Supplementary material

Emotional salience enhances the forward flow of memory

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Conditional response probability curves are not modulated upon oddball recall

We investigated whether CRP curves were modulated depending on whether oddballs were remembered or forgotten. A 4-way RM ANOVA (oddball type [emotional, perceptual] x lag [1-5] x direction [backwards, forwards] x recall [oddball recalled, oddball forgotten]) showed a significant main effect of lag ($F(3.24, 220.23)=96.75$, $p<0.0001$) as well as lag x direction ($F(3.24, 220.34)=10.20$, $p<0.0001$). Post-hoc uncorrected t-tests showed that contiguity effect was preserved (specially at lags 1 and 2) as well as a forward effect at lags 1 ($t(279)=-4.70$, $p<0.0001$) and 5 ($t(278)=3.64$, $p<0.001$). Furthermore, we found a significant main effect of recall ($F(1,68)=43.33$, $p<0.0001$) which showed overall enhanced CRP curves for lists where oddballs were recalled (Fig. 7). We found no significant main effects of oddball types ($F(1, 68)=0.91$, $p=0.35$), direction ($F(1, 68)=0.34$, $p=0.56$), oddball x lag ($F(4, 272)=1.51$, $p=0.20$), oddball x direction ($F(1, 68)=0.55$, $p=0.46$), oddball x recall ($F(1, 68)=0.77$, $p=0.38$), lag x recall ($F(4,272)=1.09$, $p=0.36$) nor a significant direction x recall ($F(1, 68)=1.19$, $p=0.28$).

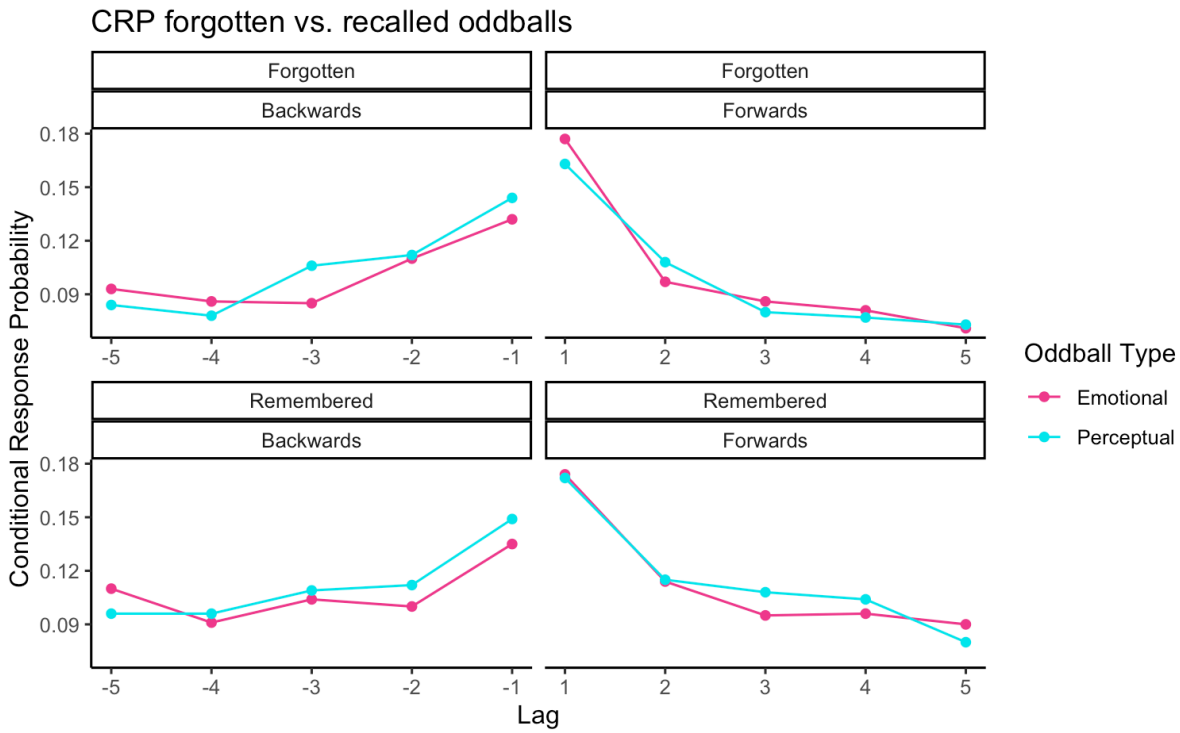

Figure 1. CRP curves showed a preserved forward-contiguity effect both when items were recalled as well as forgotten. Lists in which emotional oddballs were recalled showed overall enhanced CRP curves compared to those that were not.

