Supplementary material of

Associations of brain structure with psychopathy

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Methods

Magnetic resonance imaging

The following MR scanners and sequence parameters had been applied in each subsample:

(1) Data set MU (Müller et al. 2008) was recorded at the University Hospital in Göttingen, Germany with a 1.5 Tesla Siemens Symphony scanner (Siemens Medical Systems, Erlangen, Germany). T1-weighted images were acquired with a magnetization-prepared rapid acquisition gradient echo image (MPRAGE) sequence with a voxel size of 1 x 1 x 1.08 mm (matrix size 256 x 192, TR = 11.08 ms, TE = 4 ms, flip angle = 15°).

(2) Data set (FS, UH) (Schneider et al. 2000) was recorded at the Forschungszentrum Jülich with a 1.5 Tesla Magnetom Vision Scanner (Siemens Medical Systems, Erlangen, Germany). A MPRAGE sequence with a voxel size of 0.9 x 0.9 x 1.25 mm and 0.9 x 0.9 x1.33 mm was used (matrix size: 256 x 256, TR = 704, TE = 4.4 ms).

(3) Data set (UH, LH) (Hofhansel et al. 2020) was acquired using a 3 Tesla Siemens PRISMA MR scanner (Siemens Medical Systems, Erlangen, Germany), located in the Medical Faculty of RWTH Aachen University. T1-weighted structural images were obtained by means of a three-dimensional MPRAGE sequence (voxel size: 1 × 1 × 1 mm, matrix size: 256 x 256, TR = 2300ms, TE = 2.98ms, flip angle = 9°).

Measurement of the intracranial volume (ICV)

The intracranial volume (ICV) of each subject was measured by manual segmentation. First, the MR images were affinely transformed into the space of the reference brain so that the transformed brains had nearly the same extent and alignment. The contour of the intracranial vault was manually delineated on every tenth sagittal section, as well as on the three most lateral sections, using the program ITK-SNAP. The sizes of the segmented mask sections were calculated and linearly interpolated for sections in between. The summed section sizes yielded the ICV in the space of the reference brain, which was rescaled by the determinant of the affine transformation to yield the actual ICV.

Results of region-based analysis

The brain regions are arranged in a hierarchical atlas system with the whole brain on the highest level, and cortical areas and subcortical nuclei at the lowest level. The latter are from the Julich-Brain atlas (Amunts et al. 2020), complemented by maps of nuclei and cerebellar lobules of the AAL3 atlas (Tzourio-Mazoyer et al. 2002, Rolls et al. 2020), and masks of pons, mesencephalon and cerebellar white matter. Regions on upper levels are formed by combination of their child-regions. For every region within the hierarchy the test-statistic t_{uncorr} is calculated by evaluation of the respective statistical model with the region's volume data. The multiple-testing correction follows the procedure described in (Bogomolov et al. 2020).

All regions which have the same *parent region* form a *region family*. The p-value of such a family can be calculated by direct statistical evaluation of the parent region's volume data, which results in the uncorrected p-value p_{uncorr}. Alternatively, this p-value can be calculated by the Simes p-value (Simes 1986) of the family's member regions, see main text for details. Then within each family, the multiple-testing correction of the p-values of its members is calculated using the Benjamini-Hochberg method for controlling the false discovery rate (FDR)(Benjamini and Hochberg 1995), yielding the corrected p-value p_{fdr}. When p_{fdr} is below the specified FDR threshold, the multiple-testing criterion is fulfilled. However, according to (Bogomolov et al. 2020) the FDR threshold q_{set} has to be reduced by the proportion of "significant findings" or "discoveries" in the upper region. This procedure must only be applied within a region family, when its parent region was found to have a significant effect.

The following tables show the results of the atlas branches down to every region, where at least the uncorrected p-value is < 0.05. The column "sign" indicates columns with significant findings. Significance of multiple-testing corrected p-value: * p<0.05, ** p<0.01, *** p<0.001, **** p<0.0001.

u = uncorrected p-value ≤ 0.05 .

Table S1: Associations between PCL-R dimension 1 and regions of hierarchical brain atlas

REGION	t_uncorr	p_simes	p_fdr	sign	q_set
BRAIN	0.79	0.9730	0.9730		0.0500
├── BRAIN_L	0.78	0.5660	0.9730		0.0500
│ ├── DIENCEPHALON_L	1.12	0.1420	0.5660		0.0000
│ │ └── THALAMUS_L	1.09	0.4310	0.4310		0.0000
│ │ └── DORSAL_THALAMUS_L	1.03	0.2880	0.4310		0.0000
│ │ └── MEDIAL_GROUP_L	0.52	0.0957	0.2880		0.0000
│ │ └── THALAMUS-MV_L	2.24	0.0319	0.0957	u	0.0000
│ └── TELENCEPHALON_L	1.39	0.5510	0.7210		0.0000
│ ├── CEREBRAL_CORTEX_L	1.14	0.5510	0.5510		0.0000
│ │ ├── FRONTAL_LOBE_L	0.71	0.5710	0.6850		0.0000
│ │ │ ├── MEDIAL_ORBITOFRONTAL_CORTEX_L	-0.92	0.0594	0.6240		0.0000
│ │ │ │ └── AREA-FO2_L	-2.45	0.0198	0.0594	u	0.0000
│ │ │ ├── SUPERIOR_FRONTAL_SULCUS_L	1.90	0.1370	0.8870		0.0000
│ │ │ │ └── AREA-SFS1_L	2.07	0.0465	0.1370	u	0.0000
│ │ │ └── VENTRAL_PRECENTRAL_GYRUS_L	1.44	0.0272	0.5710	u	0.0000
│ │ │ └── AREA-6V1_L	2.89	0.0068	0.0272	u	0.0000
│ │ ├── INSULA_L	0.40	0.0918	0.5510		0.0000
│ │ │ └── AGRANULAR_INSULA_L	1.93	0.0306	0.0918	u	0.0000
│ │ │ └── AREA-IA3_L	2.73	0.0102	0.0306	u	0.0000
│ │ ├── LIMBIC_LOBE_L	1.29	0.3670	0.5510		0.0000
│ │ │ ├── HIPPOCAMPAL_FORMATION_L	2.50	0.1840	0.3670		0.0000
│ │ │ │ ├── AREA-EC_L	2.30	0.0283	0.1840	u	0.0000
│ │ │ │ ├── HIPPOCAMPUS-CA1_L	2.08	0.0459	0.1840	u	0.0000
│ │ │ │ └── HIPPOCAMPUS-SUBC_L	1.73	0.1040	0.2360		0.0000
│ │ │ │ └── HIPPOCAMPUS-SUBC.PROS_L	2.33	0.0261	0.1040	u	0.0000
│ │ │ └── PIRIFORM_CORTEX_L	1.99	0.1360	0.3670		0.0000
│ │ │ └── AREA-PIRT_L	2.10	0.0679	0.1360		0.0000
│ │ │ └── AREA-PIRT.TU_L	2.19	0.0358	0.0679	u	0.0000
│ │ └── TEMPORAL_LOBE_L	2.07	0.2220	0.5510		0.0000
│ │ └── GAPMAP-TEMPORAL-TO-PARIETAL_L	2.44	0.0202	0.2220	u	0.0000
│ └── CEREBRAL_NUCLEI_L	1.56	0.3380	0.5510		0.0000
│ └── AMYGDALA_L	1.69	0.4550	0.4550		0.0000
│ └── AMYGDALA-CM_L	1.99	0.0852	0.4550		0.0000
│ └── AMYGDALA-CM.AAA_L	2.30	0.0284	0.0852	u	0.0000
└── BRAIN_R	0.77	0.9730	0.9730		0.0500
└── TELENCEPHALON_R	1.14	0.9730	0.9730		0.0000
└── CEREBRAL_CORTEX_R	0.89	0.9730	0.9730		0.0000
└── FRONTAL_LOBE_R	-0.07	0.3280	0.9730		0.0000
├── MEDIAL_ORBITOFRONTAL_CORTEX_R	-1.76	0.0156	0.3280	u	0.0000
│ ├── AREA-FO1_R	-3.00	0.0052	0.0156	u	0.0000
│ └── AREA-FO2_R	-2.41	0.0218	0.0327	u	0.0000
├── MIDDLE_FRONTAL_GYRUS_R	-0.43	0.1670	0.9370		0.0000
│ └── AREA-8V2_R	-2.12	0.0418	0.1670	u	0.0000
├── SUPERIOR_FRONTAL_GYRUS_R	-1.27	0.1780	0.9370		0.0000
│ └── AREA-8D2_R	-2.09	0.0446	0.1780	u	0.0000
└── SUPERIOR_FRONTAL_SULCUS_R	-1.18	0.1270	0.9370		0.0000
└── AREA-6D3_R	-2.25	0.0317	0.1270	u	0.0000

Table S1: Associations between PCL-R dimension 1 and regions of the hierarchical brain atlas. p-values of higher-level regions where calculated using the Simes method (see above and main text).

