

Supplemental Material

1. Calculation of Subjective Unconsciousness using ROC measures

1.1: ROC calculations and experimental method

There was no precedence for the calculation of non-parametric discrimination performance using ROC criteria for subjective adjustments (Kingdom & Prins, 2010; Prins, 2016). In consultation with on-topic colleagues and further development of existing methods (Tsikandilakis, Chapman & Peirce, 2018), ROC-adjustments were made to the duration of presentation (13.89 or 20.83 or 27.78 or 34.72 or 41.67 ms) for which hits produced the closest – corrected for multiple available forced-choices – score to .167 when false alarms were designated as false positives for the particular stimulus type in the implemented duration (13.89 or 20.83 or 27.78 or 34.72 or 41.67 ms) after dividing the false alarm rate by the number of available stimulus categories that could confer the possibility for false alarms. The blurs were also treated as potential instances for false alarms. The implementation of the duration of the blur stimuli was performed also using subjective criteria for .167 ($n_{13.89} = 59$; $n_{20.83} = 18$; $M. = .174$, $S.E. = .007$; $B = .34$). Instances of equal performance between two or more thresholds were not reported for ROC or hit-rate adjustments.

1.2: Perfect Chance Level Performance for A adapted for Multiple Choice Assessment

For available experimental durations 13.89 or 20.83 or 27.78 or 34.72 or 41.67 ms and for Angry adjusted duration “x”, Fearful adjusted duration “y”, happy adjusted duration “z”, sad adjusted duration “w”, neutral adjusted duration “q” and blur adjusted duration “i”, perfect chance-level performance ($A = .167$):

Presented Stimulus	Angry (x)	Angry (x)	Angry (x)	Angry (x)	Angry (x)	Angry (x)
Responded	Angry	Fearful	Happy	Sad	Neutral	Blur
Presented Stimulus	Fearful (y)	Fearful (y)	Fearful (y)	Fearful (y)	Fearful (y)	Fearful (y)
Responded	Angry	Fearful	Happy	Sad	Neutral	Blur
Presented Stimulus	Happy (z)	Happy (z)	Happy (z)	Happy (z)	Happy (z)	Happy (z)
Responded	Angry	Fearful	Happy	Sad	Neutral	Blur
Presented Stimulus	Sad (w)	Sad (w)	Sad (w)	Sad (w)	Sad (w)	Sad (w)
Responded	Angry	Fearful	Happy	Sad	Neutral	Blur
Presented Stimulus	Neutral (q)	Neutral (q)	Neutral (q)	Neutral (q)	Neutral (q)	Neutral (q)
Responded	Angry	Fearful	Happy	Sad	Neutral	Blur
Presented Stimulus	Blur (i)	Blur (i)	Blur (i)	Blur (i)	Blur (i)	Blur $K = \frac{S(blurs)}{n(emotion\ types)}$
Responded	Angry	Fearful	Happy	Sad	Neutral	Blur/K

Tab.2: Perfect chance-level performance

. Supplemental Material 2: Session Analysis

2.1: Frequentist Analysis

		Sum of Squares	df	Mean Square	F	Sig.
Fearful_SCR	Between Groups	.000	1	.000	.201	.656
	Within Groups	.010	75	.000		
	Total	.010	76			
Angry_SCR	Between Groups	.000	1	.000	.324	.571
	Within Groups	.005	75	.000		
	Total	.005	76			
Happiness_SCR	Between Groups	.000	1	.000	.077	.783
	Within Groups	.003	75	.000		
	Total	.003	76			
Sadness_SCR	Between Groups	.000	1	.000	1.894	.173
	Within Groups	.001	75	.000		
	Total	.001	76			
Neutrality_SCR	Between Groups	.000	1	.000	2.778	.100
	Within Groups	.001	75	.000		
	Total	.001	76			
Fear_HR	Between Groups	.013	1	.013	1.371	.245
	Within Groups	.694	75	.009		
	Total	.707	76			
Anger_HR	Between Groups	.014	1	.014	1.329	.253
	Within Groups	.798	75	.011		
	Total	.812	76			
Happiness_HR	Between Groups	.018	1	.018	3.469	.066
	Within Groups	.391	75	.005		
	Total	.409	76			
Sadness_HR	Between Groups	.011	1	.011	1.617	.207
	Within Groups	.528	75	.007		
	Total	.539	76			

2.2: Bayesian Analysis

Full Bayesian pairwise comparisons are included in a dedicated section in 3.1 to 3.7 using matrix statistical tables for each assessment.

