Supplemental Materials

Supplemental Results

Behavioral performance: accuracy and reaction time

We here analyzed the behavioral performance within target-present trials. Across all three experiments, all subject groups (ASD, ASD controls, amygdala lesions, general controls and NUS students) had an average performance above 90% (**Fig. 2**), indicating that they were able to perform the task without difficulty. In Experiment 1 (**Fig. 2A**), only a marginal difference was found between social targets and non-social targets (two-way mixed ANOVA (target type X subject group); main effect of target type: $F(1,26)=4.21$, $p=0.051$, effect size $\eta^2=0.030$), and no difference was found between subject groups (main effect of subject group: $F(3,26)=1.58$, $p=0.22$, $\eta^2=0.12$) nor interaction ($F(3,26)=0.94$, $p=0.44$, $\eta^2=0.020$). Similarly, in Experiment 2 (**Fig. 2C**), no difference was found between social targets and non-social targets (main effect of target type: $F(1,29)=0.17$, $p=0.69$, $\eta^2=0.0022$), and no difference was found between subject groups (main effect of subject group: $F(2,29)=0.86$, $p=0.43$, $\eta^2=0.034$) or any interaction ($F(2,29)=0.32$, $p=0.73$, $\eta^2=0.0086$). Finally, also in Experiment 3 (**Fig. 2E**), no difference was found between social targets and non-social targets (main effect of target type: $F(1,31)=3.59$, $p=0.068$, $\eta^2=0.036$), nor between subject groups (main effect of subject group: $F(3,31)=0.15$, $p=0.93$, $\eta^2=0.0089$) or interaction ($F(3,31)=0.58$, $p=0.63$, $\eta^2=0.018$), showing that overall people with ASD and amygdala lesion patients still had similar performance in terms of accuracy compared to controls.

In Experiment 1, non-social targets were detected more quickly by all subject groups (**Fig. 2B**; two-way mixed ANOVA (target type X subject group); main effect of target type: $F(1,26)=199.4$, $p=1.05\times10^{-13}$, $\eta^2=0.13$), an effect that showed only a weak interaction with subject group ($F(3,26)=2.83$, $p=0.058$, $\eta^2=0.0057$). General control subjects and NUS control subjects showed overall faster detection of targets (main effect of subject group: $F(3,26)=5.40$, $p=0.0050$, $\eta^2=0.32$), but there was no difference between

amygdala patients vs. general controls, amygdala patients vs. people with ASD, people with ASD vs. general controls, or general controls vs. NUS controls (two-tailed t-test, all ps>0.05). In Experiment 2, non-social targets still featured faster detection due to their being more distinct from one another (**Fig. 2D**; main effect of target type: $F(1,29)=75.4$, $p=1.47\times10^{-9}$, $\eta^2=0.068$), but the faster detection of non-social targets did not depend on subject groups (interaction between target type and subject group: $F(2,29)=0.31$, $p=0.74$, $\eta^2=5.60\times10^{-4}$; main effect of subject group: $F(2,29)=3.01$, $p=0.065$, $\eta^2=0.16$). Notably, across independent samples of people with ASD, we found no difference between Experiment 1 and Experiment 2 in detection accuracy (unpaired t-test: $t(19)=-0.69$, $p=0.50$, effect size in Hedges's g (standardized mean difference): $g=-0.30$) or RT ($t(19)=-0.39$, $p=0.70$, $g=-0.17$). This argues against the influence of low-level visual properties on our task.

With simpler arrays in Experiment 3, non-social targets that were more distinct from one another retained their advantage to be detected faster (**Fig. 2F**; two-way mixed ANOVA (target type X subject group); main effect of target type: $F(1,31)=13.2$, $p=9.82\times10^{-4}$, $\eta^2=0.0078$). ASD controls and NUS controls showed marginally faster detection of targets (main effect of subject group: $F(3,31)=2.38$, $p=0.088$, $\eta^2=0.18$), but there was no interaction ($F(3,31)=0.38$, $p=0.77$, $\eta^2=6.80\times10^{-4}$) or significant difference between amygdala patients vs. people with ASD, people with ASD vs. ASD controls, or ASD controls vs. NUS controls (two-tailed t-tests separately for social vs. non-social targets, all ps>0.05). Lower task difficulty was confirmed with a shorter RT compared to Experiment 1 (paired t-test for NUS controls: $t(10)=10.2$, $p=1.38\times10^{-6}$, $g=2.11$; paired t-test for amygdala patients: $t(2)=17.7$, $p=0.0032$, $g=2.27$; unpaired t-test for people with ASD: $t(19)=4.56$, $p=2.13\times10^{-4}$, $g=1.97$) and Experiment 2 (paired t-test for ASD controls: $t(7)=6.13$, $p=4.76\times10^{-4}$, $g=1.95$; paired t-test for NUS controls: $t(10)=10.8$, $p=7.83\times10^{-7}$, $g=2.53$).

Missing detection of targets was not prominent in amygdala lesion patients

Fig. 3M-O summarizes the percentage of trials with misses across subject groups. In Experiment 1 (**Fig. 3M**), no difference was found between social and non-social targets (two-way mixed ANOVA (target type X subject group); main effect of target type: $F(1,26)=0.28$, $p=0.60$, effect size $\eta^2=8.90\times10^{-4}$) nor interaction ($F(3,26)=0.50$, $p=0.68$, effect size $\eta^2=0.0049$). However, NUS controls had significantly fewer misses (main effect of subject group: $F(3,26)=5.45$, $p=0.0048$, $\eta^2=0.35$; t-test against general controls: $t(17)=3.44$, $p=0.0032$, effect size in Hedges's g (standardized mean difference): $g=1.53$ for social targets, and $t(17)=2.21$, $p=0.041$, $g=0.98$ for non-social targets), which was likely due to the faster RT (**Fig. 2B**; see **Supplemental Discussion**). But compared to general controls, neither people with ASD ($t(14)=0.59$, $p=0.56$, $g=0.28$ for social targets, and $t(14)=0.53$, $p=0.60$, $g=0.25$ for non-social targets) nor amygdala lesion patients ($t(9)=1.15$, $p=0.27$, $g=0.71$ for social targets, and $t(9)=0.51$, $p=0.62$, $g=0.32$ for non-social targets) had more misses, suggesting that the amygdala is not essential for preferential coding of biologically relevant stimuli into conscious perception in this visual search task.

We repeated the analysis by excluding the last 2 fixations landing on the target for misses and we derived qualitatively the same results.