Table S2: Associations between PCL-R dimension 2 and regions of hierarchical brain atlas

REGION	t_uncorr	p_simes	p_fdr	sign	q_set
BRAIN	-1.86	0.0240	0.0240	*	0.0500
├── BRAIN_L	-1.66	0.0136	0.0240	*	0.0500
│ ├── DIENCEPHALON_L	-2.10	0.0034	0.0136	**	0.0500
│ │ ├── SUBTHALAMUS_L	-3.44	0.0017	0.0034	**	0.0375
│ │ │ └── SUBTHALAMUS-STN_L	-3.44	0.0017	0.0017	**	0.0375
│ │ └── THALAMUS_L	-2.06	0.0135	0.0135	*	0.0375
│ │ ├── DORSAL_THALAMUS_L	-2.04	0.0090	0.0135	**	0.0375
│ │ │ ├── ANTERIOR_GROUP_L	-2.57	0.0018	0.0090	**	0.0250
│ │ │ │ ├── THALAMUS-AM_L	-3.82	0.0006	0.0018	***	0.0050
│ │ │ │ └── THALAMUS-AV_L	-3.25	0.0027	0.0041	**	0.0050
│ │ │ ├── INTRALAMINAR_GROUP_L	-2.19	0.0508	0.0635		0.0250
│ │ │ │ ├── THALAMUS-CL_L	-2.34	0.0254	0.0508	u	0.0050
│ │ │ │ └── THALAMUS-SPF_L	-2.46	0.0195	0.0508	u	0.0050
│ │ │ ├── MEDIAL_GROUP_L	-2.38	0.0408	0.0635	u	0.0250
│ │ │ │ ├── THALAMUS-MD_L	-2.17	0.0376	0.0564	u	0.0050
│ │ │ │ └── THALAMUS-PV_L	-2.61	0.0136	0.0408	u	0.0050
│ │ │ └── VENTRAL_GROUP_L	-2.40	0.0257	0.0635	u	0.0250
│ │ │ ├── THALAMUS-VAMC_L	-2.96	0.0057	0.0257	u	0.0050
│ │ │ ├── THALAMUS-VA_L	-2.84	0.0077	0.0257	u	0.0050
│ │ │ ├── THALAMUS-VIM_L	-2.16	0.0380	0.0633	u	0.0050
│ │ │ ├── THALAMUS-VLA_L	-2.61	0.0136	0.0340	u	0.0050
│ │ │ ├── THALAMUS-VM_L	-2.84	0.0077	0.0257	u	0.0050
│ │ │ └── THALAMUS-VPMPC_L	-2.23	0.0332	0.0633	u	0.0050
│ │ └── VENTRAL_THALAMUS_L	-2.29	0.0050	0.0135	**	0.0375
│ │ └── THALAMUS-ZI_L	-3.28	0.0025	0.0050	**	0.0250
│ ├── MESENCEPHALON_L	-1.93	0.0357	0.0476	*	0.0500
│ │ └── MIDBRAIN_TEGMENTUM_L	-2.48	0.0357	0.0357	*	0.0375
│ │ ├── NUCLEUS_RUBER_PARVOCELL_PART_L	-2.49	0.0180	0.0357	*	0.0375
│ │ │ └── MIDBRAIN-NRP_L	-2.49	0.0180	0.0180	*	0.0250
│ │ └── SUBSTANTIA_NIGRA_L	-2.53	0.0238	0.0357	*	0.0375
│ │ ├── MIDBRAIN-SNC_L	-2.36	0.0246	0.0246	*	0.0250
│ │ └── MIDBRAIN-SNR_L	-2.67	0.0119	0.0238	*	0.0250
│ ├── METENCEPHALON_L	-2.26	0.0099	0.0198	**	0.0500
│ │ ├── CEREBELLUM_L	-2.11	0.0099	0.0099	**	0.0375
│ │ │ ├── CEREBELLAR_CORTEX_L	-2.01	0.0348	0.0522	u	0.0375
│ │ │ │ ├── CEREBELLUM_ANT_LOBE_L	-2.97	0.0116	0.0348	u	0.0125
│ │ │ │ │ ├── Cerebellum_3_L	-2.68	0.0116	0.0116	u	0.0000
│ │ │ │ │ └── Cerebellum_4_5_L	-2.95	0.0059	0.0116	u	0.0000
│ │ │ │ ├── CEREBELLUM_POST_LOBE_L	-1.67	0.1330	0.1330		0.0125
│ │ │ │ │ ├── Cerebellum_6_L	-2.05	0.0489	0.1410	u	0.0000
│ │ │ │ │ └── Cerebellum_9_L	-2.47	0.0190	0.1330	u	0.0000
│ │ │ │ └── CEREBELLUM_VERMIS	-2.69	0.0946	0.1330		0.0125
│ │ │ │ ├── Vermis_3	-2.14	0.0403	0.0946	u	0.0000
│ │ │ │ ├── Vermis_4_5	-2.20	0.0348	0.0946	u	0.0000
│ │ │ │ ├── Vermis_6	-2.55	0.0156	0.0946	u	0.0000
│ │ │ │ └── Vermis_8	-2.06	0.0473	0.0946	u	0.0000
│ │ │ ├── CEREBELLAR_NUCLEI_L	-2.37	0.0578	0.0578		0.0375
│ │ │ │ └── DENTATE_NUCLEUS_L	-2.19	0.0454	0.0578	u	0.0125
│ │ │ │ ├── CEREBELLUM-NDENTD_L	-2.06	0.0476	0.0476	u	0.0000
│ │ │ │ └── CEREBELLUM-NDENTV_L	-2.39	0.0227	0.0454	u	0.0000
│ │ │ └── CEREBELLAR_WM_L	-3.18	0.0033	0.0099	**	0.0375
│ │ └── PONS_L	-3.01	0.0062	0.0099	**	0.0375
│ │ ├── PONTINE_TEGMENTUM_L	-2.31	0.0274	0.0274	*	0.0375
│ │ └── VENTRAL_PONS_L	-3.20	0.0031	0.0062	**	0.0375
│ └── TELENCEPHALON_L	-0.90	0.2080	0.2080		0.0500
│ ├── CEREBRAL_CORTEX_L	-0.72	0.2080	0.2080		0.0375
│ │ ├── FRONTAL_LOBE_L	-1.70	0.3680	0.3680		0.0000
│ │ │ ├── DORSAL_PRECENTRAL_GYRUS_L	-2.42	0.0186	0.3680	u	0.0000
│ │ │ │ └── AREA-6D1_L	-2.77	0.0093	0.0186	u	0.0000
│ │ │ ├── LATERAL_ORBITOFRONTAL_CORTEX_L	-1.10	0.1800	0.5390		0.0000
│ │ │ │ └── AREA-FO6_L	-2.09	0.0449	0.1800	u	0.0000
│ │ │ └── MEDIAL_ORBITOFRONTAL_CORTEX_L	-1.08	0.0668	0.3680		0.0000
│ │ │ ├── AREA-FO1_L	-2.33	0.0262	0.0668	u	0.0000
│ │ │ └── AREA-FO2_L	-2.09	0.0445	0.0668	u	0.0000
│ │ ├── INSULA_L	-2.32	0.0468	0.2080	u	0.0000
│ │ │ ├── DYSGRANULAR_INSULA_L	-2.02	0.1470	0.2210		0.0000
│ │ │ │ ├── AREA-ID4_L	-2.52	0.0168	0.1470	u	0.0000
│ │ │ │ └── AREA-ID5_L	-2.28	0.0295	0.1470	u	0.0000
│ │ │ └── GRANULAR_INSULA_L	-2.89	0.0156	0.0468	u	0.0000
│ │ │ ├── AREA-IG1_L	-2.72	0.0104	0.0156	u	0.0000

