

## Supplemental Information (SI) 2 for

### Reading **your** emotions in **my** physiology? Reliable emotion interpretations in absence of a robust physiological resonance

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#### Additional information to Analysis 1 (Behavioral analysis)

Table 1. Descriptive statistics of behavioral responses and questionnaire data.

	<i>M</i>	<i>SD</i>	Range
Behavioral responses			
Accuracy (overall)	0.831	0.074	0.400 – 0.925
▪ Face	0.885	0.081	0.450 – 1.000
▪ Body	0.776	0.098	0.350 – 0.950
Intensity (overall)	53.810	8.292	30.860 – 73.260
▪ Face	60.520	8.023	40.525 – 78.125
▪ Body	52.560	9.066	28.950 – 72.700
▪ Subtle	42.483	14.337	1.870 – 74.522
Questionnaire scores			
EQ	83.150	24.146	32 - 129
LSAS	34.960	20.184	5 - 83
AQ	17.030	6.050	3 - 31

Table 2. Percentages of mapping a subtle emotional cue to each of the 6 expression categories by cue type.

	Angry	Happy	Sad	Fearful*	Neutral
Cue type					
Blush	7.746	2.817	14.085	13.028	62.324
Dilated pupils	5.986	1.761	11.444	8.627	72.183
Tears	1.006	0.201	89.537	2.213	7.042

\*Note. In the labelling task, the option for fear was ‘scared’ instead of fearful.

*Emotion recognition accuracy.* To explore sources of random variation between subjects in their behavioural responses, we employed self-reported demographic and personality variables in additional analyses. More specifically, we ran three models with the same independent variables as in the main analysis (emotion category and modality or cue type respectively, see Methods section), and additionally included Gender, Age and the questionnaire scores from the LSAS, the AQ and the EQ as predictors. Given that we were specifically interested in explaining between-subject variance by including these predictors, we didn't include a random intercept for the subject variable which already accounts for between-subject variance. While the inclusion of AQ scores, LSAS scores, EQ scores, Gender and Age as additional predictors didn't reveal any significant relation between personal characteristics and emotion recognition accuracy, perceived intensity ratings did vary depending on these variables (see Tables 3 and 5 below). For the prototypical facial and bodily expressions of emotion, there was a significant effect of gender, with men providing overall lower intensity ratings than women. Moreover, higher trait empathy as reported in the EQ was related to higher intensity ratings. The latter relationship was also found in the model on perception of subtle facial cues, whereas there was no effect of gender. On top of that, social anxiety traits as well as autistic traits showed a significant relation to perceived emotional intensity of the subtler expressions of emotion: higher LSAS scores were associated with lower intensity ratings whereas higher AQ scores were associated with higher intensity ratings. Importantly, even though the residual variance became larger when adding predictors instead of a random intercept, the predictive value of the experimental manipulation variables (i.e. emotion category, modality and their interaction, or cue type) was not meaningfully influenced by adding the subject-specific variables as predictors.

Table 3. Results of the (A) binomial generalized linear mixed-effects model predicting emotion recognition accuracy by emotion category and modality and (B) binomial general linear model predicting emotion recognition accuracy by emotion category and modality, including individual difference variables as additional predictors.

Fixed effects	A						B					
	<i>Odds Ratios</i>	<i>df1</i>	<i>df2</i>	$\chi^2$	<i>z</i>	<i>p</i>	<i>Odds Ratios</i>	<i>df1</i>	<i>df2</i>	$\chi^2$	<i>z</i>	<i>p</i>
Intercept	9.679	1	5589	236.119	15.366	< .001	8.508		5585		5.369	< .001
Emotion category		4	5589	185.788		< .001		4	5585	194.10		< .001
▪ <i>Angry</i>	0.342				-6.132	< .001	0.346				-6.087	< .001
▪ <i>Happy</i>	0.145				-11.524	< .001	0.149				-11.426	< .001
▪ <i>Sad</i>	0.428				-4.750	< .001	0.432				-4.716	< .001
▪ <i>Fearful</i>	0.647				-2.312	<b>0.021</b>	0.650				-2.297	<b>0.022</b>

