|  |  |  |  |  |  |  |  |
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| **Table S2** | | | | | | | |
| *Theory-driven neural associations with neuroticism* | | | | | | | |
|  | IAPS (*N* = 332) | | |  | FACES (*N* = 424) | | |
|  | *r* | 95% CI | BF01 |  | r | 95% CI | BF01 |
| *Regions* | | | | | | | |
| *Averaged signal* |  |  |  |  |  |  |  |
| Amygdala-L | .03 | [-.08, .14] | 19.4 |  | .07 | [-.03, .16] | 10.5 |
| Amygdala-R | .05 | [-.06, .15] | 16.4 |  | .06 | [-.04, .15] | 12.6 |
| aInsula-L | -.05 | [-.15, .06] | 16.1 |  | .03 | [-.06, .13] | 20.4 |
| aInsula-R | -.06 | [-.17, .05] | 12.7 |  | .05 | [-.05, .14] | 16.6 |
| dACC-L | -.11 | [-.22, .00] | 3.4 |  | .04 | [-.06, .13] | 18.7 |
| dACC-R | -.11 | [-.22, -.00] | 2.84 |  | .04 | [-.05, .13] | 17.0 |
| *PLS Modelsa* |  |  |  |  |  |  |  |
| Amygdala | -.05 | [-.24, .15] | 11.5 |  | .13 | [-.06, .32] | 5.3 |
| aInsula | -.05 | [-.24, .15] | 11.4 |  | .02 | [-.18, .21] | 12.6 |
| dACC | .04 | [-.16, .23] | 11.9 |  | .09 | [-.11, .28] | 8.6 |
| *Best region* |  |  |  |  |  |  |  |
| Cerebellum/  Diencephalon | -.12 | [-.26, .03] | 4.95 |  | .07 | [-.06, .21] | 9.5 |
| *Networks* | | | | | | | |
| *Averaged Signal* |  |  |  |  |  |  |  |
| Visual | -.02 | [-.13, .09] | 21.6 |  | .04 | [-.06, .13] | 19.4 |
| Somatomotor | -.02 | [-.12, .09] | 21.9 |  | .11 | [.02, .20] | 1.9 |
| dAttention | -.03 | [-.13, .08] | 20.5 |  | .07 | [-.03, .16] | 9.5 |
| vAttention | -.04 | [-.15, .07] | 17.5 |  | .07 | [-.03, .16] | 9.9 |
| Limbic | -.01 | [-.12, .09] | 22.2 |  | .12 | [.03, .22] | 1.0 |
| Frontoparietal | -.10 | [-.20, .01] | 4.7 |  | .04 | [-.05, .14] | 17.0 |
| Default-Mode | -.07 | [-.18, .04] | 10.1 |  | .06 | [-.04, .15] | 12.5 |
| *Linear Regression* |  |  |  |  |  |  |  |
| All networksb | -.03 | .467 | >100 |  | .12 | .071 | >100 |
| *Random Forest* |  |  |  |  |  |  |  |
| All networksb | .10 | .059 |  |  | -.06 | .710 |  |
| *Signatures* | | | | | | | |
| PINES | -.09 | [-.20, 0.02] | 5.5 |  | .07 | [-.03, .16] | 9.5 |
| VIFS | .04 | [-.07, .15] | 17.6 |  | -.03 | [-.13, .07] | 21.3 |
| Fear | .05 | [-.06, .15] | 16.2 |  | .01 | [-.09, .10] | 25.5 |
| Anger | .01 | [-.10, .12] | 22.4 |  | .05 | [-.05, .14] | 16.1 |
| Sadness | -.03 | [-.13, .08] | 20.6 |  | .05 | [-.05, .14] | 15.4 |
| Note. BF01 = Bayes factor of the null hypothesis over the alternative hypothesis. Bayes factors were calculated with the bayesFactor toolbox in matlab.  aThe proportion of in-region voxels weights with positive signs ranged between 49-51%.  bFor the linear multiple regression approach, the multiple correlation coefficient is reported, calculated as the square-root of adjusted *R*². Here, *p*-values are reported instead of confidence intervals, as confidence intervals for (unadjusted) *R*² cannot contain zero and are therefore harder to interpret in terms of statistical significance. Similarly, *p*-values are reported for the random forest approach, as it was preregistered to be conducted on the whole sample with out-of-bag prediction for which (to our knowledge) currently are no valid confidence intervals available. The *p*-value is for a one-sided test, as negative correlations between predictions and actual values are not meaningful. | | | | | | | |

