**Supplementary Information**

**Neural representations of the multidimensional self in the cortical midline structures**

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**SI Text**

*Behavioral performance in the label-shape matching task*

**Matched pairs:** A repeated measures ANOVA (Identity × Dimension) on ACC showed a significant main effect of Identity (*F* (2, 36) = 35.91, *P* < 0.001, *η2* = 0.67), owing to more accurate responses to self *vs.* mother (*P* < 0.001), self *vs.* celebrity (*P* < 0.001), and mother *vs.* celebrity (*P* = 0.002) from *post hoc* comparison. There was a main effect of Dimension (*F* (2, 36) = 3.59, *P* < 0.001, *η2* = 0.17), and its interaction with Identity was found (*F* (4, 72) = 7.58, *P* < 0.001, *η2* = 0.30). *Post hoc* analysis showed that in the social dimension, ACCself > ACCmother > ACCcelebrity (all *P* < 0.002); in the mental dimension, ACCself > ACCmother (*P* = 0.007),ACCself > ACCcelebrity (*P* = 0.001), and there was no difference between mother and celebrity (*P* = 0.50); in the physical dimension, ACCself > ACCmother > ACCcelebrity (all *P* < 0.009) (**Supplementary** Fig. 2 A left panel). For response time (RT), a repeated measures ANOVA (Identity × Dimension) showed a significant effect of Identity (*F* (2, 36) = 51.47, *P* < 0.001, *η2* = 0.74), owing to faster responses to self *vs.* mother (*P* < 0.001), self *vs.* celebrity (*P* < 0.001), and mother *vs.* celebrity (*P* = 0.009) from *post hoc* comparison. Dimension did not show a main effect (*F* (2, 36) = 0.18, *P* = 0.84, *η2* = 0.01); an interaction effect between Identity and Dimension was found (*F* (4, 72) = 7.71, *P* < 0.001, *η2* = 0.30); *post hoc* analysis showed that in the social dimension, RTself < RTmother < RTcelebrity (all *P* < 0.008); in the mental dimension, RTself < RTmother,RTself < RTcelebrity (all *P* < 0.001), and there was no difference between mother and celebrity (*P* = 0.97); in the physical dimension, RTself < RTmother < RTcelebrity (all *P* < 0.003) (**Supplementary** Fig. 2 A middle panel). Multiple comparisons were Bonferroni corrected. Together, these findings provided consistent evidence for unique responses to self-relevant associations in comparison with those related to mother and celebrity. Our results were well consistent with findings from previous studies that have used a similar paradigm ([1](#_ENREF_1), [2](#_ENREF_2)).

To test the distribution characteristics of matching judgments in each associated pair, we adopted a bootstrapping procedure. We combined the ACC and RT of each participant in each associated pair as a single data point (ACC, RT). A bootstrapped dataset was created by resampling the data with replacement, keeping the sample size of data as the number of participants; this procedure was repeated 2000 times to estimate the mean of the population in each associated pair across all dimensions. The bootstrapped data showed a clear boundary between self- and close/distant other-related associations in matched pairs in all dimensions (**Supplementary** Fig. 2 B).

**Mismatched pairs:** Repeated measures ANOVAs (Identity × Dimension) were conducted separately for ACC and RT. For ACC, the main effect of Identity was significant (*F* (2, 36) = 5.48, *P* = 0.008, *η2* = 0.23); *post hoc* analysis showed that ACCself > ACCmother (*P* = 0.005), and there was no difference between self and celebrity, or between mother and celebrity (all *P* > 0.19). Neither the main effect of Dimension nor its interaction with Identity was significant (*P* > 0.05). ANOVA on RT revealed a main effect of Identity (*F* (2, 36) = 7.80, *P* = 0.002, *η2* = 0.30); *post hoc* analysis showed that RTself < RTmother (*P* = 0.02), RTcelebrity < RTmother (*P* = 0.02), and there was no difference between self and celebrity (*P* =1.00). Neither the main effect of Dimension nor its interaction with Identity was significant (*P* > 0.05). Multiple comparisons were Bonferroni corrected. Neither the main effect of Dimension nor its interaction with Identity was significant (*P* > 0.05). The bootstrapped results for the ACC and RT, illustrated in **Supplementary** Fig. 2 C, showed that there was no clear boundary among self, mother, and celebrity across dimensions.