Conditional response probability curves modulation by SOA

Due to the fact that we found an enhancement in transitions from emotional oddballs we fit a linear mixed effects model with direction [backwards vs. forwards], transition [to vs. from oddballs] and SOA [1, 2, 3, 4, 6] as factors. There was no significant main effect of direction ($X^2(1)=0.04$, $p=0.83$), transition ($X^2(1)=1.65$, $p=0.20$) nor SOA ($X^2(1)=7.85$, $p=0.10$) (Fig. 3). There were no significant interactions between direction x transition ($X^2(1)=1.83$, $p=0.18$), direction x SOA ($X^2(4)=4.71$, $p=0.32$), transition x SOA ($X^2(4)=4.09$, $p=0.40$). However, there was a significant interaction between direction x transition x SOA ($X^2(4)=10.06$, $p=0.04$) (Fig. 2). Post-hoc tests looking at differences in transitions to and from oddballs showed no significant difference of SOA 1 ($t(47)=0.43$, $p=0.67$), 3 ($t(145)=1.11$, $p=0.27$), however there was a trend at SOA 4 ($t(179)=1.94$, $p=0.05$) and significant differences at SOA 2 ($t(110)=2.06$, $p=0.042$) and SOA 6 ($t(199)=2.72$, $p=0.007$). Next, we

conducted post-hoc tests to evaluate whether forwards vs. backwards transitions were significantly different across SOAs. There were no significant differences across any SOA. SOA 1 (t(59)=-0.425, p=0.67), SOA 2 (t(137)=-1.15, p=0.254), SOA 3 (t(164)=0.01, p=0.10), SOA 4 (t(194)=1.83, p=0.07), SOA 6 (t(219)=0.97, p=0.33).

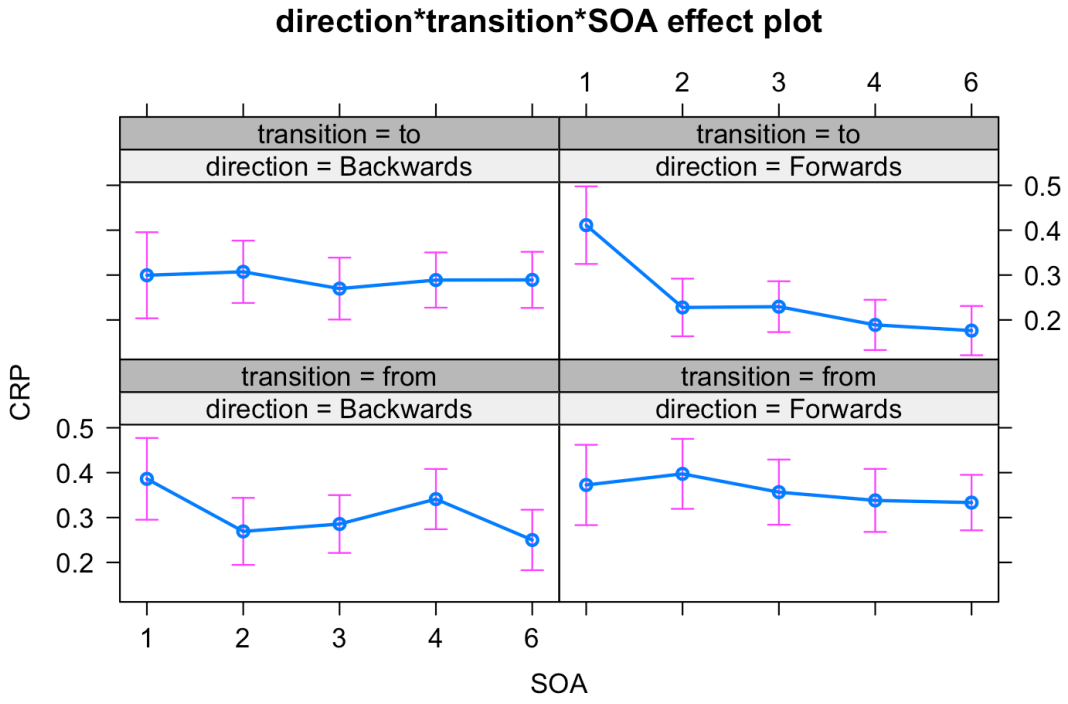

Figure 2. Plot of the significant interaction direction [backwards vs. forwards], transition [to vs. from] and SOA [1, 2, 3, 4, 6].

