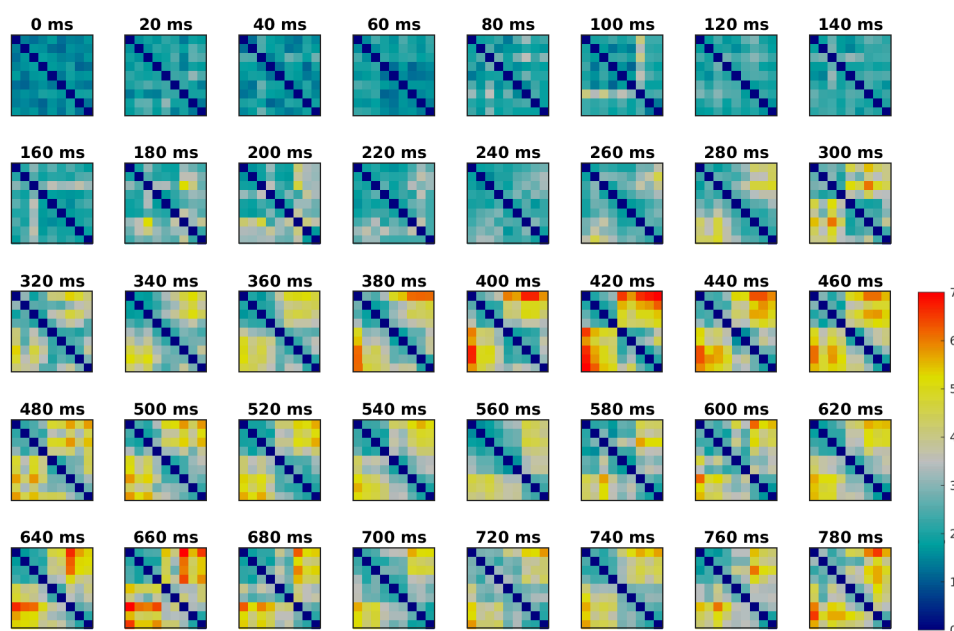


## Supplementary Figures



**Figure S1 – Time course of EEG RDMs.** EEG RDMs from stimulus onset to 780 ms after stimulus onset, in steps of 20 ms. For the order of experimental conditions, see Figure 1.

## Supplementary Tables

Condition	Brain regions	Local maxima (mm)			Cluster size (voxels)
		x	y	z	
<b>fMRI Standard Analyses</b>					
BF > STR	Fusiform cortex, lateral occipital cortex	46	-60	-22	1884
	Precuneus cortex, posterior cingulate gyrus	-4	-58	30	1235
	Anterior cingulate cortex, frontal pole, paracingulate gyrus	0	40	10	495
	R middle temporal gyrus, inferior temporal gyrus, superior temporal sulcus	50	-44	6	201
	R frontal orbitofrontal cortex	26	12	-16	96
	L frontal orbitofrontal cortex	-28	18	-16	29
	R Inferior frontal gyrus	50	34	8	25
	R temporal pole	44	18	-16	16
FR > STR	Precuneus cortex, posterior cingulate cortex, intracalcarine cortex	-2	-60	32	2808

	Ventromedial prefrontal cortex, frontal pole, anterior cingulate cortex, paracingulate gyrus, medial superior frontal gyrus	2	50	-20	1571
	R fusiform gyrus, lateral occipital cortex	44	-60	-22	1405
	R supramarginal gyrus, middle temporal gyrus, superior temporal sulcus	50	-42	10	98
	Subcallosal cortex	-4	20	-6	87
	L lateral occipital cortex	-40	-92	14	20
	L lateral occipital cortex	-30	-88	20	8
	L supramarginal gyrus, angular gyrus	-60	-48	12	4
	R anterior middle temporal gyrus	56	4	-32	3
Happy > neutral	Lingual gyrus, intracalcarine gyrus, precuneous cortex	-18	-50	-14	3092
	L Temporal pole, orbitofrontal cortex, insular cortex, frontal operculum, inferior frontal gyrus, caudate, thalamus, pallidum,	-34	16	-32	1815
	Frontal pole, anterior cingulate, paracingulate gyrus, superior frontal gyrus	-18	68	18	1665
	Supplementary motor cortex, medial and L superior frontal gyrus, anterior cingulate cortex, mid cingulate cortex	4	6	66	1109
	Cerebellum, brain stem	14	-74	-38	1065
	L precentral gyrus, postcentral gyrus, middle frontal gyrus,	-26	-16	64	900
	R cerebellum, brain stem	32	-38	-28	424
	L cerebellum	-22	-82	-24	413
	Cuneal cortex, occipital pole	-8	-82	32	288
	Precuneus cortex, posterior cingulate	-6	-56	32	254
Happy > fear	L middle frontal gyrus, inferior frontal gyrus, frontal pole	-36	42	22	347
	L Angular gyrus, supramarginal gyrus	-40	-52	46	169
	L frontal operculum, insular cortex,	-38	22	6	129
	R insular cortex	40	18	0	108
	L lateral occipital cortex, superior parietal lobule	-28	-60	42	82
	R precentral gyrus, middle frontal gyrus	42	6	30	67
	L middle frontal gyrus	-34	4	62	49

