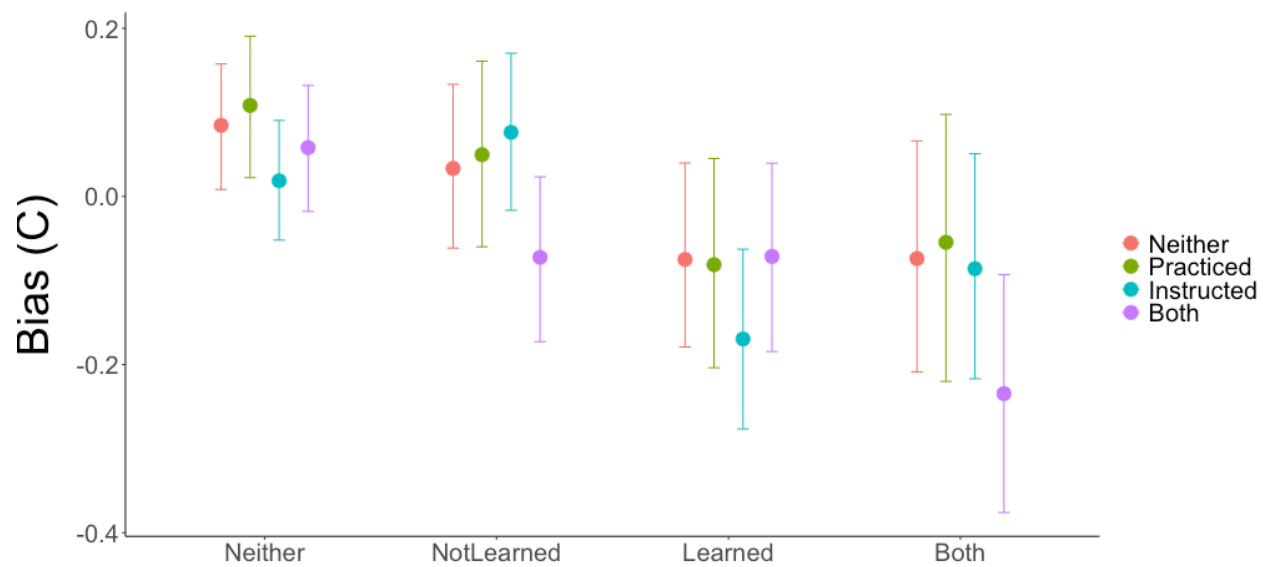


Table S6: Fitted posterior medians and 95% HDIs for bias (C).