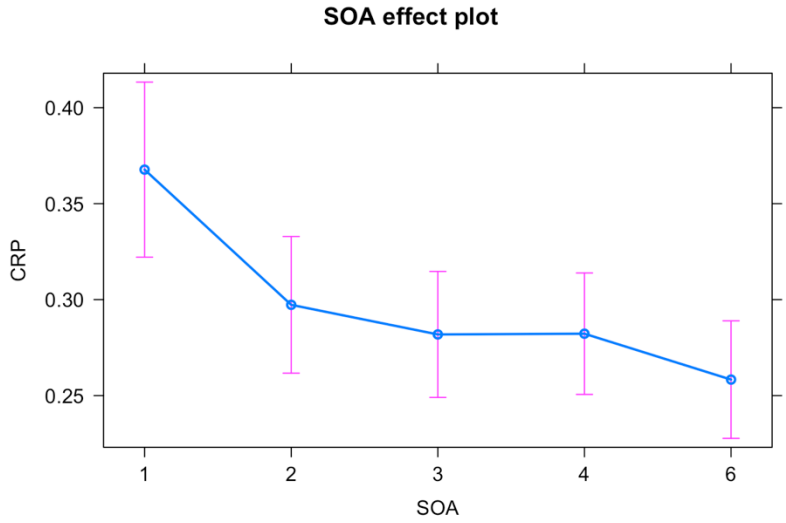

Figure 3. Plot of the trend of the main effect of SOA showing reduced CRP as SOA increased, in line with temporal contiguity effects.

