

Associations between emotion processing and self-reports of emotion regulation



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INTRODUCTION

- The **late positive potential (LPP)** provides electrophysiological measures for emotional reactivity and emotion regulation¹.
- There is some evidence for an association between LPP-based measures of emotional reactivity and **habitual emotion regulation** in everyday life², but there is no conclusive evidence for such an association between LPP-based measures of emotion regulation and habitual emotion regulation.
- Objective: are LPP-based measures of both emotional processes associated with self-reported habitual emotion regulation?**
 - Modulation of LPP by picture valence and different emotion regulation strategies
 - Self-report of habitual use of emotion regulation strategies via the Behavioral Emotion Regulation Questionnaire (**BERQ**)³ and Cognitive Emotion Regulation Questionnaire (**CERQ**)⁴

EXPERIMENTAL DESIGN

IAPS task

Participants were instructed to maintain, reduce, or enhance emotional responding using passive viewing, reappraisal or savoring. (Fig. 1).

- Stimuli: Neutral, threatening and pleasant pictures (IAPS)⁵

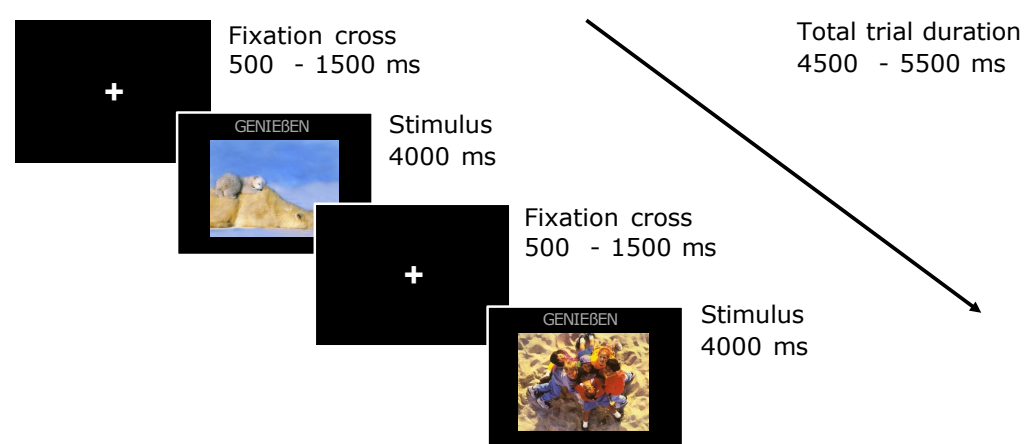
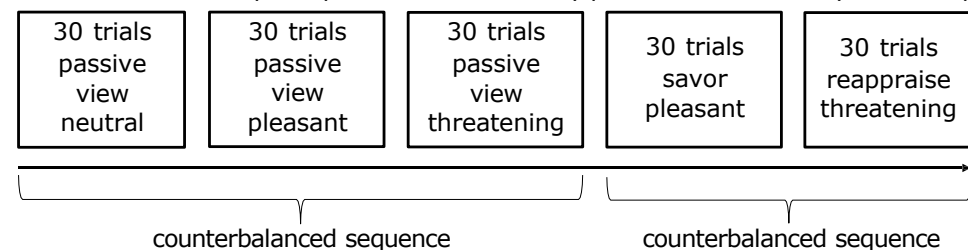


Fig. 1. Schematic of trials in which participants should savor any positive emotions they felt in response to the picture.



SAMPLE

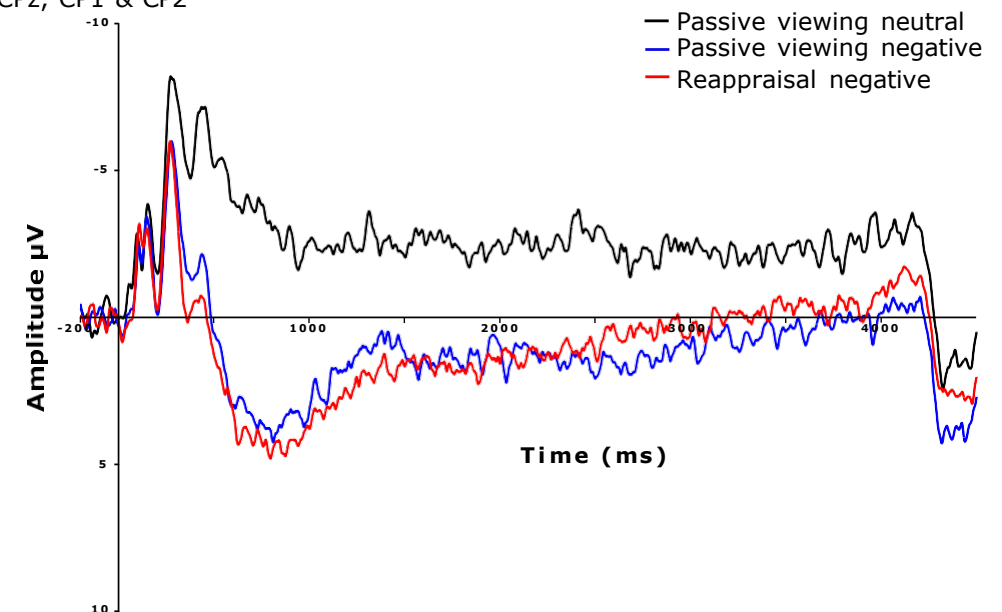
Sample

N (m/f)	24 (4 / 20)
Age	24.08 (7.40)
BERQ scales (possible range: 5 - 25)	
Seeking Distraction	11.96 (2.79)
Withdrawal	7.00 (3.16)
Actively Approaching	15.25 (3.11)
Seeking Social Support	13.92 (4.47)
Ignoring	6.79 (3.18)
CERQ scales (possible range: 2 - 10)	
Self-blame	4.04 (1.15)
Acceptance	7.30 (2.16)
Rumination	6.13 (1.39)
Positive Refocusing	4.87 (1.82)
Refocus on Planning	8.22 (1.73)
Positive Reappraisal	7.78 (1.78)
Putting into Perspective	6.13 (2.32)
Catastrophizing	3.57 (1.34)
Blaming Others	3.39 (1.03)