CATEGORY LEARNING STRATEGIES ON MEMORY SI

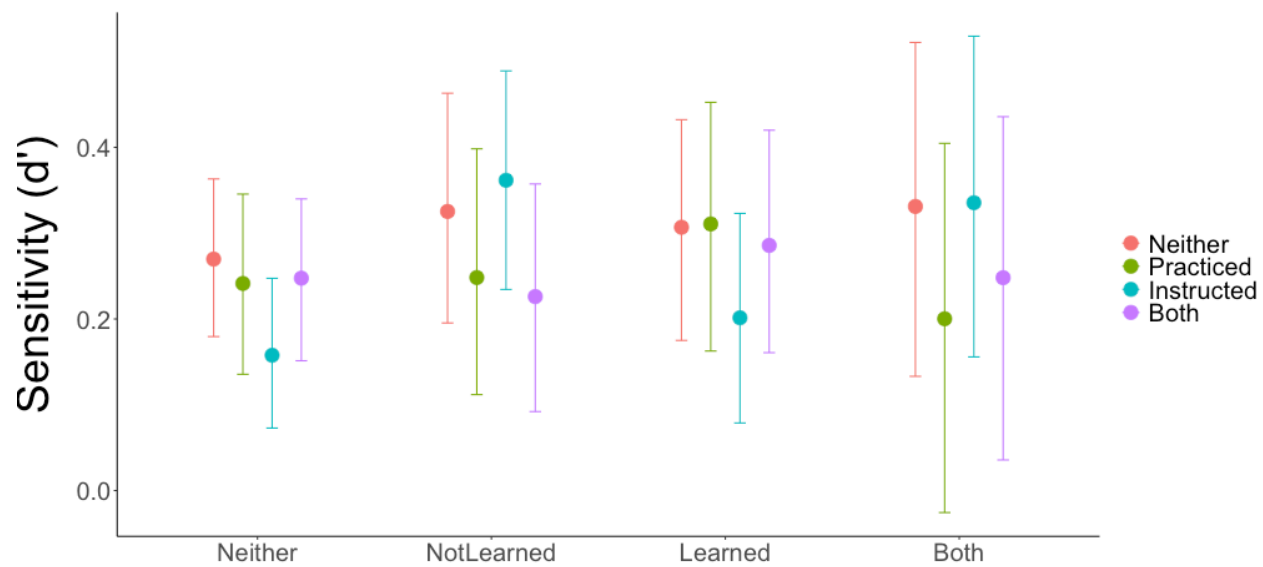


Table S7: Fitted posterior medians and 95% HDIs for sensitivity (d').

CATEGORY LEARNING STRATEGIES ON MEMORY SI

Parameter	Median	HDI	pd	ROPE	% in ROPE
Intercept	1.68	[1.54, 1.82]	1	[-0.16, 0.16]	0
P	-0.09	[-0.30, 0.12]	0.77	[-0.16, 0.16]	0.75
I	-0.1	[-0.30, 0.10]	0.82	[-0.16, 0.16]	0.74
L	0.01	[-0.01, 0.04]	0.87	[-0.16, 0.16]	1
NL	0	[-0.03, 0.02]	0.66	[-0.16, 0.16]	1
O	0.01	[-0.01, 0.03]	0.86	[-0.16, 0.16]	1
P:I	0.01	[-0.28, 0.31]	0.52	[-0.16, 0.16]	0.74
P:L	-0.01	[-0.05, 0.02]	0.8	[-0.16, 0.16]	1
I:L	-0.01	[-0.05, 0.02]	0.83	[-0.16, 0.16]	1
P:NL	0.02	[-0.01, 0.05]	0.89	[-0.16, 0.16]	1
I:NL	0.01	[-0.02, 0.04]	0.72	[-0.16, 0.16]	1
L:NL	0.03	[-0.01, 0.07]	0.93	[-0.16, 0.16]	1
P:O	-0.02	[-0.05, 0.02]	0.84	[-0.16, 0.16]	1
I:O	-0.01	[-0.04, 0.02]	0.78	[-0.16, 0.16]	1
L:O	-0.01	[-0.05, 0.03]	0.7	[-0.16, 0.16]	1
NL:O	-0.02	[-0.06, 0.02]	0.9	[-0.16, 0.16]	1
P:I:L	0.03	[-0.02, 0.07]	0.86	[-0.16, 0.16]	1
P:I:NL	-0.03	[-0.08, 0.01]	0.91	[-0.16, 0.16]	1
P:L:NL	-0.04	[-0.10, 0.02]	0.89	[-0.16, 0.16]	1
I:L:NL	-0.03	[-0.08, 0.02]	0.89	[-0.16, 0.16]	1
P:I:O	0	[-0.04, 0.05]	0.55	[-0.16, 0.16]	1
P:L:O	0	[-0.05, 0.06]	0.53	[-0.16, 0.16]	1
I:L:O	0	[-0.05, 0.05]	0.52	[-0.16, 0.16]	1
P:NL:O	0	[-0.05, 0.06]	0.52	[-0.16, 0.16]	1
I:NL:O	0.01	[-0.04, 0.06]	0.71	[-0.16, 0.16]	1
L:NL:O	0	[-0.07, 0.07]	0.51	[-0.16, 0.16]	1
P:I:L:NL	0.02	[-0.06, 0.09]	0.69	[-0.16, 0.16]	1
P:I:L:O	-0.04	[-0.11, 0.04]	0.86	[-0.16, 0.16]	1
P:I:NL:O	0.01	[-0.06, 0.09]	0.63	[-0.16, 0.16]	1
P:L:NL:O	0.03	[-0.07, 0.12]	0.71	[-0.16, 0.16]	1
I:L:NL:O	0	[-0.09, 0.09]	0.55	[-0.16, 0.16]	1
P:I:L:NL:O	0.01	[-0.12, 0.14]	0.55	[-0.16, 0.16]	1

Table S8: Posterior medians, 95% HDIs, *pds*, ROPEs, and % in ROPE for the μ parameter of the reaction time model.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

