**Supplementary Materials**

**1. Meta-analyses of the Neuroimaging Literature on Emotion**

Neuroimaging is a useful technique for exploring the nature of emotion because it can give evidence of the more basic mechanisms that support emotions when the experiences or perceptions might never give evidence of all their underlying mechanisms (as baked bread does not reveal its ingredients). Meta-analysis, when applied to neuroimaging findings, is particularly useful for hypothesis testing given the high rate of false-positives and highly variable experimental and statistical methods used across individual neuroimaging studies (see Wager et al. 2007).

***1.1 Prior Meta-analyses of the Neuroimaging Literature on Emotion***

At present, six published meta-analyses have assessed the neuroimaging literature on emotion: three assessing the locationist view (Fusar-Poli et al. 2008; Phan et al. 2002; Vytal & Hamann, in press) and one assessing the psychological construction view (Kober et al., 2008). Two meta-analyses assessed both views (Murphy et al. 2003; Wager et al., 2003).

Regarding the locationist view, there was some evidence for brain-emotion consistency within meta-analyses. For instance, Phan et al., Murphy et al., Vytal and Hamann and Fusar-Poli et al. all found evidence that the amygdala shows consistent increases in studies of fear (although the degree of consistency was less than might be expected in some cases; e.g., Phan et al. 2002 see Barrett & Wager, 2006). Yet even when consistency existed within a meta-analysis, little specificity was observed both within and across analyses. For instance, Phan et al. found that the amygdala showed increased activation during instances of *fear*, but also during instances of *happiness* and sadness (see Figure 2a in Phan et al. 2002). Murphy et al. found that the aMCC had increased activation during instances of both *sadness* and *happiness*. Vytal and Hamann found that the left amygdala had consistent increases in activation during instances of *anger*, *fear*, and *disgust*. Methodological differences between meta-analyses make it hard to ascertain the degree to which there is consistency and specificity in findings when comparing across meta-analyses.

The meta-analyses that tested a psychological constructionist view prior to 2008 (Murphy et al. 2003; Wager et al. 2003), limited themselves to the investigation of the brain regions realizing various models for only one psychological operation, core affect, and thus did not offer the fullest test of a psychological constructionist account. Although methodological differences make comparison between the two meta-analyses difficult, it is clear that Murphy et al. (2003) and Wager et al. (2003) found very different results. Murphy et al. (2003) did not find any areas that consistently showed increased activity during positive or negative affect or approach or withdrawal behavior. Wager et al. (2003), on the other hand, found brain areas with increased activation during instances of positive affect, negative affect, and approach and avoidance behavior.

**2. Method**

***2.1 The database***

Our entire database contains 656 experimental contrasts reported in 234 PET or fMRI studies of the experience or perception of discrete emotion categories or affect (pleasant/unpleasant states with some degree of arousal). Our sampling methods have been comprehensively reported elsewhere (Kober et al. 2008; Wager et al. 2008). For the present investigation, we restricted our analysis to studies targeting the experience or perception of discrete emotions (240 contrasts of anger, sadness, fear, disgust, and happiness from 91 studies published 1993 through the end of 2007). Contrasts assessing emotion categories such as amusement, surprise, or contempt were not included in the present analysis because there were too few in the literature to assess reliably. We also excluded contrasts assessing more general affective states (pleasure, displeasure or arousal) in the present analysis because we wanted to achieve the clearest test of the locationist approach to emotion. Following prior convention, statistically significant peaks of activation within each contrast were included. Relative decreases in activation from baseline conditions were not included. Finally, consistent with two prior meta-analyses (Fusar-Poli et al. 2008; Vytal & Hamann, in press), we excluded contrasts without a neutral reference condition (e.g., fear experience minus sadness experience). We analyze contrasts of emotion experience and perception separately since prior meta-analytic evidence found differences in the brain regions supporting experience v. perception of emotion (Wager et al. 2008). Combining the two modalities could increase variability across instances within a category and hence decrease the likelihood of finding strong evidence for a locationist hypothesis. For the sake of comparability with prior meta-analyses, we present findings for the experience plus perception of emotion categories in Table S4 of the supplementary materials. Studies of emotion experience were those that induced feelings through a range of sensory modalities including vision (e.g., pictures), olfaction (e.g., odors), memory (e.g., autobiographical recall), and imagery (e.g., simulation of scenarios). Studies of emotion perception were those that asked participants to view faces or bodies or listen to voices with emotional content. Each study included in the database was coded for the states assessed (e.g., affect vs. emotion, experience vs. perception), the induction method used (e.g., vision, audition, olfaction, imagery, recall), stimuli used (e.g., faces, voices, pictures, etc), the presence of cognitive load (whether a participant was required to attend to multiple sources of information at once), and a number of other task-related variables that could influence meta-analytic findings (e.g., whether a participant was directed to evaluate their feelings or a stimulus, whether the judgment explicitly involved an emotional judgment or not). See Table S1 for more details about our inclusion criteria. Raters were K.A.L., H.K., and E.B.M. Each study was rated by two raters and both raters were in perfect agreement. See Table S2 for a summary of the studies included in the present analysis and Appendix I. in the main document for references.

