Supporting information S1:

ROI-drawing technique	Brain area	Group	Intra-rater		Inter-rater	
			Average Dice score	Average modified Cohen's kappa	Average Dice score	Average modified Cohen's kappa
ManSmROI	CAU	CON	0.83	0.83	0.77	0.77
	PM	CON	0.78	0.78	0.73	0.73
	IC	CON	0.67	0.67	0.58	0.58
	PU	CON	0.78	0.78	0.75	0.75
	GCC	CON	0.75	0.75	0.74	0.74
	CAU	ASP	0.83	0.83	0.77	0.76
	PM	ASP	0.76	0.76	0.72	0.72
	IC	ASP	0.55	0.55	0.50	0.49
	PU	ASP	0.81	0.81	0.67	0.66
	GCC	ASP	0.79	0.79	0.76	0.76
ManGeoROI	CAU	CON	0.63	0.63	0.57	0.57
	IC	CON	0.54	0.54	0.44	0.44
	PU	CON	0.69	0.69	0.62	0.62
	GCC	CON	0.67	0.67	0.62	0.62
	CAU	ASP	0.61	0.61	0.60	0.59
	IC	ASP	0.50	0.50	0.45	0.45
	PU	ASP	0.60	0.60	0.64	0.63
	GCC	ASP	0.74	0.74	0.63	0.63
ManLaROI	CAU	CON	0.87	0.87	0.84	0.83
	PM	CON	0.77	0.77	0.73	0.73
	IC	CON	0.70	0.70	0.62	0.61
	PU	CON	0.82	0.81	0.82	0.81
	GCC	CON	0.77	0.77	0.76	0.76
	CAU	ASP	0.88	0.87	0.84	0.83
	PM	ASP	0.79	0.78	0.71	0.71
	IC	ASP	0.70	0.69	0.57	0.57
	PU	ASP	0.87	0.87	0.80	0.80
	GCC	ASP	0.79	0.79	0.80	0.80

Supporting information S1: (cont.)

ROI-drawing technique	Brain area	Group	Intra-rater		Inter-rater	
			Average Dice score	Average modified Cohen's kappa	Average Dice score	Average modified Cohen's kappa
ID	CAU	CON	0.82	0.82	0.90	0.90
	PM	CON	0.82	0.82	0.72	0.72
	IC	CON	0.74	0.74	0.61	0.61
	PU	CON	0.74	0.74	0.80	0.80
	CAU	ASP	0.87	0.86	0.91	0.91
	PM	ASP	0.82	0.82	0.68	0.68
	IC	ASP	0.75	0.75	0.53	0.53
	PU	ASP	0.84	0.84	0.76	0.76
MO	CAU	CON	0.82	0.82	0.77	0.77
	PU	CON	0.75	0.75	0.75	0.75
	CAU	ASP	0.83	0.83	0.78	0.77
	PU	ASP	0.82	0.82	0.73	0.72
COM	CAU	CON	0.49	0.49	0.76	0.76
	PU	CON	0.72	0.72	0.78	0.78
	CAU	ASP	0.41	0.41	0.68	0.68
	PU	ASP	0.63	0.62	0.74	0.73