	L superior frontal gyrus	-20	20	60	44
	L thalamus	-8	-14	18	5
	L supplementary motor cortex	-8	6	54	5
<b>Model RSA</b>					
Identity	L Fusiform cortex, lingual gyrus, precuneus cortex, posterior cingulate cortex, lateral occipital cortex, intracalcarine cortex	-28	-52	-14	3035
	Medial superior frontal gyrus, anterior cingulate, paracingulate gyrus, frontal pole	-2	36	52	2721
	L inferior frontal gyrus, middle frontal gyrus	-54	18	10	1607
	Occipital pole, lingual gyrus, intracalcarine cortex,	-12	-104	-10	1436
	R temporal pole, orbitofrontal cortex, frontal operculum, insular cortex, inferior frontal gyrus	40	8	-32	966
	R postcentral gyrus, precentral gyrus	52	-20	38	842
	L angular gyrus, middle temporal gyrus, Superior temporal sulcus, supramarginal gyrus, lateral occipital cortex	-50	-56	28	565
	Mid cingulate gyrus	2	-12	36	369
	Superior frontal gyrus, supplementary motor cortex,	16	16	64	327
	L middle temporal gyrus, superior temporal gyrus	-64	-10	-6	308
Emotion	L inferior frontal gyrus, temporal pole, precentral gyrus	-54	14	2	301
	Ventromedial prefrontal cortex, subcallosal cortex, frontal pole	10	30	-24	266
	L parahippocampal gyrus, hippocampus	-20	-4	-30	141
	R putamen, caudate	22	14	-2	122
	R amygdala, putamen, pallidum,	18	-6	-12	108
	R temporal pole, inferior frontal gyrus	48	12	-8	88
	L temporal pole, parahippocampal gyrus	-36	10	-30	77
	L orbitofrontal cortex, amygdala	-26	10	-20	65
	R planum temporale, superior temporal gyrus	46	2	-20	63
	L insular cortex	-36	-6	-6	57

Love	L insular cortex, central opercular cortex, putamen, frontal opercular cortex	-32	10	10	355
	L postcentral gyrus	-66	-14	22	117
	R postcentral gyrus, precentral gyrus	64	-6	30	116
	R cerebellum	12	-86	-26	99
	L lateral occipital cortex	-48	-74	12	86
	L cerebellum	-30	-80	-32	82
	R superior frontal gyrus	14	14	64	80
	L Brainstem, hippocampus	-14	-20	-26	79
	R parahippocampal gyrus, temporal fusiform cortex	32	-8	-34	75
	Paracingulate gyrus	-2	46	-2	73
Familiarity	Intracalcarine cortex, precuneus cortex, posterior cingulate gyrus, cuneal cortex, Lingual gyrus	-10	-72	16	2974
	R middle temporal gyrus, supramarginal gyrus, fusiform gyrus, lateral occipital cortex, inferior temporal gyrus, superior Temporal gyrus, superior temporal sulcus	66	-42	6	1772
	Frontal pole, ventromedial prefrontal cortex, paracingulate gyrus, anterior cingulate gyrus, medial superior frontal gyrus,	-6	64	0	1695
	R superior frontal gyrus	10	16	70	274
	L occipital fusiform cortex, cerebellum	-34	-70	-14	267
	R lateral occipital cortex	28	-60	56	261
	L lateral occipital cortex, angular gyrus	-60	-64	24	258
	R middle frontal gyrus, precentral gyrus	38	4	46	254
	L frontal pole, superior frontal gyrus	-12	42	54	248
	R frontal orbital cortex, frontal operculum, insular cortex	46	26	-12	206
Valence	Ventromedial cortex, R orbitofrontal cortex, amygdala, hippocampus (bilateral), putamen, caudate	4	42	-14	1140
	L temporal pole, inferior frontal gyrus, anterior middle temporal gyrus	-52	10	0	406
	Anterior cingulate cortex, paracingulate gyrus, medial superior frontal gyrus	2	6	44	216
	R Cerebellum	30	-38	-36	183