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| *Table S1. Inclusion and exclusion criteria for the neuroimaging papers included in the present analysis* | |
| Inclusion criteria | Exclusion criteria |
| Paper was published after January, 1990 and before January 2008 | Paper was published after December 2007 |
| Paper uses PET or fMRI | Paper does not use PET or fMRI |
| Paper conducts contrasts using subtraction analyses | Paper conducts regressions, correlations or other method that does not rely on subtraction |
| Paper reports peak activations for contrasts conducted | Paper does not report peak activations for contrasts conducted |
| Contrasts test the neural basis of emotion experience (i.e., the feeling of emotions that are induced by pictures, music, recall, films, odors; or when participants judge the meaning of emotional words)  --or--  Contrasts test the neural basis of emotion perception (i.e., seeing or hearing emotional content in others’ faces or voices) | Contrasts test the neural basis of a mixture between experience and perception of emotion; does not clearly test experience or perception of emotion |
| Contrasts test the neural basis of the discrete emotion categories: anger, disgust, fear, happiness or sadness | Contrasts test the neural basis of affect (pleasure v. displeasure; arousal)  --or--  Contrasts test the neural basis of amusement, contempt, surprise, pain, fear conditioning, explicit memory, priming, learning, error processing, hunger/thirst, sexual arousal, emotion regulation (suppression or re-appraisal), anticipation of emotion (but not experience), comparison is between specific geno/phenotypes, comparison is between arbitrarily created groups (e.g., chocolate cravers v. not) |
| Contrasts subtract a neutral or baseline condition (reference) from the condition of interest (target) | Contrasts subtract an emotional condition (reference) from the condition of interest (target) |
| Participants in the sample are healthy adults | Participant in the sample are patients, children or elderly adults |
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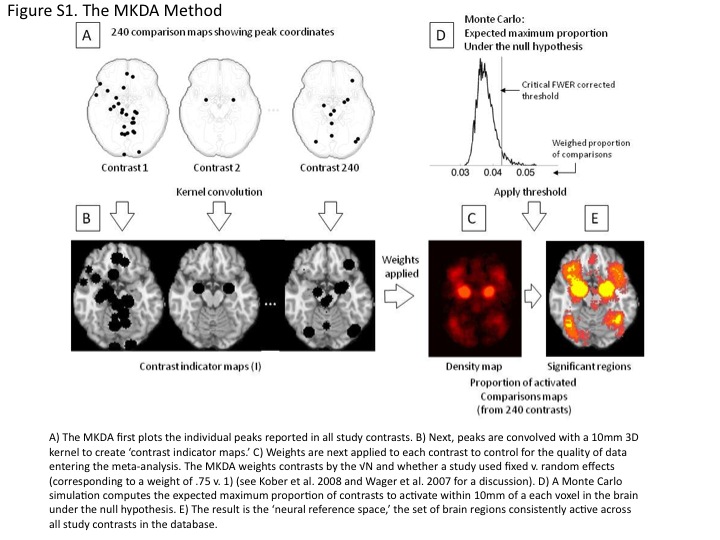
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| *Table S2. Studies in the Meta-analysis* | | | |  |  |
| First Author | Year | N | Fixed vs. Random | Modality | Emotion(s) |
| Aalto | 2002 | 11 | Random | Experience | Sadness |
| Ashwin | 2007 | 13 | Random | Perception | Fear |
| Beauregard | 1998 | 7 | Fixed | Experience | Sadness |
| Blair | 1999 | 13 | Fixed | Perception | Anger |
| Breiter | 1996 | 10 | Fixed | Perception | Fear, Happiness |
| Britton | 2006a | 12 | Random | Experience | Sadness, Disgust |
| Britton | 2006b | 12 | Random | Experience, Perception | Anger, Fear, Happiness, Sadness |
| Buchanan | 2000 | 10 | Random | Perception | Happiness, Sadness |
| Calder | 2007 | 12 | Random | Experience | Disgust |
| Cooney | 2007 | 14 | Fixed | Experience | Sadness |
| Damasio | 2000 | 25\* | Fixed | Experience | Anger, Fear, Happiness, Sadness |
| Dannlowski | 2007 | 23 | Random | Perception | Anger, Sadness |
| Das | 2005 | 28 | Random | Perception | Fear |
| Deeley | 2006 | 9 | Fixed | Perception | Fear |
| Dolan | 1996 | 8 | Fixed | Perception | Happiness |
| Dougherty | 1999 | 8 | Fixed | Experience | Anger |
| Eugene | 2003 | 20 | Random | Experience | Sadness |
| Fischer | 2004 | 24 | Random | Perception | Anger |
| Fitzgerald | 2004 | 12 | Random | Experience | Disgust |
| Fitzgerald | 2006 | 20 | Random | Perception | Anger, Disgust, Fear, Happiness, Sadness |
| George | 1994 | 21 | Fixed | Experience | Sadness |
| George | 1995 | 11 | Fixed | Experience | Sadness |
| George | 1996b | 10 | Fixed | Experience | Happiness, Sadness |
| Grandjean | 2005 | 15 | Random | Perception | Anger |
| Grezes | 2007 | 16 | Random | Perception | Fear |
| Grosbras | 2006 | 20 | Random | Perception | Anger |
| Hutcherson | 2005 | 28 | Random | Experience | Sadness |
| KeslerWest | 2001 | 21 | Fixed | Perception | Anger, Fear, Happiness, Sadness |
| Killgore | 2004 | 12 | Random | Perception | Happiness, Sadness |
| Kilts | 2003 | 13 | Random | Perception | Anger, Happiness |
| Kimbrell | 1999 | 16 | Fixed | Experience | Anger |
| Lane | 1997c | 11 | Fixed | Experience | Disgust, Happiness, Sadness |
| Lange | 2003 | 9 | Random | Perception | Fear |
| Lee | 2006 | 18 | Random | Perception | Anger, Happiness, Sadness |
| Levesque | 2003 | 20 | Random | Experience | Sadness |
| Liddell | 2005 | 25 | Random | Perception | Fear |
| Liotti | 2000 | 8 | Fixed | Experience | Sadness |
| Malhi | 2007 | 10 | Random | Perception | Disgust, Fear |
| Marci | 2007 | 10 | Fixed | Experience | Anger, Happiness, Sadness |
| Markowitch | 2003 | 13 | Random | Experience | Happiness, Sadness |
| Mayberg | 1999 | 8 | Fixed | Experience | Sadness |
| Minzenberg | 2007 | 12 | Fixed | Perception | Anger, Fear |
| Mitchell | 2007 | 15 | Random | Perception | Fear |
| Mitterschiffthaler | 2007 | 16 | Random | Experience | Happiness, Sadness |
| Mizuno | 2007 | 18 | Random | Perception | Happiness, Sadness |
| Moll | 2005 | 13 | Fixed | Experience | Anger, Disgust |
| Nomura | 2004 | 9 | Fixed | Perception | Anger |
| Ottowitz | 2004 | 8 | Fixed | Experience | Sadness |
| Paradiso | 1997 | 8 | Fixed | Experience | Disgust, Happiness |
| Pardo | 1993 | 7 | Fixed | Experience | Sadness |
| Partiot | 1995 | 12 | Fixed | Experience | Sadness |
| Peelen | 2007 | 18 | Random | Perception | Anger, Disgust, Fear, Happiness, Sadness |
| Pessoa | 2002 | 21 | Fixed | Perception | Disgust, Fear |
| Phillips | 1997 | 7 | Random | Perception | Disgust, Fear |
| Phillips | 1998a | 6 | Random | Perception | Disgust, Fear |
| Phillips | 1998b | 8 | Random | Perception | Happiness, Sadness |
| Phillips | 2004 | 8 | Random | Perception | Disgust, Fear |
| Pietrini | 2000 | 15 | Random | Experience | Anger |
| Pourtois | 2005 | 8 | Random | Perception | Fear, Happiness |
| Rauch | 2007 | 20 | Random | Perception | Anger, Fear, Happiness |
| Reinders | 2005 | 15 | Random | Perception | Fear |
| Salloum | 2007 | 11 | Random | Perception | Anger, Disgust, Fear, Happiness, Sadness |
| Sambataro | 2006 | 24 | Random | Perception | Disgust |
| Sato | 2004 | 10 | Random | Perception | Anger |
| Schacher | 2006 | 17 | Random | Perception | Fear |
| Schafer | 2005 | 40 | Fixed | Experience | Disgust, Fear |
| Schienle | 2002 | 12 | Random | Experience | Disgust, Fear |
| Schienle | 2006 | 12 | Random | Experience | Disgust, Fear |
| Schroeder | 2004 | 20 | Random | Perception | Disgust |
| Silvert | 2007 | 10 | Random | Perception | Fear |
| Simon | 2006 | 17 | Random | Perception | Anger |
| Somerville | 2004 | 16 | Random | Perception | Happiness |
| Sprengelmeyer | 1998 | 6 | Fixed | Perception | Anger, Disgust, Fear |
| Stark | 2003 | 19 | Random | Experience | Disgust, Fear |
| Stark | 2005 | 15 | Random | Experience | Disgust, Fear |
| Stark | 2007 | 66 | Random | Experience | Disgust, Fear |
| Vuilleumier | 2001 | 12 | Random | Perception | Fear |
| Wang | 2005 | 12 | Random | Perception | Sadness |
| Whalen | 2001 | 8 | Fixed | Perception | Anger, Fear |
| Wicker | 2003 | 14 | Random | Experience, Perception | Disgust |
| Williams, L. | 2001 | 11 | Fixed | Perception | Fear |
| Williams, L. | 2004 | 22 | Fixed | Perception | Fear |
| Williams, C. | 2005 | 13 | Random | Perception | Anger, Disgust, Fear |
| Williams, L. | 2006a | 15 | Random | Perception | Fear |
| Williams, L. | 2006b | 13 | Random | Perception | Fear |
| Williams, L. | 2006c | 15 | Random | Perception | Fear |
| Wright, C | 2006 | 18 | Random | Perception | Fear |
| Wright, P | 2004 | 8 | Fixed | Experience | Disgust, Fear |
| Yamasaki | 2002 | 10 | Fixed | Experience | Disgust |
| *Note:* Damasio et al. 2000 had differing Ns across contrasts (ranging from 16-25) | | | | | |

