

## Supplementary Materials

### Primary Analyses with Autistic Traits as the Predictor

Although CU-traits were the primary focus of the paper, we also run the analysis in relation to autistic traits (not including CU-traits), to show the effect of autistic traits on emotion recognition (ER). This is to aid interpretation in changes in any ER-CU-traits associations once autistic traits were included in the model (see Table S1).

#### *Static Emotion Recognition Task*

##### *Static Accuracy*

There was an overall main effect of autistic traits ( $p < .001$ ), and an Emotion\*autistic traits interaction ( $p < .001$ ). When re-running the analysis split by emotion, this effect was driven by higher autistic traits associated with significantly lower ER for happy expressions ( $p = .010$ ), and marginally reduced recognition accuracy for sad ( $p = .051$ ) and scared ( $p = .069$ ) expressions.

##### *Static Relative Looking to the Eyes*

The main effect of autistic traits did not reach significance ( $p = .093$ ) but there was a significant Emotion\*autistic traits interaction ( $p < .001$ ). This was driven by significantly reduced looking to the eyes for angry ( $p = .014$ ) expressions and marginally reduced looking for sad expressions ( $p = .072$ ) in those with higher levels of autistic traits.

#### *Dynamic Emotion Recognition Task*

##### *Dynamic Accuracy*

There was a main effect of autistic traits, with better recognition accuracy associated with lower autistic traits ( $p = .024$ ). There were no 2 or 3-way interactions with ASD traits and either Gaze

or Emotion, but there was a significant Gaze\*Emotion interaction ( $p < .001$ ). Running separate GEE models for each emotion, showed that there was a significant main effect of gaze direction for angry ( $p = .001$ ; greater accuracy for averted gaze 0.91 versus direct gaze 0.84), sad ( $p < .001$ ; with greater accuracy for direct 0.93 versus averted gaze 0.85) and neutral expressions ( $p = .003$ ; with greater accuracy for direct 0.91 versus averted gaze 0.85).

#### *Dynamic RT*

There was no main effect of autistic traits, nor any 2 or 3-way interactions with ASD traits and either Gaze or Emotion. There was a significant Gaze\*Emotion interaction ( $p < .001$ ). Running separate GEE models for each emotion, showed that there was a significant main effect of gaze direction for happy ( $p = .006$ ; faster RT for averted 3.27 versus direct gaze 3.50), sad ( $p = .040$ ; faster RT for direct 3.43 versus averted gaze 3.57) and neutral expressions ( $p < .001$ ; faster RT for direct 3.45 versus averted gaze 3.78).

#### *Dynamic Relative Looking to the Eyes*

There was no significant main effect of autistic traits nor any 2 or 3-way interactions with autistic traits. There was a main effect of Gaze, with increased attention to the eyes for direct (mean = 0.62) versus averted gaze (mean = 0.59). Again, there was a significant Gaze\*Emotion interaction ( $p < .001$ ). Running separate GEE models for each emotion, showed that there was a significant main effect of gaze direction for happy ( $p = .004$ ; increased looking to eyes for averted 0.57 versus direct gaze 0.52), sad ( $p < .001$ ; increased looking to eyes for direct 0.68 versus averted gaze 0.57), scared ( $p = .013$ ; increased looking to eyes for direct 0.63 versus averted gaze 0.60).

Table S1: Associations between Autistic Traits and Static and Dynamic Emotion Recognition