Similarly, in Experiment 2 (**Fig. 3N**), no difference was found between social and non-social targets (main effect of target type: $F(1,29)=0.10$, $p=0.75$, $\eta^2=1.34\times10^{-4}$) nor interaction ($F(2,29)=0.60$, $p=0.56$, $\eta^2=0.0015$), but NUS controls had significantly fewer misses than people with ASD and ASD controls (main effect of subject group: $F(2,29)=4.57$, $p=0.019$, $\eta^2=0.23$). People with ASD had comparable misses to those seen in ASD controls (unpaired t-test: $t(19)=2.03$, $p=0.057$, $g=0.87$ for social targets and $t(19)=1.37$, $p=0.19$, $g=0.59$ for non-social targets). Notably, with an independent sample of people with ASD, Experiment 2 had comparable percentages of trials with misses as Experiment 1 (unpaired t-test: $t(19)=-1.23$, $p=0.23$, $g=-0.53$).

With an easier task in Experiment 3 (**Fig. 3O**), we found the percentage of trials with misses decreased compared to Experiment 2 (both experiments had equal saliency

between social and non-social items; two-way ANOVA (experiment X subject group (ASD, ASD controls and NUS controls)); main effect of experiment: $F(1,58)=4.99$, $p=0.029$, $\eta^2=0.060$; paired t-test for people with ASD: $t(12)=2.76$, $p=0.017$, $g=0.78$; paired t-test for ASD controls: $t(7)=1.99$, $p=0.087$, $g=0.90$; paired t-test for NUS controls: $t(10)=3.28$, $p=0.0082$, $g=1.15$), consistent with the idea that the percentage of misses is a function of the task difficulty (Rutishauser and Koch, 2007). We found no difference between social and non-social targets (two-way mixed ANOVA (target type X subject group); main effect of target type: $F(1,31)=0.77$, $p=0.39$, $\eta^2=0.0020$), suggesting that social and non-social targets had equal strength to be encoded into consciousness. However, ASD controls and NUS controls had significantly fewer misses (main effect of subject group: $F(3,31)=4.57$, $p=0.0092$, $\eta^2=0.27$), which was likely due to the faster RT (**Fig. 2F**; see **Supplemental Discussion**). People with ASD had more misses than ASD controls (t-test, $t(19)=2.05$, $p=0.054$, $g=0.89$ for social targets and $t(19)=2.17$, $p=0.043$, $g=0.94$ for non-social targets), but had similar number of misses as amygdala lesion patients ($t(14)=1.62$, $p=0.13$, $g=0.98$ for social targets and $t(14)=0.073$, $p=0.94$, $g=0.044$ for non-social targets). ASD controls had similar number of misses as NUS controls ($t(17)=0.39$, $p=0.70$, $g=0.17$ for social targets and $t(17)=0.94$, $p=0.36$, $g=0.42$ for non-social targets).

We lastly performed a subject-by-subject correlation analysis to confirm that the percentage of misses is a function of task difficulty. Task difficulty is typically measured by the time required to find the target (Treisman, 1988, 1998, Wolfe, 1998). In Experiment 1, there was strong subject-by-subject correlation between RT and the percentage of misses (Pearson correlation; all subjects: $r=0.72$, $p=8.31\times10^{-6}$; amygdala lesion patients: $r=0.97$, $p=0.15$; people with ASD: $r=0.67$, $p=0.068$; general controls: $r=0.57$, $p=0.14$; NUS controls: $r=0.22$, $p=0.51$). Strong correlations were observed in Experiment 2 (all subjects: $r=0.84$, $p=2.29\times10^{-9}$; people with ASD: $r=0.89$, $p=4.53\times10^{-5}$; ASD controls: $r=0.69$, $p=0.060$; NUS controls: $r=0.87$, $p=5.52\times10^{-4}$) and Experiment 3 (all subjects: $r=0.76$, $p=9.60\times10^{-8}$; amygdala lesion patients: $r=0.90$, $p=0.29$; people with ASD: $r=0.89$, $p=5.58\times10^{-5}$; ASD controls: $r=0.89$, $p=0.0034$; NUS controls: $r=0.23$,

p=0.50) as well. These results showed that the percentage of misses is a function of task difficulty.

Reduced orientation towards target-relevant items in visual search

We further compared people with ASD to general controls and found that social items attracted more attention (two-way mixed ANOVA (target type X subject group); main effect of target type; average of fixations 2 to 10: social: 35.11±3.52 (mean±SEM), non-social: 22.74±2.64; $F(1,14)=24.7$, $p=2.05\times10^{-4}$, $\eta^2=0.21$) and people with ASD had reduced target-relevant effects (ASD: 22.20±3.30, general control: 35.64±3.05; $F(1,14)=8.97$, $p=9.64\times10^{-3}$, $\eta^2=0.25$). Fixation-by-fixation analysis revealed that the impairment in people with ASD mainly came from the initial fixations of their search (fixations 2 to 5: 16.78±3.54; see **Supplemental Table 5**). However, there was a weak interaction (average of fixations 2 to 10: $F(1,14)=4.86$, $p=0.045$, $\eta^2=0.041$), suggesting that compared to general controls, people with ASD were more impaired in orienting to socially relevant targets.

We next compared amygdala lesion patients with general controls. Social targets still attracted more attention than non-social targets (two-way mixed ANOVA (target type X subject group); main effect of target type; average of fixations 2 to 10: social: 42.80±1.89, non-social: 24.76±3.37; $F(1,9)=41.1$, $p=1.23\times10^{-4}$, $\eta^2=0.52$), but there was no difference between amygdala patients and controls for the average of all fixations (main effect of subject group: amygdala: 28.81±1.02, general control: 35.64±3.05; $F(1,9)=1.74$, $p=0.22$, $\eta^2=0.059$), early fixations (amygdala: 26.38±1.35, general control: 31.47±2.62; $F(1,9)=1.28$, $p=0.29$, $\eta^2=0.041$), late fixations (amygdala: 30.76±2.14, general control: 40.11±5.39; $F(1,9)=1.04$, $p=0.33$, $\eta^2=0.059$), nor at any individual fixation ($p>0.05$ for all fixations). There was no interaction for all averages or at any fixations (see **Supplemental Table 5**). Separate analysis within social targets (**Fig. 6A**) and non-social targets (**Fig. 6B**) found no reduced attention towards target-relevant items,

for neither social targets nor non-social targets (t-test with general controls: $p>0.05$ for all fixations). Further, we observed no difference between general controls and NUS controls ($p>0.05$ for all fixations).