3. Bayesian Analysis

3.1: SCR responses for ROC adjustments

A Bayesian analysis with uncorrected degrees of freedom was run using the Dienes calculator. The intervals were defined at - .01 and .01. The results for B can be seen in the confusion matrix below:

	Angry	Happy	Sad	Neutral
Fearful	.27	.11	.55	1.31
Angry		.12	.47	1.12
Happy			.36	.97

3.2: Heart-rate responses for ROC adjustments

A Bayesian analysis with uncorrected degrees of freedom was run using the Dienes calculator. The intervals were defined at - 1 and 1. The results for B can be seen in the confusion matrix below:

	Angry	Happy	Sad	Neutral
Fearful	.5	.12	.17	.92
Angry		.15	.19	.74
Happy			.21	.97

3.3: Valence responses for ROC adjustments

A Bayesian analysis with uncorrected degrees of freedom was run using the Dienes calculator. The intervals were defined at - 1 and 1. The results for B can be seen in the confusion matrix below:

	Angry	Happy	Sad	Neutral
Fearful	.23	.47	.51	.49
Angry		.36	.49	.41
Happy			.	.21

3.4: Arousal responses for ROC adjustments

A Bayesian analysis with uncorrected degrees of freedom was run using the Dienes calculator. The intervals were defined at - 1 and 1. The results for B can be seen in the confusion matrix below:

	Angry	Happy	Sad	Neutral
Fearful	.62	.74	.66	.99
Angry		.72	.66	.98
Happy			.67	.99

3.5 Facial-Emotional Responses

A Bayesian analysis with uncorrected degrees of freedom was run using the Dienes calculator. The intervals were defined at - .1 and .1. The results for B can be seen in the confusion matrix below:

	Angry	Sad
Fearful	.02	.01
Angry		.01

3.6: Force Pressure Responses for ROC Adjustments

A single participant was excluded from the analysis due to excessive movement artefacts. See raw data at <https://osf.io/3v4uh/> A Bayesian analysis with uncorrected degrees of freedom was run using the Dienes calculator. The intervals were defined at - .1 and .1. The results for B can be seen in the confusion matrix below:

	Angry	Happy	Sad	Neutral
Fearful	.02	.07	.05	.14
Angry		.04	.09	.11
Happy			.09	.08

3.7: RDR Responses for Hit-Rate and ROC Adjustments

A single participant was excluded from the analysis due to excessive movement artefacts. See raw data at <https://osf.io/3v4uh/> A Bayesian analysis with uncorrected degrees of freedom was run using the Dienes calculator. The intervals were defined at - .1 and .1. The results for B can be seen in the confusion matrix below:

Hit-Rate Adjustments:

	Angry	Happy	Sad	Neutral
Fearful	.73	.71	.95	.96
Angry		.79	.91	.97
Happy			.92	.96

ROC Adjustments:

	Angry	Happy	Sad	Neutral
Fearful	.03	.08	.09	.19
Angry		.09	.09	.13
Happy			.11	.12

Supplemental Material 4: Pairwise Comparisons

4.1: Frequentist Analysis

Descriptive Statistics

	Mean	Std. Deviation	N
SCRFEARHITS	.0922	.01059	77
SCRANGRYHITS	.0566	.00968	77
SCRHAPPYHITS	.0555	.01165	77
SCRADHITS	.0174	.00894	77
SCRNEUTRALHITS	.0166	.03110	77

Pairwise Comparisons

Measure: MEASURE_1

(I) SCR_Hits	(J) SCR_Hits	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	.036*	.002	.000	.031	.040
	3	.037*	.002	.000	.032	.042
	4	.075*	.001	.000	.070	.079
	5	.076*	.004	.000	.065	.086
2	1	-.036*	.002	.000	-.040	-.031
	3	.001	.002	1.000	-.004	.006
	4	.039*	.002	.000	.035	.044
	5	.040*	.004	.000	.030	.050
3	1	-.037*	.002	.000	-.042	-.032
	2	-.001	.002	1.000	-.006	.004
	4	.038*	.002	.000	.033	.043
	5	.039*	.004	.000	.028	.049
4	1	-.075*	.001	.000	-.079	-.070
	2	-.039*	.002	.000	-.044	-.035
	3	-.038*	.002	.000	-.043	-.033
	5	.001	.004	1.000	-.010	.012
5	1	-.076*	.004	.000	-.086	-.065
	2	-.040*	.004	.000	-.050	-.030
	3	-.039*	.004	.000	-.049	-.028
	4	-.001	.004	1.000	-.012	.010

Descriptive Statistics

	Mean	Std. Deviation	N
SCRFEARMISS	.0306	.00848	77
SCRANGRYMISS	.0297	.00873	77
SCRHAPPYMISS	.0257	.01105	77
SCRADMINISS	.0186	.00914	77
SCRNEUTRALMISS	.0113	.00817	77