***2.2 The multilevel peak kernel density analysis***

We analyzed our database using the Multilevel Kernel Density Analysis (MKDA; Wager et al. 2007; <http://psych.colorado.edu/~tor/>). None of the prior meta-analyses of emotion (except Kober et al. 2008) used a kernel-based method. Phan et al. (2002) counted peak activations in a given anatomically defined area. Murphy et al. (2003) used a K-S statistic to test whether there were differences in spatial distributions between reported xyz coordinates for different experimental conditions (e.g., *fear* vs. *anger*). Perhaps the closest method to MKDA is the ALE method used by Vytal and Hamann (2010), which places a Gaussian distribution around reported peaks and then sums the peaks and their distributions for each condition to make a statistical map of activations; essentially, the concept is the same. The ALE method as used by Vytal and Hamann, however, does not control for instances where two peaks from the same study fall very close to one another, as described below.

MKDA has now been used in a number of published meta-analyses of the neuroimaging literature (Barrett et al. 2007; Etkin & Wager, 2007; Kober et al. 2008; Nee et al. 2007; Wager et al. 2007, 2008; Salimi-Khorshimi et al. 2009).A summary of the method is presented in Figure S1 (see Kober et al. 2008, Salimi-Khorshimi et al. 2009 and Wager et al. 2007 for an in-depth discussion of the method and analysis parameters). The MKDA possesses several advantages beyond the meta-analytic techniques that have been used thus far to summarize the neuroimaging literature on emotion. For instance, earlier meta-analyses of the neuroimaging literature (except for Barrett et al., 2007; Kober et al. 2008; Wager et al., 2008) failed to account for the fact that results from imaging studies have a nested data structure (i.e., specific peak activations are nested within specific contrasts, which are nested within specific papers). This means that individuals peaks reported in a given contrast (e.g., anger vs. neutral) within a study are not statistically independent of one another, and should not simply be counted as independent data points during a meta-analytic summary. Because individual imaging studies vary in the number of peak activations that they report for each contrast, small differences in the studies sampled in a meta-analysis can produce large differences in the final results when peaks from the same contrast are mistakenly treated as independent. A number of factors influence how many peaks are reported by an individual study, including the sample size (i.e., power to find significant results), the authors’ pre-processing and statistical thresholding decisions, and whether a fixed or random effects analysis was used. For example, Damasio et al. (2000) reported 15 peaks in a sad vs. neutral contrast. Without controlling for the nested structure of the data, this study will influence a meta-analytic summary more than twice as much as Phillips et al. (1998b), who reported 6 peaks in a sad vs. neutral contrast. Ignoring the nested data structure allows random error to creep into the analyses, producing more variable results, and ultimately makes it harder to find consensus across the meta-analyses. Additionally, if meta-analyses have different databases, they will contain different kinds of idiosyncratic results and different sampling noise. In this case, it is hard to discern whether different findings stem from the addition of new papers or from variability in the databases.

Other meta-analyses of the neuroimaging literature on emotion also allowed individual peaks from both “fixed-effects” (subject is treated as a fixed effect and the inter-individual variability is ignored) and “random-effects” analyses (subject is treated as a random effect, which is widely considered the correct approach) to contribute equally in the final empirical summary, despite the fact that those resulting from a random-effects analysis are more generalizable to the population. This can also add random error to meta-analytic findings. For example, using a fixed effects analysis on data from 7 participants, Beauregard et al. (1998) reported 13 peaks from a sad vs. neutral contrast. Phillips et al (1998b) reported 7 peaks from a random effects analysis of data from 8 participants. Although Phillips et al.’s findings are, by definition, more predictive of the population, the Beauregard et al. findings were treated as equivalent (and actually contributed more to the final empirical summary because they reported twice as many peaks). Statistic values (t, Z scores) in fixed-effects analyses are typically much higher, and the threshold for reporting much more liberal, than random-effects analyses. The MKDA weighs studies using random effects analysis and those with larger sample sizes more heavily, thereby correcting some of the statistical limitations present in other meta-analytic studies (see Kober et al. 2008; Kober & Wager, in press; Wager et al. 2007; 2008 for a discussion).



***2.3 Analyses***

We used three types of analyses to compare locationist and psychological constructionist views on emotion. The first two types of analyses asked, “given that a person is experiencing or perceiving an instance of a certain emotion category, which brain regions show consistent increases in activation across study contrasts?” (e.g., given that a person is experiencing *fear*, which brain regions have a consistent increase in activation across study contrasts?). These analyses were accomplished with our density analyses and χ2 analyses. In the third type of analysis, we asked “which mental states and methods variables were likely to produce significant increases in activation in a given brain area across study contrasts?” (e.g., when there is an increase in amygdala activity, which emotion experiences, perceptions, or methods variables were likely to produce that increase?). This was accomplished via a set of exploratory logistic regressions.

