

Does your past define you? The role of previous visual experience
in predicting new affective pictures and sounds

Supplementary materials

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1 Experiment 1

1.1 Stimuli

Table S1: List of NAPS picture names used as S2s in Experiment 1, sorted by valence (Neg = negative, Neu = neutral).

Valence	NAPS pictures names
NEG	Animals_001_h; Animals_024_h; Animals_025_h; Animals_027_h; Animals_033_h; Animals_038_h; Animals_054_h; Animals_068_h; Animals_071_h; Animals_074_h; Animals_077_h; Animals_078_h; Faces_146_h; Faces_150_h; Faces_152_h; Faces_170_h; Faces_271_h; Faces_272_h; Faces_285_h; Faces_290_h; Faces_291_h; Faces_293_h; Faces_294_h; Faces_302_h; Landscapes_002_h; Landscapes_004_h; Landscapes_005_h; Landscapes_007_h; Landscapes_010_h; Landscapes_011_h; Landscapes_014_h; Landscapes_017_h; Landscapes_022_h; Landscapes_026_h; Landscapes_139_h; Landscapes_177_h; Objects_001_h; Objects_002_h; Objects_003_h; Objects_007_h; Objects_011_h; Objects_022_h; Objects_125_h; Objects_132_h; Objects_139_h; Objects_149_h; Objects_283_h; Objects_285_h; People_001_h; People_008_h; People_020_h; People_022_h; People_118_h; People_127_h; People_136_h; People_140_h; People_200_h; People_215_h; People_225_h; People_226_h
NEU	Animals_109_h; Animals_114_h; Animals_122_h; Animals_125_h; Animals_126_h; Animals_136_h; Animals_165_h; Animals_169_h; Animals_170_h; Animals_197_h; Animals_202_h; Animals_206_h; Faces_184_h; Faces_186_h; Faces_188_h; Faces_282_h; Faces_304_h; Faces_314_h; Faces_316_h; Faces_326_h; Faces_329_h; Faces_331_h; Faces_335_h; Faces_343_h; Landscapes_009_h; Landscapes_041_h; Landscapes_048_h; Landscapes_050_h; Landscapes_089_h; Landscapes_100_h; Landscapes_107_h; Landscapes_127_h; Landscapes_143_h; Landscapes_149_h; Landscapes_163_h; Landscapes_172_h; Objects_025_h; Objects_033_h; Objects_041_h; Objects_069_h; Objects_075_h; Objects_078_h; Objects_079_h; Objects_103_h; Objects_254_h; Objects_262_h; Objects_263_h; Objects_270_h; People_069_h; People_089_h; People_099_h; People_101_h; People_109_h; People_153_h; People_162_h; People_167_h; People_173_h; People_178_h; People_194_h; People_250_h

Table S2: Means (M), standard deviations (SD), and results of two-tailed t-tests assuming unequal variance in luminance, contrast, complexity indices (i.e., JPEG size, entropy), and color space indices (i.e., LABL, LABA, LABB), referred to negative (Neg) and neutral (Neu) NAPS pictures employed as S2s in Experiment 1.

	NEG		NEU		t(118)	p
Measure	M	SD	M	SD		
luminance	114.149	27.503	116.943	27.615	-0.555	0.580
contrast	65.682	11.569	66.225	11.490	-0.258	0.797
complexity						
jpeg_size	350,012.367	118,541.318	331,739.683	120,579.766	0.837	0.404
entropy	7.579	0.338	7.608	0.311	-0.489	0.626
color space						
LABL	47.078	11.035	48.411	11.090	-0.660	0.511
LABA	1.684	4.600	0.541	7.901	0.969	0.335
LABB	7.444	9.766	7.492	11.416	-0.025	0.980

Table S3: Trials per experimental condition in the learning and test phases. For each phase and group (CG = certain group, UG = uncertain group) we report the S1 color (S1), the S2 valence (S2), the S1-S2 congruency (%) and the number of trials out of total (N). For the test phase we also report the predictive meaning of the cue according to new contingencies (Cue; Cueneg = cue preceding negative S2s, Cueneu = cue preceding neutral S2s), and the S2 congruency (Cong; Con = congruent, NCon = incongruent). Color-valence pairings were counterbalanced between subjects.

