

Supplemental Material

Tactile Memory Impairments in Younger and Older Adults

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Experiment 1									
Age	Tactile pattern	Accuracy		t	df	p (corr.)	d	CI	
	(% similarity)	Mean	SD					Lower	Upper
Younger	Reference	76.67	12.34	8.37	14	4.860*10 ^{-6***}	2.16	1.74	3.53
	87.5%	35.33	32.70	-1.73	14	0.312	-0.45	-1.41	0.09
	70%	47.33	34.32	-0.30	14	0.768	-0.08	-0.71	0.44
	62.5%	62.00	34.06	1.36	14	0.388	0.35	-0.15	1.25
	50%	70.67	28.90	2.76	14	0.060	0.72	0.16	2.26
	37.5%	95.33	9.16	19.18	14	1.330*10 ^{-10***}	4.95	3.19	19.11
	25%	88.00	19.35	7.61	14	1.225*10 ^{-5***}	1.96	1.14	6.45
	12.5%	98.67	3.52	53.57	14	1.072*10 ^{-16***}	13.83	9.56	19.11
Older	Reference	81.33	14.08	8.62	14	4.536*10 ^{-6***}	2.23	1.63	3.76
	87.5%	33.33	18.77	-3.43	14	8.400*10 ^{-3**}	-0.89	-1.68	-0.41
	70%	31.33	25.03	-2.88	14	0.0119*	-0.75	-1.79	-0.25
	62.5%	72.00	21.78	3.91	14	6.240*10 ^{-3**}	1.01	0.47	2.41
	50%	73.33	24.98	3.62	14	8.400*10 ^{-3**}	0.93	0.45	2.11
	37.5%	72.67	21.20	4.14	14	5.676*10 ^{-3**}	1.07	0.63	1.89
	25%	76.00	24.44	4.12	14	9.700*10 ^{-3**}	1.07	0.44	3.65
	12.5%	84.67	23.26	5.77	14	3.563*10 ^{-4***}	1.49	0.71	3.97
Experiment 2									
Age	Tactile pattern	Accuracy		t	df	p (corr.)	d	CI	
	(% similarity)	Mean	SD					Lower	Upper
Learned Younger	100%	94.17	5.48	56.50	19	6.200*10 ^{-22***}	12.63	10.28	17.64
	87.5%	90.83	10.78	27.31	19	4.160*10 ^{-16***}	6.11	4.23	11.78
	75%	77.08	17.91	13.01	19	1.971*10 ^{-10***}	2.91	2.02	4.67
	62.5%	55.42	16.06	8.47	19	1.418*10 ^{-7***}	1.89	1.27	3.18
	50%	47.50	17.96	5.60	19	2.100*10 ^{-5***}	1.25	0.84	2.14

	Older	100%	75.42	16.10	14.00	19	9.200*10 ^{-11***}	3.13	2.36	4.78
		87.5%	79.58	19.02	12.83	19	3.296*10 ^{-10***}	2.87	2.14	4.77
		75%	76.25	18.98	12.07	19	6.990*10 ^{-10***}	2.70	2.13	3.81
		62.5%	51.25	14.63	8.02	19	3.200*10 ^{-7***}	1.79	1.39	2.63
		50%	47.50	13.00	7.74	19	3.200*10 ^{-7***}	1.73	1.24	2.68
New	Younger	100%	87.5	13.92	20.08	19	1.480*10 ^{-13***}	4.49	3.06	9.06
		87.5%	80.00	18.22	13.50	19	1.380*10 ^{-10***}	3.02	2.14	5.14
		75%	74.17	16.42	13.39	19	1.380*10 ^{-10***}	2.99	2.51	4.07
		62.5%	50.83	22.28	5.19	19	1.052*10 ^{-4***}	1.16	0.75	1.79
		50%	47.50	23.74	4.24	19	4.440*10 ^{-4***}	0.95	0.55	1.61
	Older	100%	56.67	24.87	5.69	19	5.190*10 ^{-5***}	1.27	0.98	1.78
		87.5%	61.25	26.80	6.05	19	3.240*10 ^{-5***}	1.35	0.89	2.29
		75%	62.50	21.88	7.66	19	1.575*10 ^{-6***}	1.71	1.32	2.43
		62.5%	47.92	21.10	4.86	19	2.180*10 ^{-4***}	1.09	0.73	1.71
		50%	42.92	17.99	4.45	19	2.720*10 ^{-4***}	1.00	0.60	1.62