***2.3.1 Density analyses.*** In the density analyses, we searched over the brain for voxels with more consistent activation for instances of one emotion category than all others (e.g., for voxels that reached family-wise error-rate corrected significance in the contrast [*fear* perception v. perception of other emotion categories]). This was computed by comparing the local density (i.e., proportion) of reported activations for the target emotion category v. all others, and comparing the asymmetry to what would be expected by chance across the entire brain using a Monte Carlo test, as described in Wager et al. (2007) and Wager et al. (2008). Density analyses were computed via a series of contrasts (e.g., *fear* experience v. the experience of *anger*, *disgust*, *happiness* and *sadness*) using the script Meta\_Activation\_FWE.m from the MKDA toolbox (<http://psych.colorado.edu/~tor/>). This analysis was repeated for each of the 5 emotion categories for each experience and perception. These *density analyses* speak to whether a category of emotion (e.g., *fear* experience) involves increased activation frequency in a set of voxels across studies, controlling for both the number of contrast (study) maps associated with that category and the density of activations that are expected across the brain by chance. Thus, if contrasts related to *fear* experience were associated with more frequent amygdala activity than contrasts related to other emotion categories, but contrasts related to *fear* experience were also associated with more frequent activity in the rest of the brain as well, then the analysis would not yield significant results in amygdala. If *fear* experience (v. experience of other emotion categories) produced a consistent increase in amygdala activity that was not observed for other brain regions, however, the analysis would yield significant differences in amygdala.

We reported peak voxels surviving either a height-based family-wise error rate (FWER) threshold corrected at p < .05 or an extent-based threshold with a primary threshold of p < .001 and FWER-corrected at p < .05 based on cluster extent. The height-based threshold is the most spatially specific cluster-extent-based threshold for significant consistency across studies in the MKDA analysis (i.e., those regions where the peak density is high enough that the null-hypothesis chances of finding a single significant voxel anywhere in the gray matter of the brain is p < .05). The extent-based threshold (where the number of contiguous voxels above p<.001 are compared with the number of contiguous voxels expected by chance anywhere in the brain; see Kober et al. 2008) is set at the most stringent level because these clusters are the most spatially specific of the extent-based clusters.

***2.3.2 χ2 analyses.*** We probed the voxels identified in the density analysis further by asking whether there was any *absolute* difference in the proportion of contrasts activating near each voxel (within 10 mm) for each emotion category v. the others (i.e., [*anger* perception – perception of other emotions], [*fear* perception – perception of other emotions], etc.) This was accomplished using 2 analyses on the contingency table consisting of counts of study contrasts showing activation in or around these voxels vs. study contrasts without such activations for the target emotion category vs. other categories. When counts were low, a nonparametric test was used as described in Wager et al. (2007) and Wager et al. (2009). This analysis yields a series of statistical maps reflecting whether each voxel was more frequently activated in study contrasts for each emotion vs. the average of the others, irrespective of activations elsewhere in the brain. All χ2 tests were false discovery rate (FDR) corrected for multiple comparisons (FDR p < .05)*.* As above, this analysis was performed for each emotion category, separately for both experience and perception conditions. It was not possible to compute χ2 analyses on the extent-based clusters so we do not report these. The χ2 analyses revealed whether any voxels within a mask (e.g., significant voxels from MKDA analysis) were more associated with one emotion category (e.g., *fear* experience) than all others. All χ2 analyses were false discovery rate (FDR) corrected at p<.05. χ2 analyses were computed using Meta\_Chi\_sq\_new.m from the MKDA toolbox (<http://psych.colorado.edu/~tor/>).

***2.3.3 Logistic regressions.***

We used a series of stepwise logistic regressions to ask which mental states and methods variables were likely to produce significant increases in activation in a give brain area across study contrasts. We began by selecting clusters of voxels in a ROI-based fashion from our neural reference space using the height-threshold or a stringent extent-threshold (p<.001), focusing on areas hypothesized to play a role in *emotion* by the locationist and/or psychological constructionist approaches. Our dependent variable was whether each contrast in the database did (signified by a “1”) or did not (signified by a “0”) activate within 10 mm of a given cluster peak in the neural reference space. Binary data indicating whether a cluster did or did not have increased activation during a given contrast was extracted using Meta\_cluster\_tools.m (<http://psych.colorado.edu/~tor/>). Our independent variables were effect-codes indicating which emotion category, methodological variables, and other psychological factors were used by each contrast. In particular, we examined whether significant increases in activation were predicted by each emotion category by modality (e.g., anger experience, anger perception, etc.), valence (pleasantness vs. unpleasantness) and arousal (high vs. low arousal), modality (experience v. perception) as well as induction method (visual, auditory, imagery, recall), stimuli used (films, pictures, faces, personal events), level of cognitive demand (present or absent), focus of attention (whether emotional content was foregrounded in attention, as when someone explicitly reports his/her state, or backgrounded in attention, as when someone makes a gender judgment about an emotional face), and object of evaluation (whether a participant was making a judgment about his/her bodily feelings or an external stimulus). Effect-coded variables were regressed in a stepwise manner as main effects. Importantly, many of the method variables were correlated (see Table S3) and hence dropped from the model, so our logistic regressions indicate which method variables *best* predict increased activation in a given area (at times over and above other method variables to which they were correlated). We list varibles that were significant and marginally significant predictors of brain activity in Table S6. All logistic regressions were performed in Stata 10 software using the Logistic Regression package developed by J. Scott Long (from [www.indiana.edu/~jsloc/stata](http://www.indiana.edu/~jsloc/stata)).

In each set of analyses, we assessed the association between emotion categories and specific, anatomically defined brain areas. We did not take a network approach in the present meta-analysis because many existing locationist hypotheses argue for a link between a single emotion category and a particular brain region and do not focus on networks (anatomical or functional). We believe that a network-based approach is an important avenue of future work and are currently developing a means of assessing co-activation of brain regions across contrasts within each emotion category for our own software package.

***2.4 Localization***

Peak coordinates were localized by overlaying significant voxels on the MNI average template. We verified their locations using the Duvernoy atlas (Duvernoy, 1995), Talairach atlas (Talairach & Tournoux, 1988), and the computerized software FSLview (http://www.fmrib.ox.ac.uk/fsl/fslview/index.html). For the sake of reference, approximate Brodmann’s areas were assigned.