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| Table SX |  |  |  |  |  |  |
| *Clusters of voxels with positive weights at FDR of q = .10* | | | | | | |
|  |  | MNI | | |  |  |
| Region | Volume [mm³] | X | Y | Z | Z­max-Statistic | % covered |
| Basal ganglia | 64 | -12 | -14 | -4 | 3.652305768 | 100 |
| Basal ganglia | 64 | -12 | 10 | 12 | 3.852284309 | 100 |
| Basal ganglia | 144 | 32 | -32 | 0 | 3.90804411 | 89 |
| Basal ganglia | 160 | -24 | -16 | 8 | 4.104912286 | 100 |
| Brainstem | 224 | 10 | -24 | -34 | 4.04452717 | 79 |
| Brainstem | 224 | -2 | -26 | -12 | 3.983246299 | 43 |
| Brainstem | 472 | -4 | -10 | -22 | 4.454181836 | 32 |
| Cerebellum | 64 | 28 | -56 | -42 | 3.545403913 | 25 |
| Cerebellum | 64 | 8 | -44 | -42 | 3.73168988 | 100 |
| Cerebellum | 64 | 38 | -74 | -38 | 3.666787978 | 88 |
| Cerebellum | 64 | -22 | -60 | -36 | 3.601441673 | 88 |
| Cerebellum | 128 | 22 | -54 | -36 | 4.052773897 | 75 |
| Cerebellum | 144 | 34 | -68 | -40 | 3.96928996 | 67 |
| Cerebellum | 144 | 12 | -48 | -16 | 4.026818128 | 56 |
| Cerebellum | 208 | 18 | -70 | -14 | 4.175139382 | 62 |
| Cerebellum | 416 | 12 | -66 | -38 | 3.895829671 | 54 |
| Cerebellum | 776 | -12 | -68 | -38 | 4.334853742 | 35 |
| Cortex Default ModeA | 128 | -22 | 20 | 44 | 3.605726765 | 50 |
| Cortex Default ModeA | 144 | -8 | 62 | 8 | 3.953326055 | 100 |
| Cortex Default ModeB | 64 | -58 | -46 | -2 | 3.681519856 | 50 |
| Cortex Default ModeB | 128 | -42 | 24 | -14 | 3.650804356 | 75 |
| Cortex Default ModeB | 208 | 16 | 48 | 26 | 4.272855498 | 35 |
| Cortex Default ModeC | 64 | 34 | -26 | -24 | 3.566796028 | 63 |
| Cortex Default ModeC | 200 | -38 | -26 | -18 | 3.786977859 | 52 |
| Cortex Dorsal AttentionA | 256 | 28 | -60 | 30 | 4.303589365 | 41 |
| Cortex Dorsal AttentionA | 392 | 24 | -78 | 20 | 3.996921822 | 33 |
| Cortex Dorsal AttentionA | 432 | 40 | -42 | 66 | 4.388786267 | 13 |
| Cortex Dorsal AttentionB | 64 | 12 | -54 | 60 | 3.927093939 | 100 |
| Cortex Dorsal AttentionB | 64 | -42 | -52 | 62 | 3.646879984 | 75 |
| Cortex Dorsal AttentionB | 216 | -38 | -4 | 32 | 4.343334203 | 7 |
| Cortex Dorsal AttentionB | 296 | -32 | -54 | 68 | 4.411285513 | 84 |
| Cortex Fronto ParietalA | 128 | 28 | 14 | 28 | 4.304903366 | 25 |
| Cortex Fronto ParietalB | 128 | -58 | -50 | -16 | 3.943971404 | 100 |
| Cortex Fronto ParietalB | 288 | 64 | -20 | -18 | 3.843402842 | 75 |
| Cortex Fronto ParietalC | 256 | 0 | -74 | 44 | 3.597457891 | 50 |
| Cortex Fronto ParietalC | 432 | -2 | -72 | 52 | 4.254097528 | 43 |
| Cortex Limbic | 64 | 18 | -4 | -42 | 3.529895563 | 25 |
| Cortex Limbic | 128 | 60 | -16 | -34 | 3.779750831 | 63 |
| Cortex Limbic | 160 | 28 | 0 | -38 | 3.806306957 | 55 |
| Cortex Limbic | 176 | 44 | 20 | -20 | 4.221152529 | 73 |
| Cortex Limbic | 176 | 16 | 52 | -18 | 3.893277031 | 68 |
| Cortex Limbic | 288 | 54 | -12 | -36 | 4.256764093 | 89 |
| Cortex Limbic | 320 | 54 | 8 | -32 | 3.992710966 | 98 |
| Cortex Limbic | 424 | 22 | -8 | -44 | 4.367441661 | 28 |
| Cortex Limbic | 520 | -28 | 0 | -40 | 4.086828182 | 66 |
| Cortex Limbic | 736 | 36 | 20 | -38 | 5.03981465 | 97 |
| Cortex SomatomotorB | 600 | 40 | -18 | 2 | 3.833716071 | 28 |