Supplemental Material - Table 1. Above-chance level performance of younger and older adults (experiment 1, experiment 2). Shown are mean accuracies (mean) and standard deviations (SD) to correctly recognize the 'reference pattern' and 'new patterns' compared to chance level (50%) for younger and older adults separately (experiment 1); shown are also mean accuracies (mean) and standard deviations (SD) to correctly recognize the 'learned patterns' and the 'new patterns' compared to chance level (25%) for younger and older adults separately (experiment 2). One sample t tests were calculated to compare between the chance level and the mean accuracies (t = test statistic, df = degrees of freedom, p (corr.) = Holm-Bonferroni-corrected p -value, d = Cohen's d and CI = confidence interval). Significance is indicated by *, ** or ***.

Comparison between similarity levels		t	df	p (corr.)	Cohen's d	CI	
						Lower	Upper
87.5%	70%	0.85	29	0.802	0.16	-0.21	0.54
	62.5%	4.10	29	0.004**	0.75	0.33	1.59
	50%	5.05	29	3.28*10 ^{-4***}	0.92	0.50	1.61
	37.5%	9.21	29	8.24*10 ^{-9***}	1.68	1.27	2.37
	25%	6.36	29	9.65*10 ^{-6***}	1.16	0.73	1.88
	12.5%	9.26	29	7.79*10 ^{-9***}	1.69	1.18	2.52
70%	62.5%	3.37	29	0.022*	0.6	0.24	1.21
	50%	4.02	29	0.004**	0.73	0.30	1.37
	37.5%	8.12	29	1.07*10 ^{-7***}	1.48	1.07	2.06
	25%	6.39	29	9.33*10 ^{-6***}	1.16	0.75	1.80
	12.5%	8.23	29	8.44*10 ^{-8***}	1.50	1.07	2.36
62.5%	50%	1.31	29	0.606	0.24	-0.13	0.59
	37.5%	2.66	29	0.080	0.48	0.16	0.82
	25%	2.76	29	0.080	0.50	0.13	0.95
	12.5%	4.23	29	0.003**	0.77	0.46	1.17
50%	37.5%	2.21	29	0.176	0.40	0.05	0.72
	25%	1.82	29	0.315	0.33	-0.01	0.80
	12.5%	4.07	29	0.004**	0.74	0.41	1.19
37.5%	25%	0.47	29	0.802	0.08	-0.46	-0.30
	12.5%	2.76	29	0.080	0.50	0.19	0.84
25%	12.5%	3.21	29	0.029*	0.59	0.31	0.91

Supplemental Material - Table 2. Post-hoc comparisons between accuracies at different similarity levels averaged across younger and older adults (experiment 1). Paired sample t tests were performed to compare between tactile patterns (t = test statistic, df = degrees of freedom, p (corr.) = Holm-Bonferroni-corrected p-value, d = Cohen's d and CI = confidence interval). Significance is indicated by *, ** or ***.

Completeness level	Mean $\pm$ SD		BF ₁₀	error%	95% CI	
	Younger	Older			Lower	Upper
100%	6.67 $\pm$ 14.20	18.75 $\pm$ 25.77	2.17	1.143*10 ⁻⁵	0.05	1.09
87.5%	10.83 $\pm$ 21.48	18.33 $\pm$ 32.29	0.646	7.193*10 ⁻⁷	0.02	0.82
75%	2.92 $\pm$ 20.64	13.75 $\pm$ 30.98	1.051	0.001	0.03	0.94
62.5%	4.58 $\pm$ 30.76	3.33 $\pm$ 28.02	0.282	3.255*10 ⁻⁴	0.01	0.61
50%	0.00 $\pm$ 24.33	4.58 $\pm$ 23.33	0.504	2.968*10 ⁻⁵	0.01	0.76

Supplemental Material - Table 3. Results of comparison of pattern completion bias between younger and older adults (experiment 2). Bayesian independent-sample t tests were performed to compare the bias score at each completeness level between age groups (BF₁₀ = Bayes Factor, error% = error rate, CI = credible interval). The alternative hypothesis is older > younger on the bias score at each completeness level.