**3. Supplementary Results**

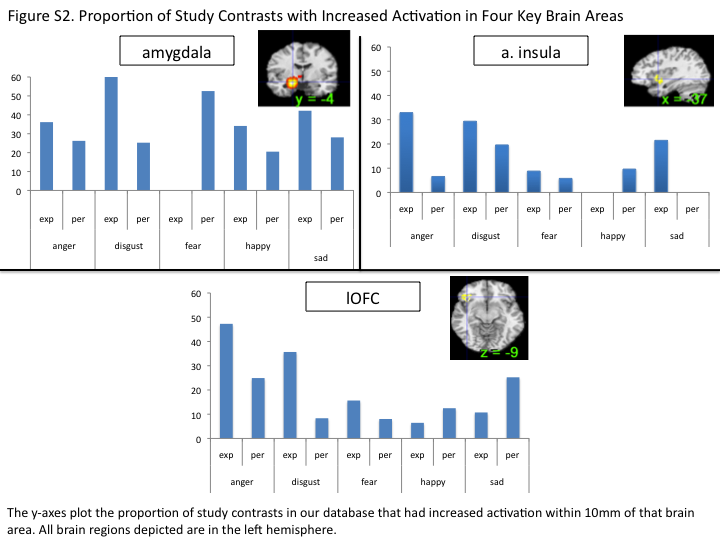
The tables and figures reported here supplement the results presented in the main document. We first present a table of peak coordinates in the neural reference space for discrete emotion (Table S3, to accompany Figure 4 in the main document). Next we presentthe brain regions with a consistent increase in activity associated with discrete emotion categories, collapsed across instances of experience and perception (Table S4). These are the findings of a χ2 analysis. We report these findings for comparability with previous meta-analyses (e.g., Fusar-Poli et al. 2008; Murphy et al. 2003; Phan et al. 2002; Vytal & Hamman, 2010). Next, we report relationships between methods variables in our database to give readers a sense of the degree of overlap between categories within the coding criteria we established (Table S5). Next, we report a detailed description of our logistic regression findings (including those findings that were not highlighted in the main article) (Table S6). Finally, we include several figures to supplement the main document. Figures S2 and S3 are plots of activation proportions for certain brain areas, to compliment Figure 5 in the main document. These figures report the proportion of study contrasts for a given emotion category by modality (e.g., *anger* experience, *anger* perception, *disgust* experience, etc.) that had increased activity within 10mm of a peak coordinate within a given brain region. Figure S4 displays subcortical areas involved in the neural reference space for emotion.