REGION	t_uncorr	p_simes	p_fdr	sign	q_set
│ │ │ ├── AREA-IG2_L	-2.44	0.0206	0.0206	u	0.0000
│ │ │ └── AREA-IG3_L	-2.75	0.0097	0.0156	u	0.0000
│ │ ├── LIMBIC_LOBE_L	0.95	0.1100	0.2210		0.0000
│ │ │ ├── HIPPOCAMPAL_FORMATION_L	1.09	0.0552	0.1100		0.0000
│ │ │ │ └── AREA-EC_L	2.89	0.0069	0.0552	u	0.0000
│ │ │ └── PIRIFORM_CORTEX_L	2.25	0.0384	0.1100	u	0.0000
│ │ │ └── AREA-PIRT_L	2.66	0.0192	0.0384	u	0.0000
│ │ │ ├── AREA-PIRT.TIT_L	2.47	0.0192	0.0192	u	0.0000
│ │ │ └── AREA-PIRT.TU_L	2.62	0.0135	0.0192	u	0.0000
│ │ ├── OCCIPITAL_LOBE_L	-0.68	0.3590	0.3680		0.0000
│ │ │ └── LATERAL_OCCIPITAL_CORTEX_L	-2.05	0.0897	0.3590		0.0000
│ │ │ └── AREA-HOC4LP_L	-2.27	0.0299	0.0897	u	0.0000
│ │ ├── PARIETAL_LOBE_L	-0.57	0.3510	0.3680		0.0000
│ │ │ ├── INFERIOR_PARIETAL_LOBULE_L	-0.13	0.1330	0.3510		0.0000
│ │ │ │ └── AREA-PFCM_L	-2.47	0.0190	0.1330	u	0.0000
│ │ │ ├── INTRAPARIETAL_SULCUS_L	-2.00	0.1760	0.3510		0.0000
│ │ │ │ ├── AREA-HIP3_L	-2.10	0.0439	0.1760	u	0.0000
│ │ │ │ └── AREA-HIP4_L	-2.32	0.0272	0.1760	u	0.0000
│ │ │ └── PARIETAL_OPERCULUM_L	-0.05	0.0602	0.3510		0.0000
│ │ │ ├── AREA-OP2_L	-2.27	0.0301	0.0602	u	0.0000
│ │ │ └── AREA-OP4_L	2.54	0.0163	0.0602	u	0.0000
│ │ └── TEMPORAL_LOBE_L	1.31	0.0693	0.2080		0.0000
│ │ ├── COLLATERAL_SULCUS_L	2.92	0.0063	0.0693	u	0.0000
│ │ │ └── AREA-COS1_L	2.92	0.0063	0.0063	u	0.0000
│ │ ├── FUSIFORM_GYRUS_L	-0.37	0.1380	0.2280		0.0000
│ │ │ └── AREA-FG5_L	2.31	0.0275	0.1380	u	0.0000
│ │ ├── GAPMAP-TEMPORAL-TO-PARIETAL_L	2.05	0.0491	0.2280	u	0.0000
│ │ ├── HESCHL_GYRUS_L	-1.95	0.0738	0.2280		0.0000
│ │ │ └── AREA-TE-1.1_L	-2.36	0.0246	0.0738	u	0.0000
│ │ └── SUPERIOR_TEMPORAL_GYRUS_L	-0.93	0.0981	0.2280		0.0000
│ │ └── AREA-TE-2.2_L	-2.23	0.0327	0.0981	u	0.0000
│ └── CEREBRAL_NUCLEI_L	-1.20	0.1670	0.2080		0.0375
│ └── BASAL_GANGLIA_L	-1.09	0.0558	0.1670		0.0000
│ ├── Pallidum_L	-2.77	0.0093	0.0558	u	0.0000
│ └── VENTRAL_PALLIDUM_L	-2.41	0.0217	0.0651	u	0.0000
│ └── VENTRALPALLIDUM-VP_L	-2.41	0.0217	0.0217	u	0.0000
└── BRAIN_R	-1.99	0.0240	0.0240	*	0.0500
├── DIENCEPHALON_R	-1.28	0.0136	0.0272	*	0.0500
│ ├── SUBTHALAMUS_R	-2.90	0.0068	0.0136	**	0.0500
│ │ └── SUBTHALAMUS-STN_R	-2.90	0.0068	0.0068	**	0.0250
│ └── THALAMUS_R	-1.27	0.0660	0.0660		0.0500
│ ├── DORSAL_THALAMUS_R	-1.25	0.0450	0.0675	u	0.0250
│ │ ├── ANTERIOR_GROUP_R	-3.04	0.0117	0.0450	u	0.0000
│ │ │ ├── THALAMUS-AM_R	-3.11	0.0039	0.0117	u	0.0000
│ │ │ └── THALAMUS-AV_R	-2.84	0.0078	0.0117	u	0.0000
│ │ ├── MEDIAL_GROUP_R	-0.98	0.0180	0.0450	u	0.0000
│ │ │ └── THALAMUS-PV_R	-2.94	0.0060	0.0180	u	0.0000
│ │ └── VENTRAL_GROUP_R	-1.90	0.0395	0.0658	u	0.0000
│ │ ├── THALAMUS-VAMC_R	-2.83	0.0079	0.0395	u	0.0000
│ │ ├── THALAMUS-VA_R	-3.10	0.0040	0.0395	u	0.0000
│ │ ├── THALAMUS-VLA_R	-2.50	0.0179	0.0447	u	0.0000
│ │ └── THALAMUS-VM_R	-2.51	0.0173	0.0447	u	0.0000
│ └── VENTRAL_THALAMUS_R	-1.34	0.0220	0.0660	u	0.0250
│ └── THALAMUS-ZI_R	-2.70	0.0110	0.0220	u	0.0000
├── MESENCEPHALON_R	-2.14	0.0303	0.0404	*	0.0500
│ └── MIDBRAIN_TEGMENTUM_R	-2.64	0.0303	0.0303	*	0.0500
│ ├── NUCLEUS_RUBER_PARVOCELL_PART_R	-2.45	0.0202	0.0303	*	0.0500
│ │ └── MIDBRAIN-NRP_R	-2.45	0.0202	0.0202	*	0.0333
│ └── SUBSTANTIA_NIGRA_R	-2.67	0.0144	0.0303	*	0.0500
│ ├── MIDBRAIN-SNC_R	-2.43	0.0207	0.0207	*	0.0333
│ └── MIDBRAIN-SNR_R	-2.87	0.0072	0.0144	**	0.0333
├── METENCEPHALON_R	-2.80	0.0060	0.0240	**	0.0500
│ ├── CEREBELLUM_R	-2.63	0.0039	0.0060	**	0.0500
│ │ ├── CEREBELLAR_CORTEX_R	-2.46	0.0792	0.0792		0.0500
│ │ │ ├── CEREBELLUM_ANT_LOBE_R	-2.37	0.0396	0.0792	u	0.0167
│ │ │ │ └── Cerebellum_4_5_R	-2.45	0.0198	0.0396	u	0.0000
│ │ │ └── CEREBELLUM_POST_LOBE_R	-2.30	0.0805	0.0805		0.0167
│ │ │ ├── Cerebellum_6_R	-2.66	0.0121	0.0805	u	0.0000
│ │ │ ├── Cerebellum_9_R	-2.29	0.0288	0.0805	u	0.0000
│ │ │ └── Cerebellum_Crus1_R	-2.21	0.0345	0.0805	u	0.0000
│ │ ├── CEREBELLAR_NUCLEI_R	-2.64	0.0437	0.0655	u	0.0500
│ │ │ ├── CEREBELLUM-NINTERP_R	-2.10	0.0437	0.0437	u	0.0167
│ │ │ ├── DENTATE_NUCLEUS_R	-2.45	0.0292	0.0437	u	0.0167
│ │ │ │ ├── CEREBELLUM-NDENTD_R	-2.24	0.0322	0.0322	u	0.0000
│ │ │ │ └── CEREBELLUM-NDENTV_R	-2.58	0.0146	0.0292	u	0.0000

REGION	t_uncorr	p_simes	p_fdr	sign	q_set
│ │ │ └── FASTIGIAL_NUCLEUS_R	-2.10	0.0433	0.0437	u	0.0167
│ │ │ └── CEREBELLUM-NFAST_R	-2.10	0.0433	0.0433	u	0.0000
│ │ └── CEREBELLAR_WM_R	-3.52	0.0013	0.0039	**	0.0500
│ └── PONS_R	-3.08	0.0060	0.0060	**	0.0500
│ ├── PONTINE_TEGMENTUM_R	-2.51	0.0175	0.0175	*	0.0500
│ └── VENTRAL_PONS_R	-3.21	0.0030	0.0060	**	0.0500
└── TELENCEPHALON_R	-1.14	0.0450	0.0450	*	0.0500
├── CEREBRAL_CORTEX_R	-0.81	0.7590	0.7590		0.0500
│ ├── FRONTAL_LOBE_R	-1.73	0.3890	0.7590		0.0250
│ │ ├── FRONTAL_OPERCULUM_R	-1.25	0.2630	0.8190		0.0000
│ │ │ └── AREA-OP5_R	-2.10	0.0438	0.2630	u	0.0000
│ │ ├── MEDIAL_ORBITOFRONTAL_CORTEX_R	-1.86	0.0201	0.3890	u	0.0000
│ │ │ ├── AREA-FO1_R	-2.90	0.0067	0.0201	u	0.0000
│ │ │ └── AREA-FO2_R	-2.05	0.0483	0.0725	u	0.0000
│ │ └── SUPERIOR_FRONTAL_SULCUS_R	-2.90	0.0522	0.3890		0.0000
│ │ ├── AREA-SFG3_R	-2.35	0.0253	0.0522	u	0.0000
│ │ └── AREA-SFS1_R	-2.33	0.0261	0.0522	u	0.0000
│ ├── INSULA_R	-1.88	0.2880	0.7590		0.0250
│ │ └── DYSGRANULAR_INSULA_R	-1.77	0.0960	0.2880		0.0000
│ │ └── AREA-ID4_R	-2.76	0.0096	0.0960	u	0.0000
│ ├── OCCIPITAL_LOBE_R	-1.24	0.5060	0.7590		0.0250
│ │ └── LATERAL_OCCIPITAL_CORTEX_R	-1.56	0.1500	0.5060		0.0000
│ │ └── AREA-HOC5_R	-2.04	0.0499	0.1500	u	0.0000
│ └── TEMPORAL_LOBE_R	1.37	0.3870	0.7590		0.0250
│ ├── COLLATERAL_SULCUS_R	2.20	0.0352	0.3870	u	0.0000
│ │ └── AREA-COS1_R	2.20	0.0352	0.0352	u	0.0000
│ └── FUSIFORM_GYRUS_R	0.72	0.1260	0.4140		0.0000
│ └── AREA-FG5_R	2.35	0.0252	0.1260	u	0.0000
└── CEREBRAL_NUCLEI_R	-2.13	0.0225	0.0450	*	0.0500
├── AMYGDALA_R	-0.45	0.5020	0.5020		0.0250
│ ├── AMYGDALA-MF_R	-1.90	0.0864	0.5020		0.0083
│ │ └── AMYGDALA-MF.LM_R	-2.11	0.0432	0.0864	u	0.0000
│ └── AMYGDALA-SF_R	-0.50	0.1430	0.5020		0.0083
│ └── AMYGDALA-SF.AHI_R	-2.06	0.0478	0.1430	u	0.0000
├── BASAL_FOREBRAIN_R	-1.85	0.0237	0.0356	u	0.0250
│ └── SUBLENTICULAR_BASAL_FOREBRAIN_R	-2.83	0.0079	0.0237	u	0.0083
│ └── BASALFOREBRAIN-CH-4_R	-2.83	0.0079	0.0079	u	0.0000
└── BASAL_GANGLIA_R	-2.03	0.0075	0.0225	**	0.0250
├── N_Acc_R	-2.22	0.0333	0.0500	u	0.0083
├── Pallidum_R	-3.28	0.0025	0.0075	**	0.0083
├── VENTRAL_PALLIDUM_R	-3.34	0.0022	0.0075	**	0.0083
│ └── VENTRALPALLIDUM-VP_R	-3.34	0.0022	0.0022	**	0.0028
└── VENTRAL_STRIATUM_R	-2.95	0.0082	0.0164	u	0.0083
├── VENTRALSTRIATUM-ACBL_R	-3.19	0.0032	0.0082	u	0.0028
├── VENTRALSTRIATUM-FUCD_R	-2.22	0.0339	0.0452	u	0.0028
└── VENTRALSTRIATUM-FUP_R	-3.10	0.0041	0.0082	u	0.0028

Table S2: Associations between PCL-R dimension 2 and regions of the hierarchical brain atlas. p-values of higher-level regions where calculated using the Simes method (see above and main text).