**Supplementary figures**



**Supplementary Figure 1. Pattern similarity between identities within mental dimension.** Neural patterns were more similar between mother and celebrity than between self and celebrity in the following regions: PCC/precuneus extending to mPFC and ACC (MNI x/y/z = -12/-54/21 mm, cluster size = 10226 voxels; maximum T = 6.25), mPFC (MNI x/y/z = -12/-3/57 mm, cluster size = 16 voxels; maximum T = 2.66), TPJ (MNI x/y/z = 51/-60/24 mm, cluster size = 367 voxels; maximum T = 3.51), dlPFC (MNI x/y/z = -42/39/-3 mm, cluster size = 60 voxels; maximum T = 3.25), caudate (MNI x/y/z = -15/-6/15 mm, cluster size = 5 voxels; maximum T = 2.35), and cerebellum (MNI x/y/z = 9/-36/-33 mm, cluster size = 31 voxels; maximum T = 2.68). mPFC, medial prefrontal cortex; PCC, posterior cingulate cortex; TPJ, temporoparietal junction.

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**Supplementary Figure 2. Behavioral results in the label-shape matching task.** **(A)** Behavioral results for the matched condition. Accuracy and response time as a function of identity and dimension. **(B)** Bootstrap results of accuracy and response time in three dimensions in the matched condition. **(C)** Bootstrap results of accuracy and response time in three dimensions in the mismatched condition. \*\**P* < 0.01; \*\*\**P* < 0.001. All multiple comparisons were Bonferroni corrected.



**Supplementary Figure 3. (A)** Dissimilarity/distance for each pair of conditions, calculated as 1 minus the Pearson correlation coefficient. **(B)** Corresponding *P* values for the distance between each pair of conditions.

MS, mental-self; PS, physical-self; SS, social-self; MM, mental-mother; PM, physical-mother; SM, social-mother; MC, mental- celebrity; PC, physical- celebrity; SC, social-celebrity.



**Supplementary Figure 4.** Brain regions in which neural patterns were more related to the representation of self-knowledge than to self-identity, including the TPJ and PCC. TPJ, temporoparietal junction; PCC, posterior cingulate cortex; FWE, family-wise error.

**Supplementary Tables**

**Supplementary Table 1.** Demographic information and personality scores of participants in the fMRI experiment

|  |  |
| --- | --- |
| Variables | Mean (SD) |
| Gender | 45 males |
| Age (years) | 20.94 (2.05) |
| Self-esteem | 28.52 (3.39) |
| Social economic status | 6.64 (1.75) |
| Independent | 56.10 (8.57) |
| Interdependent | 62.32 (7.85) |
| IRI | 2.41 (0.45) |

*Note.* Self-esteem score was measured with Self-esteem Scale ([4](#_ENREF_4)), social economic status was measured by the Subjective Economic Status scale ([5](#_ENREF_5)), independent and interdependent score were obtained from Self Construal Scale ([6](#_ENREF_6)), and IRI score was collected from Interpersonal Reactivity Index ([7](#_ENREF_7)). Standard errors are presented in parentheses. IRI, interpersonal reactivity index.