	R posterior middle temporal gyrus, inferior temporal gyrus	48	-12	-24	147
	L occipital pole	-20	-98	12	139
	L superior temporal gyrus	54	-4	14	135
	L angular gyrus, superior parietal lobule, lateral occipital cortex	38	-54	44	129
	L parahippocampal gyrus, hippocampus	-18	-16	-30	118
	R precentral gyrus, posterior cingulate gyrus	14	-28	48	103
EEG-fMRI					
108 ms	Lingual gyrus, intracalcarine cortex, precuneus cortex, cuneal cortex	-2	-68	2	620
	L planum temporale, middle temporal gyrus, superior temporal gyrus, supramarginal gyrus	-62	-32	12	449
	Precuneus cortex	0	-62	38	200
	L superior parietal lobule, lateral occipital cortex	-26	-58	54	170
	R lateral occipital cortex	36	-72	54	156
	Posterior cingulate cortex	-6	-26	34	132
	L middle temporal gyrus	-58	-8	-14	125
	L lateral occipital cortex, angular gyrus, supramarginal gyrus	-60	-62	32	81
	Ventromedial cortex, frontal pole	2	52	-22	79
	L lateral occipital cortex	-52	-68	22	79
204 ms	Lingual gyrus, Precuneus cortex, posterior cingulate cortex	0	-68	2	2890
	R inferior temporal gyrus, lateral occipital cortex, superior temporal sulcus, middle temporal gyrus, fusiform cortex, cerebellum	48	-58	-16	2442
	Ventromedial prefrontal cortex, frontal pole, anterior cingulate cortex	0	48	-14	1111
	Medial forebrain, hypothalamus, L amygdala, N. accumbens, BNST	-2	-2	-12	619
	L middle temporal gyrus, superior temporal gyrus, planum temporale	-58	-10	-10	528
	L lateral occipital cortex, supramarginal gyrus, postcentral gyrus, precentral gyrus	-56	64	36	336
	R precentral gyrus, middle frontal gyrus	44	-6	46	335

	R orbitofrontal cortex, insular cortex, frontal pole	32	26	-18	256
	Posterior cingulate gyrus, precentral gyrus	-4	-38	34	207
	Cerebellum, fusiform gyrus	-14	-80	-20	203
308 ms	Precuneous cortex	2	-76	42	119
	R superior frontal gyrus	10	14	68	59
	Frontal pole	-8	60	-8	47
	Precuneous cortex, intracalcarine cortex	-6	-64	18	28
	Posterior cingulate gyrus	-2	-44	10	20
	R occipital pole	16	-90	8	19
	Lingual gyrus	-4	-64	2	14
	R precuneous cortex	16	-68	46	7
	L temporal fusiform gyrus	-34	-20	-30	6
	L postcentral gyrus	-10	-40	74	4
428 ms	R middle temporal gyrus, angular gyrus	66	-28	-2	233
	Frontal pole	-4	64	0	228
	L precentral gyrus, postcentral gyrus	-24	-26	62	227
	R superior frontal gyrus	10	16	68	214
	L central opercular cortex, precentral gyrus, postcentral gyrus, planum polare	-50	4	6	210
	R angular gyrus, lateral occipital cortex, precuneous cortex	40	-56	34	184
	L inferior frontal gyrus, orbitofrontal cortex, frontal operculum	-54	14	10	180
	L middle frontal gyrus	-44	6	44	179
	R middle frontal gyrus, inferior frontal gyurs	52	36	28	176
	Precuneus cortex, posterior cingulate cortex	-10	-54	46	167
660 ms	Lateral occipital cortex, Intracalcarine cortex, precuneous cortex, cuneal cortex, posterior cingulate cortex, lingual gyrus, middle frontal gyrus, superior frontal gyrus	54	-68	24	5570
	R superior temporal gyrus, middle temporal gyrus, inferior temporal gyrus, planum temporale, supramarginal gyrus, cerebellum	60	-8	-4	1339

Frontal pole, paracingulate gyrus, frontal medial cortex, subcallosal cortex, superior frontal gyrus	-24	66	10	1150
R middle frontal gyrus, frontal pole, inferior frontal gyrus, frontal operculum, frontal orbital cortex	48	34	24	757
Lingual gyrus, occipital pole	8	-88	-14	660
Cerebellum, fusiform cortex	-36	-52	-28	386
L postcentral gyrus, precentral gyrus, central operculum	-50	-6	18	286
L superior frontal gyrus	-14	18	52	284
L precentral gyrus, precentral gyrus,	-12	-34	64	224
R middle frontal gyrus	50	20	38	223

**Table S1 – Summary of brain activations.** Activations are whole-brain corrected using permutation tests and threshold-free cluster enhancement. Clusters were determined from t-statistics after thresholding with the binarised result of the TFCE. Only the 10 largest clusters per condition are reported. Cluster size reported in 2 x 2 x 2 mm voxels.