Table S3: Associations between PCL-R total and regions of hierarchical brain atlas

REGION	t_uncorr	p_simes	p_fdr	sign	q_set
BRAIN	-0.84	0.6000	0.6000		0.0500
├── BRAIN_L	-0.72	0.6000	0.6000		0.0500
│ ├── METENCEPHALON_L	-2.18	0.1500	0.6000		0.0000
│ │ └── CEREBELLUM_L	-2.17	0.1110	0.1500		0.0000
│ │ ├── CEREBELLAR_CORTEX_L	-2.16	0.1820	0.2230		0.0000
│ │ │ ├── CEREBELLUM_POST_LOBE_L	-2.06	0.1410	0.1820		0.0000
│ │ │ │ └── Cerebellum_8_L	-2.23	0.0329	0.1410	u	0.0000
│ │ │ └── CEREBELLUM_VERMIS	-1.98	0.1820	0.1820		0.0000
│ │ │ └── Vermis_8	-2.39	0.0228	0.1820	u	0.0000
│ │ └── CEREBELLAR_WM_L	-2.17	0.0369	0.1110	u	0.0000
│ └── TELENCEPHALON_L	0.02	0.6010	0.8020		0.0000
│ └── CEREBRAL_CORTEX_L	-0.02	0.3010	0.6010		0.0000
│ ├── FRONTAL_LOBE_L	-0.78	0.1700	0.3010		0.0000
│ │ └── MEDIAL_ORBITOFRONTAL_CORTEX_L	-1.55	0.0081	0.1700	u	0.0000
│ │ ├── AREA-FO1_L	-2.89	0.0067	0.0100	u	0.0000
│ │ └── AREA-FO2_L	-3.25	0.0027	0.0081	u	0.0000
│ ├── LIMBIC_LOBE_L	1.57	0.0544	0.3010		0.0000
│ │ ├── HIPPOCAMPAL_FORMATION_L	2.28	0.0272	0.0544	u	0.0000
│ │ │ └── AREA-EC_L	3.16	0.0034	0.0272	u	0.0000
│ │ └── PIRIFORM_CORTEX_L	2.40	0.0152	0.0544	u	0.0000
│ │ └── AREA-PIRT_L	2.71	0.0076	0.0152	u	0.0000
│ │ ├── AREA-PIRT.TIT_L	2.37	0.0240	0.0240	u	0.0000
│ │ └── AREA-PIRT.TU_L	3.11	0.0038	0.0076	u	0.0000
│ ├── PARIETAL_LOBE_L	-0.14	0.2000	0.3010		0.0000
│ │ ├── INFERIOR_PARIETAL_LOBULE_L	-0.13	0.2450	0.5440		0.0000
│ │ │ └── AREA-PFCM_L	-2.20	0.0350	0.2450	u	0.0000
│ │ └── PARIETO-OCCIPITAL_SULCUS_L	2.22	0.0334	0.2000	u	0.0000
│ │ └── AREA-HPO1_L	2.22	0.0334	0.0334	u	0.0000
│ └── TEMPORAL_LOBE_L	1.67	0.1280	0.3010		0.0000
│ ├── COLLATERAL_SULCUS_L	2.23	0.0324	0.1280	u	0.0000
│ │ └── AREA-COS1_L	2.23	0.0324	0.0324	u	0.0000
│ ├── GAPMAP-TEMPORAL-TO-PARIETAL_L	2.45	0.0196	0.1280	u	0.0000
│ └── SUPERIOR_TEMPORAL_GYRUS_L	-1.19	0.0348	0.1280	u	0.0000
│ └── AREA-TE-2.2_L	-2.67	0.0116	0.0348	u	0.0000
└── BRAIN_R	-0.95	0.5290	0.6000		0.0500
├── METENCEPHALON_R	-2.23	0.1320	0.5290		0.0000
│ └── CEREBELLUM_R	-2.19	0.1320	0.1320		0.0000
│ └── CEREBELLAR_CORTEX_R	-2.16	0.0882	0.1320		0.0000
│ └── CEREBELLUM_POST_LOBE_R	-2.15	0.0441	0.0882	u	0.0000
│ ├── Cerebellum_6_R	-2.64	0.0126	0.0441	u	0.0000
│ └── Cerebellum_Crus1_R	-2.87	0.0070	0.0441	u	0.0000
└── TELENCEPHALON_R	-0.30	0.3020	0.6050		0.0000
├── CEREBRAL_CORTEX_R	-0.28	0.1510	0.3020		0.0000
│ ├── FRONTAL_LOBE_R	-1.45	0.0252	0.1510	u	0.0000
│ │ ├── FRONTAL_OPERCULUM_R	-1.32	0.1210	0.6130		0.0000
│ │ │ └── AREA-OP5_R	-2.44	0.0202	0.1210	u	0.0000
│ │ ├── MEDIAL_ORBITOFRONTAL_CORTEX_R	-2.31	0.0012	0.0252	u	0.0000
│ │ │ ├── AREA-FO1_R	-3.92	0.0004	0.0012	u	0.0000
│ │ │ └── AREA-FO2_R	-3.24	0.0028	0.0042	u	0.0000
│ │ ├── POSTERIOR_SFG_R	-2.09	0.0447	0.3130	u	0.0000
│ │ │ └── AREA-6MA_R	-2.09	0.0447	0.0447	u	0.0000
│ │ ├── SUPERIOR_FRONTAL_GYRUS_R	-2.53	0.0124	0.1300	u	0.0000
│ │ │ └── AREA-8D2_R	-3.19	0.0031	0.0124	u	0.0000
│ │ └── SUPERIOR_FRONTAL_SULCUS_R	-2.74	0.1460	0.6130		0.0000
│ │ └── AREA-SFG3_R	-2.18	0.0365	0.1460	u	0.0000
│ ├── INSULA_R	-1.27	0.4380	0.8780		0.0000
│ │ └── DYSGRANULAR_INSULA_R	-1.34	0.1460	0.4380		0.0000
│ │ └── AREA-ID4_R	-2.58	0.0146	0.1460	u	0.0000
│ └── LIMBIC_LOBE_R	0.61	0.6050	0.8780		0.0000
│ └── HIPPOCAMPAL_FORMATION_R	2.07	0.2360	0.6050		0.0000
│ └── HIPPOCAMPUS-CA1_R	2.28	0.0295	0.2360	u	0.0000
└── CEREBRAL_NUCLEI_R	-0.60	0.7610	0.7610		0.0000
└── BASAL_GANGLIA_R	-0.60	0.4840	0.7610		0.0000
└── VENTRAL_STRIATUM_R	-1.51	0.1640	0.4910		0.0000
└── VENTRALSTRIATUM-ACBL_R	-2.13	0.0409	0.1640	u	0.0000

Table S3: Associations between PCL-R total score and regions of the hierarchical brain atlas. p-values of higher-level regions where calculated using the Simes method (see above and main text).

Figure S4: Associations between PCL-R total and brain regions

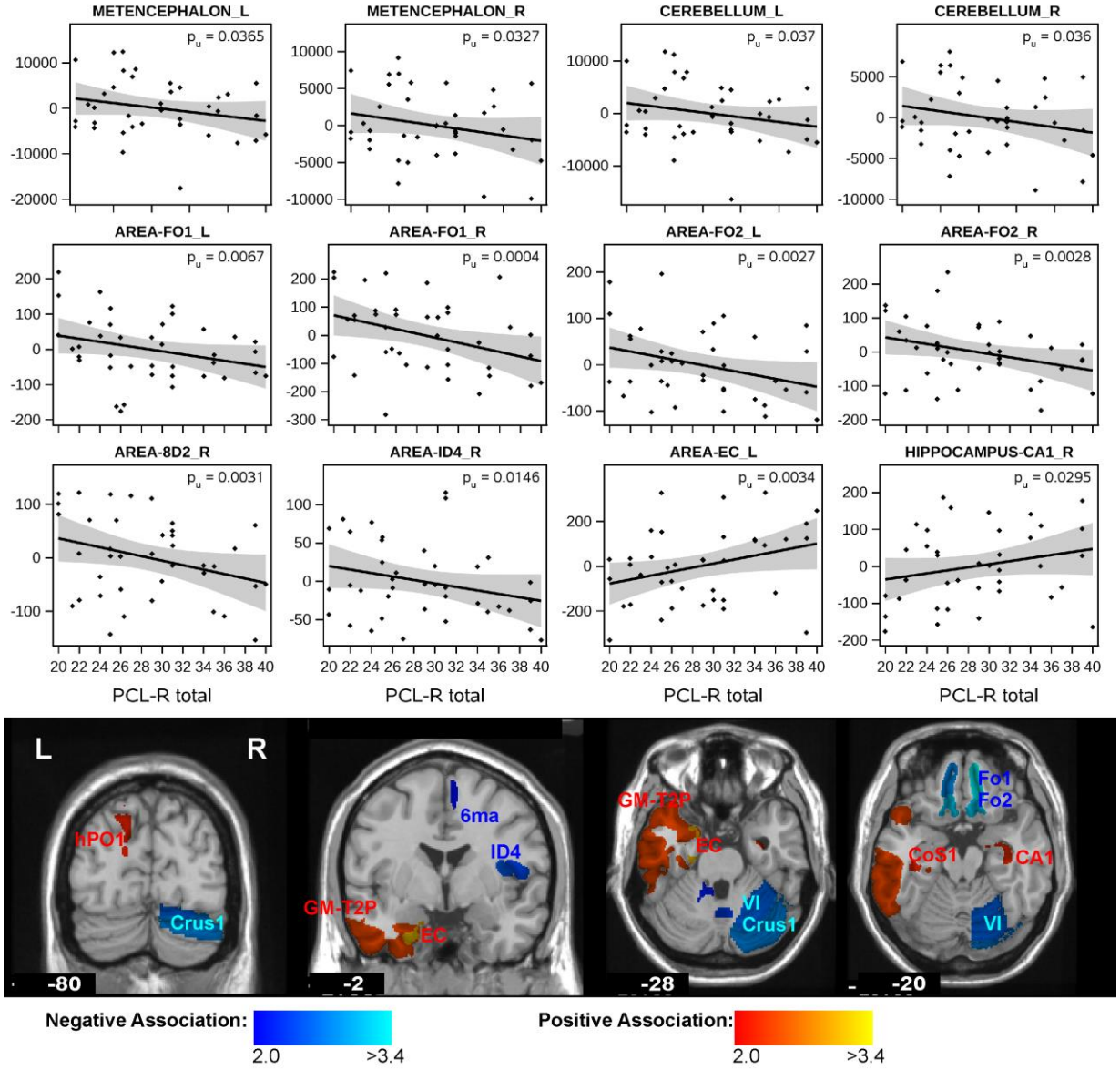


Figure S4: Associations of PCL-R total with volumes of brain regions in psychopathic subjects with PCL-R total ≥ 20. Volume data were adjusted for study (acquisition site), age and intra-cranial volume. The scatter-plots show the individual data points, the regression line with its confidence limits and the p-value (uncorr.). The bottom row shows the brain regions, where an association with $p_{uncorr} < 0.05$ had been found, with colors corresponding to the statistical score (student's t). Blue-cyan: Negative association, red-yellow: positive association.

