Table DS1: Behavioral data (inside scanner) (a) TD and ASD pre-training. **(b)** Untrained and trained ASD for pre and post training. TD = typically developing control group; ASD= autism spectrum disorder; SD = standard deviation

(a) TD and ASD pre-training			
Group	Condition	Performance Mean [SD]	Reaction Time in msec Mean [SD]
TD	Explicit	28.76 [4.12]	1235.74 [596]
	Implicit	29.72 [1.94]	986.35 [593.35
	Neutral	31.8 [1.02]	869.88 [662.6]
	Object	31.8 [2.71]	1134.26 [541.4]
ASD	Explicit	25.69 [2.33]	1360.95 [459.8]
	Implicit	28.97 [1.14]	1212.65 [408.84]
	Neutral	31.48 [0.65]	1093.65 [444.19]
	Object	30.97 [0.44]	1383.27 [431.82]

(b) Untrained and trained ASD for pre- and post-training			
ASD untrained (pre training)	Explicit	26.4 [4.12]	1199.1 [596]
	Implicit	28.73 [1.94]	1125.6 [593.35]
	Neutral	31.2 [1.02]	1028.22 [662.6]
	Object	30.46 [2.71]	1428.14 [541.4]
ASD untrained (post training)	Explicit	25.73 [2.33]	1311.2 [459.8]
	Implicit	28.06 [1.14]	1133.31 [408.84]
	Neutral	31.06 [0.65]	1030.84 [444.19]
	Object	30.73 [0.44]	1351.9 [431.82]
ASD trained (pre training)	Explicit	24.93 [4.2]	1534.4 [547.92]
	Implicit	29.21 [1.63]	1306.02 [502.18]
	Neutral	31.79 [0.43]	1163.8 [582.69]
	Object	31.5 [1.16]	1335.2 [495.53]
ASD trained (post training)	Explicit	25.5 [4.11]	1240.32 [302.99]
	Implicit	29.21 [1.05]	1014.02 [247.51]
	Neutral	31.86 [0.36]	862.67 [180.28]
	Object	31.36 [1.15]	1110.85 [264.59]

Table DS2: Correlation analysis for (a) ASD pre-training, and (b) trained ASD post-training

(a) ASD pre-training		
Correlation (two-tailed)	r-value	p-value
Right amygdala and FEFA test	0.56	0.001
Right amygdala and ERT	0.25	0.17
Right amygdala and ADOS Communication score	0.13	0.47
Right amygdala and ADOS Social interaction score	0.20	0.27
(b) Trained ASD post-training		
Medial prefrontal cortex and ADOS Communication score	-0.49	0.053
Medial prefrontal cortex and ADOS Social interaction score	-0.095	0.72
Right amygdala and ADOS Communication score	-0.25	0.35
Right amygdala and ADOS Social interaction score	-0.27	0.31
Left fusiform gyrus and ADOS Communication score	0.24	0.37
Left fusiform gyrus and ADOS Social interaction score	0.34	0.19