**Supplementary Table 2.** Full list of items used in the fMRI experiment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Social dimension** | | | | |
| Asian | poor man | fan | landlord | high school student |
| American | scout leader | European | middle class | college student |
| customer | ads spokesman | idol | African | cellphone manufacturer |
| Buddhist | non-religious | professor | salesman | technical worker |
| emcee | undergraduate | athlete | bank customer | religious person |
| coach | house owner | Christian | student | teacher assistant |
| researcher | left-winger | volunteer | teacher | Olympic champion |
| Politician | shop assistant | civilian | cyclist | graduate student |
| Chinese | actor/actress | humanist | testee | mathematician |
| Korean | Arts student | Danish | PC user | white collar workers |
| driver | museum owner | bus driver | Gmail user | blue collar workers |
| car owner | Mac user | German | internet user | government employee |
| skier | right-winger | passenger | Facebook user | bank employee |
| tourist | bus passenger | tenant | football player | table tennis player |
| celebrity | bike owner | scout | cellphone user | basketball player |
| tour guide | waiter/waitress | consumer | self-employed | not a celebrity |
|  |  |  |  |  |
| **Mental dimension** | | | | |
| decent | tolerant | assertive | confident | lazy |
| honest | Humble | picky | suspicious | easy-going |
| witty | calm | timid | healthy | mediocre |
| indifferent | rash | rough | friendly | rude |
| outgoing | merciless | diligent | talkative | smart |
| hostile | despicable | competent | arrogant | headstrong |
| clever | reliable | gregarious | dexterous | shy |
| aggressive | generous | firm | outstanding | open-minded |
| slow | easy-going | petty | rigid | intelligent |
| snobbish | fiery | earnest | Irritable | strong |
| hospitable | pessimistic | negative | rational | frank |
| loyal | arbitrary | humorous | naughty | stubborn |
| careless | famous | warm | superstitious | hypocritical |
| sincere | happy | selfish | courageous | disgusting |
| stupid | clumsy | modest | weak | dedicated |
| optimistic | mature | greedy | patient | impulsive |
|  |  |  |  |  |
| **Physical dimension** | | | | |
| short | long hair | flawless | short fingers | stocky arms |
| straight hair | with no acne | fat | thin-lipped | heavier than 60 kg |
| thin arms | small eyes | wrinkled | broad shoulder | some acnes on the face |
| hyperopia | bald-headed | thin | small feet | asymmetrical face |
| big feet | flat-chested | buxom | thick-lipped | lighter than 60 kg |
| black hair | tufty-haired | tall | yellow hair | symmetrical face |
| choppy | pierced ears | myopia | small ears | narrow shoulder |
| big ears | unpierced ears | slim | yellowish skin | small hand |
| long arm | straight nose | tattoo | big nose | hour-glass figure |
| short neck | large eyes | long neck | tallow-faced | long eyelashes |
| green eyes | buxom body | no tattoo | bushy eyebrows | snaggle-toothed |
| blue pupil | straight teeth | small nose | boney body | long fingers |
| no freckles | out of shape | thin legs | short arm | ruddy faced |
| large waist | thick-legged | in shape | sparse eyebrows | short eyelashes |
| freckles | crooked nose | oval face | moon-faced | curly hair |
| short legs | short hair | big hand | long legs | light skin |
|  |  |  |  |  |

**Supplementary Table 3.** Brain regions from searchlight results in which neural patterns were more associated with one's own personal knowledge than person identity.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Region | L/R | x/y/z (MNI) | t-value | cluster size |
| Precuneus/posterior cingulate gyrus/temporal parietal junction | L/R | -21/-75/42 | 8.76 | 2977 |
| Middle temporal gyrus | R | 57/-54/0 | 4.40 | 59 |
| Inferior frontal gyrus | R | 45/42/3 | 6.30 | 23 |

DM, dissimilarity matrix; L, left; R, right. Voxel-wise *P*(FWE) < 0.05.