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| *Table S3 Neural Reference Space for Discrete Emotion* | | | | | | | | |
| Region | BA | Threshold | Coordinates (MNI) | | | | Volume (voxels) | |
|  |  |  | x | Y | z |  | |
| *Core affect* |  |  |  |  |  |  | |
| L. amygdala |  | *Height* | -20 | -4 | -16 | 1259 | |
| R. amygdala |  | *Height* | 22 | -4 | -16 | 919 | |
| L. lat. OFC | 47 | *Height* | -34 | 18 | -16 | 1 | |
|  |  |  | -40 | 26 | -6 | 173 | |
|  |  |  | -52 | 28 | -6 | 1 | |
| L. lat OFC/a. ins |  | *Extent* | -42 | 28 | -8 | 191 | |
|  |  |  | -32 | 24 | -10 | 183 | |
|  |  |  | -46 | 24 | 0 | 337 | |
| L .anterior insula |  | *Height* | -40 | 14 | 14 | 2 | |
|  |  | *Extent* | -38 | 8 | -10 | 123 | |
| L. anterior insula |  | *Extent* | -38 | 8 | -8 | 193 | |
| R. lat. OFC | 47 | *Height* | 44 | 26 | 0 | 6 | |
|  |  |  | 44 | 26 | -6 | 1 | |
|  |  |  | 48 | 28 | 0 | 2 | |
|  |  |  | 48 | 16 | 4 | 1 | |
|  |  | *Extent* | 42 | 24 | -4 | 286 | |
| R. anterior insula |  | *Extent* | 48 | 12 | 0 | 28 | |
|  |  | *Extent* | 42 | 24 | -4 | 286 | |
| sACC | 25 | *Extent* | 3 | 20 | -2 | 31 | |
|  |  |  | 0 | 38 | 6 | 62 | |
| L. Putamen |  | *Extent* | -22 | 8 | -10 | 123 | |
|  |  |  | -28 | -2 | -4 | 68 | |
| R. Putamen |  | *Extent* | 28 | 6 | 0 | 243 | |
| Midbrain (PAG) |  | *Height* | -14 | -28 | -2 | 4 | |
|  |  | *Extent* | -2 | -30 | -6 | 109 | |
| Midbrain |  | *Height* | 0 | -4 | 4 | 1 | |
|  |  |  | 10 | -20 | -8 | 1 | |
|  |  | *Extent* | -4 | 0 | 2 | 337 | |
|  |  |  | -6 | -8 | 0 | 258 | |
|  |  |  | 16 | -18 | -8 | 206 | |
|  |  |  | 8 | -14 | -2 | 176 | |
|  |  |  | 6 | -4 | -2 | 150 | |
| *Categorization* |  |  |  |  |  |  | |
| DMPFC | 9 | *Height* | -8 | 46 | 34 | 2 | |
|  | 8 |  | -2 | 18 | 50 | 12 | |
|  |  |  | -4 | 16 | 56 | 1 | |
|  | 9 | *Extent* | -6 | 40 | 32 | 21 | |
|  |  |  | -6 | 48 | 34 | 171 | |
|  |  |  | 2 | 42 | 44 | 38 | |
| DMPFC/d. ACC | 9/32 | *Extent* | 2 | 46 | 14 | 52 | |
|  |  |  | -6 | 44 | 24 | 140 | |
| DMPFC | 8 | *Extent* | -4 | 18 | 48 | 112 | |
|  |  |  | -8 | 24 | 54 | 75 | |
|  |  |  | -8 | 16 | 56 | 138 | |
|  |  |  | 0 | 12 | 56 | 39 | |
| L. Parahippcampal cortex |  | *Extent* | -18 | -12 | -26 | 79 | |
|  |  |  | -10 | -34 | -2 | 25 | |
| R. Parahippcampal cortex |  |  | 16 | -10 | -26 | 85 | |
| L. Entorhinal cortex |  | *Extent* | -12 | 4 | -18 | | 72 | |
|  |  |  | -24 | -14 | -8 | | 65 | |
| R. Entorhinal cortex |  | *Extent* | 12 | 24 | -14 | | 80 | |
|  |  |  | 24 | 6 | -14 | | 97 | |
| L. Hippocampus |  | *Extent* | -32 | -8 | -20 | | 91 | |
| R. Hippocampus |  | *Extent* | 30 | -12 | -16 | | 70 | |
| L. Temporal-parietal junction | 39 | *Height* | -48 | -76 | 8 | | 1 | |
|  |  |  | -52 | -60 | 10 | | 1 | |
|  |  |  | -48 | -68 | 8 | | 77 | |
| R. Temporal-parietal junction |  | *Extent* | 54 | -60 | 0 | | 50 | |
|  |  |  | 44 | -58 | 2 | | 164 | |
|  |  |  | 54 | -46 | 2 | | 134 | |
| *Language* |  |  |  |  |  | |  | |
| R. Anterior temporal lobe | 38 | *Height* | 36 | 6 | -26 | | 6 | |
|  |  |  | 48 | 8 | -16 | | 1 | |
|  |  | *Extent* | 40 | 14 | -22 | | 78 | |
| L. Anterior temporal lobe |  | *Extent* | -34 | 14 | -20 | | 260 | |
| R. Superior temporal cortex | 22 | *Height* | 54 | -46 | 4 | | 18 | |
|  |  |  | 54 | -34 | 6 | | 1 | |
| L. VLPFC | 44 | *Extent* | -42 | 16 | 12 | | 114 | |
| R. VLPFC | 45 | *Height* | 48 | 22 | 14 | | 160 | |
|  |  |  | 44 | 22 | 16 | | 1 | |
|  | 45 | *Extent* | 46 | 28 | 10 | | 241 | |
|  |  |  | 48 | 20 | 20 | | 301 | |
|  |  |  | 42 | 16 | 6 | | 227 | |
| *Executive control* |  |  |  |  |  | |  | |
| R. DLPFC | 9 | *Height* | 46 | 10 | 30 | | 6 | |
|  |  | *Extent* | 46 | 8 | 32 | | 153 | |
|  |  |  | 52 | 22 | 30 | | 105 | |
| L. VLPFC | 9 | *Height* | -46 | 16 | 24 | | 202 | |
| L. VLPFC |  | *Extent* | -52 | 18 | 26 | | 65 | |
|  |  |  | -46 | 8 | 24 | | 61 | |
| L. VLPFC | 46 | *Extent* | -40 | 18 | 26 | | 110 | |
| *Additional Regions* |  |  |  |  |  | |  | |
| L. peristriate cortex | 19 | *Height* | -46 | -74 | -6 | | 1 | |
|  |  |  | -48 | -68 | 8 | | 77 | |
|  |  |  | -48 | -76 | 8 | | 1 | |
|  |  | *Extent* | -40 | -80 | -14 | | 176 | |
|  |  |  | -48 | -72 | -6 | | 139 | |
| R. peristriate cortex |  | *Extent* | 50 | -74 | 4 | | 186 | |
| L. occipitotemporal cortex | 37 | *Height* | -48 | -72 | -2 | | 1 | |
|  |  |  | -48 | -68 | 0 | | 1 | |
|  |  |  | -42 | -58 | 18 | | 462 | |
|  |  | *Extent* | -46 | -52 | -24 | | 89 | |
|  |  |  | -34 | -62 | -22 | | 61 | |
|  |  |  | -38 | -44 | -20 | | 118 | |
|  |  |  | -38 | -72 | -14 | | 170 | |
|  |  |  | -42 | -58 | -10 | | 83 | |
| R. occipitotemporal cortex | 37 | *Height* | 42 | -54 | 20 | | 437 | |
|  |  |  | 40 | -66 | -12 | | 1 | |
|  |  |  | 40 | -62 | -8 | | 1 | |
|  |  |  | 48 | -66 | 4 | | 249 | |
|  |  | *Extent* | 42 | -54 | -20 | | 437 | |
|  |  |  | 40 | -66 | -12 | | 1 | |
|  |  |  | 40 | -62 | -8 | | 1 | |
|  |  |  | 48 | -66 | 4 | | 249 | |
| R. middle temporal cortex | 21 | *Height* | 52 | 4 | -14 | | 1 | |
| R. middle temporal cortex | 21 | *Extent* | 50 | 2 | -18 | | 81 | |
|  |  |  | 50 | 10 | -18 | | 136 | |
|  |  |  | 54 | 4 | -12 | | 51 | |
| Thalamus |  | *Extent* | 0 | -20 | 4 | | 122 | |
| Uncus |  | *Extent* | -28 | 4 | -28 | | 157 | |
|  |  |  | 36 | 0 | -26 | | 157 | |
|  |  |  | 24 | 6 | -26 | | 85 | |
| L. thalamus |  | *Height* | -8 | -24 | 6 | | 1 | |
|  |  |  | -10 | -20 | 6 | | 1 | |
|  |  |  | -12 | -26 | 4 | | 7 | |
|  |  | *Extent* | -20 | -28 | 2 | | 61 | |
|  |  |  | -12 | -28 | 2 | | 152 | |
|  |  |  | -10 | 18 | 8 | | 149 | |
| R. thalamus |  | *Height* | 8 | -16 | 0 | | 5 | |