Learning Phase					Test Phase					
Group	S1	S2	%	N/40	S1	Cue	S2	Cong	%	N/80
CG	red	neg	100	20	red	cue _{neg}	neg	Con	75	30
			100	20		cue _{neu}	neu	NCon	25	10
	blue	neu	100	20	blue	cue _{neg}	neg	NCon	25	10
			100	20		cue _{neu}	neu	Con	75	30
UG	red	neg	50	10	red	cue _{neg}	neg	Con	75	30
		neu	50	10		cue _{neu}	neu	NCon	25	10
	blue	neg	50	10	blue	cue _{neg}	neg	NCon	25	10
		neu	50	10		cue _{neu}	neu	Con	75	30

1.2 Time

1.2.1 Block

Table S4: Results of exploratory LMMs investigating the effect of block (1 and 2) group (CG and UG) and Cue (Negative and Neutral) on Expectancy rating in Experiment 1. We reported the unstandardized regression coefficients, standard errors (SE), 95% confidence intervals (CI), and the associated t-test.

Parameter	Estimate	SE	t	df	p	95% CI	
Intercept	52.67	0.62	85.52	253.94	< 0.001	51.46	53.88
UG - CG	-0.66	1.23	-0.54	253.94	0.59	-3.09	1.76
block 2 - block 1	0.50	0.47	1.05	7,070.08	0.294	-0.43	1.43
neg - neu	24.59	1.91	12.89	208.45	< 0.001	20.83	28.36
group x block	1.16	0.95	1.22	7,070.08	0.222	-0.70	3.02
cue x group	23.88	3.82	6.26	208.45	< 0.001	16.35	31.40
block x cue	1.84	0.95	1.94	7,083.16	0.052	-0.02	3.70
group x block x cue	-8.77	1.90	-4.62	7,083.16	< 0.001	-12.49	-5.05
σ ID	6.99						
σ cue	24.18						
σ residual	20.00						

Table S5: Anova table of exploratory LMM investigating the effect of block (first vs second part of the experiment) group (CG and UG) and Cue (Negative and Neutral) on Expectancy rating in Experiment 1.

Effect	SS	Df _{num}	Df _{den}	F	p
Group	2.20	1	183.07	0.01	0.941
block	441.38	1	7,070.08	1.10	0.294
Cue	76,327.03	1	183.02	190.74	< 0.001
Group x Block	597.69	1	7,070.08	1.49	0.222
Group x Color	11,137.28	1	183.02	27.83	< 0.001
Block x Cue	1,509.38	1	7,083.16	3.77	0.052
Group x Block x Color	8,553.04	1	7,083.16	21.37	< 0.001