**Supplementary Table 4.** Brain regions from searchlight results using Pearson linear correlation for the behavioral and theoretical models characterizing unique representations of the self.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | Region | L/R | x/y/z (MNI) | t-value | cluster size |
| **Behavioral DM** | Posterior cingulate gyrus | R | 15/-51/30 | 9.71 | 4848 |
| Supramarginal gyrus | R | 48/-51/21 | 6.02 |  |
| Medial frontal gyrus | L | -15/24/42 | 7.79 | 4882 |
| Medial frontal gyrus | R | 18/24/42 | 7.47 |  |
| Medial frontal gyrus | R | 12/45/12 | 6.87 |  |
| Middle Temporal gyrus | R | 63/-9/-24 | 5.06 | 100 |
|  |  |  |  |  |  |
| **Self-uniqueness DM** | Posterior cingulate gyrus | L | -6/-48/39 | 8.43 | 2155 |
|  |  | L | -42/-60/21 | 5.89 |  |
|  | Medial prefrontal cortex | L | -3/39/-6 | 7.38 | 1998 |
|  | Superior frontal cortex | L | -21/30/33 | 6.99 |  |
|  | Middle temporal gyrus | L | -60/-3/-24 | 4.95 | 36 |
|  |  |  |  |  |  |
| **Identity-sensitive self-representation DM** | Medial frontal gyrus | L | -3/39/-6 | 5.28 | 865 |
|  | Medial frontal gyrus | L | -21/33/30 | 4.51 |  |
|  | Posterior cingulate gyrus |  | 0/-48/42 | 5.04 | 343 |
|  |  |  |  |  |  |
| **Dimension-sensitive self-representation DM** | Posterior cingulate gyrus | L | -9/-45/39 | 7.52 | 5499 |
|  | Middle temporal gyrus | L | -36/-69/27 | 7.17 |  |
|  | Superior temporal gyrus | R | 48/-60/27 | 5.01 |  |
|  | Middle frontal gyrus | L | -21/27/39 | 5.45 | 1001 |
|  | Middle frontal gyrus | L | -42/42/27 | 4.65 |  |
|  |  | L | -63/-9/-21 | 4.62 | 46 |
|  | Medial frontal gyrus | R | 12/39/6 | 4.44 | 411 |
|  | Medial orbital frontal |  | 0/39/-9 | 4.38 |  |
|  | Middle frontal gyrus | R | 30/24/36 | 4.34 | 139 |
|  | Middle frontal gyrus | R | 36/39/6 | 3.92 | 8 |

DM, dissimilarity matrix; L, left; R, right. Voxel-wise *P*(FWE) < 0.05.

**Supplementary Table 5.** Brain regions from searchlight results using Kendall rank correlation for the behavioral and theoretical models characterizing unique representations of the self.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | Region | L/R | x/y/z (MNI) | t-value | cluster size | |
| Behavioral DM | Posterior cingulate gyrus | R | 15/-51/30 | 9.39 | | 6021 |
| Superior temporal gyrus | R | 57/-60/24 | 6.05 | |  |
| Middle temporal gyrus | L | -39/-63/21 | 4.41 | |  |
| Medial frontal gyrus | L | -18/30/36 | 7.81 | | 5621 |
| Medial frontal gyrus | L | -3/45/6 | 7.22 | |  |
| Superior frontal cortex | R | 18/30/39 | 6.28 | |  |
| Inferior temporal gyrus | R | 63/-6/-21 | 5.02 | | 158 |
|  |  |  |  |  | |  |
| Self-uniqueness DM | Posterior cingulate gyrus | L | -9/-45/39 | 8.53 | | 1864 |
|  | Medial frontal gyrus | L | -3/39/-6 | 7.34 | | 1958 |
|  | Superior frontal gyrus | L | -21/30/33 | 6.86 | |  |
|  | Angular gyrus | L | -39/-60/21 | 5.66 | | 233 |
|  | Middle temporal gyrus | L | -60/-3/-24 | 4.56 | | 18 |
|  | Middle temporal gyrus | L | -66/-6/-18 | 4.37 | |  |
|  |  |  |  |  | |  |
| Identity-sensitive self-representation DM | Posterior cingulate gyrus | R | 3/-45/42 | 5.82 | | 358 |
|  | Medial frontal gyrus | L | -3/39/-6 | 5.81 | | 838 |
|  | Medial frontal gyrus | L | -21/33/30 | 4.84 | |  |
|  |  |  |  |  | |  |
| Dimension-sensitive self-representation DM | Posterior cingulate gyrus | L | -9/-45/39 | 9.62 | | 5243 |
|  | Middle temporal gyrus | L | -36/-69/27 | 9.06 | |  |
|  | Middle temporal gyrus | R | 48/-60/24 | 5.54 | |  |
|  | Middle frontal gyrus | L | -21/27/39 | 5.99 | | 736 |
|  | Middle frontal gyrus | L | -42/42/27 | 4.57 | |  |
|  |  | L | -48/42/21 | 4.32 | |  |
|  | Medial frontal gyrus | L | -3/42/-6 | 4.72 | | 334 |
|  | Anterior cingulate gyrus | R | 12/39/3 | 4.62 | |  |
|  | Middle frontal gyrus | R | 30/24/36 | 4.62 | | 92 |
|  |  | R | 33/30/51 | 4.19 | |  |
|  | Middle temporal gyrus | L | -63/-9/-21 | 4.47 | | 11 |
|  | Inferior frontal gyrus | R | 39/42/3 | 4.27 | | 13 |