Modality	0.332	1	5589	39.921	-6.318	< .001	0.336	1	5585	42.93	-6.272	< .001	
Emotion Category* Modality (Face)		4	5589	203.438		< .001		4	5585	358.93		< .001	
▪ <i>Angry</i>	21.067				10.514	< .001	20.514				10.442	< .001	
▪ <i>Happy</i>	206.266				11.748	< .001	197.466				11.643	< .001	
▪ <i>Sad</i>	3.900				5.796	< .001	3.844				5.755	< .001	
▪ <i>Fearful</i>	5.181				6.322	< .001	5.100				6.277	< .001	
AQ scores							0.997	1	5585	0.16	-0.406	0.685	
LSAS scores							1.002	1	5585	0.97	0.982	0.326	
EQ scores							1.000	1	5585	0.01	0.091	0.928	
Gender (male)							1.017	1	5585	0.04	0.197	0.844	
Age							1.002	1	5585	0.03	0.165	0.869	
<b>Random Effects</b>	Variance						Variance						
N <sub>Subject</sub>	70	Intercept				0.081							
Obs.	5600	Residuals				0.754		Residuals		0.769			

Note. Bold font highlights p-values below the significance level of 0.05.

Table 4. Results of the estimated mean contrasts between the emotion category and modality factor levels in the binomial generalized mixed-effects model predicting emotion recognition accuracy.

	<i>Odds Ratio</i>	<i>z</i>	<i>p</i>	<i>Odds Ratio</i>	<i>z</i>	<i>p</i>
	Face			Body		
Within modality						
Neutral / angry	0.139	-8.549	< .001	2.923	6.132	< .001
Neutral / happy	0.034	-8.062	< .001	6.903	11.524	< .001
Neutral / sad	0.599	-3.364	<b>0.008</b>	2.336	4.750	< .001
Neutral / fearful	0.298	-6.733	< .001	1.545	2.312	0.208
Angry / happy	0.241	-3.095	<b>0.020</b>	2.362	6.491	< .001
Angry / sad	4.317	6.136	< .001	0.799	-1.533	1.000
Angry / fearful	2.149	2.981	<b>0.029</b>	0.529	-4.045	<b>0.001</b>
Happy / sad	17.897	6.780	< .001	0.338	-7.891	< .001
Happy / fearful	8.909	5.017	< .001	0.224	-10.013	< .001
Sad / fearful	0.498	-3.689	<b>0.002</b>	0.661	-2.557	0.106
Between modalities	Body / Face					
Neutral	3.011	6.318	< .001			
Angry	0.143	-8.408	< .001			
Happy	0.015	-10.096	< .001			
Sad	0.772	-1.646	0.100			
Fearful	0.587	-2.811	<b>0.005</b>			

Note. Bold font highlights p-values below the significance level of 0.05.

Table 5. Results of the (A) linear mixed-effects model predicting perceived emotional intensity of prototypical facial and bodily expressions by emotion category and modality and (B) general linear model predicting perceived emotional intensity by emotion category and modality, including individual difference variables as additional predictors.

Fixed effects	A						B					
	<i>B</i>	<i>df1</i>	<i>df2</i>	<i>F</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>df1</i>	<i>df2</i>	<i>F</i>	<i>t</i>	<i>p</i>
Intercept	22.186	1	250	328.245	18.118	< .001	22.502		5585	59.801	7.733	< .001
Emotion category		4	5521	420.987		< .001		4	5585	370.165		< .001
▪ <i>Angry</i>	40.696				34.305	< .001	40.696				32.168	< .001
▪ <i>Happy</i>	33.639				28.356	< .001	33.639				26.590	< .001
▪ <i>Sad</i>	37.484				31.597	< .001	37.484				29.629	< .001
▪ <i>Fearful</i>	40.100				33.802	< .001	40.100				31.696	< .001
Modality (Face)	2.332	1	5521	3.865	1.966	<b>0.049</b>	2.332	1	5585	3.398	1.843	0.065
Emotion Category* Modality (Face)		4	5521	37.339		< .001		4	5585	32.831		< .001
▪ <i>Angry</i>	12.359				7.367	< .001	12.359				6.908	< .001
▪ <i>Happy</i>	12.891				7.684	< .001	12.891				7.205	< .001
▪ <i>Sad</i>	-3.279				-1.954	0.051	-3.279				-1.832	0.067
▪ <i>Fearful</i>	6.721				4.006	< .001	6.721				3.757	< .001
AQ scores							0.015	1	5585	0.079	0.282	0.778
LSAS scores							-0.031	1	5585	3.503	-1.872	0.061
EQ scores							0.034	1	5585	6.839	2.615	<b>0.009</b>
Gender (male)							-1.464	1	5585	5.227	-2.286	<b>0.022</b>
Age							-0.072	1	5585	0.555	-0.745	0.456
Random Effects	Variance						Variance					
N <sub>Subject</sub>	70	Intercept				55.71						
Obs.	5600	Residuals				394.05	Residuals				447.03	

Note. Bold font highlights p-values below the significance level of 0.05.