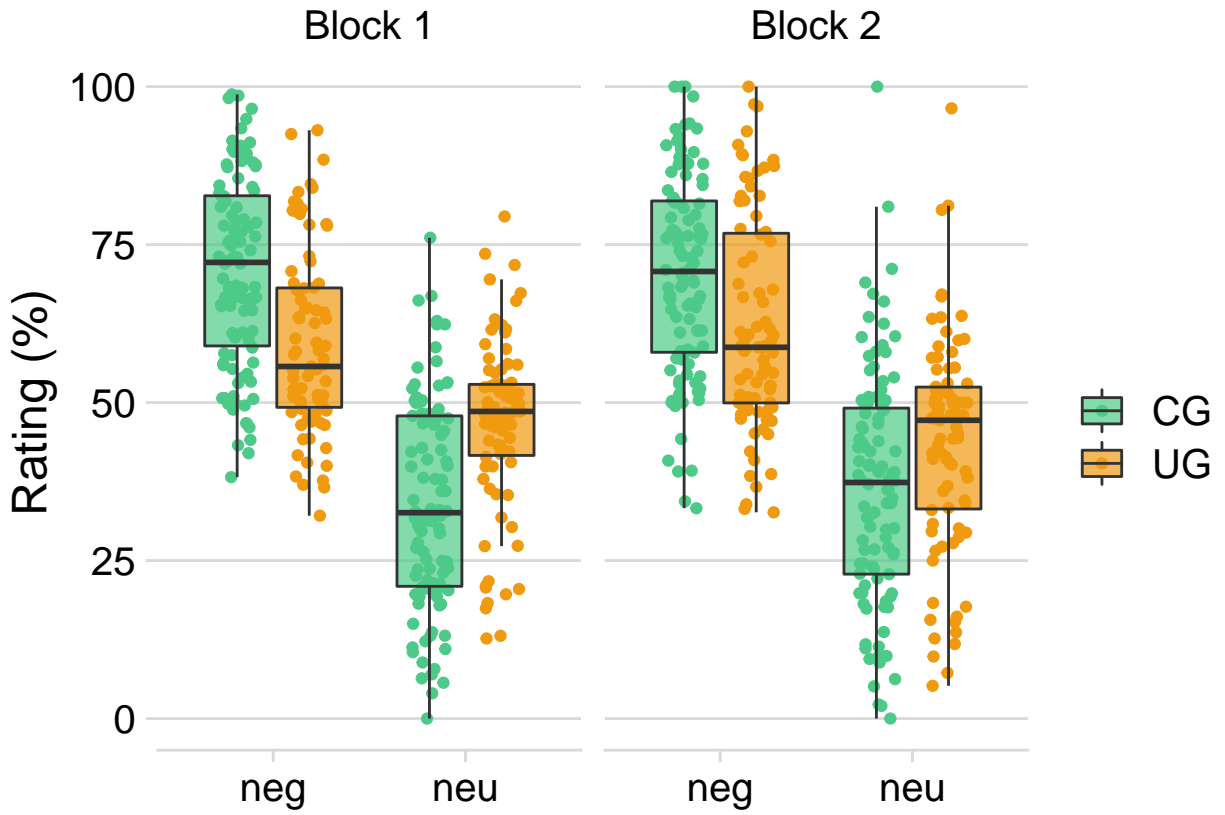


Figure 1: Box-plot of expectancy ratings in Experiment 1 according to the group (CG vs. UG), and the cue S1 color (cue-neg vs. cue-neu). Points represent the mean estimated value for each participant and condition.