DM, dissimilarity matrix; L, left; R, right. Voxel-wise *P*(FWE) < 0.05.

**Supplementary Table 6.** Brain regions from univariate activation analysis of identities across dimensions.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Contrast | Region | L/R | x/y/z (MNI) | t-value | cluster size |
| **Self vs. Celebrity** | Medial frontal gyrus | L | -3/39/-6 | 14.56 | 1968 |
|  | Medial frontal gyrus | L | -9/48/-3 | 14.29 |  |
|  | Superior frontal gyrus | L | -24/39/33 | 9.61 |  |
|  | Inferior parietal lobule | L | -57/-42/27 | 8.01 | 191 |
|  | Superior temporal gyrus | L | -42/-51/18 | 5.56 |  |
|  |  | L | -3/-18/36 | 7.18 | 55 |
|  | Supramarginal gyrus | R | 54/-48/30 | 5.96 | 39 |
|  |  | L | -6/-57/45 | 5.96 | 53 |
|  | Cerebelum | R | 27/-63/-21 | 5.73 | 36 |
|  | Cerebelum | R | 42/-72/-27 | 5.46 |  |
|  | Cuneus | L | -18/-57/12 | 5.56 | 110 |
|  | Cuneus | L | -12/-51/3 | 5.48 |  |
|  | Precuneus | L | -3/-69/21 | 5.45 |  |
|  | Middle occipital gyrus | R | 36/-84/3 | 5.44 | 19 |
|  | Cuneus | R | 21/-51/12 | 5.26 | 7 |
|  |  |  |  |  |  |
| **Mother vs. Celebrity** | Medial frontal gyrus | L | -6/51/-3 | 8.94 | 671 |
|  | Anterior cingulate gyrus | L | -6/33/-6 | 8.75 |  |
|  | Superior frontal gyrus | L | -21/39/33 | 8.18 |  |
|  | Medial frontal gyrus | R | 18/48/15 | 5.91 | 39 |
|  | | | | | |
| **Self vs. Mother** | Medial frontal gyrus | L | -3/39/6 | 7.97 | 236 |
| Middle temporal gyrus | L | -54/-54/3 | 7.36 | 245 |
| Supramarginal gyrus | L | -57/-45/24 | 5.38 |  |
| Precuneus | L | -18/-66/27 | 6.14 | 187 |
| Posterior cingulate gyrus | L | -12/-51/9 | 6.05 |  |
|  | Cuneus | L | -18/-57/21 | 5.7 |  |
|  | Cuneus | R | 21/-54/15 | 5.96 | 64 |
|  | Cerebelum | R | 15/-69/-15 | 5.92 | 148 |
|  | Cerebelum | R | 21/-75/-21 | 5.76 |  |
|  | Cerebelum | R | 30/-66/-21 | 5.3 |  |
|  | Middle occipital gyrus | L | -30/-87/6 | 5.82 | 57 |
|  | Middle cingulate gyrus | R | 0/-15/39 | 5.71 | 27 |
|  | Middle occipital gyrus | R | 33/-81/3 | 5.46 | 39 |
|  | Middle temporal gyrus | L | -57/-30/-3 | 5.41 | 20 |
|  | Precuneus | L | -6/-48/48 | 5.39 | 16 |
|  | Superior occipital gyrus | L | -24/-78/21 | 5.32 | 16 |
|  | Lingual gyrus | L | -15/-87/-6 | 5.21 | 50 |
|  | Lingual gyrus | L | -21/-69/-12 | 5.17 |  |
|  | Lingual gyrus | L | -18/-75/-6 | 5.09 |  |