Region		Identity	Emotion	Identity x Emotion
L Amygdala	<i>F</i> <i>p</i> $\eta p^2$	1.68 .202	< 1	< 1
R Amygdala	<i>F</i> <i>p</i> $\eta p^2$	< 1	< 1	< 1
L VTA	<i>F</i> <i>p</i> $\eta p^2$	5.32 .009 .202 Partner > Stranger $F = 11.04, p = .010, \eta p^2 = .354$ Partner vs. Friend $F = 3.60, p = .215$ Friend vs. Stranger $F = 1.44, p = .733$	2.52 .092	3.36 .013 .138 Emotion in Partner $F < 1$ Emotion in Friend $F = 5.84, p = .018, \eta p^2 = .218$ Happy > Neutral $F = 9.18, p = .019, \eta p^2 = .304$ Happy > Fear $F = 7.21, p = .042, \eta p^2 = .256$ Fear vs. Neutral $F < 1$ Emotion in Stranger $F = 1.07, p = .350$
R VTA	<i>F</i> <i>p</i> $\eta p^2$	4.60 .016 .180 Partner vs. Stranger $F = 6.61, p = .053$ Partner vs. Friend $F = 5.74, p = .078$ Friend vs. Stranger $F < 1$	2.53 .092	< 1
L Caudate	<i>F</i> <i>p</i> $\eta p^2$	< 1	4.04 .025 .161 Happy vs. Neutral	< 1

			$F = 6.12, p = .066$ Happy vs. Fear $F = 6.32, p = .060$ Fear vs. Neutral $F < 1$	
R Caudate	$F$ $p$ $\eta p^2$	< 1	4.06 .025 .162 Happy vs. Neutral $F = 3.72, p = .202$ Happy vs. Fear $F = 6.24, p = .062$ Fear vs. Neutral $F = 1.28, p = .812$	1.41 .239
L Putamen	$F$ $p$ $\eta p^2$	2.57 .094	2.86 .070	< 1
R Putamen	$F$ $p$ $\eta p^2$	< 1	2.74 .076	< 1
L N. acc.	$F$ $p$ $\eta p^2$	1.66 .202	1	1
R N. acc.	$F$ $p$ $\eta p^2$	1.29 .286	1.46 .243	< 1

**Table S2 – Region of Interest Analyses unimodal fMRI.** Results of repeated-measures ANOVAs with factors Emotion (Fear Happy Neutral) and Identity (Partner Stranger Friend). Huyn-Feldt-corrections were applied to correct for violations of sphericity assumptions. In post-tests, p-values are Bonferroni-corrected. Degrees of freedom: (2,42) for main effects of Identity and Emotion; (1,21) for post-tests. Interactions: F(4,84), post-tests of Emotion within Identity (2,42). R=right; L=left; VTA=ventral tegmental area; N. acc. = Nucleus accumbens.

ERP Component		Identity	Emotion	Identity x Emotion
P1	$F$ $p$ $\eta p^2$	4.10 .025 .194 Partner > Stranger $F = 10.10, p = .017, \eta p^2 = .373$ Partner vs. Friend $F < 1$ Friend vs. Stranger $F = 2.30, p = .308$	< 1	1.118 .355
N170	$F$ $p$ $\eta p^2$	9.17 .001 .350 Partner > Stranger $F = 16.24, p = .003, \eta p^2 = .489$ Partner vs. Friend $F = 1.62, p = .660$ Friend > Stranger $F = 9.58, p = .020, \eta p^2 = .360$	< 1	< 1
P3	$F$ $p$ $\eta p^2$	$F = 13.86$ < .001 .449 Partner > Stranger $F = 44.12, p < .001, \eta p^2 = .722$	< 1	2.21 .077



		Partner > Friend $F = 10.67, p = .014, \eta_p^2 = .386$ Friend vs. Stranger $F = 1.41, p = .756$		
Late Positive Complex		21.60 < .001 .560 Partner > Stranger $F = 52.18, p < .001, \eta_p^2 = .754$ Partner > Friend $F = 15.85, p = .003, \eta_p^2 = .482$ Friend vs. Stranger $F = 5.84, p = .082$	1.38 .265	1.66 .169

**Table S3 – ERP component results from unimodal ERP analyses.** Results of repeated-measures ANOVAs with factors Emotion (Fear Happy Neutral) and Identity (Partner Stranger Friend). Huyn-Feldt-corrections were applied to correct for violations of sphericity assumptions. In post-tests, p-values are Bonferroni-corrected. Degrees of freedom: (2,34) for main effects of Identity and Emotion; (1,17) for post-tests, (4,68) for Interactions.

