**Supplemental Tables**

|  |  |  |
| --- | --- | --- |
| Table S1. Positive and negative statements eliciting thought-action fusion condition in the experiment | | |
| Positive statements | 1 | I hope he/she wins a lottery in the near future. |
| 2 | I hope he/she moves to a fine house in the near future. |
| 3 | I hope he/she travels to a place he/she has dreamt of in the near future. |
| 4 | I hope he/she becomes extremely wealthy in the near future. |
| 5 | I hope he/she achieves his or her dream in the near future. |
| 6 | I hope everything he/she does works out well in the near future. |
| 7 | I hope he/she gets a nice sedan in the near future. |
| 8 | I hope he/she starts doing what he/she desires in the near future. |
| Negative statements | 1 | I hope he/she is in a terrible car accident in the near future. |
| 2 | I hope he/she gets stabbed with a knife in the near future. |
| 3 | I hope he/she suffers from hate comments in a social networking site in the near future. |
| 4 | I hope he/she is wrongly accused and put behind bars in the near future. |
| 5 | I hope he/she loses his/her vision due to an accident in the near future. |
| 6 | I hope he/she has an ugly scar on the face in the near future. |
| 7 | I hope he/she gets kidnapped in the near future. |
| 8 | I hope he/she has a diagnosis of acute leukemia in the near future. |
| In the actual experiment, the name of close or neutral person was displayed instead of he or she. | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Table S2. Pharmacological treatment in patients with OCD (N=28) | | | |
| Drug | | Number (%) | Mean daily dosage (range) (mg) |
| Antidepressants | | 28 (100) |  |
|  | ESC | 21 (75) | 20 (10-40) |
|  | SER | 2 (7) | 175 (150-200) |
|  | PAR | 1 (4) | 25 (25) |
|  | ESC+PAR | 1 (5) | 20, 50 |
|  | ESC+MIR | 1 (6) | 10, 7.5 |
|  | ESC+FLV | 1 (7) | 20, 150 |
|  | BUP+VOR | 1 (8) | 300, 20 |
| Anxiolytics | | 20 (71) |  |
|  | ALP | 6 (21) | 0.9 (0.5-2.0) |
|  | CLO | 6 (21) | 20 (10-30) |
|  | BSP | 2 (7) | 0.5 (0.5) |
|  | DZP | 1 (4) | 3.5 (2.0-5.0) |
|  | ALP+LRZ | 2 (7) | 0.5, 1 (0.5, 1) |
|  | CLO+DZP | 2 (7) | 0.75, 3 (0.5-1, 2-4) |
|  | ALP+DZP | 1 (4) | 0.5, 10 |
| Antipsychotics | | 7 (25) |  |
|  | ARP | 4 (14) | 3.5 (5-10) |
|  | RIS | 2 (7) | 1.25 (0.5-2) |
|  | ARP+RIS | 1 (4) | 10, 1 |
| ALP, alprazolam; ARP, aripiprazole; BSP, buspiron; BUP, bupropion; CLO, clonazepam; DZP, diazepam; ESC, escitalopram; FLV, fluvoxamine; LRZ, lorazepam; MIR, mirtazapine; PAR, paroxetine; RIS, risperidone; SER, sertraline; VOR, vortioxetine | | | |

Table S3. Identified regions of interest (ROIs) based on multi-voxel pattern analysis

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task** | **Identified region** |  | | |
| **x** | **y** | **z** |
| Positive close sentence | Superior medial frontal | 60 | 6 | 0 |
| Thalamus | 8 | -4 | 2 |
| Dorsal anterior cingulate cortex | 18 | 34 | 22 |
| Superior temporal | -42 | -2 | -12 |
| Precuneus | -6 | -50 | 34 |
| Insular | 40 | -2 | 0 |
| Negative close sentence | Middle cingulate cortex (MCC) | -12 | -32 | 42 |
| Superior frontal | -24 | 52 | 20 |
| Middle temporal gyrus | -44 | -70 | 16 |
| Middle temporal gyrus | 50 | -74 | 14 |
| Precuneus | -12 | -58 | 60 |
| Superior frontal | 16 | 32 | 48 |
| Fusiform | 42 | -26 | -20 |
| Positive neutral sentence | Middle temporal gyrus | -48 | -64 | 6 |
| Middle temporal gyrus | 50 | -60 | 6 |
| Thalamus | -18 | -16 | 18 |
| Paracentral lobule | 6 | -44 | 70 |
| Negative neutral sentence | Superior temporal | -56 | 2 | 2 |
| Precuneus | -10 | -50 | 58 |
| Precuneus | 2 | -66 | 26 |
| Middle cingulate cortex (MCC) | 16 | -36 | 44 |
| Dorsal anterior cingulate cortex | 0 | 40 | 22 |
| Inferior parietal | 52 | -52 | 40 |
| Middle orbitofrontal | 34 | 58 | -10 |
| Insular | 38 | 8 | 4 |
| Cuneus | 12 | -84 | 28 |