Table 6. Results of the estimated mean contrasts between the emotion category and modality factor levels in the linear mixed-effects model predicting perceived emotional intensity of prototypical facial and bodily expressions.

Within modality	<i>Est.</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>Est.</i>	<i>df</i>	<i>t</i>	<i>p</i>
	Face				Body			
Neutral / angry	-53.005	5521	-44.723	< .001	-40.696	5521	-34.305	< .001
Neutral / happy	-46.530	5521	-39.233	< .001	-33.639	5521	-28.356	< .001
Neutral / sad	-34.205	5521	-28.833	< .001	-37.484	5521	-31.597	< .001
Neutral / fearful	-46.821	5521	-39.468	< .001	-40.100	5521	-33.802	< .001
Angry / happy	6.525	5521	5.500	< .001	7.057	5521	5.949	< .001
Angry / sad	18.850	5521	15.890	< .001	3.212	5521	2.708	0.068
Angry / fearful	6.234	5521	5.255	< .001	5.496	5521	0.503	1.000
Happy / sad	12.325	5521	10.389	< .001	-3.845	5521	-3.241	<b>0.012</b>
Happy / fearful	-0.291	5521	-0.245	1.000	-6.461	5521	-5.446	< .001
Sad / fearful	-12.616	5521	-10.635	< .001	-2.616	5521	-2.205	0.275
Between modalities	Body / Face							
Neutral	-2.332	5521	-1.966	0.050				
Angry	-14.961	5521	-12.384	< .001				
Happy	-15.223	5521	-12.832	< .001				
Sad	0.946	5521	0.789	0.425				
Fearful	-9.054	5521	-7.632	< .001				

Note. Bold font highlights p-values below the significance level of 0.05.

Table 7. Results of the (A) linear mixed-effects model predicting perceived emotional intensity of subtle emotion cues by cue type and (B) general linear model predicting perceived emotional intensity by cue type, including individual difference variables as additional predictors.

Fixed effects	A						B					
	<i>B</i>	<i>df1</i>	<i>df2</i>	<i>F</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>df</i>	<i>df2</i>	<i>F</i>	<i>t</i>	<i>p</i>
(Intercept)	24.518	1	95	176.16	13.273	< .001	7.699		2161	2.306	1.518	0.129
Cue type		3	2097	669.31		< .001		3	2161	452.109		< .001
▪ <i>Blush</i>	9.861				8.487	< .001	9.861				6.975	< .001
▪ <i>Dilated Pupils</i>	0.254				0.218	0.827	0.254				0.179	0.858
▪ <i>Tears</i>	47.045				39.118	< .001	47.045				32.150	< .001
AQ scores							0.310	1	2161	10.260	3.203	<b>0.001</b>
LSAS scores							-0.091	1	2161	9.415	-3.068	<b>0.002</b>
EQ scores							0.097	1	2161	17.472	4.180	< .001
Gender (male)							0.726	1	2161	0.399	0.632	0.528
Age							0.273	1	2161	2.466	1.570	0.116
Random Effects	Variance						Variance					
N <sub>Subject</sub>	70	Intercept				191.6						
Obs.	2170	Residuals				378.0	Residuals				557.52	

Note. Bold font highlights p-values below the significance level of 0.05.

Table 8. Results of the estimated mean contrasts between the cue type factor levels in the linear mixed-effects model predicting perceived emotional intensity of subtle emotional cues.

	<i>Est.</i>	<i>df</i>	<i>t</i>	<i>p</i>
Neutral / blush	-9.861	2097	-8.487	< <b>.001</b>
Neutral / dilated pupils	-0.254	2097	-0.218	1.000
Neutral / tears	-47.045	2097	-39.118	< <b>.001</b>
Blush / dilated pupils	9.607	2097	8.269	< <b>.001</b>
Blush / tears	-37.185	2097	-30.919	< <b>.001</b>
Dilated pupils / tears	-46.792	2097	-38.907	< <b>.001</b>

*Note.* Bold font highlights p-values below the significance level of 0.05.