1.2.2 Trials

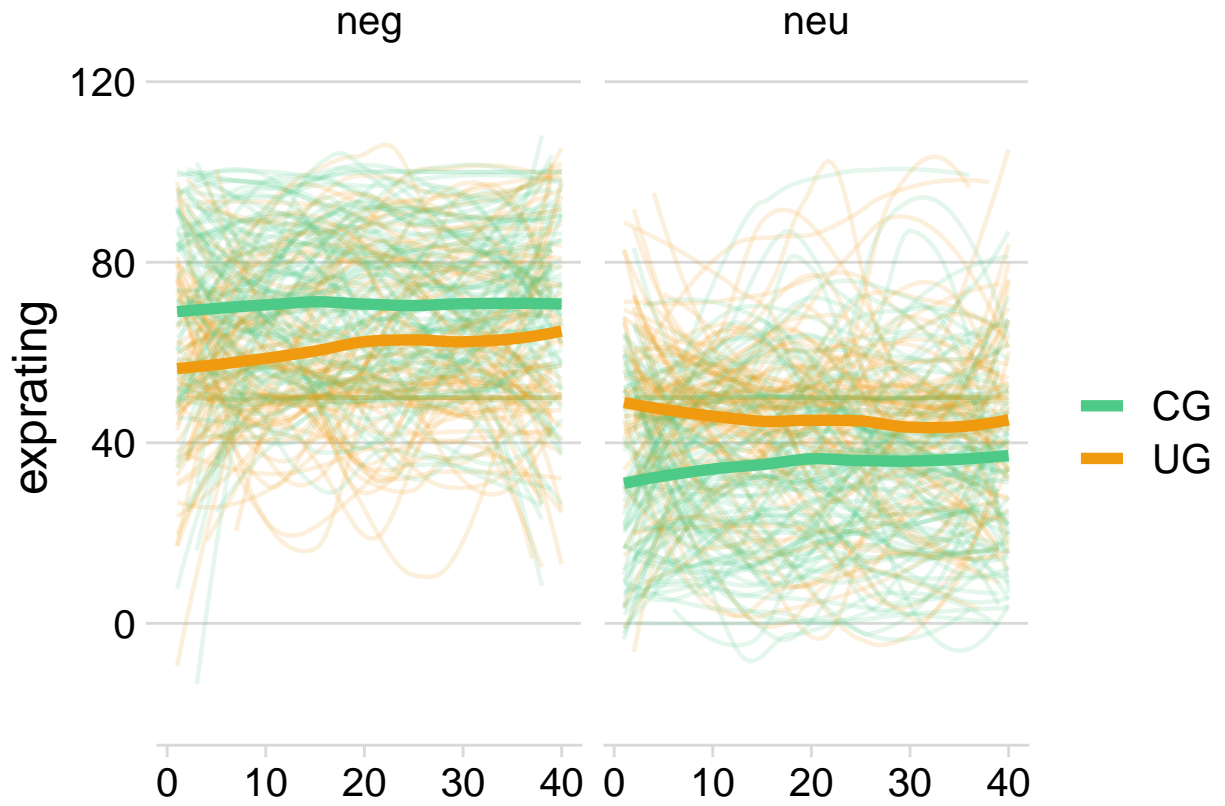


Figure 2: Relationship between trials, cue (negative and neutral) and group (CG and UG) on Expectancy ratings. For each subject and group a loess regression is fitted in order to represent the non-linear pattern. Furthermore, given the non-linearity we did not reported the linear mixed-model analysis.

2 Experiment 2

2.1 Stimuli

Table S6: List of NAPS picture names used as S2s in Experiment 1, sorted by valence (Neg = negative, Neu = neutral).

Valence	NAPS pictures names	IADS-2 sounds numbers
NEG	Animals_074_h, Animals_077_h, Animals_078_h, Animals_024_h, Faces_293_h, Faces_290_h, Faces_302_h, Faces_152_h, Landscapes_139_h, Landscapes_005_h, Landscapes_026_h, Landscapes_002_h, Objects_139_h, Objects_125_h, Objects_149_h, Objects_003_h, People_226_h, People_022_h, People_140_h, People_127_h	105, 106, 115, 116, 241, 242, 244, 255, 276, 277, 279, 283, 285, 286, 289, 290, 292, 293, 295, 296, 420, 422, 423, 424, 501, 502, 600, 611, 624, 625, 626, 703, 709, 711, 712, 713, 714, 719, 730, 732
NEU	Animals_170_h, Animals_206_h, Animals_125_h, Animals_109_h, Faces_304_h, Faces_316_h, Faces_331_h, Faces_326_h, Landscapes_127_h, Landscapes_149_h, Landscapes_163_h, Landscapes_107_h, Objects_262_h, Objects_254_h, Objects_263_h, Objects_078_h, People_194_h, People_099_h, People_173_h, People_101_h	107, 109, 113, 120, 132, 150, 152, 170, 171, 172, 206, 225, 254, 262, 270, 355, 360, 361, 363, 364, 365, 370, 374, 375, 377, 378, 400, 403, 601, 602, 610, 698, 704, 705, 716, 721, 724, 725, 726, 808

Table S7: Means (M), standard deviations (SD), and results of two-tailed t-tests assuming unequal variance in luminance, contrast, complexity indices (i.e., JPEG size, entropy), and color space indices (i.e., LABL, LABA, LABB) for affective pictures, and in physical properties (i.e., min dB, max dB, peak dB) for affective sounds, referred to negative (Neg) and neutral (Neu) NAPS pictures and IADS-2 sounds employed as S2s in Experiment 2.

	NEG		NEU				
Measure	M	SD	M	SD	t	df	p
luminance	110.232	23.168	121.242	24.168	-1.471		0.150
contrast	65.834	10.017	61.919	10.617	1.199		0.238
jpeg_size	345,480.200	115,725.462	357,945.550	111,068.563	-0.348		0.730
entropy	7.623	0.399	7.663	0.216	-0.394	38	0.695
LABL	45.552	9.136	50.539	9.667	-1.677		0.102
LABA	2.089	4.294	-1.576	10.822	1.408		0.167
LABB	5.316	5.992	6.630	15.278	-0.358		0.722
min dB	-0.673	0.058	-0.657	0.094	-0.916		0.362
max dB	0.668	0.052	0.681	0.116	-0.638	78	0.526
peak amp dB	-93.125	566.920	-3.582	1.347	-0.999		0.321

2.2 Time

2.2.1 Block

Table S8: Results of exploratory LMMs investigating the effect of trial (mean centered) on expectancy ratings in Experiment 2. For each model, we reported the unstandardized regression coefficients, standard errors (SE), 95% confidence intervals (CI), and the associated t-test.