The attentional deficit in ASD is more severe with high task demands

Separate analysis within social targets (**Fig. 6E**) showed that the target-relevant effect was not reduced in people with ASD for social targets—we observed no difference across all subject groups (ASD: 38.82±3.96, amygdala: 38.94±6.58, NUS control: 55.65±4.57, ASD control: 48.43±4.71; one-way ANOVA, $p>0.05$ for all fixations), and when comparing people with ASD and ASD controls, we observed no difference in target-relevant effects ($p>0.05$ for all fixations). Still, amygdala lesion patients did not show a different target-relevant effect compared to ASD controls, NUS controls, or people with ASD (**Supplemental Table 5**). Similarly, separate analysis within non-social targets (**Fig. 6F**) showed no difference across all subject groups (ASD: 32.28±3.82, amygdala: 39.81±7.68, NUS control: 45.86±4.52, ASD control: 44.62±4.39; $p>0.05$ for all fixations). There was no difference for people with ASD vs. ASD controls, amygdala patients vs. people with ASD, amygdala patients vs. ASD controls, nor ASD controls vs. NUS controls (for all comparisons: $p>0.05$ for all fixations; see **Supplemental Table 5**).

Supplemental Discussion

Missing detection of targets and task difficulty

Subjects could look at the target during search without detecting it, failures of attention despite fixation that occurred surprisingly frequently in our task, especially with increased task load (Experiments 1 and 2). Task difficulty is typically measured by the time required to find the target and the RT correlates with the size of the search array (Treisman, 1988, 1998, Wolfe, 1998). Thus, a search task is more difficult than another,

or more difficult to one subject than another, if more time is required to find the target. Consistent with previous findings (Rutishauser and Koch, 2007), we found in our experiments that the percentage of misses is a function of the task difficulty—when RT is shorter, the percentage of missed detections is lower, as shown by a strong correlation within each subject group, as well as pronounced differences between subject groups such that NUS controls who had fastest RT also showed the smallest percentage of misses. Furthermore, in the simpler arrays (Experiment 3), not only were the targets easier to detect (shown by a significantly shorter RT), but also the percentage of missed detections was lower. The missed detections might be explained by a capacity limitation (Rutishauser and Koch, 2007). With greater task difficulty, the target item might not effectively be reported as it failed to emerge into "access consciousness", a failure to transfer from iconic to working memory.

Supplemental Table 1: List of ASD diagnosis and evaluation. Autism traits were evaluated by the Autism Diagnostic Observation Schedule (ADOS) and the Autism Diagnostic Interview-Revised (ADI-R). Cutoff scores for ASD on ADOS are 2 for A (communication) and 4 for B (social interaction). C is total (sum of A and B), and D is for stereotyped behavior. Cutoff scores for ASD on ADI-R are 10 for A (social interaction), 8 for B (communication) and 3 for C (stereotyped behavior). Higher scores indicate stronger autism traits.

Abbreviations: Exp: Experiments in which the subject participated. SCQ: Social Communication Questionnaire (cutoff score=14). AQ: Autism Spectrum Quotient. SRS A-SR: Social Responsiveness Scale-2 Adult Form (Self Report). n.a: not available.

		ADOS				ADI-R					SRS	
Exp	ID	A	B	C	D	A	B	C	D	SCQ	A-SR	AQ
1	RA0780	5	11	16	1	29	18	10	4	31	63	17
1	RA0796	4	9	13	0	n.a.	n.a.	n.a.	n.a.	7	71	n.a.
1	RA0364	6	11	17	0	21	20	7	3	19	99	30
1	RA0083	4	8	12	0	12	12	2	1	n.a.	78	27
1	RA0844	6	13	19	0	n.a.	n.a.	n.a.	n.a.	20	71	26
1	RA0100	7	14	21	3	25	18	3	3	24	67	28
1	RA0101	7	13	20	3	24	18	4	3	23	32	21
1,3	RA0846	4	11	15	0	n.a.	n.a.	n.a.	n.a.	n.a.	60	33
2,3	RA0582	3	5	8	3	n.a.	n.a.	n.a.	n.a.	n.a.	116	n.a.
2,3	RA0784	2	5	7	0	n.a.	n.a.	n.a.	n.a.	26	94	26
2,3	RA0085	4	9	13	1	21	11	6	3	12	114	n.a.
2,3	RA0880	3	6	9	2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	20
2,3	RA0843	3	6	9	1	n.a.	n.a.	n.a.	n.a.	n.a.	66	29
2,3	RA0584	3	4	7	3	14	12	5	0	21	92	28
2,3	RA0080	6	14	20	2	16	14	5	1	15	110	39
2,3	RA0869	3	8	11	0	n.a.	n.a.	n.a.	n.a.	n.a.	71	20
2,3	RA0847	5	7	12	1	n.a.	n.a.	n.a.	n.a.	n.a.	90	31
2	RA0871	2	6	8	2	n.a.	n.a.	n.a.	n.a.	n.a.	79	19
2,3	RA0626	3	11	14	0	28	22	8	3	21	78	25
2,3	RA0090	3	8	11	4	8	10	3	0	n.a.	n.a.	16
2,3	RA0849	5	8	13	1	n.a.	n.a.	n.a.	n.a.	30	97	28

Supplemental Table 2: List of demographics and psychological evaluation for people with ASD and ASD controls. Intelligence was measured by the Wechsler Abbreviated Scale of Intelligence (WASI).

Abbreviations: Exp: Experiments in which the subject participated. Age: age at testing. Hand: Dominant handedness (A: ambidextrous, L: left, R: right). WASI: Intelligence quotient (IQ) scores from the Wechsler Abbreviated Scale of Intelligence. FSIQ: full-scale IQ. PIQ: performance IQ. VIQ: verbal IQ. n.a.: not available.

Subject Category	Exp	ID	Age	Sex	Hand	Race	Education	WASI		
								FSIQ	PIQ	VIQ
ASD	1	RA0780	25	M	R	Asian/Pacific Islander	High School	103	125	87
	1	RA0796	26	M	R	Caucasian	Bachelor's Degree	133	127	131
	1	RA0364	31	M	A	Caucasian	Bachelor's Degree	106	99	111
	1	RA0083	26	M	R	Caucasian	Some College	106	118	94
	1	RA0844	24	M	R	Caucasian	n.a.	107	103	109
	1	RA0100	23	F	R	Caucasian	Some College	107	110	102
	1	RA0101	23	F	R	Caucasian	Some College	102	103	101
	1,3	RA0846	33	M	R	Caucasian	Bachelor's Degree	91	111	50
	2,3	RA0582	32	M	R	Asian/Pacific Islander	Master's Degree	124	115	127
	2,3	RA0784	27	M	R	Caucasian	Master's Degree	128	121	129
	2,3	RA0085	38	F	A	Caucasian	Bachelor's Degree	133	122	135
	2,3	RA0880	28	M	R	Caucasian	Bachelor's Degree	108	99	114
	2,3	RA0843	20	F	A	Multiracial	Some College	124	114	128
	2,3	RA0584	26	F	R	Caucasian	Bachelor's Degree	125	119	123
	2,3	RA0080	30	M	L	Caucasian	Some College	115	109	117
	2,3	RA0869	32	F	R	Hispanic/Latino	Bachelor's Degree	88	85	95