| Cortex Temporal Parietal | 256 | -48 | 6 | -6 | 4.158587209 | 41 |
| Cortex Ventral AttentionA | 192 | 42 | -4 | -4 | 4.009962572 | 79 |
| Cortex Ventral AttentionA | 320 | 38 | -14 | -10 | 4.447322313 | 25 |
| Cortex Ventral AttentionB | 64 | -42 | 46 | 28 | 3.958137593 | 100 |
| Cortex Ventral AttentionB | 224 | 48 | 38 | 14 | 4.141441415 | 21 |
| Cortex Ventral AttentionB | 272 | 2 | 32 | 18 | 4.040992933 | 82 |
| Cortex Visual Central | 64 | 40 | -68 | -20 | 3.586643375 | 50 |
| Cortex Visual Central | 128 | -16 | -88 | 12 | 3.842890959 | 6 |
| Cortex Visual Central | 336 | 2 | -84 | 22 | 3.910583629 | 38 |
| Cortex Visual Peripheral | 64 | -8 | -70 | -2 | 3.536887002 | 100 |
| Cortex Visual Peripheral | 64 | -22 | -74 | 2 | 3.534790704 | 50 |
| Cortex Visual Peripheral | 64 | -24 | -86 | 36 | 3.593700695 | 75 |
| Cortex Visual Peripheral | 384 | 8 | -62 | 6 | 4.277608272 | 83 |
| Cortex Visual Peripheral | 552 | 26 | -64 | 6 | 4.035739112 | 49 |
| Diencephalon | 64 | 18 | -24 | -4 | 3.57039058 | 100 |
| No description | 64 | 68 | -48 | 4 | 3.524026159 | 0 |
| No description | 64 | 24 | 22 | 10 | 3.547524833 | 0 |
| No description | 64 | 28 | -58 | 12 | 3.588740176 | 0 |
| No description | 64 | 28 | -16 | 52 | 3.526708569 | 0 |
| No description | 64 | -22 | -76 | 58 | 4.050048247 | 0 |
| No description | 128 | 44 | -40 | 28 | 4.08176954 | 0 |
| *Note.* The “% covered” column indicates the percent of voxels in a cluster cover by a specific region label. Automated labelling was performed with the canlab toolbox using the region() and table() functions. | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Table SX |  |  |  |  |  |  |
| *Clusters of voxels with negative weights at FDR of q = .10* | | | | | | |
|  |  | MNI | | |  |  |
| Region | Volume [mm³] | X | Y | Z | Z­max-Statistic | % covered |
| Basal ganglia | 64 | 6 | 0 | -10 | -3.54718 | 75 |
| Basal ganglia | 64 | 2 | 12 | 16 | -3.7611 | 50 |
| Basal ganglia | 88 | 0 | 14 | 14 | -3.55865 | 9 |
| Basal ganglia | 144 | -24 | 12 | -4 | -3.80977 | 72 |
| Basal ganglia | 264 | -8 | 0 | 18 | -4.20653 | 100 |
| Basal ganglia | 384 | -18 | -10 | 28 | -4.18908 | 79 |
| Basal ganglia | 560 | 14 | 28 | 0 | -4.40146 | 36 |
| Basal ganglia | 784 | 18 | -32 | 10 | -4.48621 | 44 |
| Cerebellum | 288 | 4 | -56 | -48 | -4.21364 | 100 |
| Cerebellum | 336 | 0 | -64 | -6 | -4.4739 | 57 |
| Cortex Default ModeA | 64 | -40 | -68 | 34 | -3.51907 | 38 |
| Cortex Default ModeA | 64 | -2 | -50 | 36 | -3.61961 | 50 |
| Cortex Default ModeA | 160 | -8 | 20 | -12 | -3.65508 | 50 |
| Cortex Default ModeA | 176 | -4 | 52 | -8 | -3.89427 | 68 |
| Cortex Default ModeA | 192 | 10 | -48 | 44 | -4.02499 | 46 |
| Cortex Default ModeB | 64 | -14 | 40 | 44 | -3.53953 | 50 |
| Cortex Default ModeB | 64 | -54 | -6 | 52 | -3.60081 | 88 |
| Cortex Default ModeB | 96 | -56 | 4 | -36 | -3.61481 | 100 |
| Cortex Default ModeB | 192 | -32 | 0 | -32 | -4.00529 | 21 |
| Cortex Default ModeB | 208 | -48 | 28 | 0 | -4.05867 | 81 |
| Cortex Default ModeB | 264 | -52 | -10 | 44 | -4.08027 | 48 |
| Cortex Dorsal AttentionA | 400 | 52 | -58 | 8 | -3.94604 | 88 |
| Cortex Dorsal AttentionA | 824 | 50 | -68 | -2 | -4.44292 | 24 |