Parameter	Estimate	SE	t	df	p	95% CI	
Intercept	53.38	0.59	90.56	244.35	< 0.001	52.22	54.54
UG - CG	1.16	1.18	0.98	244.35	0.326	-1.16	3.48
block 2 - block 1	0.03	0.48	0.07	6,535.32	0.946	-0.91	0.97
neg - neu	18.96	2.12	8.93	188.04	< 0.001	14.77	23.15
group x block	-1.08	0.96	-1.13	6,535.32	0.26	-2.96	0.80
cue x group	12.41	4.25	2.92	188.04	0.004	4.03	20.79
block x cue	5.32	0.96	5.55	6,560.99	< 0.001	3.44	7.20
group x block x cue	0.33	1.92	0.17	6,560.99	0.863	-3.43	4.09
σ ID	6.30						
σ cue	26.28						
σ residual	19.51						

Table S9: Anova table of exploratory LMM investigating the effect of block (first vs second part of the experiment) group (CG and UG) and Cue (Negative and Neutral) on Expectancy rating in Experiment 2.

Effect	SS	Df _{num}	Df _{den}	F	p
Group	2.20	1	183.07	0.01	0.941
block	441.38	1	7,070.08	1.10	0.294
Cue	76,327.03	1	183.02	190.74	< 0.001
Group x Block	597.69	1	7,070.08	1.49	0.222
Group x Color	11,137.28	1	183.02	27.83	< 0.001
Block x Cue	1,509.38	1	7,083.16	3.77	0.052
Group x Block x Color	8,553.04	1	7,083.16	21.37	< 0.001