Table S5: Group differences between psychopathic subjects and controls in regions of the hierarchical atlas

REGION	t_uncorr	p_uncorr	p_fdr	sign	q_set
BRAIN	-2.96	0.0042	0.0042	**	0.0500
├── BRAIN_L	-2.95	0.0043	0.0061	**	0.0500
│ ├── METENCEPHALON_L	-1.87	0.0662	0.1320		0.0500
│ │ └── CEREBELLUM_L	-1.96	0.0542	0.1080		0.0000
│ │ ├── CEREBELLAR_CORTEX_L	-1.96	0.0537	0.0805		0.0000
│ │ │ ├── CEREBELLUM_POST_LOBE_L	-2.20	0.0310	0.0930	u	0.0000
│ │ │ │ └── Cerebellum_6_L	-2.20	0.0310	0.0933	u	0.0000
│ │ │ └── CEREBELLUM_VERMIS	-0.38	0.7040	0.8320		0.0000
│ │ │ └── Vermis_10	-2.43	0.0176	0.1410	u	0.0000
│ │ └── CEREBELLAR_NUCLEI_L	-2.07	0.0423	0.0805	u	0.0000
│ │ └── DENTATE_NUCLEUS_L	-1.90	0.0612	0.1840		0.0000
│ │ └── CEREBELLUM-NDENTD_L	-2.05	0.0436	0.0872	u	0.0000
│ └── TELENCEPHALON_L	-2.46	0.0162	0.0648	u	0.0500
│ ├── CEREBRAL_CORTEX_L	-2.83	0.0061	0.0122	u	0.0000
│ │ ├── FRONTAL_LOBE_L	-2.61	0.0111	0.0666	u	0.0000
│ │ │ ├── GAPMAP-FRONTAL-TO-OCCIPITAL_L	-2.51	0.0142	0.2980	u	0.0000
│ │ │ ├── MIDDLE_FRONTAL_GYRUS_L	-1.78	0.0789	0.3260		0.0000
│ │ │ │ └── AREA-8V2_L	-2.15	0.0353	0.1410	u	0.0000
│ │ │ ├── SUPERIOR_FRONTAL_GYRUS_L	-1.88	0.0636	0.3260		0.0000
│ │ │ │ ├── AREA-SFG2_L	-2.20	0.0309	0.0724	u	0.0000
│ │ │ │ └── AREA-SFG4_L	-2.13	0.0362	0.0724	u	0.0000
│ │ │ └── SUPERIOR_FRONTAL_SULCUS_L	-1.62	0.1090	0.3260		0.0000
│ │ │ └── AREA-6D3_L	-2.31	0.0236	0.0944	u	0.0000
│ │ ├── LIMBIC_LOBE_L	-1.95	0.0548	0.1110		0.0000
│ │ │ └── HIPPOCAMPAL_FORMATION_L	-1.78	0.0796	0.3180		0.0000
│ │ │ └── HIPPOCAMPUS-SUBC_L	-1.97	0.0531	0.1890		0.0000
│ │ │ └── HIPPOCAMPUS-SUBC.PRES_L	-2.10	0.0390	0.1160	u	0.0000
│ │ ├── OCCIPITAL_LOBE_L	-0.96	0.3400	0.3400		0.0000
│ │ │ └── DORSAL_OCCIPITAL_CORTEX_L	-2.06	0.0431	0.1720	u	0.0000
│ │ │ ├── AREA-HOC4D_L	-2.44	0.0173	0.0516	u	0.0000
│ │ │ └── AREA-HOC6_L	-2.16	0.0344	0.0516	u	0.0000
│ │ ├── PARIETAL_LOBE_L	-1.56	0.1220	0.1840		0.0000
│ │ │ ├── INFERIOR_PARIETAL_LOBULE_L	-0.95	0.3460	0.4800		0.0000
│ │ │ │ └── AREA-PGP_L	-2.16	0.0339	0.2370	u	0.0000
│ │ │ ├── INTRAPARIETAL_SULCUS_L	-2.79	0.0067	0.0402	u	0.0000
│ │ │ │ ├── AREA-HIP1_L	-3.89	0.0002	0.0016	u	0.0000
│ │ │ │ ├── AREA-HIP2_L	-2.70	0.0087	0.0232	u	0.0000
│ │ │ │ └── AREA-HIP3_L	-2.75	0.0075	0.0232	u	0.0000
│ │ │ └── PARIETAL_OPERCULUM_L	1.06	0.2930	0.4800		0.0000
│ │ │ └── AREA-OP1_L	2.44	0.0174	0.0696	u	0.0000
│ │ └── TEMPORAL_LOBE_L	-1.95	0.0555	0.1110		0.0000
│ │ ├── GAPMAP-FRONTAL-TO-TEMPORAL-II_L	-2.04	0.0450	0.1240	u	0.0000
│ │ ├── OCCIPITO-TEMPORAL_SULCUS_L	2.57	0.0122	0.1240	u	0.0000
│ │ │ └── AREA-OTS1_L	2.57	0.0122	0.0122	u	0.0000
│ │ ├── PARAHIPPOCAMPAL_GYRUS_L	-2.31	0.0235	0.1240	u	0.0000
│ │ │ ├── AREA-PH2_L	-2.00	0.0494	0.0741	u	0.0000
│ │ │ └── AREA-PH3_L	-2.49	0.0152	0.0456	u	0.0000
│ │ └── SUPERIOR_TEMPORAL_SULCUS_L	-2.16	0.0338	0.1240	u	0.0000
│ │ └── AREA-STS2_L	-2.06	0.0435	0.0809	u	0.0000
│ └── CEREBRAL_NUCLEI_L	-0.53	0.6000	0.6000		0.0000
│ └── AMYGDALA_L	-1.53	0.1300	0.3890		0.0000
│ ├── AMYGDALA-CM_L	-1.52	0.1340	0.2350		0.0000
│ │ └── AMYGDALA-CM.ME_L	-2.06	0.0426	0.1280	u	0.0000
│ ├── AMYGDALA-LB_L	-1.29	0.2010	0.2820		0.0000
│ │ └── AMYGDALA-LB.BM_L	-2.29	0.0251	0.1000	u	0.0000
│ └── AMYGDALA-MF_L	-2.07	0.0418	0.2350	u	0.0000
│ └── AMYGDALA-MF.ICM_L	-2.22	0.0296	0.0592	u	0.0000
└── BRAIN_R	-2.83	0.0061	0.0061	**	0.0500
├── DIENCEPHALON_R	-0.58	0.5630	0.5630		0.0500
│ └── THALAMUS_R	-0.59	0.5540	0.9080		0.0125
│ └── METATHALAMUS_R	-1.68	0.0969	0.2910		0.0000
│ └── LATERAL_GENICULATE_BODY_R	-2.14	0.0356	0.0712	u	0.0000
│ └── METATHALAMUS-CGL_R	-2.14	0.0356	0.0356	u	0.0000
└── TELENCEPHALON_R	-2.65	0.0098	0.0392	**	0.0500
├── CEREBRAL_CORTEX_R	-3.10	0.0028	0.0056	**	0.0125
│ ├── FRONTAL_LOBE_R	-1.75	0.0843	0.1010		0.0063
│ │ ├── DORSAL_PRECENTRAL_GYRUS_R	-1.89	0.0626	0.3290		0.0000
│ │ │ └── AREA-6D2_R	-2.00	0.0493	0.0986	u	0.0000