| Cortex Dorsal AttentionB | 64 | -44 | -32 | 40 | -3.60794 | 75 |
| Cortex Dorsal AttentionB | 96 | 34 | -30 | 52 | -3.79994 | 58 |
| Cortex Dorsal AttentionB | 208 | -38 | 2 | 56 | -3.77187 | 88 |
| Cortex Dorsal AttentionB | 392 | 14 | -44 | 70 | -4.2037 | 49 |
| Cortex Dorsal AttentionB | 808 | 38 | 0 | 54 | -4.85951 | 63 |
| Cortex Fronto ParietalA | 128 | 32 | -48 | 52 | -3.75713 | 69 |
| Cortex Fronto ParietalA | 288 | 42 | 16 | 16 | -4.27468 | 8 |
| Cortex Fronto ParietalA | 336 | 38 | -2 | 40 | -4.4202 | 31 |
| Cortex Fronto ParietalA | 928 | 48 | 20 | 34 | -4.48172 | 31 |
| Cortex Fronto ParietalB | 128 | -6 | 20 | 40 | -3.84357 | 88 |
| Cortex Fronto ParietalB | 176 | 8 | 44 | 36 | -4.37012 | 9 |
| Cortex Fronto ParietalB | 176 | 28 | 26 | 48 | -4.09105 | 82 |
| Cortex Fronto ParietalB | 200 | 58 | -56 | 46 | -3.92567 | 4 |
| Cortex Fronto ParietalB | 224 | 14 | 38 | -18 | -4.16718 | 18 |
| Cortex Limbic | 144 | -2 | 38 | -30 | -3.92036 | 44 |
| Cortex Limbic | 160 | 16 | 14 | -16 | -3.81417 | 30 |
| Cortex Limbic | 176 | 36 | 12 | -28 | -4.45452 | 77 |
| Cortex SomatomotorA | 64 | -62 | -10 | 22 | -3.55048 | 75 |
| Cortex SomatomotorA | 128 | -54 | -28 | 48 | -3.64743 | 50 |
| Cortex SomatomotorA | 904 | -30 | -20 | 60 | -4.93739 | 27 |
| Cortex SomatomotorB | 192 | 46 | -26 | 22 | -3.9968 | 71 |
| Cortex Temporal Parietal | 128 | -60 | -16 | -4 | -3.85981 | 31 |
| Cortex Ventral AttentionA | 64 | 34 | 14 | -18 | -3.68263 | 75 |
| Cortex Ventral AttentionA | 112 | -54 | -36 | 48 | -3.72868 | 57 |
| Cortex Ventral AttentionA | 128 | 12 | -12 | 44 | -3.78576 | 44 |
| Cortex Ventral AttentionA | 192 | 66 | -20 | 40 | -3.74956 | 8 |
| Cortex Ventral AttentionA | 192 | -2 | 0 | 56 | -3.7675 | 46 |
| Cortex Ventral AttentionB | 64 | -20 | 44 | -18 | -3.56508 | 100 |
| Cortex Ventral AttentionB | 64 | 36 | 22 | 8 | -3.59033 | 100 |
| Cortex Ventral AttentionB | 616 | 4 | 36 | 30 | -4.72523 | 60 |
| Cortex Visual Central | 192 | 42 | -80 | -4 | -3.94547 | 88 |
| Cortex Visual Central | 336 | 0 | -84 | -12 | -3.86713 | 48 |
| Cortex Visual Central | 344 | -42 | -76 | 2 | -4.60834 | 40 |
| Cortex Visual Peripheral | 344 | 6 | -40 | -2 | -4.07015 | 37 |
| Diencephalon | 176 | -2 | -4 | 6 | -3.5862 | 36 |
| Diencephalon | 272 | 0 | -26 | 8 | -4.42874 | 18 |
| Hippocampus | 96 | 12 | -38 | 4 | -3.57135 | 17 |
| No description | 64 | -44 | -46 | -4 | -3.605 | 0 |
| No description | 64 | 16 | 46 | -4 | -3.64018 | 0 |
| No description | 64 | -30 | 16 | 32 | -3.61792 | 0 |
| No description | 128 | -20 | -44 | 16 | -3.79467 | 0 |
| No description | 224 | -26 | -46 | 12 | -4.45522 | 0 |
| *Note.* The “% covered” column indicates the percent of voxels in a cluster cover by a specific region label. Automated labelling was performed with the canlab toolbox using the region() and table() functions. | | | | | | |

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| **Table 1** | | |
| *Sample Characteristics* | | |
|  | faces (N = 424) | scenes (N = 338) |
| Women (%) | 52.1 | 48.8 |
| Age (years) | 42.8 ± 7.4 | 41.3 ± 7.1 |
| Race (%) |  |  |
| Caucasian/White | 83.5 | 77.7 |
| African-American | 15.1 | 19.0 |
| Multiracial/ethnic | 1.4 | 1.2 |
| School years completed | 17 ± 2.8 | 16.6 ± 3 |
|  | | |