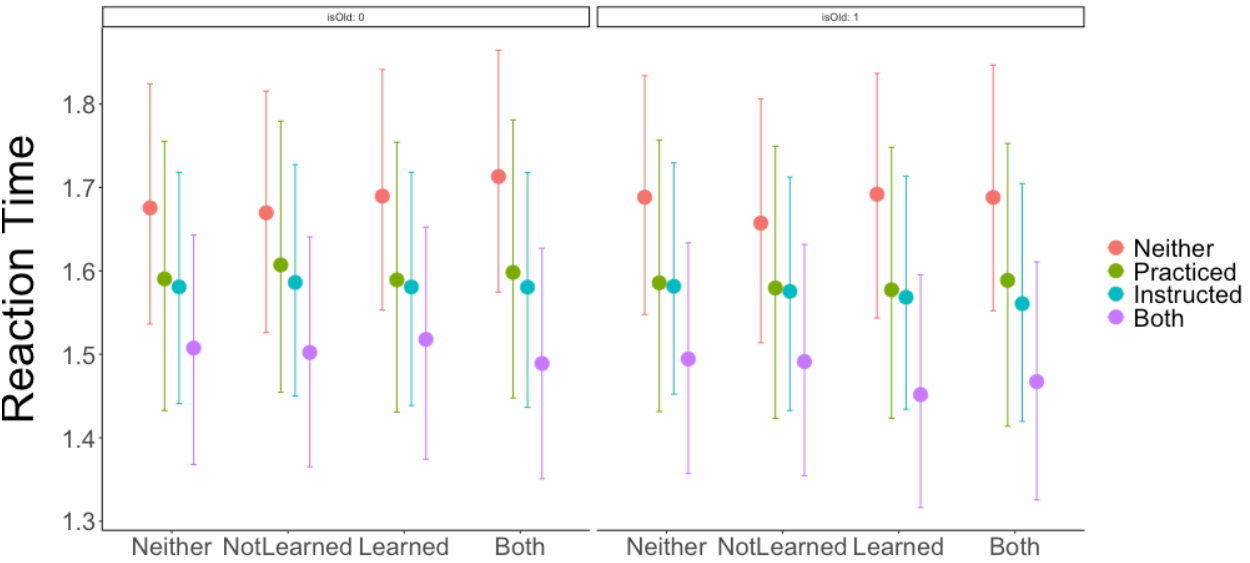


Table S9: Fitted posterior medians and 95% HDIs for the μ parameter of the reaction time model.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

Parameter	Median	HDI	pd	ROPE	% in ROPE
Intercept	-0.4	[-0.49, -0.30]	1	[-0.16, 0.16]	0
P	-0.11	[-0.27, 0.03]	0.93	[-0.16, 0.16]	0.72
I	-0.08	[-0.21, 0.05]	0.89	[-0.16, 0.16]	0.9
L	0	[-0.04, 0.04]	0.51	[-0.16, 0.16]	1
NL	-0.03	[-0.08, 0.01]	0.95	[-0.16, 0.16]	1
O	0.01	[-0.04, 0.05]	0.64	[-0.16, 0.16]	1
P:I	0.12	[-0.07, 0.32]	0.88	[-0.16, 0.16]	0.66
P:L	-0.04	[-0.10, 0.03]	0.85	[-0.16, 0.16]	1
I:L	0	[-0.06, 0.06]	0.52	[-0.16, 0.16]	1
P:NL	0.04	[-0.02, 0.11]	0.91	[-0.16, 0.16]	1
I:NL	0.06	[0.00, 0.11]	0.97	[-0.16, 0.16]	1
L:NL	0.07	[-0.00, 0.14]	0.97	[-0.16, 0.16]	1
P:O	-0.01	[-0.08, 0.05]	0.66	[-0.16, 0.16]	1
I:O	0	[-0.06, 0.05]	0.54	[-0.16, 0.16]	1
L:O	0.02	[-0.05, 0.09]	0.71	[-0.16, 0.16]	1
NL:O	-0.03	[-0.11, 0.04]	0.78	[-0.16, 0.16]	1
P:I:L	0.02	[-0.07, 0.11]	0.64	[-0.16, 0.16]	1
P:I:NL	-0.1	[-0.19, -0.02]	0.99	[-0.16, 0.16]	0.91
P:L:NL	-0.04	[-0.15, 0.07]	0.76	[-0.16, 0.16]	1
I:L:NL	-0.12	[-0.22, -0.02]	0.99	[-0.16, 0.16]	0.79
P:I:O	-0.04	[-0.14, 0.05]	0.82	[-0.16, 0.16]	1
P:L:O	-0.04	[-0.15, 0.07]	0.74	[-0.16, 0.16]	1
I:L:O	-0.08	[-0.18, 0.02]	0.95	[-0.16, 0.16]	0.95
P:NL:O	-0.03	[-0.14, 0.08]	0.71	[-0.16, 0.16]	1
I:NL:O	-0.05	[-0.16, 0.05]	0.84	[-0.16, 0.16]	1
L:NL:O	-0.03	[-0.16, 0.10]	0.67	[-0.16, 0.16]	1
P:I:L:NL	0.04	[-0.10, 0.19]	0.7	[-0.16, 0.16]	0.96
P:I:L:O	0.07	[-0.08, 0.22]	0.81	[-0.16, 0.16]	0.89
P:I:NL:O	0.17	[0.02, 0.32]	0.99	[-0.16, 0.16]	0.42
P:L:NL:O	0.11	[-0.08, 0.30]	0.88	[-0.16, 0.16]	0.69
I:L:NL:O	0.16	[-0.01, 0.33]	0.97	[-0.16, 0.16]	0.48
P:I:L:NL:O	-0.23	[-0.48, 0.03]	0.96	[-0.16, 0.16]	0.29