	2,3	RA0847	21	M	R	Asian/Pacific Islander	Some College	90	97	86
	2	RA0871	44	M	R	Caucasian	Associate's Degree	89	80	101
	2,3	RA0626	21	M	A	Asian/Pacific Islander	Middle School	125	119	123
	2,3	RA0090	46	M	R	Caucasian	Some College	56	60	57
	2,3	RA0849	21	M	R	Hispanic/Latino	n.a.	108	103	110
ASD Controls	2,3	RA0782	32	M	L	Hispanic/Latino	Bachelor's Degree	104	114	95
	2,3	RA0817	24	M	R	Caucasian	Bachelor's Degree	109	106	109
	2,3	RA0829	30	F	R	Caucasian	Bachelor's Degree	116	111	116
	2,3	RA0749	59	M	R	Caucasian	Associate's Degree	120	128	109
	2,3	RA0548	46	M	R	Caucasian	Some College	97	109	85
	2,3	RA0830	25	M	R	Caucasian	Bachelor's Degree	125	121	122
	2,3	RA0842	32	M	R	Caucasian	Bachelor's Degree	117	110	119
	2,3	RA0835	39	F	R	Hispanic/Latino	Bachelor's Degree	102	99	104

Supplemental Table 3: List of demographics and psychological evaluation for amygdala lesion patients (AP, AM and BG) and general controls. Intelligence was measured by the Wechsler Abbreviated Scale of Intelligence (WASI). AM and BG's IQ was measured by the HAWIE-R ('Hamburg-Wechsler Intelligenztest für Erwachsene in revidierter Fassung'), a German-language adaptation of the Wechsler Intelligence Test for Adults-Revised (WAIS-R), which provides a measure of verbal, performance, and full-scale IQ.

Abbreviations: Age: age at testing. Hand: Dominant handedness (A: ambidextrous, L: left, R: right). Benton: Benton Facial Recognition Test, long form score. Benton scores 41-54 are in the normal range. WASI: IQ scores from the Wechsler Abbreviated Scale of Intelligence. FSIQ: full-scale IQ. PIQ: performance IQ. VIQ: verbal IQ. n.a.: not available.

ID	Age	Sex	Hand	Race	Education	Benton	WASI		
							FSIQ	PIQ	VIQ
AP	27	F	R	Asian/Pacific Islander	Bachelor's Degree	50	98	106	92
AM	38	F	A	Caucasian	13 years of education in Germany	36	101	103	99
BG	38	F	R	Caucasian	13 years of education in Germany	41	96	97	94
RA0629	32	F	A	Caucasian	Some College	n.a.	n.a.	n.a.	n.a.
RA0633	27	F	R	Asian/Pacific Islander	Bachelor's Degree	n.a.	n.a.	n.a.	n.a.
RA0762	23	F	A	Hispanic/ Latino	Some College	50	100	105	95
RA0764	31	F	R	Caucasian	Master's Degree	n.a.	102	103	101
RA0829	29	F	R	Caucasian	Bachelor's Degree	n.a.	116	111	116

ID	Age	Sex	Hand	Race	Education	Benton	WASI		
							FSIQ	PIQ	VIQ
RA0835	38	F	R	Hispanic/ Latino	Bachelor's Degree	49	102	99	104
RA0848	40	F	R	Caucasian	High School	n.a.	101	104	98
RA0851	35	F	R	Caucasian	Bachelor's Degree	n.a.	107	103	108

Supplemental Table 4: Statistical results for general social preference. *All* is the average of fixation 2 to 10. *Early* is the average of fixation 2 to 5, and *Late* is the average of fixation 6 to 10.

Experiment 1													
One-Way ANOVA													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(3,26)	1.00	5.61	0.82	3.84	2.04	1.45	2.35	0.61	0.54	1.30	5.02	5.85	2.80
p-value	0.41	0.0042	0.50	0.021	0.13	0.25	0.10	0.61	0.66	0.30	0.0070	0.0034	0.060
Effect Size	0.10	0.39	0.086	0.31	0.19	0.14	0.21	0.066	0.060	0.13	0.37	0.40	0.24
Amygdala vs. ASD													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(9)	-0.71	2.72	-0.13	2.34	1.43	0.31	1.27	0.67	1.67	1.66	1.92	2.32	1.53
p-value	0.50	0.024	0.90	0.044	0.19	0.76	0.23	0.52	0.13	0.13	0.086	0.045	0.16
Effect Size Hedges's g	-0.44	1.68	-0.08	1.45	0.88	0.19	0.79	0.42	1.03	1.03	1.19	1.44	0.95
Amygdala vs. General control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(9)	0.38	0.23	-1.14	0.46	0.55	-0.96	-0.94	-0.17	0.90	-0.57	-0.60	-0.040	-0.71
p-value	0.72	0.82	0.29	0.66	0.60	0.36	0.37	0.87	0.39	0.59	0.57	0.97	0.50
Effect Size Hedges's g	0.23	0.14	-0.70	0.28	0.34	-0.59	-0.58	-0.11	0.56	-0.35	-0.37	-0.025	-0.44
ASD vs. General control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(14)	1.66	-3.24	-1.23	-2.63	-1.77	-1.79	-2.68	-1.41	-0.83	-2.59	-4.18	-3.26	-3.34
p-value	0.12	0.0059	0.24	0.020	0.10	0.094	0.018	0.18	0.42	0.022	9.17×10	0.0057	0.0049
Effect Size Hedges's g	0.78	-1.53	-0.58	-1.24	-0.84	-0.85	-1.26	-0.66	-0.41	-1.26	-1.98	-1.54	-1.58
General control vs. NUS Control													

Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(17)	-1.35	1.78	1.07	-0.52	-1.06	0.10	0.91	1.14	0.44	0.23	1.23	0.46	1.21
p-value	0.19	0.094	0.30	0.61	0.30	0.92	0.37	0.27	0.67	0.82	0.24	0.65	0.24
Effect Size Hedges's g	-0.60	0.79	0.48	-0.23	-0.47	0.046	0.41	0.50	0.20	0.10	0.54	0.21	0.54
Experiment 2													
One-Way ANOVA													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(2,29)	0.54	0.98	0.15	1.88	0.80	2.25	0.70	1.92	4.06	0.35	2.28	1.14	2.14
p-value	0.59	0.39	0.86	0.17	0.46	0.12	0.50	0.16	0.03	0.71	0.12	0.33	0.14
Effect Size	0.036	0.064	0.010	0.11	0.052	0.13	0.05	0.12	0.22	0.02	0.14	0.073	0.13
ASD vs. ASD Control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(19)	0.12	-0.97	0.39	0.84	-0.52	-0.13	-1.09	-0.80	1.66	1.20	0.35	-0.09	0.51
p-value	0.90	0.34	0.70	0.41	0.61	0.90	0.29	0.43	0.11	0.25	0.73	0.93	0.62
Effect Size Hedges's g	0.053	-0.42	0.17	0.36	-0.22	-0.055	-0.47	-0.35	0.72	0.52	0.15	-0.037	0.22
ASD Control vs. NUS Control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(17)	-0.74	0.41	0.48	2.21	0.67	2.00	-0.62	1.03	2.90	0.65	2.30	1.24	2.20
p-value	0.47	0.69	0.64	0.041	0.51	0.062	0.54	0.32	0.010	0.52	0.034	0.23	0.042
Effect Size Hedges's g	-0.33	0.18	0.21	0.98	0.30	0.89	-0.28	0.46	1.29	0.29	1.02	0.55	0.98
Experiment 3													
One-Way ANOVA													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(3,31)	0.36	0.050	0.79	2.10	0.69	1.13	1.92	0.51	0.63	1.21	1.20	1.13	0.62
p-value	0.79	0.98	0.51	0.12	0.56	0.35	0.15	0.68	0.60	0.34	0.32	0.35	0.61
Effect Size	0.032	0.0048	0.071	0.17	0.063	0.10	0.18	0.056	0.083	0.22	0.10	0.10	0.057
ASD vs. ASD Control													

Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(19)	0.52	-0.24	0.064	-1.44	-0.78	-0.47	-1.09	-0.10	-0.73	1.15	-0.73	-1.09	-0.63
p-value	0.61	0.81	0.95	0.17	0.45	0.64	0.29	0.92	0.48	0.27	0.48	0.29	0.54
Effect Size Hedges's g	0.22	-0.10	0.028	-0.62	-0.34	-0.20	-0.48	-0.043	-0.37	0.83	-0.31	-0.47	-0.27
Amygdala vs. ASD													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(14)	-0.14	-0.008	-1.50	-0.15	-1.11	-0.18	0.10	-0.63	-0.13	0.032	-0.69	-1.24	-0.21
p-value	0.89	0.99	0.16	0.88	0.29	0.86	0.92	0.54	0.90	0.97	0.50	0.23	0.83
Effect Size Hedges's g	-0.09	-0.005	-0.91	-0.090	-0.67	-0.11	0.069	-0.45	-0.10	0.023	-0.42	-0.75	-0.13
Amygdala vs. ASD Control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
t-statistic t(9)	0.27	-0.18	-1.44	-1.34	-1.06	-0.33	-0.49	-0.38	-0.34	0.58	-0.67	-1.60	-0.41
p-value	0.79	0.86	0.19	0.21	0.32	0.75	0.64	0.71	0.75	0.62	0.52	0.14	0.69
Effect Size Hedges's g	0.17	-0.11	-0.89	-0.83	-0.66	-0.20	-0.35	-0.27	-0.24	0.33	-0.41	-0.99	-0.26

Supplemental Table 5: Statistical results for target-relevant effects. *All* is the average of fixation 2 to 10. *Early* is the average of fixation 2 to 5, and *Late* is the average of fixation 6 to 10. NaN: values not available (NUS controls did not have 10 fixations for non-social targets in Experiment 3).

Experiment 1													
Two-way ANOVA (target type X subject group): All subject groups													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,26)	29.6	34.1	7.38	20	13	16.4	11.4	1.92	3.27	6.97	55.4	43.9	26.3
p-value	1.0E-05	3.70E-06	0.0116	0.000135	0.00128	0.00041	0.00234	0.178	0.0824	0.015	6.63E-08	4.97E-07	2.38E-05
Effect Size	0.388	0.262	0.0613	0.150	0.124	0.183	0.112	0.0291	0.0517	0.174	0.264	0.199	0.213
Main effect of subject group													
F-statistic F(3,26)	0.731	3.73	7.57	4.95	3.86	1.91	0.94	2.20	0.525	0.595	4.76	6.79	2.38
p-value	0.543	0.0236	0.000851	0.00752	0.0207	0.152	0.435	0.112	0.669	0.625	0.00894	0.00157	0.0927
Effect Size	0.018	0.124	0.325	0.227	0.192	0.0924	0.0599	0.112	0.0318	0.0177	0.206	0.285	0.121
Interaction													
F-statistic F(3,26)	1.00	5.47	0.995	1.38	0.240	0.519	0.693	0.445	0.356	0.553	2.07	2.50	0.704
p-value	0.407	0.00475	0.411	0.270	0.867	0.673	0.565	0.723	0.785	0.651	0.129	0.0817	0.558
Effect Size	0.0394	0.126	0.0248	0.0311	0.00686	0.0173	0.0204	0.0203	0.0169	0.0414	0.0296	0.034	0.0171
Two-way ANOVA (target type X subject group): ASD vs. General control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,14)	17.0	10.5	5.76	7.58	8.35	10.5	4.99	3.38	2.29	8.34	24.7	16.6	18.2
p-value	0.00103	0.00585	0.0309	0.0156	0.0119	0.00584	0.0423	0.0872	0.154	0.0127	0.000205	0.00113	0.000781
Effect Size	0.417	0.175	0.105	0.0798	0.0945	0.165	0.0576	0.0774	0.0728	0.226	0.209	0.150	0.171
Main effect of subject group													
F-statistic F(1,14)	1.76	5	9.55	6.44	10.5	3.77	1.4	2.92	1.7	2.23	8.97	11.1	4.56
p-value	0.206	0.0422	0.00798	0.0237	0.0059	0.0725	0.256	0.109	0.214	0.159	0.00964	0.00489	0.0508

