

Supplementary Materials

Analysis of recognition response bias

Response bias was calculated in each Experiment as $C = -0.5 * (z\text{Hits} - z\text{FA})$, where scores of $C > 0$ indicate a conservative bias, a tendency to respond 'no' (new), and scores of $C < 0$ indicate a liberal bias, a tendency to respond 'yes' (old). See Supplementary Materials Table SM3 for scores.

A 2(Age) x 2(Encoding-type) ANOVA on C scores in Experiment 1 revealed a main effect of Age, $F(1,68)=6.27$, $p=.015$, $\eta_p^2=.08$, but no main effect of Encoding-type, $F(1,68)=0.40$, $p=.528$, $\eta_p^2=.01$, and no Age x Encoding-type interaction, $F(1,68)=0.81$, $p=.371$, $\eta_p^2=.01$. Older adults (marginal mean=-0.82) were more liberal than young adults (marginal mean=-0.27). A 2(Age) x 2(Encoding-type) x 2(Test-type) ANOVA in Experiment 2A revealed a main effect of Age, $F(1,94)=11.48$, $p=.001$, $\eta_p^2=.11$, with a tendency towards liberal responding in young adults (marginal mean=-0.17), but a tendency towards conservative responding in older adults (marginal mean=0.16). There was also a main effect of Encoding-type, $F(1,94)=55.18$, $p<.001$, $\eta_p^2=.37$, with more liberal responding in the conceptual condition (marginal mean=-0.10) and more conservative responding in the perceptual condition (marginal mean=0.09), and a main effect of Test-type, $F(1,94)=8.96$, $p=.004$, $\eta_p^2=.09$, with more liberal responding on the CID-R task (marginal mean=-0.11) and more conservative responding on the CV-R task (marginal mean=0.10). However, there was an Age x Test-type interaction, $F(1,94)=7.75$, $p=.006$, $\eta_p^2=.08$, indicating more liberal responding in older than young adults on the CID-R task ($t(94)=4.85$, $p<.001$, $d=0.99$ and $t(94)=4.41$, $p<.001$, $d=0.91$, in the PP and CP conditions, respectively), but no age difference on the CV-R task ($t(94)=1.07$, $p=.288$, $d=0.22$ and $t(94)=0.99$, $p=.323$, $d=0.20$, in the PC and CC conditions, respectively). There was also an Encoding-type x Test-type interaction, $F(1,94)=31.26$, $p<.001$, $\eta_p^2=.25$, indicating and more liberal responding in the CP than the PP condition ($t(47)=5.25$, $p<.001$, $d=0.76$ and $t(47)=8.35$, $p<.001$, $d=1.21$, for young and older adults, respectively), but no difference between the PC and CC conditions ($t(47)=1.40$, $p=.168$, $d=0.20$ and $t(47)=2.03$, $p=.048$, $d=0.29$, for young and older adults, respectively [Bonferroni corrected alpha value of .013]). There was

no Age x Encoding-type interaction, $F(1,94)=1.78$, $p=.185$, $\eta_p^2=.02$, or Age x Encoding-type x Test-type interaction, $F(1,94)=1.57$, $p=.213$, $\eta_p^2=.02$.

Despite these differences in Experiment 2A, participants in Experiment 2B were generally neutral to conservative in their responding, and the ANOVA revealed no significant main effects or interactions: Age, $F(1,94)=3.39$, $p=.068$, $\eta_p^2=.04$, Encoding-type, $F(1,94)=0.77$, $p=.384$, $\eta_p^2=.01$, Test-type, $F(1,94)=0.29$, $p=.590$, $\eta_p^2<.01$, Age x Encoding-type, $F(1,94)=1.51$, $p=.223$, $\eta_p^2=.02$, Age x Test-type, $F(1,94)=1.17$, $p=.282$, $\eta_p^2=.01$, Encoding-type x Test-type, $F(1,94)=1.52$, $p=.219$, $\eta_p^2=.02$, Age x Encoding-type x Test-type, $F(1,94)=2.75$, $p=.101$, $\eta_p^2=.03$.