Note. ASD= autism spectrum disorder; FEFA= Frankfurt Test and Training for Facial Affect Recognition; ERT= Emotion Recognition Test; ADOS= Autism Diagnostic Observation Schedule.
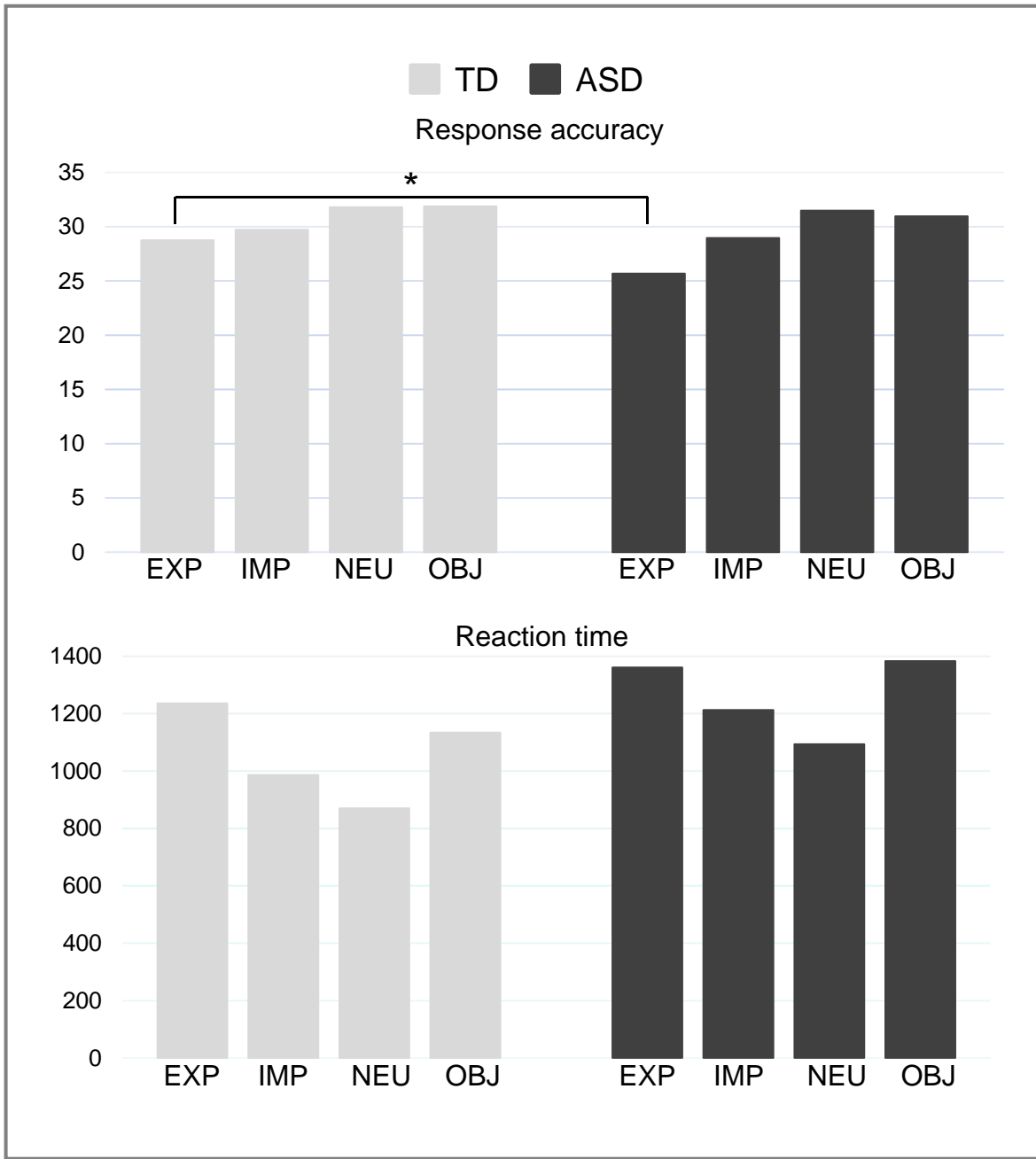
Fig. DS1. Behavioural results (inside scanner) for the TD and the ASD groups. Mean accuracies (maximum of correct answers, 32) and mean reaction times (in ms) for correct answers in each category. TD = typically developing (light grey); ASD, autism spectrum disorder (dark grey); EXP, explicit FAR; IMP, implicit FAR; NEU, neutral FAR; OBJ, object recognition; * p<0.05.
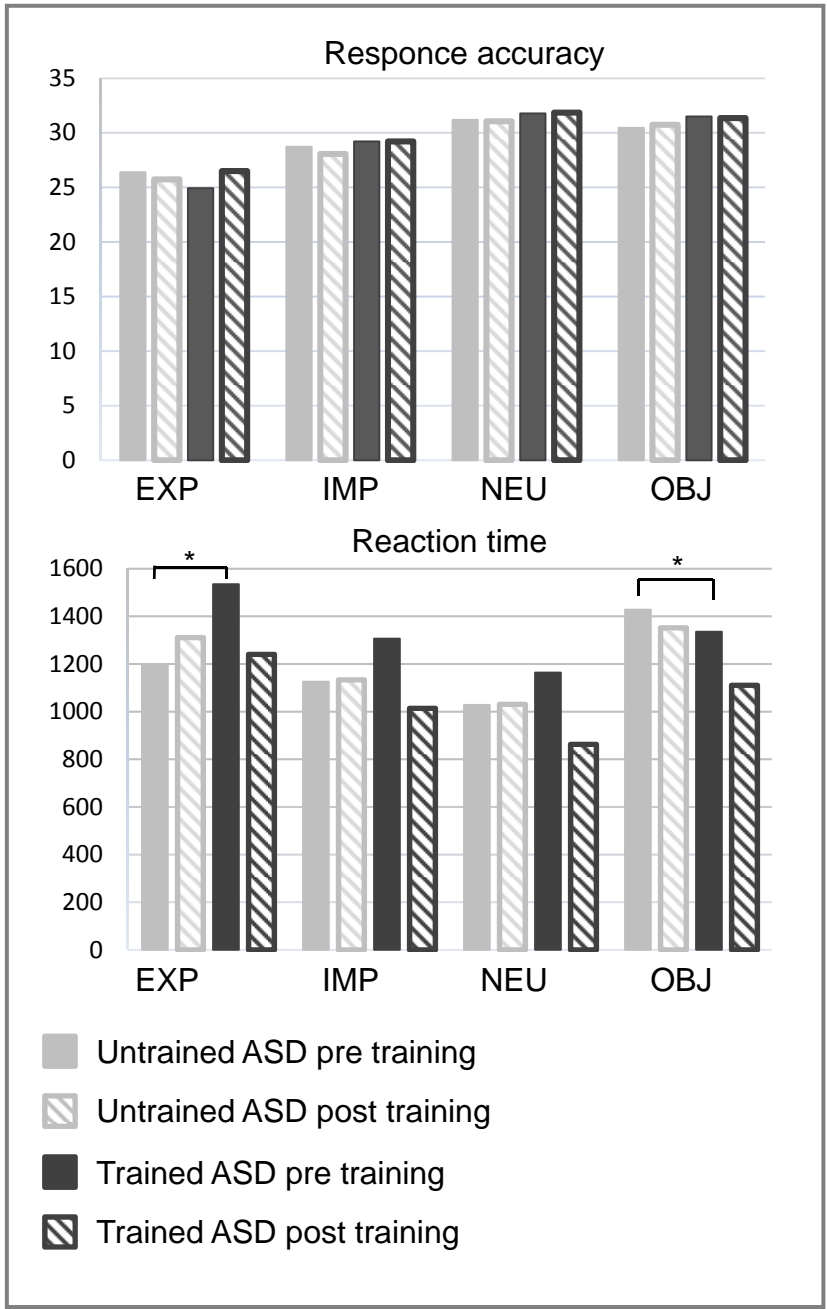
Fig. DS2. Behavioural results (inside scanner) for the untrained and the trained ASD groups for pre- and post-training. Mean accuracies (maximum of correct answers, 32) and mean reaction times (in ms) for correct answers in each category. EXP, explicit FAR; IMP, implicit FAR; NEU, neutral FAR; OBJ, object recognition; ASD, autism spectrum disorder;* $p < 0.05$