L, left; R, right. Voxel-wise *P*(FWE) < 0.05.

**Supplementary Table 7.** Brain regions from univariate activation analysis of dimensions across identities.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Contrast | Region | L/R | x/y/z (MNI) | t-value | cluster size |
| **Across Identities** | | | | | |
| **Social vs. Mental**  (activation) | Middle cingulate gyrus |  | 0/-36/39 | 18.47 | 6810 |
| Precuneus | L | -36/-72/33 | 17.70 |  |
| Inferior parietal gyrus | L | -33/-63/45 | 16.33 |  |
| Middle temporal gyrus | R | 57/-45/-12 | 11.16 | 283 |
| Inferior temporal gyrus | R | 60 -18 -24 | 8.50 |  |
| Medial frontal gyrus | L | -6/33/-15 | 6.24 | 32 |
| Medial frontal gyrus | R | 36/48/-9 | 5.87 | 10 |
| Fusiform gyrus | L | -30/-33/-18 | 13.42 | 982 |
| Fusiform gyrus | R | 30/-27/-21 | 10.06 | 121 |
| Superior frontal gyrus | L | -21/54/3 | 6.60 | 26 |
| Middle frontal gyrus | L | -24/15/48 | 13.47 | 1245 |
| Middle frontal gyrus | L | -42/12/30 | 10.92 |  |
| Middle frontal gyrus | R | 30/18/48 | 11.58 | 918 |
| Cerebelum | L | -33/-69/-48 | 8.57 | 84 |
| Cerebelum | L | -9/-75/-30 | 8.36 | 69 |
| Cerebelum | R | 6/-51/-51 | 10.83 | 69 |
| Cerebelum | R | 36/-69/-45 | 9.10 | 95 |
| Lingual gyrus | R | 18/-75/-9 | 7.44 | 157 |
| **Social vs. Mental**  (deactivation) | Middle occipital gyrus | L | -24/-99/0 | 7.47 | 43 |
| Middle occipital gyrus | R | 30/-96/0 | 8.07 | 55 |
| Anterior cingulate gyrus | L | -6/27/24 | 6.81 | 85 |
| Insula | L | -39/9/-9 | 5.84 | 16 |
| Fusiform gyrus | R | 36/-45/0 | 5.49 | 9 |
| Superior frontal gyrus | L | -6/15/57 | 5.18 | 7 |
|  |  |  |  |  |  |
| **Social vs. Physical**  (activation) | Inferior temporal gyrus | L | -57/-9/-24 | 12.35 | 565 |
| Middle temporal gyrus | L | -63/-39/-6 | 7.89 |  |
| Inferior frontal gyrus | L | -45/21/-36 | 6.94 |  |
| Superior temporal gyrus | R | 51/-51/21 | 13.95 | 1607 |
| Angular | R | 51/-60/24 | 13.04 |  |
| Parahippocampa gyrus | L | -30/-30/-18 | 12.03 | 137 |
| Parahippocampa gyrus | R | 27/-24/-24 | 9.71 | 83 |
| Anterior cingulate gyrus | R | 3/42/-12 | 10.70 | 323 |
| Cerebelum | R | 6/-51/-48 | 6.82 | 26 |
| Precuneus | L | -6/-57/21 | 13.72 | 1290 |
| Posterior cingulate gyrus | L | -6/-51/15 | 13.64 |  |
| Middle cingulate gyrus | L | -3/-39/36 | 11.43 |  |