Table S10: Posterior medians, 95% HDIs, *pds*, ROPEs, and % in ROPE for the τ parameter of the reaction time model.

CATEGORY LEARNING STRATEGIES ON MEMORY SI

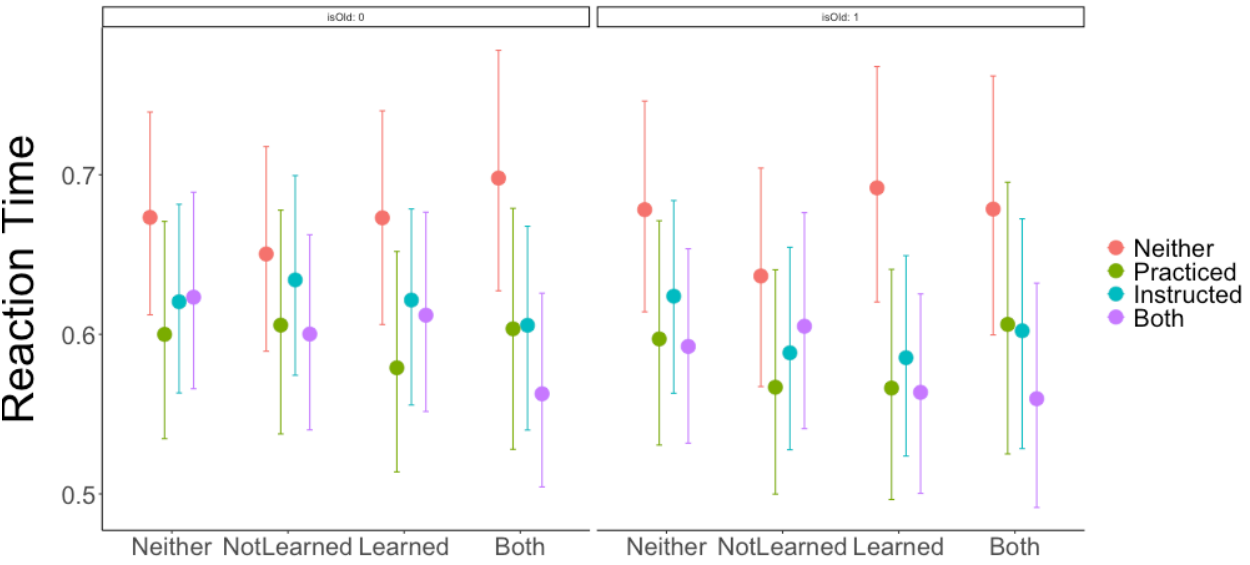


Table S11: Fitted posterior medians and 95% HDIs for the τ parameter of the reaction time model.