

Supplementary online material for

Interactions between transient and sustained neural signals support the generation  
and regulation of anxious emotion

by

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Figure Legends

Supplementary Figure 1. A region of the midbrain consistent with the periaqueductal gray (A) demonstrated significantly greater transient responses to negative relative to neutral pictures. Image threshold  $p < 0.05$ , whole-brain corrected. (B) Timecourse of midbrain/PAG ( $x=6$ ,  $y=-30$ ,  $z=-13$ ) response to pictures as a function of valence and predictability. Timecourse values were derived from FIR parameter estimates; error bars denote standard error of the mean.

Supplementary Figure 2. Predictability by Intolerance of Uncertainty interaction in right insula activity. Individuals with high IU show a selective exaggeration of sustained insular recruitment during unpredictable contexts. IU groups defined by median split for presentation purposes.

Supplementary Figure 3. Greater Intolerance of Uncertainty (IU) predicts sustained underrecruitment of the vACC/vmPFC during states of unpredictability. *Note*: Outliers are not excluded from analyses, though exclusion of the two participants with lowest vACC/vmPFC activity results in a more robust correlation ( $p=0.004$ ). Gray curves denote 95% confidence interval.

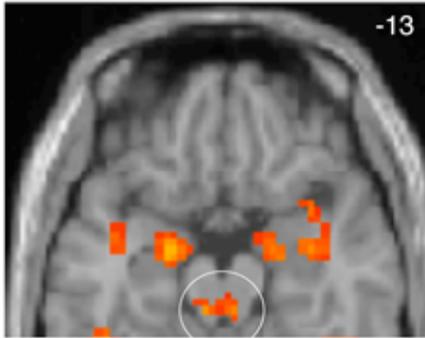
Supplementary Table 1. Stimulus characteristics.

	Valence	Arousal	Proportion depicting human	Proportion depicting human with visible face
Set 1: Negative valence	M=2.14 SD=0.38	M=6.17 SD=0.76	0.87	0.70
Set 2: Negative Valence	M=2.10 SD=0.40	M=6.09 SD=0.77	0.90	0.67
Set 3: Neutral valence	M=5.41 SD=0.7	M=3.41 SD=1.14	0.90	0.67
Set 4: Neutral valence	M=5.46 SD=0.68	M=3.38 SD=1.08	0.93	0.70

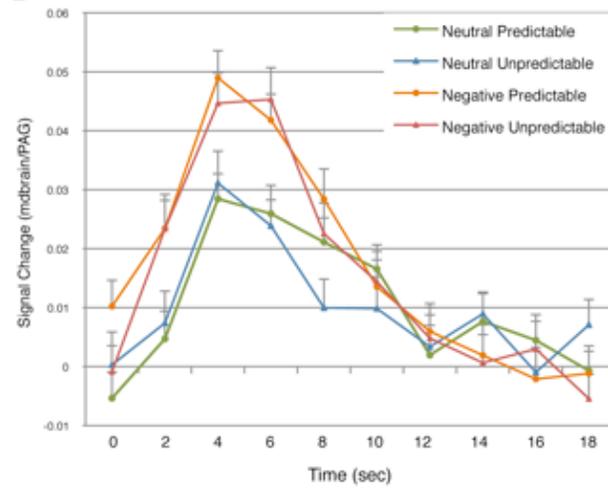
Negative and neutral stimuli were selected to differ maximally on valence ( $t(118)=32.58$ ,  $p<0.001$  and arousal ( $t(118)=15.86$ ,  $p<0.001$ ; sets 1&2 versus 3&4) while remaining balanced within each valence category (set 1 versus 2; set 3 versus 4). Sets 1 and 3 were embedded within predictable timings, and sets 2 and 4 were embedded within unpredictable timings during the experiment. Valence and arousal values were taken from IAPS normative ratings and supplementary norming data described in the main text. Valence ratings ranged from 1 to 9 (1=very negative, 9=very positive); arousal ratings ranged from 1 to 9 (1=low arousal, 9=high arousal). To control for low-level features that might engage the circuitries of interest, all four sets were matched on the proportion of images depicting humans, and humans with visible faces.

Supplementary Figure 1.

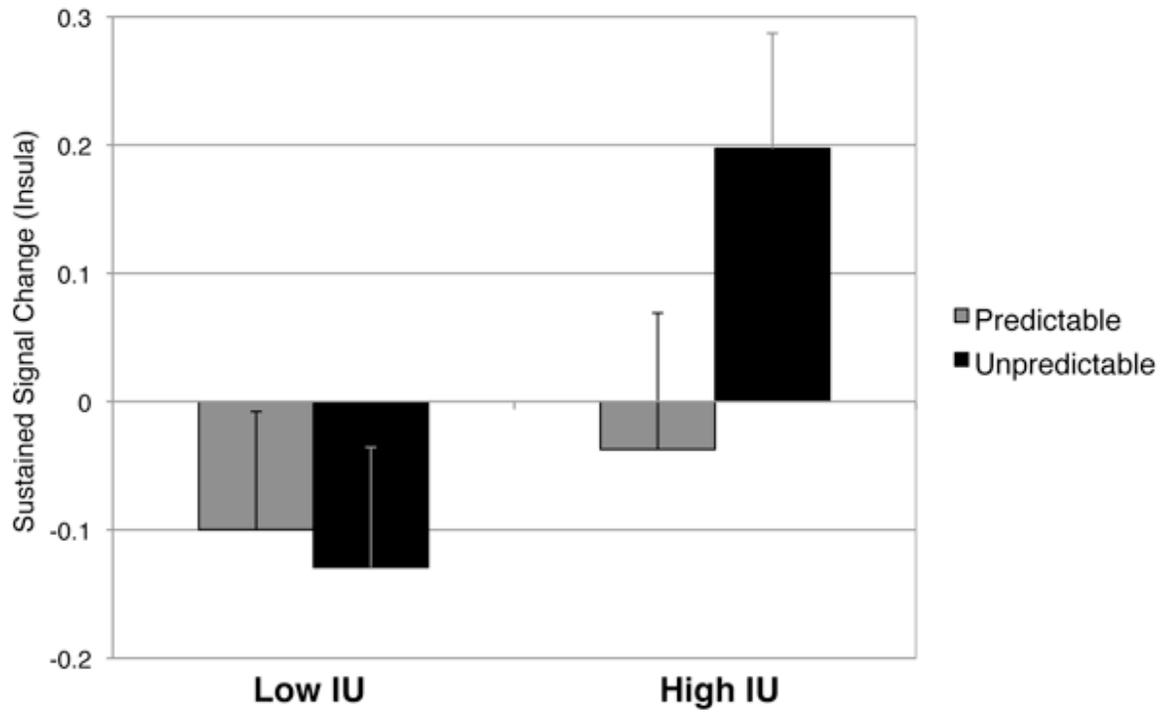
A



B



Supplementary Figure 2.



Supplementary Figure 3.