Table S1: The data table shows intra-rater and inter-rater agreement test. Dice score and modified Cohen's Kappa score of all six ROI-drawing techniques in all brains area of individual group classification (CON and ASP) are presented.
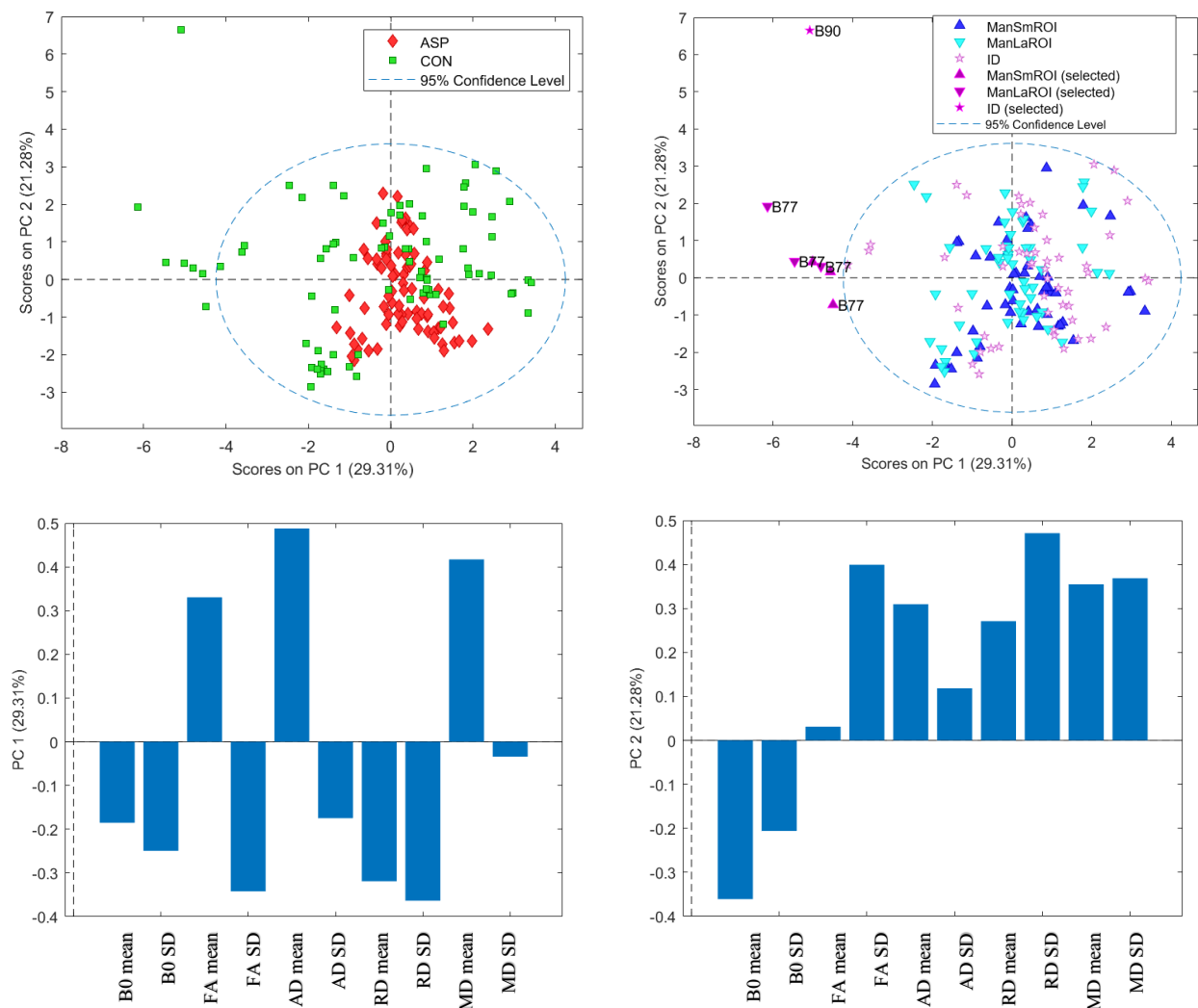
Supporting information figure S2:

Figure S2: PCA score plot and loadings of the premotor cortex (PM) according to group classification and ROI-drawing techniques.

Top left: PCA score plot of the data extracted according to group classification shows overlaying of plots between CON and ASP in PM.

Top right: PCA score plot of PM according to ROI-drawing techniques illustrates superimposition of all three drawing techniques (ManSmROI, ManLaROI, and ID) in PM. The selected dots (dense and purple color dots) are the dots distancing from the main cluster, and it belongs to only two individual brains.