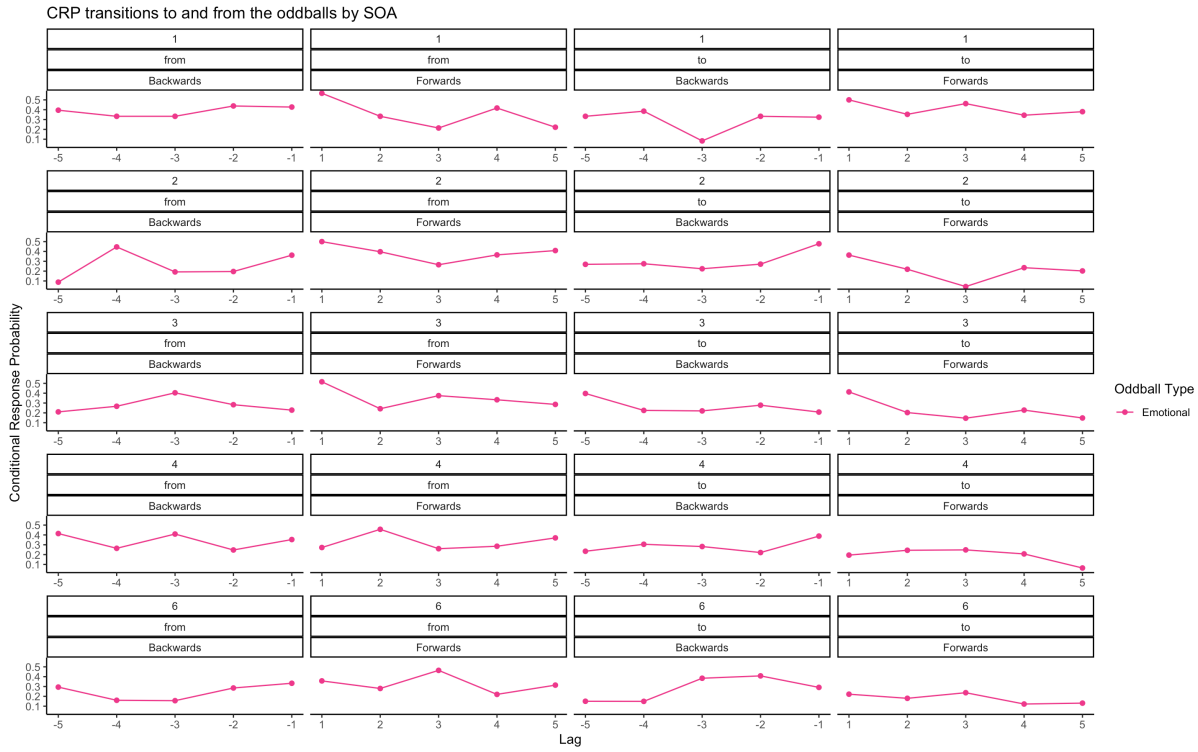

Figure 4. CRP modulation in transitions to and from oddballs by SOA in emotional lists.

Enhanced forward-contiguity transitions from emotional oddballs does not account for reduced memory for E-1 items

We correlated E-1 normalized recall values with lag +1 transitions from emotional oddballs to evaluate whether enhanced transitions from emotional oddballs explained reduced memory for E-1 items, however this did not seem to be the case (Spearman's rho=-0.04, p=0.76).

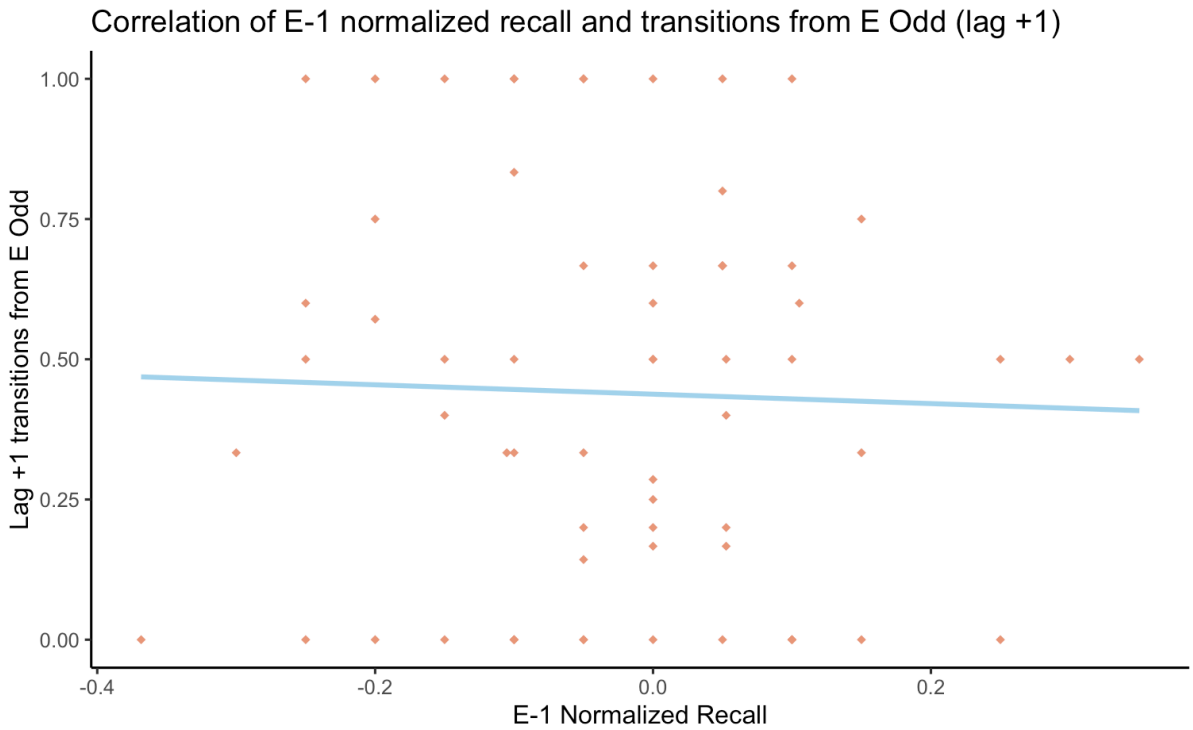

Figure 5. Spearman's correlation between normalized recall values of E-1 items and CRP values at lag +1 in transitions from emotional oddballs.