Accuracy		Static ER Wald $\chi^2$ (df), p value	Dynamic ER Wald $\chi^2$ (df), p value
	Emotion		<b>330.517 (4), p &lt; .001</b>
Gaze		-	<b>5.712 (1), p = .017</b>
Autistic traits		<b>15.115 (1), p &lt; .001</b>	<b>5.085 (1) p = .024</b>
Sex		.120 (1), p = .729	3.172 (1) p = .075
Age		.449 (1), p = .503	.013 (1), p = .911
Deprivation quintile		6.881 (4), p = .142	5.847 (4) p = .211
Emotion*Autistic traits		9.917 (4), p = .042	4.492 (4) p = .343
Gaze*Autistic traits		-	3.140 (1), p = .076
Emotion*Gaze		-	<b>23.980 (4), p &lt; .001</b>
Emotion*Gaze*Autistic traits		-	4.969 (4), p = .291
Reaction Time	Emotion	-	<b>221.048 (4), p &lt; .001</b>
	Gaze	-	.022 (1), p = .883
	Autistic traits	-	1.215 (1) p = .270
	Sex	-	1.934 (1) p = .164
	Age	-	.752 (1), p = .386
	Deprivation quintile	-	1.434 (4) p = .838
	Emotion*Autistic traits	-	4.767 (4) p = .312
	Gaze*Autistic traits	-	.612 (1), p = .434
	Emotion*Gaze	-	<b>29.057 (4), p &lt; .001</b>
	Emotion*Gaze*Autistic traits	-	7.268 (4), p = .122
Relative Attention to Eyes	Emotion	<b>57.599 (4), p &lt; .001</b>	<b>147.775 (4), p &lt; .001</b>
	Gaze	-	<b>4.994 (1), p = .025</b>
	Autistic traits	2.818 (1), p = .093	.211 (1), p = .646
	Sex	.544 (1), p = .461	1.180 (1), p = .277
	Age	.165 (1), p = .685	.008 (1), p = .930
	Deprivation quintile	6.909 (4), p = .141	16.393 (4), p = .003
	Emotion*Autistic traits	<b>29.571 (4), p &lt; .001</b>	3.417 (4), p = .491
	Gaze*Autistic traits	-	.135 (1), p = .713
	Emotion*Gaze	-	19.131 (4), p = .001
	Emotion*Gaze*Autistic traits	-	1.229 (4), p = .873

Figure S1: Scatterplot of autistic traits measured by social communication questionnaire (SCQ) and static emotion recognition average score

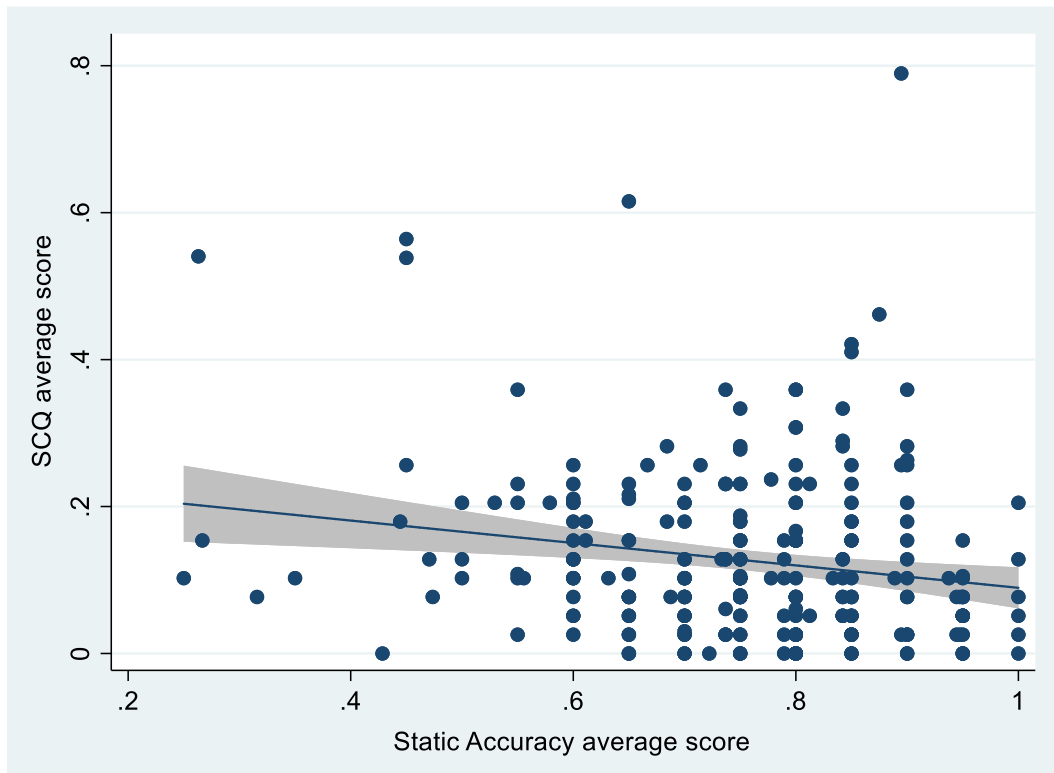


Figure S1