Bottom left and bottom right: Loading of the first and second principal component (PC1 and PC2, respectively) of PCA score plot which explain around 52% of total variance of the data.
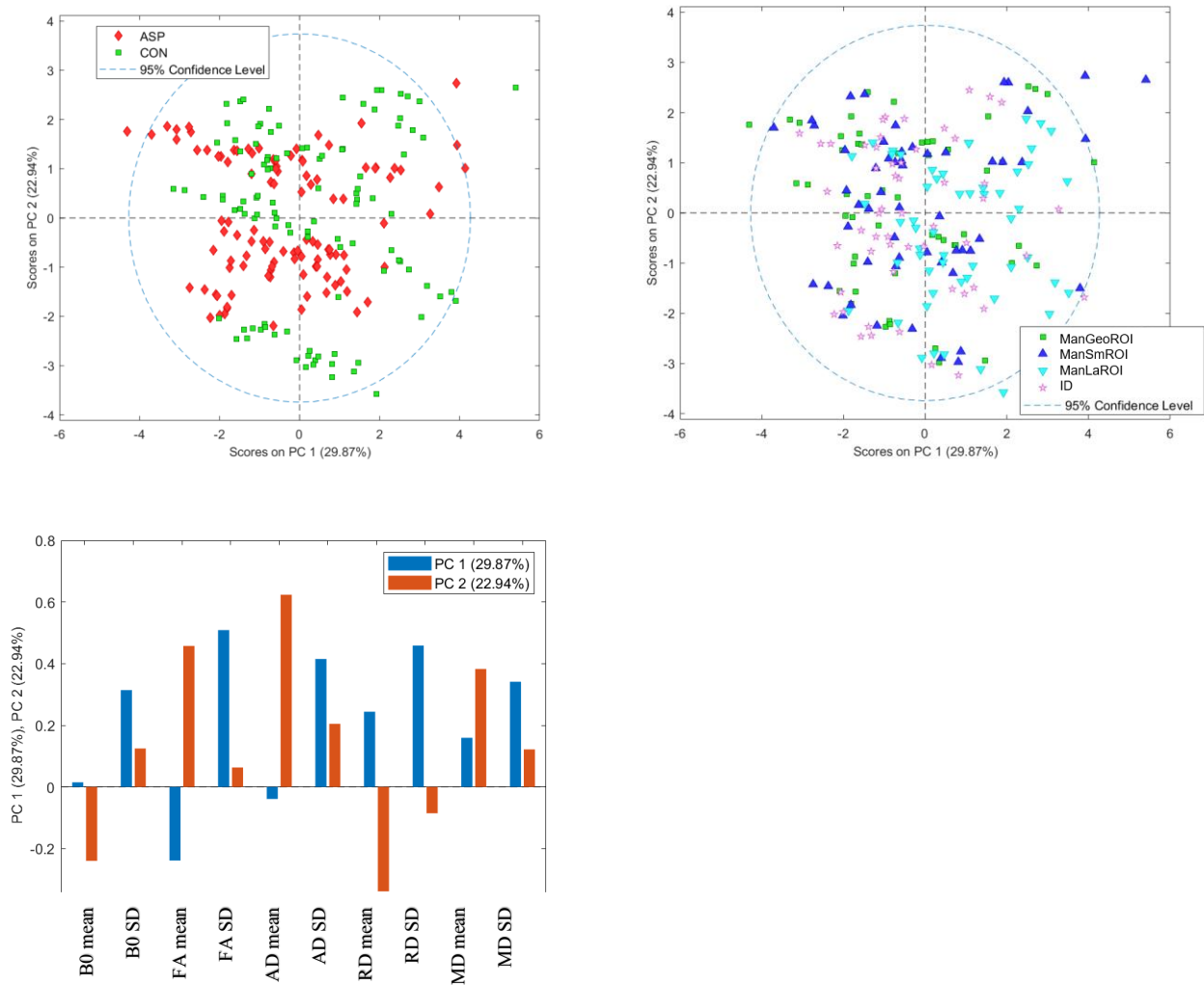
Supporting information figure S3:

Figure S3: PCA score plot and loadings of the internal capsule (IC) according to group classification and ROI-drawing techniques.
Top left: The PCA score plot of the data, categorized by group classification, shows no clear distinction between the plots from CON and ASP groups in the IC.
Top right: PCA score plot according to four ROI drawing techniques - ManGeoROI, ManSmROI, ManLaROI, and ID - in IC illustrates an overlay of the data distribute of all ROI-drawing techniques.
Bottom left : Loading of the PC1 (blue) and PC2 (red) of PCA score plots of IC which explain around 52% of total variance of the data.

Supporting information S4:

Brain area	B0 mean	B0 SD	FA mean	FA SD	AD mean $(x10^{-4})$	AD SD $(x10^{-5})$	RD mean $(x10^{-4})$	RD SD $(x10^{-5})$	MD mean $(x10^{-4})$	MD SD $(x10^{-5})$
CAU	197.32	3.24	0.10	0.03	3.53	1.43	3.40	1.43	3.21	1.08
PU	183.85	3.18	0.16	0.04	3.65	1.35	3.24	1.35	3.16	0.79
PM	189.60	4.63	0.43	0.06	4.01	2.45	2.32	2.32	2.74	1.06
IC	170.04	6.31	0.57	0.08	4.91	3.60	1.96	2.59	2.81	1.00
GCC	208.77	6.65	0.68	0.04	5.32	2.64	1.52	1.37	2.74	1.18

TABLE 4: The average mean and SD of data from the ManSmROI technique in all brain areas of both group classification. CAU: caudate nucleus, PU: putamen, PM: premotor cortex, IC: internal capsule, GCC: genu of corpus callosum.