Table SM1*Number and organisation of items between experimental phases*

Experiment 1	Block 1	Encoding (perceptual)	40
		Test (CID-R)	80 (40 old [perceptual], 40 new)
	Block 2	Encoding (conceptual)	40
		Test (CID-R)	80 (40 old [conceptual], 40 new)
Experiments 2A / 2B	Encoding	Block 1 (perceptual)	40
		Block 2 (conceptual)	40
	Test	Block 1 (CID-R)	80 (40 old [20 perceptual, 20 conceptual], 40 new)
		Block 2 (CV-R)	80 (40 old [20 perceptual, 20 conceptual], 40 new)

Note. In all experiments, the order of the blocks was counterbalanced. In this depiction, the perceptual

conditions are presented first, but half of the participants began with the conceptual condition.

Table SM2*Proportion priming in aware versus unaware participants in Experiments 1, 2A and 2B*

	Aware <i>M (SD)</i>	Unaware <i>M (SD)</i>
Experiment 1		
Perceptual block		
Young	-0.06 (0.05)	-0.05 (0.09)
Older	-0.08 (0.09)	-0.05 (0.07)
Conceptual block		
Young	0.24 (0.05)	0.21 (0.09)
Older	0.14 (0.05)	0.10 (0.06)
Experiment 2A		
Perceptual priming – CID-R test		
CP Young	0.03 (0.10)	-0.09 (0.11)
PP Young	0.03 (0.08)	-0.05 (0.08)
CP Older	-0.03 (0.12)	0.02 (0.12)
PP Older	-0.03 (0.08)	0.02 (0.10)
Conceptual priming – CV-R test		
CC Young	-0.06 (0.14)	0.01 (0.17)
PC Young	-0.03 (0.08)	-0.01 (0.18)
CC Older	-0.01 (0.15)	-0.01 (0.07)
PC Older	-0.01 (0.09)	-0.01 (0.08)
Experiment 2B		
Perceptual priming – CID-R test		
CP Young	0.04 (0.10)	0.05 (0.06)
PP Young	0.04 (0.08)	0.05 (0.08)
CP Older	-0.02 (0.15)	0.00 (0.08)
PP Older	0.05 (0.11)	0.03 (0.12)
Conceptual priming – CV-R test		
CC Young	-0.03 (0.10)	-0.00 (0.10)
PC Young	0.01 (0.08)	-0.01 (0.10)
CC Older	0.01 (0.06)	-0.07 (0.07)
PC Older	-0.02 (0.05)	-0.06 (0.11)

Note. CC = conceptual encoding—conceptual test; PC = perceptual encoding—conceptual test; CP = conceptual encoding—perceptual test; PP = perceptual encoding—perceptual test.

Table SM3*Recognition task response bias (C) in Experiments 1, 2A and 2B*

	Young	Older
	<i>M (SD)</i>	<i>M (SD)</i>
Experiment 1		
Perceptual encoding	-0.29 (0.80)	-0.75 (1.21)
Conceptual encoding	-0.26 (0.82)	-0.89 (1.08)
Experiment 2A		
PP	-0.25 (0.69)	0.32 (0.44)
CP	-0.48 (0.60)	-0.02 (0.40)
PC	0.06 (0.79)	0.21 (0.51)
CC	0.00 (0.73)	0.12 (0.50)
Experiment 2B		
PP	-0.03 (0.45)	0.24 (0.56)
CP	0.02 (0.40)	0.18 (0.57)
PC	0.00 (0.39)	0.10 (0.65)
CC	0.04 (0.41)	0.15 (0.61)

Note: PP: perceptual encoding—perceptual test; CP: conceptual encoding—perceptual test; PC: perceptual encoding—conceptual test; CC: conceptual encoding—conceptual test.