Rating		Identity	Emotion	Identity x Emotion
Attractiveness	$F$ $p$ $\eta_p^2$	32.71 < .001 609 Partner > Stranger $F = 50.49, p = .001, \eta_p^2 = .706$ Partner > Friend $F = 41.09, p < .001, \eta_p^2 = .662$ Friend vs. Stranger $F < 1$	< 1	< 1
Valence	$F$ $p$ $\eta_p^2$	18.43 < .001 .467 Partner > Stranger $F = 29.81, p < .001, \eta_p^2 = .587$ Partner > Friend $F = 12.32, p = .006, \eta_p^2 = .370$ Friend > Stranger $F = 8.96, p = .021, \eta_p^2 = .299$	69.93 < .001 .769 Happy > Neutral $F = 62.43, p < .001, \eta_p^2 = .748$ Happy > Fear $F = 107.91, p < .001, \eta_p^2 = .837$ Fear < Neutral $F = 15.46, p = .002, \eta_p^2 = .424$	7.08 < .001 .252 Emotion in Partner $F = 44.90, p < .001, \eta_p^2 = .681$ Happy > Neutral $F = 52.25, p < .001, \eta_p^2 = .713$ Happy > Fear $F = 65.41, p < .001, \eta_p^2 = .757$ Fear vs. Neutral $F = 2.47, p = .393$ Emotion in Friend $F = 59.07, p < .001, \eta_p^2 = .738$ Happy > Neutral $F = 69.44, p < .001, \eta_p^2 = .768$ Happy > Fear $F = 81.12, p < .001, \eta_p^2 = .794$ Fear vs. Neutral $F = 4.07, p = .170$ Emotion in Stranger $F = 49.33, p < .001, \eta_p^2 = .701$ Happy > Neutral $F = 15.46, p = .002, \eta_p^2 = .424$ Happy > Fear $F = 117.60, p < .001, \eta_p^2 = .848$ Fear < Neutral $F = 33.58, p < .001, \eta_p^2 = .615$
Arousal	$F$	23.37	14.02	4.10

	<i>p</i> <i>η</i> <sup>2</sup>	< .001 .527 Partner > Stranger <i>F</i> = 26.08, <i>p</i> < .001, <i>η</i> <sup>2</sup> = .554 Partner > Friend <i>F</i> = 27.56, <i>p</i> < .001, <i>η</i> <sup>2</sup> = .568 Friend vs. Stranger <i>F</i> < 1	< .001 .400 Happy > Neutral <i>F</i> = 9.92, <i>p</i> = .015, <i>η</i> <sup>2</sup> = .321 Happy > Fear <i>F</i> = 27.40, <i>p</i> < .001, <i>η</i> <sup>2</sup> = .566 Fear vs. Neutral <i>F</i> = 4.43, <i>p</i> = .143	.004 .163 Emotion in Partner <i>F</i> = 15.31, <i>p</i> < .001, <i>η</i> <sup>2</sup> = .422 Happy > Neutral <i>F</i> = 14.72, <i>p</i> = .003, <i>η</i> <sup>2</sup> = .412 Happy > Fear <i>F</i> = 32.81, <i>p</i> < .001, <i>η</i> <sup>2</sup> = .610 Fear vs. Neutral <i>F</i> = 1.61, <i>p</i> = .656 Emotion in Friend <i>F</i> = 2.11, <i>p</i> = .134 Emotion in Stranger <i>F</i> = 9.92, <i>p</i> < .001, <i>η</i> <sup>2</sup> = .321 Happy vs. Neutral <i>F</i> = 3.80, <i>p</i> = .195 Happy > Fear <i>F</i> = 16.86, <i>p</i> = .002, <i>η</i> <sup>2</sup> = .445 Fear < Neutral <i>F</i> = 8.30, <i>p</i> = .027, <i>η</i> <sup>2</sup> = .283
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**Table S4 – Results of stimulus ratings.** Results of repeated-measures ANOVAs with factors Emotion (Fear Happy Neutral) and Identity (Partner Stranger Friend). Huyn-Feldt-corrections were applied to correct for violations of sphericity assumptions. Degrees of freedom: (2,42) for main effects of Identity and Emotion; (1,21) for post-tests. Interactions: *F*(4,84), post-tests of Emotion within Identity (2,42).