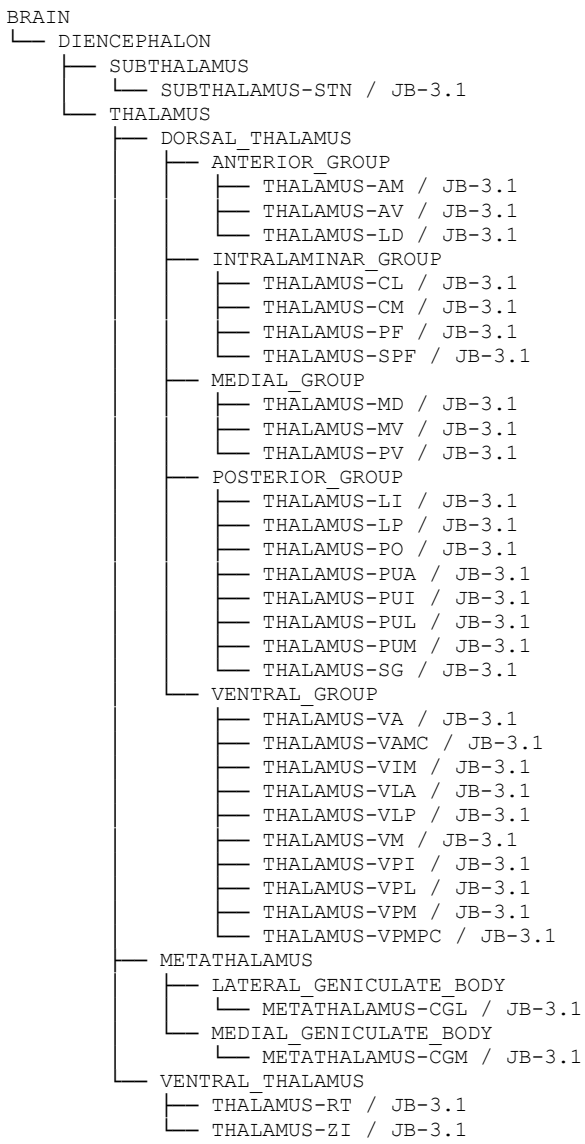
REGION	t_uncorr	p_uncorr	p_fdr	sign	q_set
│ │ ├── GAPMAP-FRONTAL-TO-OCCIPITAL_R	-2.89	0.0051	0.0672	u	0.0000
│ │ ├── INFERIOR_FRONTAL_SULCUS_R	-1.47	0.1460	0.4700		0.0000
│ │ │ └── AREA-IFS1_R	-2.03	0.0458	0.2160	u	0.0000
│ │ ├── MESIAL_PRECENTRAL_GYRUS_R	-2.81	0.0064	0.0672	u	0.0000
│ │ │ └── AREA-6MP_R	-2.81	0.0064	0.0064	u	0.0000
│ │ ├── MIDDLE_FRONTAL_GYRUS_R	-1.16	0.2490	0.5820		0.0000
│ │ │ └── AREA-MFG4_R	-2.32	0.0230	0.0920	u	0.0000
│ │ ├── POSTERIOR_SFG_R	-2.58	0.0121	0.0847	u	0.0000
│ │ │ └── AREA-6MA_R	-2.58	0.0121	0.0121	u	0.0000
│ │ └── SUPERIOR_FRONTAL_SULCUS_R	-1.43	0.1570	0.4700		0.0000
│ │ └── AREA-6D3_R	-2.04	0.0454	0.1820	u	0.0000
│ ├── INSULA_R	-2.54	0.0132	0.0396	u	0.0063
│ │ └── DYSGRANULAR_INSULA_R	-2.46	0.0161	0.0483	u	0.0000
│ │ ├── AREA-ID4_R	-2.17	0.0331	0.1650	u	0.0000
│ │ └── AREA-ID9_R	-2.20	0.0309	0.1650	u	0.0000
│ ├── LIMBIC_LOBE_R	-2.91	0.0048	0.0288	u	0.0063
│ │ ├── FRONTAL_CINGULATE_GYRUS_R	-1.33	0.1870	0.2490		0.0000
│ │ │ └── AREA-33_R	-2.14	0.0355	0.2260	u	0.0000
│ │ ├── HIPPOCAMPAL_FORMATION_R	-3.17	0.0022	0.0088	u	0.0000
│ │ │ ├── HIPPOCAMPUS-CA1_R	-2.17	0.0332	0.1330	u	0.0000
│ │ │ └── HIPPOCAMPUS-SUBC_R	-4.37	0.0000	0.0000	u	0.0000
│ │ │ ├── HIPPOCAMPUS-SUBC.PAS_R	-2.60	0.0112	0.0112	u	0.0000
│ │ │ ├── HIPPOCAMPUS-SUBC.PRES_R	-3.37	0.0012	0.0016	u	0.0000
│ │ │ ├── HIPPOCAMPUS-SUBC.PROS_R	-4.09	0.0001	0.0002	u	0.0000
│ │ │ └── HIPPOCAMPUS-SUBC.SUB_R	-4.14	0.0001	0.0002	u	0.0000
│ │ └── PIRIFORM_CORTEX_R	-1.60	0.1130	0.2260		0.0000
│ │ └── AREA-PIRTB_R	-2.28	0.0255	0.0510	u	0.0000
│ │ ├── AREA-PIRTB.TBD_R	-2.26	0.0272	0.0369	u	0.0000
│ │ └── AREA-PIRTB.TBV_R	-2.13	0.0369	0.0369	u	0.0000
│ ├── PARIETAL_LOBE_R	-2.24	0.0280	0.0466	u	0.0063
│ │ ├── INFERIOR_PARIETAL_LOBULE_R	-1.54	0.1270	0.2540		0.0000
│ │ │ └── AREA-PFCM_R	-2.12	0.0375	0.2630	u	0.0000
│ │ ├── INTRAPARIETAL_SULCUS_R	-1.94	0.0564	0.2540		0.0000
│ │ │ └── AREA-HIP3_R	-2.07	0.0424	0.3390	u	0.0000
│ │ └── SUPERIOR_PARIETAL_LOBULE_R	-1.55	0.1260	0.2540		0.0000
│ │ └── AREA-7PC_R	-2.64	0.0103	0.0721	u	0.0000
│ └── TEMPORAL_LOBE_R	-2.20	0.0311	0.0466	u	0.0063
│ ├── GAPMAP-FRONTAL-TO-TEMPORAL-II_R	-2.74	0.0077	0.0847	u	0.0000
│ └── TEMPORO-PARIETAL_JUNCTION_R	-2.31	0.0240	0.1320	u	0.0000
│ └── AREA-TPJ_R	-2.31	0.0240	0.0240	u	0.0000
└── CEREBRAL_NUCLEI_R	-0.74	0.4600	0.4600		0.0125
└── AMYGDALA_R	-2.24	0.0281	0.0843	u	0.0063
├── AMYGDALA-CM_R	-1.99	0.0499	0.1160	u	0.0000
│ └── AMYGDALA-CM.CE_R	-2.08	0.0413	0.1240	u	0.0000
├── AMYGDALA-IF_R	-1.43	0.1570	0.1830		0.0000
│ └── AMYGDALA-IF.LD_R	-2.13	0.0370	0.1010	u	0.0000
├── AMYGDALA-LB_R	-1.86	0.0668	0.1170		0.0000
│ └── AMYGDALA-LB.BL_R	-2.25	0.0276	0.1100	u	0.0000
├── AMYGDALA-VTM_R	-2.39	0.0196	0.1160	u	0.0000
└── AMYGDALOSTRIATAL_TZ_R	-2.03	0.0459	0.1160	u	0.0000
└── AMYGDALA-ASTR_R	-2.03	0.0459	0.0459	u	0.0000

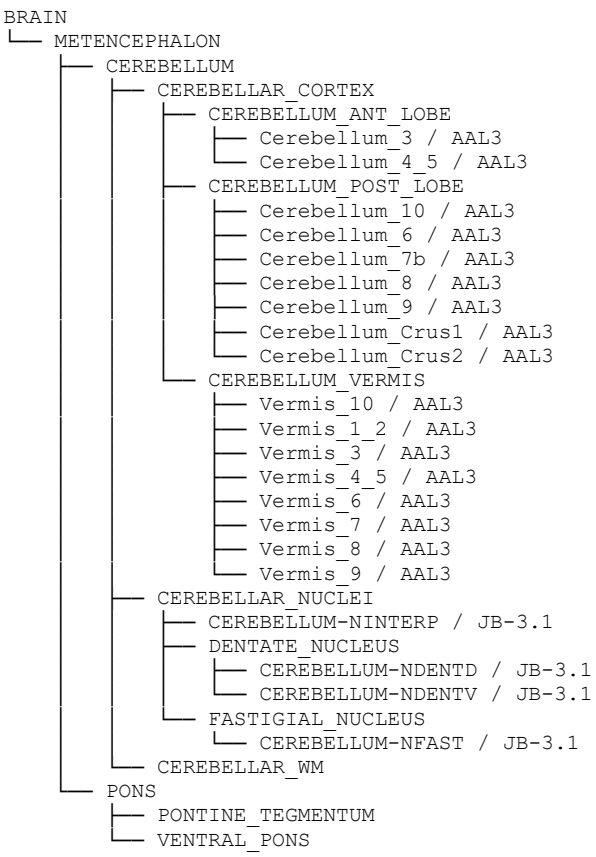
Table S5: Group differences between psychopathic subjects and controls in regions of the hierarchical brain atlas. p-values of all regions were calculated by direct evaluation of the statistical model with each region's volume data (see above and main text). The test statistic t_{uncorr} belongs to the comparison $V_{PS} - V_C$, thus a negative value indicates that the region volume was smaller in the brains of psychopathic subjects than in controls' brains.