Effect Size	0.0191	0.109	0.251	0.234	0.320	0.126	0.0691	0.104	0.0595	0.0454	0.247	0.298	0.166
Interaction													
F-statistic F(1,14)	2.75	10.7	1.09	2.89	0.0232	1.34	1.81	0.0103	0.00109	4.1	4.86	5.5	2.32
p-value	0.119	0.00551	0.313	0.111	0.881	0.267	0.199	0.921	0.974	0.0638	0.0447	0.0342	0.150
Effect Size	0.0675	0.178	0.0199	0.0304	0.000263	0.0209	0.0210	0.000235	3.48E-05	0.111	0.0411	0.0498	0.0218
Two-way ANOVA (target type X subject group): ASD vs. NUS Control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,17)	11.2	7.57	2.19	6.78	6.48	8.33	4.58	0.417	1.15	1.85	20.8	14.5	9.77
p-value	0.00388	0.0137	0.157	0.0185	0.0209	0.0103	0.0471	0.527	0.299	0.195	0.000275	0.00139	0.00616
Effect Size	0.269	0.105	0.0280	0.083	0.0946	0.139	0.103	0.00941	0.0272	0.0865	0.164	0.100	0.168
Main effect of subject group													
F-statistic F(1,17)	1.64	10.1	26.1	11.6	6.64	3.14	0.766	6.48	1.09	0.264	10.3	15.2	5.68
p-value	0.217	0.00545	8.75E-05	0.00335	0.0196	0.0942	0.394	0.0209	0.311	0.615	0.00509	0.00115	0.0290
Effect Size	0.0277	0.216	0.457	0.278	0.183	0.0884	0.0207	0.163	0.0343	0.00419	0.260	0.361	0.134
Interaction													
F-statistic F(1,17)	0.335	5.66	0.0687	2.02	0.300	0.695	1.47	0.762	0.0293	0.688	1.67	2.52	0.387
p-value	0.570	0.0294	0.796	0.173	0.591	0.416	0.242	0.395	0.866	0.421	0.213	0.131	0.542
Effect Size	0.00807	0.0787	0.000877	0.0247	0.00438	0.0116	0.033	0.0172	0.000694	0.0322	0.0132	0.0174	0.00666
Two-way ANOVA (target type X subject group): Amygdala vs. General control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,9)	21.6	32.7	6.04	20.9	10.1	9.11	10.2	1.99	3.24	12.6	41.1	38.5	21.9
p-value	0.00121	0.000287	0.0363	0.00134	0.0112	0.0145	0.011	0.191	0.110	0.00745	0.000123	0.000158	0.00115
Effect Size	0.614	0.609	0.144	0.389	0.344	0.346	0.13	0.093	0.150	0.457	0.521	0.546	0.306
Main effect of subject group													
F-statistic F(1,9)	0.0201	0.128	2.16	1.07	1.26	0.00292	1.2	0.216	0.399	1.24	1.74	1.28	1.04
p-value	0.890	0.729	0.176	0.327	0.292	0.958	0.303	0.653	0.545	0.298	0.219	0.286	0.335
Effect Size	0.00028	0.00311	0.118	0.0462	0.0398	9.04E-05	0.0885	0.0114	0.0205	0.0328	0.0592	0.0407	0.0588

Interaction													
F-statistic F(1,9)	0.153	0.022	1.3	0.528	0.718	0.861	0.00812	0.0061	1.05	0.233	0.0129	0.00824	0.0169
p-value	0.705	0.885	0.284	0.486	0.419	0.378	0.930	0.939	0.335	0.642	0.912	0.930	0.900
Effect Size	0.00436	0.000409	0.0311	0.00983	0.0244	0.0327	0.000104	0.000285	0.0487	0.00845	0.000163	0.000117	0.000236
One-Way ANOVA: Social Targets													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(3,26)	1.7259	6.9582	5.3581	6.5733	3.6054	1.8027	1.9806	1.1955	0.295	1.1938	5.0931	7.8157	2.8907
p-value	0.1863	0.0014	0.0052	0.0019	0.0266	0.1714	0.1416	0.3309	0.8286	0.3324	0.0066	7.03E-04	0.0545
Effect Size	0.1661	0.4453	0.382	0.4313	0.2938	0.1722	0.186	0.1212	0.0342	0.1253	0.3701	0.4742	0.2501
One-Way ANOVA: Non-social Targets													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(3,26)	0.3116	1.0076	4.9305	1.6222	1.7633	0.7273	0.3568	1.4464	0.5923	0.1074	2.6043	3.2903	0.9206
p-value	0.8168	0.4052	0.0077	0.2084	0.1789	0.5449	0.7846	0.2521	0.6258	0.9549	0.0733	0.0364	0.4447
Effect Size	0.0347	0.1042	0.3626	0.1577	0.1691	0.0774	0.0395	0.143	0.0664	0.0144	0.2311	0.2752	0.096
Experiment 2													
Two-way ANOVA (target type X subject group): All subject groups													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,29)	93.9	28.2	19.9	14.2	12.1	7.64	12.4	9.04	0.646	2.33	31.3	39.2	15
p-value	1.34E-10	1.07E-05	0.000112	0.000748	0.00161	0.00982	0.00144	0.0054	0.428	0.139	4.91E-06	7.88E-07	0.000574
Effect Size	0.699	0.315	0.118	0.0847	0.134	0.0749	0.135	0.113	0.00570	0.0452	0.169	0.224	0.105
Main effect of subject group													
F-statistic F(2,29)	0.250	4.82	2.82	7.18	4.31	3.63	4.89	2.47	3.36	0.422	6.00	6.63	4.52
p-value	0.78	0.0156	0.0763	0.00293	0.0229	0.0392	0.0148	0.102	0.0487	0.660	0.00662	0.00426	0.0196
Effect Size	0.00131	0.084	0.116	0.244	0.124	0.124	0.135	0.0749	0.133	0.0134	0.195	0.189	0.162
Interaction													
F-statistic F(2,29)	0.56	1.13	0.00234	0.531	0.299	1.1	0.768	0.44	1.81	0.644	0.567	0.569	0.669
p-value	0.578	0.337	0.998	0.593	0.744	0.348	0.473	0.648	0.182	0.533	0.573	0.572	0.520
Effect Size	0.00832	0.0252	2.76E-05	0.00634	0.00661	0.0215	0.0167	0.0110	0.0319	0.025	0.00614	0.00651	0.00939
Two-way ANOVA (target type X subject group): ASD vs. ASD Control													

Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,19)	50	19.7	10.1	6.04	9.7	1.69	11.5	4.67	0.215	1.31	14.1	20.5	6.62
p-value	1.00E-06	0.000279	0.00487	0.0238	0.0057	0.209	0.00309	0.0437	0.648	0.266	0.00133	0.000231	0.0186
Effect Size	0.677	0.285	0.109	0.0729	0.102	0.0298	0.183	0.0792	0.00354	0.0291	0.138	0.188	0.0861
Main effect of subject group													
F-statistic F(1,19)	0.142	3.12	0.129	4.49	4.58	2.95	1.52	4.59	0.544	0.0133	2.7	3.61	1.85
p-value	0.710	0.0934	0.724	0.0475	0.0456	0.102	0.232	0.0453	0.47	0.909	0.117	0.0729	0.19
Effect Size	0.000485	0.0590	0.00461	0.132	0.135	0.0854	0.0374	0.116	0.0174	0.000364	0.0838	0.102	0.0581
Interaction													
F-statistic F(1,19)	0.0169	1.55	0.000241	0.419	0.298	0.0203	0.617	0.167	3.60	1.27	0.233	0.147	0.779
p-value	0.898	0.229	0.988	0.525	0.592	0.888	0.442	0.687	0.0731	0.274	0.635	0.706	0.388
Effect Size	0.00023	0.0223	2.59E-06	0.00506	0.00312	0.000357	0.00985	0.00284	0.0593	0.0281	0.00228	0.00134	0.0101
Two-way ANOVA (target type X subject group): ASD vs. NUS Control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,22)	80.0	15.7	21.7	15.8	7.15	6.62	6.05	6.27	2.4	3.69	23.8	24.6	13.2
p-value	8.85E-09	0.000653	0.00012	0.000636	0.0138	0.0173	0.0222	0.0202	0.136	0.0698	7.16E-05	5.78E-05	0.00145
Effect Size	0.710	0.269	0.118	0.0966	0.120	0.0849	0.0853	0.102	0.0278	0.0990	0.161	0.193	0.115
Main effect of subject group													
F-statistic F(1,22)	0.167	9.88	5.04	12.4	6.11	5.84	8.73	1.85	6.12	0.711	9.43	10.9	7.27
p-value	0.687	0.00473	0.0352	0.00194	0.0217	0.0245	0.00732	0.187	0.0215	0.410	0.0056	0.00322	0.0132
Effect Size	0.000641	0.101	0.142	0.276	0.110	0.129	0.171	0.041	0.156	0.0141	0.206	0.208	0.172
Interaction													
F-statistic F(1,22)	1.11	1.69	0.004	0.194	0.479	1.4	0.28	0.804	0.213	0.00367	0.345	0.937	0.0427
p-value	0.303	0.207	0.950	0.664	0.496	0.249	0.602	0.379	0.649	0.952	0.563	0.344	0.838
Effect Size	0.00988	0.0288	2.17E-05	0.00118	0.00802	0.0180	0.00395	0.0131	0.00247	9.83E-05	0.00233	0.00735	0.000371
One-Way ANOVA: Social Targets													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(2,29)	0.6669	3.731	2.1064	5.2707	2.8341	3.692	1.4271	2.5374	2.6888	1.392	3.5797	4.5291	2.7592
p-value	0.521	0.0361	0.1399	0.0112	0.0751	0.0373	0.2564	0.0965	0.0849	0.2653	0.0408	0.0194	0.0800

Effect Size	0.0440	0.2047	0.1268	0.2666	0.1635	0.2029	0.0896	0.1489	0.1564	0.0904	0.198	0.238	0.1599
One-Way ANOVA: Non-social Targets													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(2,29)	0.2385	0.6854	2.2795	5.6748	2.1057	1.5259	9.5718	0.781	3.0718	0.5727	8.0094	5.8843	4.7523
p-value	0.7893	0.5119	0.1204	0.0083	0.140	0.2344	6.43E-04	0.4673	0.0617	0.5707	0.0017	0.0072	0.0164
Effect Size	0.0162	0.0451	0.1359	0.2813	0.1268	0.0952	0.3976	0.0511	0.1748	0.0407	0.3558	0.2887	0.2468
Experiment 3													
Two-way ANOVA (target type X subject group): All subject groups													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,31)	0.429	32.9	4.07	3.78	3.03	0.268	1.24	0.0262	1.18	0.305	6.50	20.9	0.297
p-value	0.517	2.59E-06	0.0524	0.0611	0.0916	0.609	0.277	0.873	0.301	0.596	0.0159	7.38E-05	0.590
Effect Size	0.0084	0.204	0.0168	0.0214	0.0196	0.00239	0.0179	0.000541	0.0554	0.00917	0.0432	0.065	0.00311
Main effect of subject group													
F-statistic F(3,31)	0.912	2.61	1.5	1.11	3.39	0.251	0.337	1.8	8.27	0.52	3.54	2.52	2.42
p-value	0.446	0.0693	0.234	0.360	0.0301	0.860	0.799	0.177	0.00367	0.680	0.0259	0.076	0.0855
Effect Size	0.0295	0.121	0.107	0.0762	0.189	0.0173	0.0250	0.115	0.279	0.112	0.189	0.163	0.131
Interaction													
F-statistic F(3,31)	0.371	0.0487	0.596	0.925	0.810	0.918	0.385	0.111	0.181	0.702	0.528	0.750	0.352
p-value	0.774	0.986	0.622	0.440	0.498	0.444	0.765	0.953	0.907	0.577	0.667	0.531	0.788
Effect Size	0.0218	0.000905	0.00741	0.0158	0.0157	0.0246	0.0167	0.00686	0.0255	0.0633	0.0105	0.00702	0.0111
Two-way ANOVA (target type X subject group): ASD vs. ASD Control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,19)	1.45	14.7	3.39	0.992	3.19	0.319	0.101	0.00325	1.33	0.235	2.30	13.7	0.0445
p-value	0.243	0.00110	0.0811	0.332	0.0898	0.579	0.755	0.955	0.276	0.641	0.146	0.00152	0.835
Effect Size	0.0405	0.230	0.0286	0.00931	0.0297	0.00615	0.00224	0.000107	0.0945	0.00971	0.0371	0.0758	0.00122
Main effect of subject group													
F-statistic F(1,19)	0.812	1.74	0.143	2.5	4.15	0.0206	0.000245	2.06	3.12	0.00966	5.15	2.66	4.21

