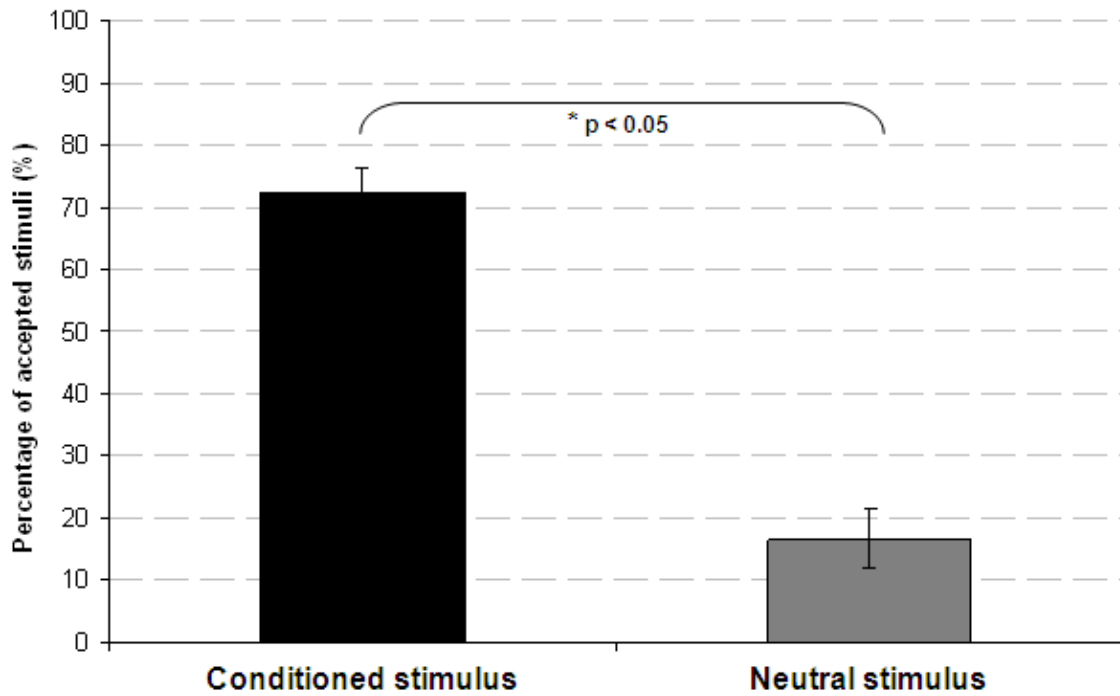
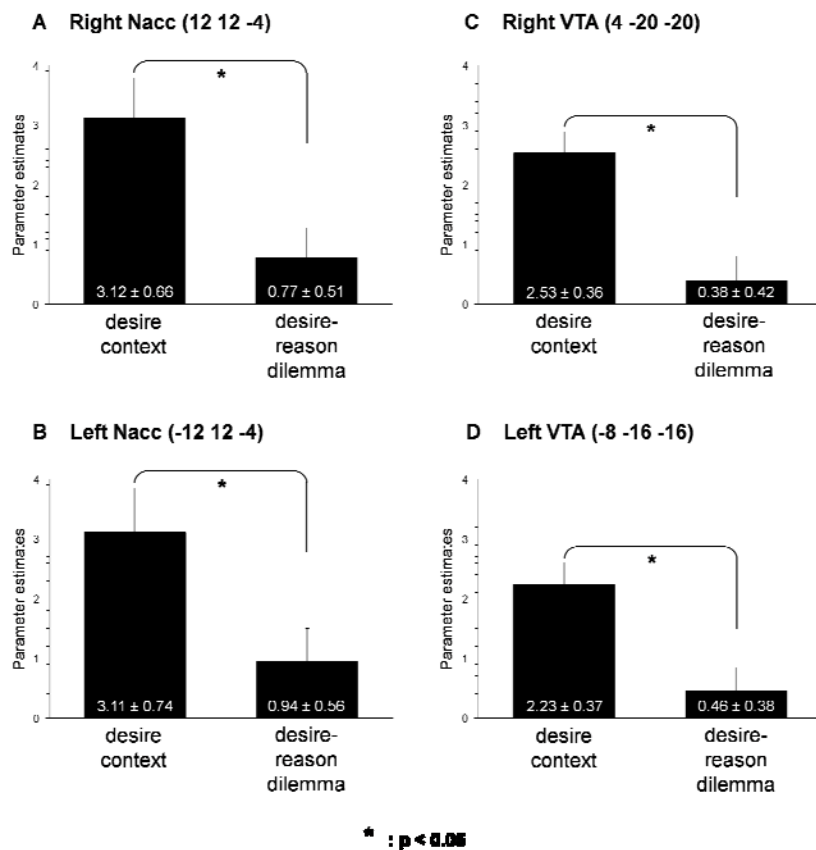


### Supplemental Figures

**Figure S1: Effect of positive reinforcement on acceptance rates (n=18; displayed with the s.e.m.).** Significant difference between the percentage of accepted conditioned (rewarding) stimuli and neutral stimuli ( $t = 9.22$ ;  $p = 0.00000005$ ).



**Figure S2: Parameter estimates for the reward signal in the Nacc and VTA (in the comparison against implicit baseline) in the ‘desire context’, in which the conditioned (rewarding) stimulus was selected when it occurred as a non-target, and during a ‘desire-reason dilemma’, which required a rejection of the (same) conditioned stimulus. Error bars depict the standard error of the mean (n = 18). (A) Significant difference in activation of right Nacc between ‘desire context’ and ‘desire-reason dilemma’ (t = 5.24; p = 0.00007). (B) Significant difference in activation of left Nacc between ‘desire’ and ‘desire-reason dilemma’ (t = 4.93; p = 0.0001). (C) Significant difference in activation of right VTA between ‘desire’ and ‘desire-reason dilemma’ (t = 8.29; p = 0.0000002). (D) Significant difference in activation of left VTA between ‘desire’ and ‘desire-reason dilemma’ (t = 7.42; p = 0.000001).**



**Supplemental Tables**

**Table S1: Negative psychophysiological interactions of the left and right Nacc and VTA during the ‘desire-reason dilemma’ (n=18).**

<b>Region</b>	<b>Seed area L Nacc (-12 12 -4)</b>	<b>Seed area R Nacc (12 12 -4)</b>	<b>Seed area L VTA (-8 -16 -16)</b>	<b>Seed area R VTA (4 -20 -20)</b>
<b>L anteroventral PFC</b>	-32 60 8 (3.71) -16 52 0 (3.48) -36 44 -4 (2.95) <sup>2</sup>	-28 56 4 (5.29) -20 56 4 (4.19)	-40 56 0 (2.02) <sup>3</sup>	-48 48 -4 (2.69) <sup>2</sup> -16 56 0 (2.09) <sup>3</sup>
<b>R anteroventral PFC</b>	44 56 0 (2.60) <sup>3</sup>	44 56 0 (3.38) <sup>1</sup>	n.s.	44 52 -8 (2.01) <sup>3</sup>

Functional interactions were significant at  $P < 0.001$ , uncorrected, if not otherwise indicated.

<sup>1</sup>Interaction was significant at  $P < 0.005$ , uncorrected.

<sup>2</sup>Interaction was significant at  $P < 0.01$ , uncorrected.

<sup>3</sup>Interaction was significant at  $P < 0.05$ , uncorrected.