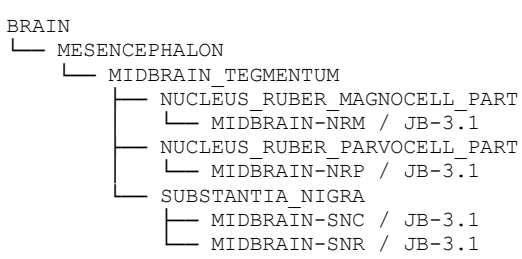
Table S6: Hierarchical anatomical atlas

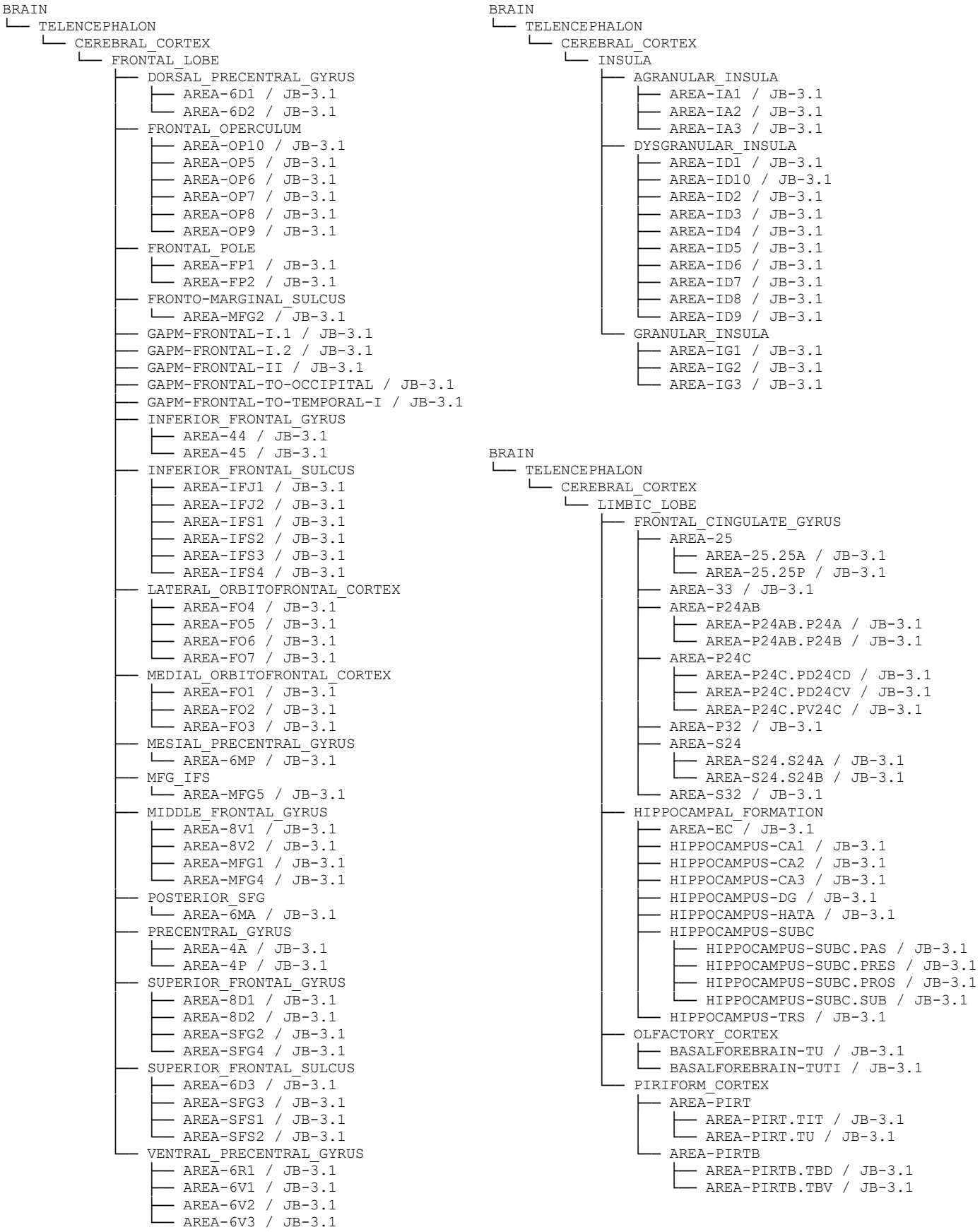
JB-3.1: Julich-Brain Atlas 3.1 (Amunts et al. 2020), https://www.ebrains.eu/tools/human-brain-atlas

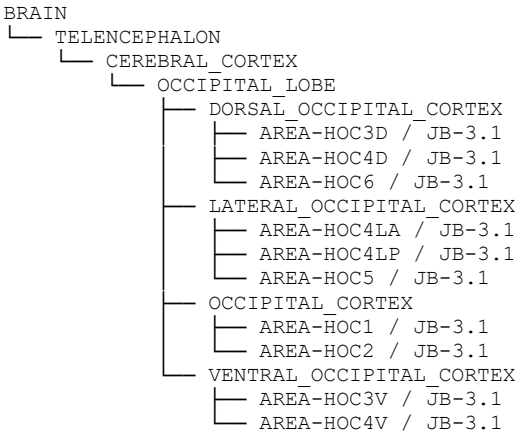
AAL3: AAL3-Atlas (Tzourio-Mazoyer et al. 2002, Rolls et al. 2020)