Table S4. Abbreviations used in functional connectivity analyses

|  |  |
| --- | --- |
| FP (Frontal Pole) | ICC (Intracalcarine Cortex) |
| IC (Insular Cortex) | MedFC (Frontal Medial Cortex) |
| SFG (Superior Frontal Gyrus) | SMA (Supplementary Motor Cortex) |
| MidFG (Middle Frontal Gyrus) | SubCalC (Subcallosal Cortex) |
| IFG tri (Inferior Frontal Gyrus, pars triangularis) | PaCiG (Paracingulate Gyrus) |
| IFG oper (Inferior Frontal Gyrus, pars opercularis) | AC (Cingulate Gyrus, anterior division) |
| PreCG (Precentral Gyrus) | PC (Cingulate Gyrus, posterior division) |
| TP (Temporal Pole) | Precuneous (Precuneous Cortex) |
| aSTG (Superior Temporal Gyrus, anterior division) | Cuneal (Cuneal Cortex) |
| pSTG (Superior Temporal Gyrus, posterior division) | FOrb (Frontal Orbital Cortex) |
| aMTG (Middle Temporal Gyrus, anterior division) | aPaHC (Parahippocampal Gyrus, anterior division) |
| pMTG (Middle Temporal Gyrus, posterior division) | pPaHC (Parahippocampal Gyrus, posterior division) |
| toMTG (Middle Temporal Gyrus, temporooccipital part) | LG (Lingual Gyrus) |
| aITG (Inferior Temporal Gyrus, anterior division) | aTFusC (Temporal Fusiform Cortex, anterior division) |
| pITG (Inferior Temporal Gyrus, posterior division) | pTFusC (Temporal Fusiform Cortex, posterior division) |
| toITG (Inferior Temporal Gyrus, temporooccipital part) | TOFusC (Temporal Occipital Fusiform Cortex) |
| PostCG (Postcentral Gyrus) | OFusG (Occipital Fusiform Gyrus) |
| SPL (Superior Parietal Lobule) | FO (Frontal Operculum Cortex) |
| aSMG (Supramarginal Gyrus, anterior division) | CO (Central Opercular Cortex) |
| pSMG (Supramarginal Gyrus, posterior division) | PO (Parietal Operculum Cortex) |
| AG (Angular Gyrus) | PP (Planum Polare) |
| sLOC (Lateral Occipital Cortex, superior division) | HG (Heschl's Gyrus) |
| iLOC (Lateral Occipital Cortex, inferior division) | PT (Planum Temporale) |
| Cereb (Cerebelum) | SCC (Supracalcarine Cortex) |
| Ver (Vermis) | OP (Occipital Pole) |

Table S5. Group differences in correlation coefficients represented in Figure 4.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | OCD | HC | Z value | P value |
|  | Thought Action Fusion | |  |  |
| MCC-Left Insular | 0.419 | -0.002 | 2.03 | 0.02 |
|  | Responsibility | |  |  |
| MCC-Left Insular | 0.417 | 0.066 | 1.71 | 0.04 |
| MCC-Right Insular | 0.392 | 0.024 | 1.76 | 0.04 |
|  | Obsessive Compulsive Inventory | |  |  |
| Fusiform-Left Insular | -0.394 | -0.121 | -1.33 | 0.09 |
|  | Dimensional O-C Scale | |  |  |
| Fusiform-Left Insular | -0.496 | -0.067 | -2.15 | 0.02 |
| Fusiform-Right Insular | -0.387 | -0.117 | -1.31 | 0.09 |
|  | Guilty Inventory | |  |  |
| Fusiform-Left Amygdala | -0.312 | -0.144 | -0.80 | 0.21 |

MCC, Middle cingulate cortex