| Middle frontal gyrus | L | -24/24/45 | 9.27 | 322 |
| Middle frontal gyrus | R | 24/27/45 | 8.51 | 225 |
| Middle occipital gyrus | R | -39/-69/33 | 15.94 | 827 |
| Superior temporal gyrus | L | -51/-57/21 | 12.12 |  |
| **Social vs. Physical**  (deactivation) | Inferior frontal gyrus | L | -42/36/12 | 13.06 | 781 |
| Lingual gyrus | R | 15/-75/-6 | 11.79 | 1400 |
| Lingual gyrus | L | -12/-84/-3 | 11.56 |  |
| Inferior frontal gyrus | R | 45/42/9 | 11.42 | 417 |
| Insula | R | 30/21/3 | 6.66 |  |
| Supplementary motor area |  | 0/15/51 | 10.77 | 631 |
| Medial frontal gyrus | R | 3/24/42 | 10.07 |  |
| Middle frontal gyrus | L | -27/-3/51 | 6.55 |  |
| Cerebelum | R | 21/-72/-48 | 8.09 | 84 |
| Superior parietal gyrus | R | 54/-36/57 | 5.51 | 15 |
| Postcentral gyrus | R | 60/-27/48 | 5.28 |  |
| Inferior parietal gyrus | L | -42/-42/39 | 5.40 | 7 |
|  |  |  |  |  |  |
| **Mental vs. Physical**  (activation) | Middle cingulate gyrus |  | 0/-18/39 | 7.31 | 27 |
| Superior frontal gyrus | R | 6/57/24 | 9.11 | 619 |
| Superior frontal gyrus | L | -9/57/21 | 6.98 |  |
| Anterior cingulate gyrus | R | 12/51/12 | 8.42 |  |
| Middle occipital gyrus | R | 42/-84/9 | 8.49 | 72 |
| Superior temporal gyrus | R | 63/-54/21 | 6.34 | 29 |
| Middle temporal gyrus | L | -45/15/-36 | 6.64 | 58 |
| Inferior frontal gyrus | L | -36/18/-18 | 6.32 |  |
| Middle temporal gyrus | R | 48/15/-33 | 7.73 | 29 |
| Cerebelum | L | -21/-87/-36 | 5.97 | 12 |
| **Mental vs. Physical**  (deactivation) | Cuneus | R | 9/-87/3 | 14.92 | 6988 |
| Cuneus | L | -9/-87/-3 | 14.55 |  |
| Lingual gyrus | R | 15/-75/-9 | 13.64 |  |
| Inferior frontal gyrus | L | -45/9/27 | 14.47 | 1998 |
| Inferior frontal gyrus | R | 45/36/12 | 13.87 | 1149 |
| Middle temporal gyrus | R | 54/-48/-12 | 11.35 | 87 |
| Middle cingulate gyrus | R | 3/-33/36 | 10.86 | 319 |
| Anterior cingulate gyrus | R | 6/3/27 | 8.72 | 64 |
| Anterior cingulate gyrus | L | -3/9/24 | 6.52 |  |
| Middle frontal gyrus | R | 30/15/51 | 8.09 | 190 |
| Hippocampus | R | 27/-30/-3 | 7.93 | 92 |
| Thalamus | R | 18/-24/9 | 5.11 |  |
| Cerebelum | R | 15/-45/-48 | 6.10 | 19 |
|  |  |  |  |  |  |

L, left; R, right. Voxel-wise *P*(FWE) < 0.05.

**References**

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