Pairwise Comparisons

Measure: MEASURE_1

(I) SCR_Hits	(J) SCR_Hits	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	.001	.001	1.000	-.003	.005
	3	.005*	.002	.035	.000	.010
	4	.012*	.001	.000	.008	.016
	5	.019*	.001	.000	.016	.023
2	1	-.001	.001	1.000	-.005	.003
	3	.004	.002	.209	-.001	.009
	4	.011*	.001	.000	.007	.015
	5	.018*	.001	.000	.014	.023
3	1	-.005*	.002	.035	-.010	.000
	2	-.004	.002	.209	-.009	.001
	4	.007*	.002	.001	.002	.012
	5	.014*	.002	.000	.010	.019
4	1	-.012*	.001	.000	-.016	-.008
	2	-.011*	.001	.000	-.015	-.007
	3	-.007*	.002	.001	-.012	-.002
	5	.007*	.001	.000	.003	.011
5	1	-.019*	.001	.000	-.023	-.016
	2	-.018*	.001	.000	-.023	-.014
	3	-.014*	.002	.000	-.019	-.010
	4	-.007*	.001	.000	-.011	-.003

4.2: Bayesian Analysis

Full Bayesian pairwise comparisons are included in a dedicated section in 3.1 to 3.7 using matrix statistical tables for each assessment.

5. Bonferonni Corrected Comparisons for Linear Trend Analysis

5.1: SPSS Output

Bonferroni							
Fear_Trend_SCR	Unsure	Possibly	-.01747*	.00355	.000	-.0261	-.0089
		Definetely	-.03317*	.00355	.000	-.0418	-.0246
	Possibly	Unsure	.01747*	.00355	.000	.0089	.0261
		Definetely	-.01570*	.00353	.000	-.0243	-.0071
	Definetely	Unsure	.03317*	.00355	.000	.0246	.0418
		Possibly	.01570*	.00353	.000	.0071	.0243
Fear_Trend_HR	Unsure	Possibly	-.55793*	.03775	.000	-.6495	-.4663
		Definetely	-.64363*	.03775	.000	-.7352	-.5520
	Possibly	Unsure	.55793*	.03775	.000	.4663	.6495
		Definetely	-.08570	.03752	.072	-.1768	.0054
	Definetely	Unsure	.64363*	.03775	.000	.5520	.7352
		Possibly	.08570	.03752	.072	-.0054	.1768
Angry_Trend_SCR	Unsure	Possibly	-.00006	.00180	1.000	-.0044	.0043
		Definetely	-.01817*	.00180	.000	-.0225	-.0138
	Possibly	Unsure	.00006	.00180	1.000	-.0043	.0044
		Definetely	-.01811*	.00178	.000	-.0224	-.0138
	Definetely	Unsure	.01817*	.00180	.000	.0138	.0225
		Possibly	.01811*	.00178	.000	.0138	.0224
Angry_Trend_HR	Unsure	Possibly	-.04026	.05897	1.000	-.1834	.1029
		Definetely	-.55367*	.05897	.000	-.6968	-.4105
	Possibly	Unsure	.04026	.05897	1.000	-.1029	.1834
		Definetely	-.51341*	.05827	.000	-.6548	-.3720
	Definetely	Unsure	.55367*	.05897	.000	.4105	.6968
		Possibly	.51341*	.05827	.000	.3720	.6548
Happy_Trend_SCR	Unsure	Possibly	-.00081	.00375	1.000	-.0099	.0083
		Definetely	-.00982*	.00373	.029	-.0189	-.0008
	Possibly	Unsure	.00081	.00375	1.000	-.0083	.0099
		Definetely	-.00900	.00375	.054	-.0181	.0001
	Definetely	Unsure	.00982*	.00373	.029	.0008	.0189
		Possibly	.00900	.00375	.054	-.0001	.0181

Happy_Trend_HR	Unsure	Possibly	-.36103*	.05049	.000	-.4836	-.2385
		Definetely	-.52951*	.05019	.000	-.6513	-.4077
	Possibly	Unsure	.36103*	.05049	.000	.2385	.4836
		Definetely	-.16847*	.05049	.003	-.2910	-.0459
	Definetely	Unsure	.52951*	.05019	.000	.4077	.6513
		Possibly	.16847*	.05049	.003	.0459	.2910

5.2: Bayesian Analysis

Full Bayesian pairwise comparisons are included in a dedicated section in 3.1 to 3.7 using matrix statistical tables for each assessment. Further supplementary material and analysis can also be found at <https://osf.io/3v4uh/>