|  |  | *Extent* | 12 | -20 | 2 | | 80 | |
| L. cerebellum |  | *Extent* | -44 | -68 | -24 | | 112 | |
| R. cerebellum |  |  | 36 | -58 | -26 | | 66 | |
| R. SMA | 6 | *Extent* | 46 | 0 | 40 | | 67 | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *Table S4. Brain Regions with a Consistent Increase in Activity Associated with One Discrete Emotion Category More so Than Others* | | | | | | |
| Region | BA | Contrast | Coordinates (MNI) | | | Volume (voxels) |
|  |  |  | x | y | z |  |
| L. amygdala |  | Sadness | -30 | -4 | -20 | 1 |
|  |  |  | -28 | -2 | -16 | 1 |
| L. amygdala |  | Disgust | -18 | -2 | -26 | 2 |
| R. amygdala |  | Disgust | 28 | -2 | -20 | 1 |
| R. insula |  | Disgust | 36 | 20 | 4 | 34 |
|  |  |  | 36 | 22 | 12 | 1 |
| L. lOFC | 47 | Anger | -44 | 20 | -2 | 1 |
|  | 11 | Disgust | -28 | 28 | 16 | 28 |
| R. lOFC | 47 | Disgust | 46 | 22 | 6 | 2 |
| L. entorhinal cortex |  | Disgust | -22 | -8 | -24 | 5 |
|  |  | Disgust | -18 | 2 | -24 | 1 |
| R. entorhinal cortex |  | Disgust | 24 | 6 | -24 | 9 |
| R.VLPFC | 44 | Disgust | 46 | 16 | 10 | 20 |
|  |  |  | 44 | 12 | 16 | 4 |
| L. occipitotemporal cortex | 37 | Fear | -50 | -70 | 2 | 10 |
| R. occipitotemporal cortex | 37 | Fear | 48 | -70 | 2 | 71 |
| *Note: Findings were computed via χ2 analysis on voxels identified in a density analysis contrast of each emotion category v. all others* | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Table S5. Relationships between methods variables in our database* | | | | | | | | | | | |
|  | Auditory | Visual | Imagery | Recall | Faces | Pictures | Film | Personal Event | Object of evaluation | Affective focus | Cognitive load |
| Auditory |  | -.384\*\* | -.048 | -.076 | -.236\*\* | -.088 | -.064 | -.080 | -.038 | -.054 | .113 |
| Visual |  |  | -.384\*\* | -.611\*\* | .615\*\* | .087 | .167\*\* | -.637\*\* | -.459\*\* | -.334\*\* | -.157\* |
| Imagery |  |  |  | -.076 | -.236\*\* | -.030 | -.064 | .293\*\* | .371\*\* | .105 | -.014 |
| Recall |  |  |  |  | -.376\*\* | .017 | -.102 | .792\*\* | .499\*\* | .357\*\* | .161\* |
| Faces |  |  |  |  |  | -.430\*\* | -.316\*\* | -.392\*\* | -.617\*\* | -.232\*\* | .177\* |
| Pictures |  |  |  |  |  |  | -.117 | -.145\* | .179\*\* | -.147\* | -.282\*\* |
| Film |  |  |  |  |  |  |  | -.107 | .356\*\* | .177\*\* | -.186\*\* |
| Personal Event |  |  |  |  |  |  |  |  | .527\*\* | .373\*\* | .092 |
| Object of Evaluation |  |  |  |  |  |  |  |  |  | .339\*\* | -.047 |
| Affective Focus |  |  |  |  |  |  |  |  |  |  | .301\*\* |
| Cognitive Load |  |  |  |  |  |  |  |  |  |  |  |
| *Note*: \*\* indicates correlation is significant at p<.01; \* indicates correlation is significant at p<.05 | | | | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Table S6. Logistic Regression Findings* | | | | | | | | | | |
| Region | voxels | BA | threshold | Predictors | Coefficient | | Dir. | Odds | Model fit | |
|  |  |  |  |  | β | *p* |  |  | χ2 | *p* |
|  |  |  |  |  |  |  |  |  |  |  |
| L. amygdala [-20, -4, -16] | 1259 |  | *Height* | Experience disgust | 1.08 | <.003 | + | 2.95 | 36.11 | <.001 |
|  |  |  |  | Perception fear | .75 | <.001 | + | 2.12 |  |  |
|  |  |  |  | Perception anger | -.76 | <.020 | - | 2.15 |  |  |
|  |  |  |  | Experience fear | -2.18 | <.003 | + | 8.89 |  |  |
|  |  |  |  | Recall | -.54 | <.050 | - | 1.71 |  |  |
|  |  |  |  | Imagery | -1.21 | <.070 | - | 3.35 |  |  |
| R. amygdala [22, -4, -16] | 919 |  | *Height* | High arousal | .22 | <.030 | + | 1.25 | 4.93 | <.030 |
| L. a. insula\* [-40, 26, -6] | 173 |  | *Height* | Experience anger | 1.23 | <.040 | + | 3.41 | 4.12 | <.040 |
| L. a. insula [-38, 8, -8] | 193 |  | *Extent* | Experience anger | 1.33 | <.030 | + | 3.80 | 4.53 | <.030 |
| R. a. insula [48, 12, 0] | 28 |  | *Extent* | Evaluation, feelings | .63 | <.040 | + | 1.87 | 4.06 | <.040 |
| R. lOFC [44, 26, 0] | 6 | 47 | *Height* | Perception disgust | 1.18 | <.040 | + | 7.17 | 10.64 | <.005 |
|  |  |  |  | Auditory stimuli | 1.97 | <.004 | + | 3.26 |  |  |
| L. lOFC [-42, 28, -8] | 191 | 47 | *Extent* | Experience anger | 1.42 | <.040 | + | 4.14 | 15.35 | <.002 |
|  |  |  |  | Auditory stimuli | 1.26 | <.030 | + | 3.54 |  |  |
|  |  |  |  | Picture stimuli | .97 | <.010 | + | 2.63 |  |  |
| R. lOFC [42, 24, -4] | 286 | 47 | *Extent* | Perception disgust | 1.68 | <.001 | + | 5.36 | 24.35 | <.001 |
|  |  |  |  | Experience disgust | .56 | <.090 | + | 1.75 |  |  |
|  |  |  |  | Auditory stimuli | 1.53 | <.014 | + | 4.63 |  |  |
|  |  |  |  | Mode, experience | .39 | <.010 | + | 1.48 |  |  |
|  |  |  |  | High arousal | .34 | <.030 | + | 1.41 |  |  |
| sACC [3, 20, -2] | 31 | 25 | *Extent* | Cognitive load | .76 | <.030 | + | 2.14 | 15.47 | <.001 |
|  |  |  |  | Evaluation, feelings | .66 | <.090 | + | 1.93 |  |  |
| pACC [0, 38, 6] | 62 | 32 | *Extent* | Recall | .88 | <.050 | + | 2.50 | 9.99 | <.010 |
| aMCC [-6, 44, 24] | 140 | 9/32 | *Extent* | High arousal | -.49 | <.001 | - | 1.63 | 22.95 | <.001 |
|  |  |  |  | Mode, perception | -.35 | <.020 | - | 1.41 |  |  |
|  |  |  |  | Perception disgust | 1.08 | <.050 | + | 2.94 |  |  |
|  |  |  |  | Cognitive load | .36 | <.060 | + | 1.43 |  |  |
| DMPFC [-6, 48, 34] | 171 | 9 | *Extent* | Mode, perception | -.36 | <.030 | - | 1.43 | 10.66 | <.004 |
|  |  |  |  | High arousal | -.26 | <.070 | - | 1.30 |  |  |
| DMPFC [2, 42, 44] | 38 | 9 | *Extent* | Mode, perception | -.48 | <.020 | + | 1.62 | 6.20 | <.010 |
| DMPFC [-6, 40, 32] | 21 | 9 | *Extent* | High arousal | -.31 | <.050 | - | 1.37 | 3.87 | <.050 |
| DMPFC/aMCC [2, 46, 14] | 52 | 9/32 | *Extent* | Recall | 2.54 | <.003 | + | 34.57 | 14.44 | <.002 |