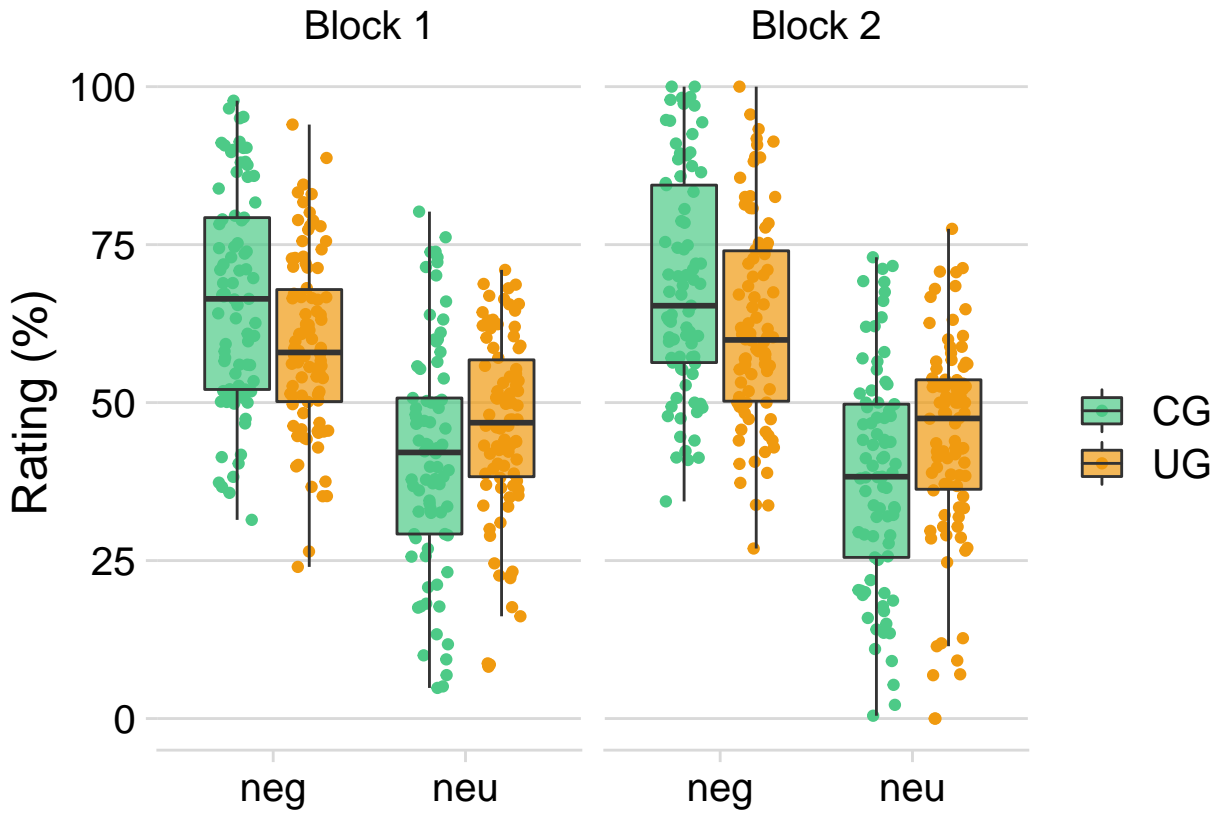


Figure 3: Box-plot of expectancy ratings in Experiment 2 according to the group (CG vs. UG), and the cue S1 color (cue-neg vs. cue-neu). Points represent the mean estimated value for each participant and condition.

2.2.2 Trials

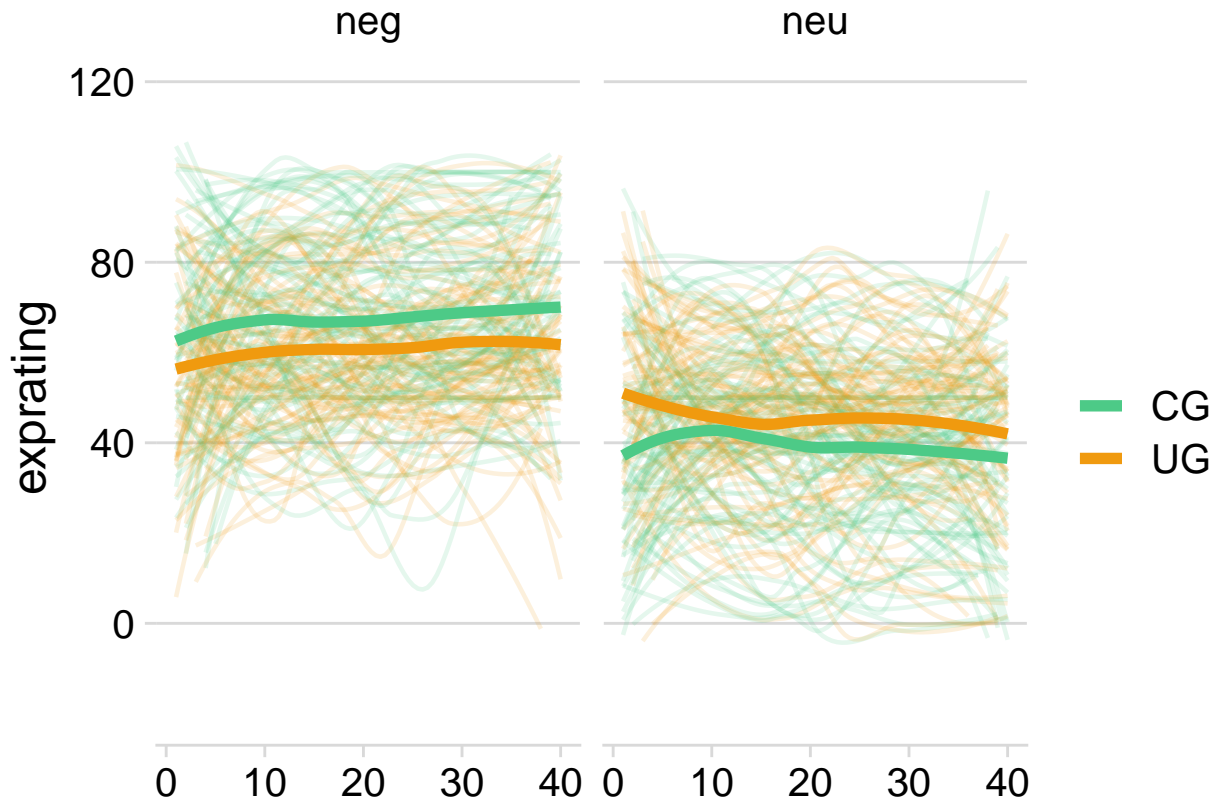


Figure 4: Relationship between trials, the cue S1 color (cue-neg and cue-neu) and group (CG and UG) on Expectancy ratings for Experiment 2. For each subject and group a loess regression is fitted in order to represent the non-linear pattern. Furthermore, given the non-linearity we did not reported the linear mixed-model analysis.