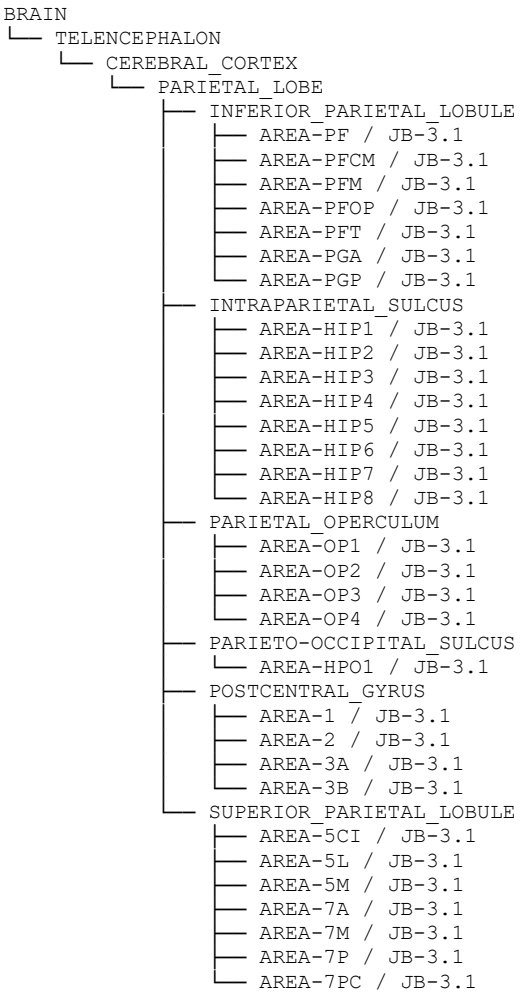


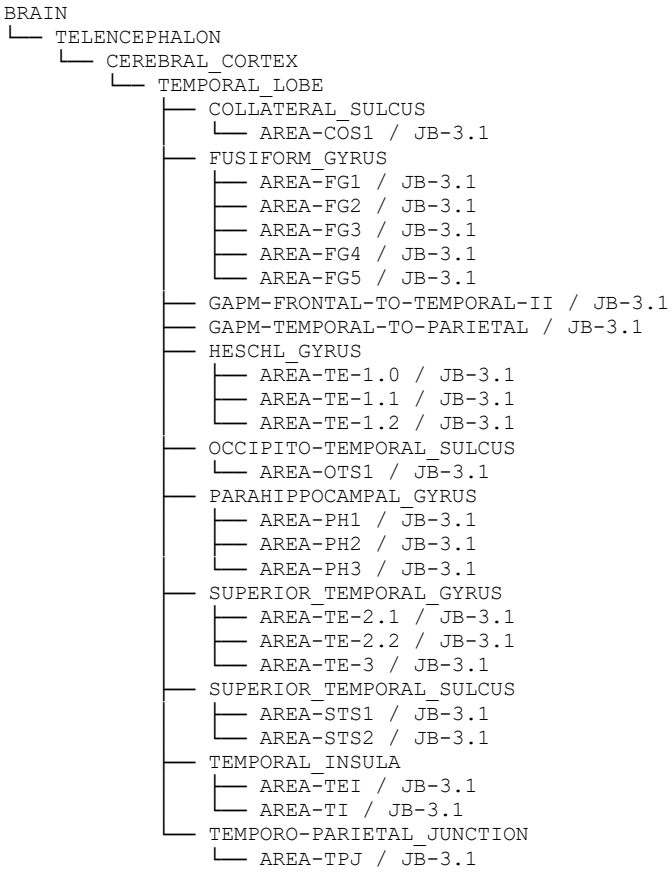


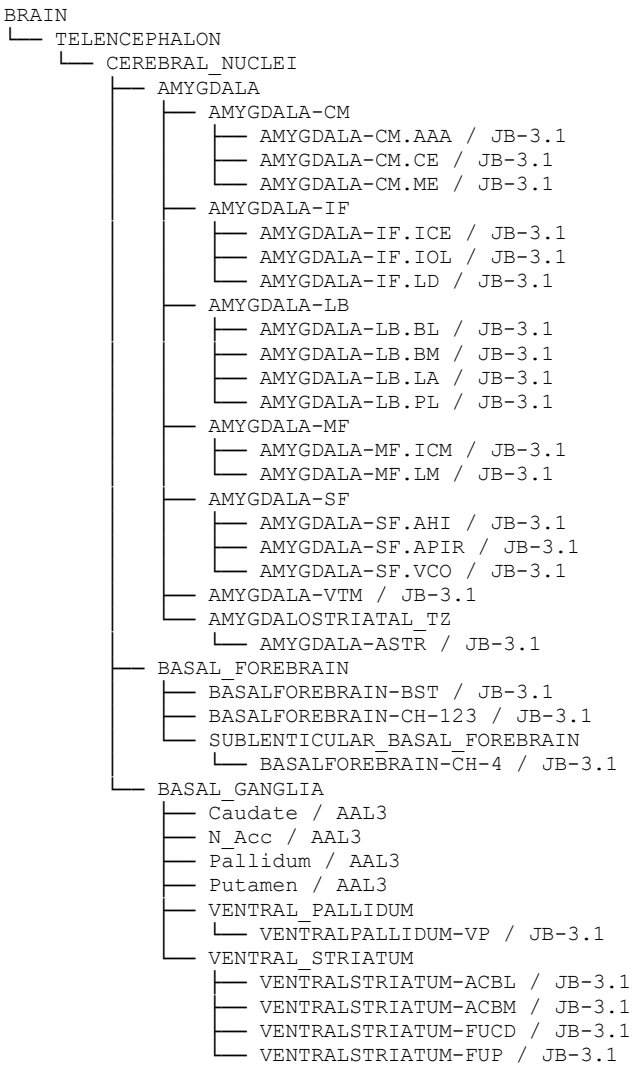



BRAIN
TELENCEPHALON
CEREBRAL_CORTEX
FRONTAL_LOBE
DORSAL_PRECENTRAL_GYRUS
AREA-6D1 / JB-3.1
AREA-6D2 / JB-3.1
FRONTAL_OPERCULUM
AREA-OP10 / JB-3.1
AREA-OP5 / JB-3.1
AREA-OP6 / JB-3.1
AREA-OP7 / JB-3.1
AREA-OP8 / JB-3.1
AREA-OP9 / JB-3.1
FRONTAL_POLE
AREA-FP1 / JB-3.1
AREA-FP2 / JB-3.1
FRONTO-MARGINAL_SULCUS
AREA-MFG2 / JB-3.1
GAPM-FRONTAL-I.1 / JB-3.1
GAPM-FRONTAL-I.2 / JB-3.1
GAPM-FRONTAL-II / JB-3.1
GAPM-FRONTAL-TO-OCCIPITAL / JB-3.1
GAPM-FRONTAL-TO-TEMPORAL-I / JB-3.1
INFERIOR_FRONTAL_GYRUS
AREA-44 / JB-3.1
AREA-45 / JB-3.1
INFERIOR_FRONTAL_SULCUS
AREA-IFJ1 / JB-3.1
AREA-IFJ2 / JB-3.1
AREA-IFS1 / JB-3.1
AREA-IFS2 / JB-3.1
AREA-IFS3 / JB-3.1
AREA-IFS4 / JB-3.1
LATERAL_ORBITOFRONTAL_CORTEX
AREA-FO4 / JB-3.1
AREA-FO5 / JB-3.1
AREA-FO6 / JB-3.1
AREA-FO7 / JB-3.1
MEDIAL_ORBITOFRONTAL_CORTEX
AREA-FO1 / JB-3.1
AREA-FO2 / JB-3.1
AREA-FO3 / JB-3.1
MESIAL_PRECENTRAL_GYRUS
AREA-6MP / JB-3.1
MFG_IFS
AREA-MFG5 / JB-3.1
MIDDLE_FRONTAL_GYRUS
AREA-8V1 / JB-3.1
AREA-8V2 / JB-3.1
AREA-MFG1 / JB-3.1
AREA-MFG4 / JB-3.1
POSTERIOR_SFG
AREA-6MA / JB-3.1
PRECENTRAL_GYRUS
AREA-4A / JB-3.1
AREA-4P / JB-3.1
SUPERIOR_FRONTAL_GYRUS
AREA-8D1 / JB-3.1
AREA-8D2 / JB-3.1
AREA-SFG2 / JB-3.1
AREA-SFG4 / JB-3.1
SUPERIOR_FRONTAL_SULCUS
AREA-6D3 / JB-3.1
AREA-SFG3 / JB-3.1
AREA-SFS1 / JB-3.1
AREA-SFS2 / JB-3.1
VENTRAL_PRECENTRAL_GYRUS
AREA-6R1 / JB-3.1
AREA-6V1 / JB-3.1
AREA-6V2 / JB-3.1
AREA-6V3 / JB-3.1
BRAIN
TELENCEPHALON
CEREBRAL_CORTEX
INSULA
AGRANULAR_INSULA
AREA-IA1 / JB-3.1
AREA-IA2 / JB-3.1
AREA-IA3 / JB-3.1
DYSGRANULAR_INSULA
AREA-ID1 / JB-3.1
AREA-ID10 / JB-3.1
AREA-ID2 / JB-3.1
AREA-ID3 / JB-3.1
AREA-ID4 / JB-3.1
AREA-ID5 / JB-3.1
AREA-ID6 / JB-3.1
AREA-ID7 / JB-3.1
AREA-ID8 / JB-3.1
AREA-ID9 / JB-3.1
GRANULAR_INSULA
AREA-IG1 / JB-3.1
AREA-IG2 / JB-3.1
AREA-IG3 / JB-3.1
BRAIN
TELENCEPHALON
CEREBRAL_CORTEX
LIMBIC_LOBE
FRONTAL_CINGULATE_GYRUS
AREA-25
AREA-25.25A / JB-3.1
AREA-25.25P / JB-3.1
AREA-33 / JB-3.1
AREA-P24AB
AREA-P24AB.P24A / JB-3.1
AREA-P24AB.P24B / JB-3.1
AREA-P24C
AREA-P24C.PD24CD / JB-3.1
AREA-P24C.PD24CV / JB-3.1
AREA-P24C.PV24C / JB-3.1
AREA-P32 / JB-3.1
AREA-S24
AREA-S24.S24A / JB-3.1
AREA-S24.S24B / JB-3.1
AREA-S32 / JB-3.1
HIPPOCAMPAL_FORMATION
AREA-EC / JB-3.1
HIPPOCAMPUS-CA1 / JB-3.1
HIPPOCAMPUS-CA2 / JB-3.1
HIPPOCAMPUS-CA3 / JB-3.1
HIPPOCAMPUS-DG / JB-3.1
HIPPOCAMPUS-HATA / JB-3.1
HIPPOCAMPUS-SUBC
HIPPOCAMPUS-SUBC.PAS / JB-3.1
HIPPOCAMPUS-SUBC.PRES / JB-3.1
HIPPOCAMPUS-SUBC.PROS / JB-3.1
HIPPOCAMPUS-SUBC.SUB / JB-3.1
HIPPOCAMPUS-TRS / JB-3.1
OLFACTORY_CORTEX
BASALFOREBRAIN-TU / JB-3.1
BASALFOREBRAIN-TUTI / JB-3.1
PIRIFORM_CORTEX
AREA-PIRT
AREA-PIRT.TIT / JB-3.1
AREA-PIRT.TU / JB-3.1
AREA-PIRTB
AREA-PIRTB.TBD / JB-3.1
AREA-PIRTB.TBV / JB-3.1


BRAIN
TELENCEPHALON
CEREBRAL_CORTEX
OCCIPITAL_LOBE
DORSAL_OCCIPITAL_CORTEX
AREA-HOC3D / JB-3.1
AREA-HOC4D / JB-3.1
AREA-HOC6 / JB-3.1
LATERAL_OCCIPITAL_CORTEX
AREA-HOC4LA / JB-3.1
AREA-HOC4LP / JB-3.1
AREA-HOC5 / JB-3.1
OCCIPITAL_CORTEX
AREA-HOC1 / JB-3.1
AREA-HOC2 / JB-3.1
VENTRAL_OCCIPITAL_CORTEX
AREA-HOC3V / JB-3.1
AREA-HOC4V / JB-3.1


BRAIN
TELENCEPHALON
CEREBRAL_CORTEX
PARIETAL_LOBE
INFERIOR_PARIETAL_LOBULE
AREA-PF / JB-3.1
AREA-PFCM / JB-3.1
AREA-PFM / JB-3.1
AREA-PFOP / JB-3.1
AREA-PFT / JB-3.1
AREA-PGA / JB-3.1
AREA-PGP / JB-3.1
INTRAPARIETAL_SULCUS
AREA-HIP1 / JB-3.1
AREA-HIP2 / JB-3.1
AREA-HIP3 / JB-3.1
AREA-HIP4 / JB-3.1
AREA-HIP5 / JB-3.1
AREA-HIP6 / JB-3.1
AREA-HIP7 / JB-3.1
AREA-HIP8 / JB-3.1
PARIETAL_OPERCULUM
AREA-OP1 / JB-3.1
AREA-OP2 / JB-3.1
AREA-OP3 / JB-3.1
AREA-OP4 / JB-3.1
PARIETO-OCCIPITAL_SULCUS
AREA-HPO1 / JB-3.1
POSTCENTRAL_GYRUS
AREA-1 / JB-3.1
AREA-2 / JB-3.1
AREA-3A / JB-3.1
AREA-3B / JB-3.1
SUPERIOR_PARIETAL_LOBULE
AREA-5CI / JB-3.1
AREA-5L / JB-3.1
AREA-5M / JB-3.1
AREA-7A / JB-3.1
AREA-7M / JB-3.1
AREA-7P / JB-3.1
AREA-7PC / JB-3.1


BRAIN
TELENCEPHALON
CEREBRAL_CORTEX
TEMPORAL_LOBE
COLLATERAL_SULCUS
AREA-COS1 / JB-3.1
FUSIFORM_GYRUS
AREA-FG1 / JB-3.1
AREA-FG2 / JB-3.1
AREA-FG3 / JB-3.1
AREA-FG4 / JB-3.1
AREA-FG5 / JB-3.1
GAPM-FRONTAL-TO-TEMPORAL-II / JB-3.1
GAPM-TEMPORAL-TO-PARIETAL / JB-3.1
HESCHL_GYRUS
AREA-TE-1.0 / JB-3.1
AREA-TE-1.1 / JB-3.1
AREA-TE-1.2 / JB-3.1
OCCIPITO-TEMPORAL_SULCUS
AREA-OTS1 / JB-3.1
PARAHIPPOCAMPAL_GYRUS
AREA-PH1 / JB-3.1
AREA-PH2 / JB-3.1
AREA-PH3 / JB-3.1
SUPERIOR_TEMPORAL_GYRUS
AREA-TE-2.1 / JB-3.1
AREA-TE-2.2 / JB-3.1
AREA-TE-3 / JB-3.1
SUPERIOR_TEMPORAL_SULCUS
AREA-STS1 / JB-3.1
AREA-STS2 / JB-3.1
TEMPORAL_INSULA
AREA-TEI / JB-3.1
AREA-TI / JB-3.1
TEMPORO-PARIETAL_JUNCTION
AREA-TPJ / JB-3.1


BRAIN
TELENCEPHALON
CEREBRAL_NUCLEI
AMYGDALA
AMYGDALA-CM
AMYGDALA-CM.AAA / JB-3.1
AMYGDALA-CM.CE / JB-3.1
AMYGDALA-CM.ME / JB-3.1
AMYGDALA-IF
AMYGDALA-IF.ICE / JB-3.1
AMYGDALA-IF.IOL / JB-3.1
AMYGDALA-IF.LD / JB-3.1
AMYGDALA-LB
AMYGDALA-LB.BL / JB-3.1
AMYGDALA-LB.BM / JB-3.1
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AMYGDALA-LB.PL / JB-3.1
AMYGDALA-MF
AMYGDALA-MF.ICM / JB-3.1
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AMYGDALA-SF.AHI / JB-3.1
AMYGDALA-SF.APIR / JB-3.1
AMYGDALA-SF.VCO / JB-3.1
AMYGDALA-VTM / JB-3.1
AMYGDALOSTRIATAL_TZ
AMYGDALA-ASTR / JB-3.1
BASAL_FOREBRAIN
BASALFOREBRAIN-BST / JB-3.1
BASALFOREBRAIN-CH-123 / JB-3.1
SUBLENTICULAR_BASAL_FOREBRAIN
BASALFOREBRAIN-CH-4 / JB-3.1
BASAL_GANGLIA
Caudate / AAL3
N_Acc / AAL3
Pallidum / AAL3
Putamen / AAL3
VENTRAL_PALLIDUM
VENTRALPALLIDUM-VP / JB-3.1
VENTRAL_STRIATUM
VENTRALSTRIATUM-ACBL / JB-3.1
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VENTRALSTRIATUM-FUP / JB-3.1

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