|  |  |  |  | Mode, perception | .73 | <.040 | + | 2.07 |  |  |
|  |  |  |  | Film stimuli | 1.72 | <.080 | + | 5.60 |  |  |
| L. dorsal entorhinal [-12, 4, -18] | 72 | 34 | *Extent* | Perception fear | .50 | <.050 | + | 1.65 | 5.46 | <.020 |
| R. dorsal entorhinal [12, 24, -18] | 80 | 34 | *Extent* | Perception fear | .64 | <.020 | + | 1.89 | 7.50 | <.010 |
| L. hippocampus [-32, -8, -20] | 91 |  | *Extent* | Perception fear | 1.12 | <.001 | + | 3.07 | 18.19 | <.001 |
|  |  |  |  | Perception anger | -1.25 | <.030 | - | 3.51 |  |  |
| R. hippocampus [30, -12, -16] | 70 |  | *Extent* | Mode, perception | .39 | <.020 | + | 1.47 | 14.48 | <.001 |
| L. VLPFC [-42, 16, 12] | 114 | 44 | *Extent* | Experience anger | 2.19 | <.010 | + | 8.89 | 27.88 | <.001 |
|  |  |  |  | Foregrounded affect | .52 | <.010 | + | 1.68 |  |  |
|  |  |  |  | Perception disgust | 1.50 | <.001 | + | 4.48 |  |  |
|  |  |  |  | Face stimuli | .25 | <.070 | + | 1.28 |  |  |
| L. VLPFC [-46, 16, 24] | 202 | 9 | *Height* | Mode, perception | .76 | <.003 | + | 2.14 | 30.25 | <.001 |
|  |  |  |  | Foregrounded affect | .57 | <.020 | + | 1.80 |  |  |
|  |  |  |  | Perception anger | 1.13 | <.003 | + | 3.09 |  |  |
|  |  |  |  | Perception fear | -.63 | <.033 | - | .1.87 |  |  |
| L. VLPFC [-40, 18, 26] | 110 | 46 | *Extent* | Mode, perception | .56 | <.003 | + | 1.76 | 15.86 | <.001 |
|  |  |  |  | Foregrounded affect | .64 | <.010 | + | 1.90 |  |  |
|  |  |  |  | Perception anger | .61 | <.090 | + | 1.84 |  |  |
| R. VLPFC [48, 22, 14] | 160 | 45 | *Height* | Auditory stimuli | 1.78 | <.040 | + | 6.04 | 3.54 | <.060 |
| R. VLPFC [46, 28, 10] | 241 | 44 | *Extent* | Perception disgust | 1.79 | <.001 | + | 5.97 | 16.23 | <.001 |
| L. a. temporal [-34, 14, 20] | 260 | 38 | *Extent* | Mode, perception | -.26 | <.050 | - | 1.29 | 11.08 | <.010 |
|  |  |  |  | Experience anger | 1.07 | <.080 | + | 2.92 |  |  |
|  |  |  |  | Negative valence | .15 | <.100 | + | 1.16 |  |  |
| R. a temporal [40, 14, -22] | 78 | 38 | *Extent* | Mode, perception | -1.21 | <.001 | - | 3.34 | 34.51 | <.001 |
|  |  |  |  | Auditory stimuli | 2.40 | <.001 | + | 11.07 |  |  |
|  |  |  |  | Evaluation, stimulus | 1.02 | <.001 | + | 2.78 |  |  |
|  |  |  |  | Picture stimuli | -1.36 | <.011 | - | 3.88 |  |  |
|  |  |  |  | Personal events | .91 | <.090 | + | 2.49 |  |  |
|  |  |  |  | Perception fear | -.59 | <.010 | - | 1.87 |  |  |
| R. DLPFC [46, 10, 30] | 6 | 9 | *Height* | Evaluation, stimulus | .73 | <.050 | + | 2.07 | 5.20 | <.020 |
| PAG [-14, -28, -2] | 4 |  | *Height* | High arousal | .62 | <.060 | + | 1.87 | 9.76 | <.001 |
|  |  |  |  | Imagery | -4.94 | <.001 | - | 140.32 |  |  |
| PAG [-2, -30, -6] | 109 |  | *Extent* | Experience fear | 1.88 | <.003 | + | 6.61 | 27.69 | <.001 |
|  |  |  |  | Evaluation, stimulus | .92 | <.020 | + | 2.52 |  |  |
|  |  |  |  | Auditory stimuli | 1.54 | <.070 | + | 4.68 |  |  |
|  |  |  |  | Visual methods | -.78 | <.001 | - | 2.17 |  |  |
|  |  |  |  | Personal events | -1.60 | <.010 | - | 4.94 |  |  |
|  |  |  |  | Cognitive load | -.34 | <.060 | - | 1.42 |  |  |
| L. peristriate [-48, -68, 8] | 77 | 19 | *Height* | Experience happiness | 3.96 | <.002 | + | 52.93 | 28.61 | <.001 |
|  |  |  |  | Foregrounded affect | 2.56 | <.001 | + | 13.13 |  |  |
|  |  |  |  | Evaluation, stimulus | .56 | <.040 | + | 1.75 |  |  |
|  |  |  |  | Film stimuli | .50 | <.030 | + | 1.64 |  |  |
|  |  |  |  | Unpleasant affect | .34 | <.060 | + | 1.41 |  |  |
| R. peristriate [50, -74, 4] | 186 | 19 | *Extent* | Experience fear | 1.72 | <.030 | + | 5.57 | 54.85 | <.001 |
|  |  |  |  | Perception disgust | 1.16 | <.050 | + | 3.18 |  |  |
|  |  |  |  | Picture stimuli | 9.57 | <.002 | + | 140,000 |  |  |
|  |  |  |  | Mode, perception | 4.69 | <.004 | + | 108.87 |  |  |
|  |  |  |  | Visual methods | 2.47 | <.070 | + | 11.88 |  |  |
|  |  |  |  | Face stimuli | -3.88 | <.001 | - | 48.53 |  |  |
|  |  |  |  | Experience disgust | -1.86 | <.003 | - | 6.42 |  |  |
| L. occipitotemporal [-42, -58, 18] | 462 | 37 | *Height* | Evaluation, stimulus | .65 | <.010 | + | 1.91 | 40.93 | <.001 |
|  |  |  |  | Visual method | 2.11 | <.040 | + | 8.26 |  |  |
|  |  |  |  | Cognitive load | -.51 | <.001 | - | 1.66 |  |  |
| R. occipitotemporal [42, -54, 20] | 437 | 37 | *Height* | Mode, perception | .42 | <.010 | + | 1.51 | 17.20 | <.001 |
|  |  |  |  | Personal event stimuli | -.77 | <.030 | - | 2.16 |  |  |
|  |  |  |  | Cognitive load | -.77 | <.030 | - | 1.34 |  |  |
| R. occipitotemporal [48, -66, 4] | 249 | 37 | *Height* | Experience fear | 2.01 | <.009 | + | 7.48 | 56.77 | <.001 |
|  |  |  |  | Perception disgust | 1.71 | <.003 | + | 5.54 |  |  |
|  |  |  |  | Mode, perception | 3.08 | <.001 | + | 21.94 |  |  |
|  |  |  |  | Film stimuli | 7.84 | <.001 | + | 561.83 |  |  |
|  |  |  |  | Picture stimuli | 6.59 | <.001 | + | 729.79 |  |  |
|  |  |  |  | Experience disgust | -1.24 | <.040 | + | 3.44 |  |  |
|  |  |  |  | Imagery | 2.87 | <.030 | + | 17.58 |  |  |
| R. middle temporal [50, 2, -18] | 18 | 21 | *Height* | Perception fear | 1.06 | <.020 | + | 2.89 | 14.91 | <.002 |
|  |  |  |  | Imagery | 1.85 | <.020 | + | 6.37 |  |  |
|  |  |  |  | Film stimuli | 1.12 | <.060 | + | 3.06 |  |  |
| *Note: “Dir.” refers to the direction of the effect and indicates whether the variable predicted increased activation in a brain area (+) or predicted that there would not be increased activation in a brain area (-)*  *\* this cluster extends into L. lOFC* | | | | | | | | | | |

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