p-value	0.379	0.203	0.709	0.131	0.0558	0.887	0.988	0.172	0.108	0.924	0.0352	0.120	0.0541
Effect Size	0.0173	0.0395	0.00607	0.0941	0.138	0.00068	8.91E-06	0.0606	0.0421	0.000689	0.139	0.0997	0.087
Interaction													
F-statistic F(1,19)	0.290	0.0256	0.144	0.177	2.70	0.000237	0.0624	0.163	0.242	2.13	0.134	1.15	0.0428
p-value	0.597	0.875	0.708	0.678	0.117	0.988	0.806	0.692	0.634	0.182	0.719	0.297	0.838
Effect Size	0.00808	0.000400	0.00121	0.00166	0.0251	4.57E-06	0.00139	0.00536	0.0172	0.0882	0.00216	0.00636	0.00117
Two-way ANOVA (target type X subject group): ASD vs. NUS Control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,22)	0.209	23.4	4.70	4.54	3.74	0.938	1.02	0.00971	0.764	NaN	8.87	19.1	1.18
p-value	0.652	7.85E-05	0.0413	0.0445	0.0662	0.344	0.326	0.923	0.405	NaN	0.00694	0.000246	0.289
Effect Size	0.00622	0.178	0.0271	0.0398	0.0471	0.008	0.0226	0.000261	0.0424	NaN	0.0604	0.0877	0.0117
Main effect of subject group													
F-statistic F(1,22)	2.72	6.31	3.14	1.69	5.38	0.0101	1.1	4.56	24.7	NaN	8.25	5.02	5.67
p-value	0.113	0.0198	0.0903	0.207	0.0301	0.921	0.308	0.0485	0.000774	NaN	0.00886	0.0355	0.0268
Effect Size	0.0344	0.146	0.106	0.0541	0.131	0.000375	0.0349	0.126	0.332	NaN	0.215	0.151	0.165
Interaction													
F-statistic F(1,22)	0.857	0.125	0.049	0.969	0.702	4.34	1.28	0.0845	0.0764	NaN	0.359	7.54E-05	0.396
p-value	0.365	0.727	0.827	0.336	0.411	0.0497	0.273	0.775	0.788	NaN	0.555	0.993	0.536
Effect Size	0.0255	0.000952	0.000283	0.00849	0.00884	0.037	0.0283	0.00227	0.00424	NaN	0.00245	3.47E-07	0.00391
Two-way ANOVA (target type X subject group): Amygdala vs. ASD Control													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
Main effect of target type													
F-statistic F(1,9)	0.498	9.55	0.164	0.00920	0.00348	0.00523	0.269	0.312	0.387	10.6	0.228	2.51	0.0575
p-value	0.498	0.0129	0.695	0.926	0.954	0.944	0.620	0.600	0.597	0.190	0.645	0.148	0.816
Effect Size	0.0198	0.308	0.00256	0.000132	2.87E-05	0.000222	0.0121	0.0299	0.118	0.126	0.011	0.0232	0.00374
Main effect of subject group													
F-statistic F(1,9)	0.000244	0.502	0.615	1.41	3.97	0.417	0.00699	0.0527	0.343	0.316	1.31	2.60	0.27
p-value	0.988	0.496	0.453	0.265	0.0776	0.535	0.936	0.827	0.617	0.674	0.282	0.141	0.616
Effect Size	1.68E-05	0.0212	0.0538	0.118	0.283	0.0271	0.000670	0.00508	0.0237	0.178	0.0694	0.200	0.0118
Interaction													

F-statistic F(1,9)	0.0623	0.0214	0.962	0.243	0.145	0.115	0.041	0.0477	0.359	10.2	0.154	0.208	0.115
p-value	0.808	0.887	0.352	0.634	0.712	0.743	0.845	0.836	0.61	0.193	0.704	0.659	0.742
Effect Size	0.00248	0.00069	0.015	0.00348	0.00119	0.00487	0.00184	0.00457	0.110	0.121	0.00744	0.00192	0.0075
One-Way ANOVA: Social Targets													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(3,31)	0.8863	2.0504	1.4601	1.5952	1.7811	0.3717	2.0223	1.2824	5.5773	0.2578	3.1216	2.184	2.4871
p-value	0.459	0.1272	0.2445	0.2105	0.1713	0.774	0.1345	0.303	0.0069	0.8543	0.0400	0.1098	0.0789
Effect Size	0.079	0.1656	0.1238	0.1337	0.147	0.0347	0.1835	0.1382	0.4817	0.0606	0.232	0.1745	0.194
One-Way ANOVA: Non-social Targets													
Fixation Order	1	2	3	4	5	6	7	8	9	10	All	Early	Late
F-statistic F(3,31)	0.0296	1.6797	1.2487	0.6742	3.7904	0.4411	0.0451	0.8797	3.8646	0.8791	2.2979	2.4435	1.166
p-value	0.993	0.1917	0.309	0.5744	0.0200	0.7253	0.987	0.4661	0.0332	0.4449	0.097	0.0827	0.339
Effect Size	0.0029	0.1398	0.1078	0.0613	0.2684	0.0422	0.0056	0.1029	0.453	0.1495	0.1819	0.1912	0.1044

Supplemental Figure Legends

Supplemental Fig. 1. MRI anatomical scans of the amygdala lesions. Displayed are high-resolution (0.5-1 mm isotropic) horizontal T1-weighted magnetic resonance imaging sections of the anterior medial temporal lobes with red arrows indexing the focal bilateral amygdala calcification damage. R: right.

Supplemental Fig. 2. Low-level properties of the stimuli. **(A-C)** Standard arrays used in Experiment 2. **(D-F)** Simpler arrays used in Experiment 3. **(A,D)** Standard low-level saliency measured with the Itti-Koch model (Itti et al., 1998, Itti and Koch, 2001) did not differ between social and non-social items in the search array (two-tailed t-test, p=0.98 for standard arrays and p=0.46 for simpler arrays). The sum of saliency of all items was normalized to 1 within each search array. **(B,E)** Distance to center did not differ between social and non-social items (measured in pixel, p=0.85 for standard arrays and p=0.96 for simpler arrays). **(C,F)** Item size did not differ between social and non-social items (measured in $pixel^2$, p=0.79 for standard arrays and p=0.34 for simpler arrays).

Supplemental Fig. 3. Target-relevant effect in Experiment 1 was preserved after normalization of fixation percentage. People with ASD had reduced percentage of fixations on items, for both **(A)** social targets and **(B)** non-social targets. However, people with ASD still had reduced fixations towards social items when searching for social targets **(C)**, but they were not different from controls when searching for non-social targets **(D)**.

Supplemental Fig. 4. In Experiment 2, all subjects looked at target-congruent items in a fast and sustained manner. **(A-B)** People with ASD. **(C-D)** ASD controls. **(E-F)** NUS controls. Red: social items. Blue: non-social items. Upper row **(A,C,E)**: when searching

for social targets. Lower row **(B,D,F)**: when searching for non-social targets. Asterisk indicates significant difference between target-congruent items and target-incongruent items (two-tailed paired t-test: $p<0.05$). Shaded area denotes ±SEM.

Supplemental Fig. 5. In Experiment 3, all subjects looked at target-congruent items in a fast and sustained manner. **(A-B)** Amygdala lesion patients. **(C-D)** People with ASD. **(E-F)** ASD controls. **(G-H)** NUS controls. Red: social items. Blue: non-social items. Upper row **(A,C,E,G)**: when searching for social targets. Lower row **(B,D,F,H)**: when searching for non-social targets. Asterisk indicates significant difference between target-congruent items and target-incongruent items (two-tailed paired t-test: $p<0.05$). Shaded area denotes ±SEM.

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