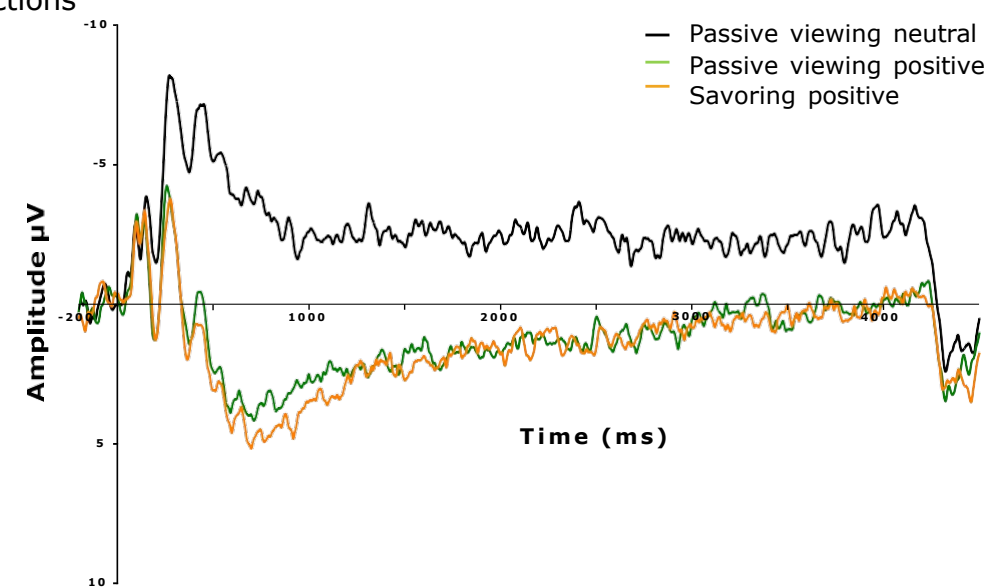
RESULTS

LPP: IAPS task

Pooling of CPz, CP1 & CP2



- Enhanced LPP in response to threatening (above) / pleasant (below) compared to neutral pictures
- No significant difference in LPP amplitudes under reappraisal (above) / savoring (below) instructions



Correlations between LPP's and BERQ / CERQ scales

	BERQ				
	Seeking Distraction	Withdrawal	Actively Approaching	Seeking Social Support	Ignoring
Viewing neutral	.37	-.07	-.01	-.12	-.08
Viewing positive	.01	-.13	.13	.06	-.17
Viewing negative	.36	-.21	.27	.36	-.28
Savoring positive	.38	.04	.11	.06	.09
Reappraisal negative	.04	-.06	.01	-.00	-.05

	CERQ								
	Self-Blame	Acceptance	Rumination	Positive Refocusing	Refocus on Planning	Positive Reappraisal	Putting into Perspective	Catastrophizing	Blaming Others
Viewing neutral	.38	-.15	-.01	.26	-.05	-.13	-.47*	.20	.42*
Viewing positive	.02	-.38	.13	.16	.30	-.10	-.33	.22	.03
Viewing negative	.01	-.23	.27	.47**	.26	.06	-.05	-.16	-.15
Savoring positive	.31	-.29	.13	-.04	.11	-.32	-.32	.22	.32
Reappraisal negative	.10	-.34	-.04	.22	-.16	-.22	-.57**	.23	.04

When regressing BERQ / CERQ scales on emotional reactivity for threatening pictures and for pleasant pictures, the standardized beta-weights were significant for:

- BERQ Seeking Distraction ~ emotional reactivity for pleasant pictures = $-.51^*$,
- BERQ Seeking Social Support ~ emotional reactivity for threatening pictures = $.56^*$,
- CERQ Catastrophizing ~ emotional reactivity for threatening pictures = $-.53^*$,
- CERQ Blaming Others ~ emotional reactivity for threatening pictures = $-.50^*$.

When regressing BERQ / CERQ scales on emotion regulation via reappraisal and via savoring, the standardized beta-weights were significant for:

- BERQ Seeking Distraction ~ emotion regulation via savoring = $.41^*$,
- CERQ scale Putting into Perspective ~ emotion regulation via reappraisal = $.48^*$.

* indicates $p < .05$, ** indicates $p < .01$. Please note that for the regression analyses we used the difference scores for emotional reactivity and regulation.

DISCUSSION

- While passively viewing, participants showed enhanced LPP responses to affective pictures, but no difference was found compared to the emotion regulation instructions.
- Emotional reactivity appears to be independently associated with self-reported habitual emotion regulation strategies seeking distraction and social support, catastrophizing and blaming others while emotion regulation appears to be independently associated with putting into perspective and also with seeking distraction.
- Due to the small sample and low power, further research is needed to clarify the suggested findings. We expect that results of the planned sample with $n = 80$ will provide more conclusive evidence.

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