

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 life^{2,3}, 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**)⁴ and Cognitive Emotion Regulation Questionnaire (**CERQ**)⁵

EXPERIMENTAL DESIGN

n = 36 healthy participants (11♂, 25♀, *M* age = 31, *SD* age = 12.2)

Emotion Regulation Paradigm

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

- Stimuli: Neutral, threatening and pleasant pictures (IAPS)⁶

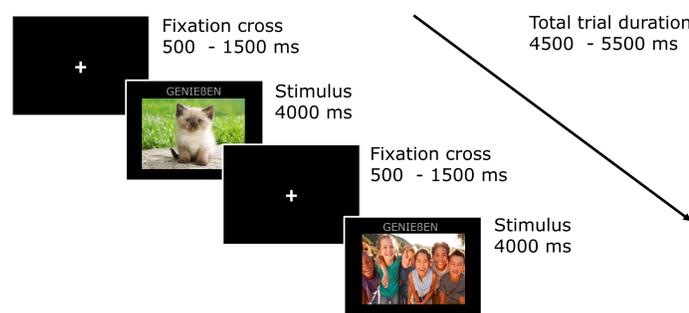
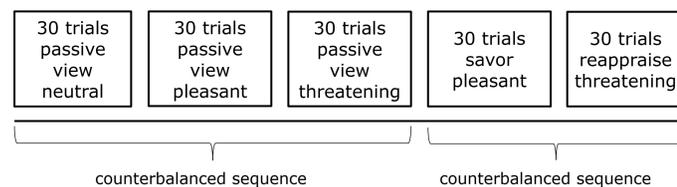


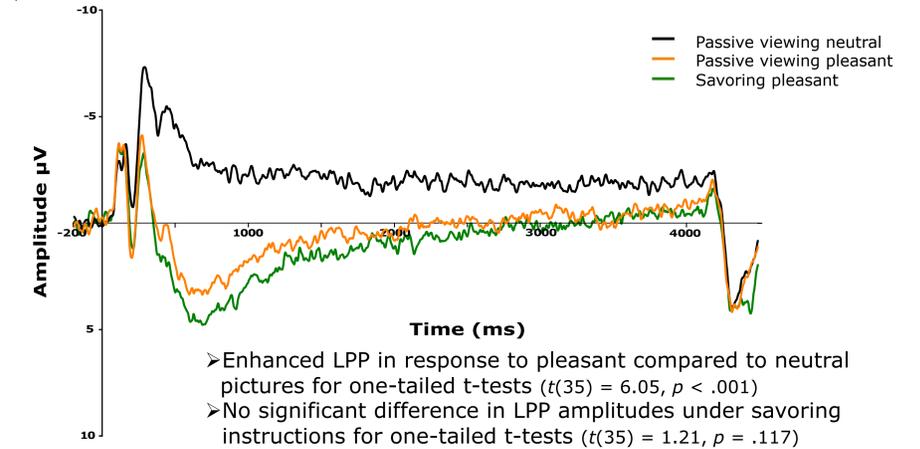
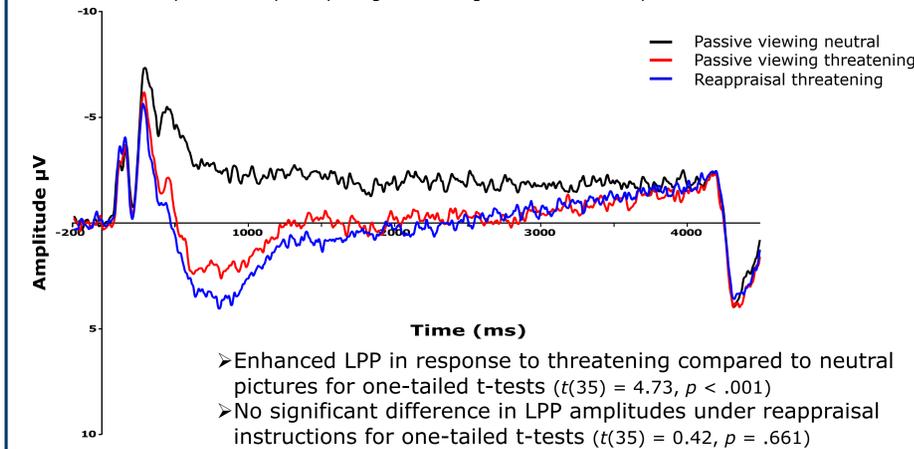
Fig. 1. Schematic of trials in which participants should savor any positive emotions they felt in response to the picture.



RESULTS

ERPs for Passive Viewing & Emotion Regulation

LPP scores were quantified by computing the average of the mean amplitudes between 400ms and 4000ms at CPz, CP1 & CP2



Correlations between LPP and BERQ / CERQ scales

	BERQ					
	Seeking Distraction	Withdrawal	Actively Approaching	Seeking Social Support	Ignoring	
Viewing pleasant	-.06	.00	.01	-.04	-.06	
Viewing threatening	.10	.10	.31	.22	-.10	
Savoring pleasant	-.08	.16	.06	-.04	.05	
Reappraisal threatening	-.25	.04	.19	.02	.06	* indicates $p < .05$.

	CERQ								
	Self-Blame	Acceptance	Rumination	Positive Refocusing	Refocus on Planning	Positive Reappraisal	Putting into Perspective	Catastrophizing	Blaming Others
Viewing pleasant	-.06	-.03	.17	.01	.02	-.01	-.06	.34*	.13
Viewing threatening	.07	-.14	.21	.14	.27	.09	.19	.34*	.17
Savoring pleasant	.14	-.17	-.11	.19	.03	.01	-.27	.09	.34*
Reappraisal threatening	.16	-.32	-.08	-.05	.01	.01	-.16	.20	.24

Regressions

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

- BERQ **Actively Approaching** ~ emotional reactivity = 0.43*
- BERQ **Seeking Social Support** ~ emotional reactivity = 0.48 *
- CERQ **Refocus on Planning** ~ emotional reactivity = 0.42*

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

- CERQ **Acceptance** ~ emotional reactivity = 0.39*.

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 = 0.34*,
- CERQ **Putting into Perspective** ~ emotion regulation = .36*.

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

- CERQ **Rumination** ~ emotion regulation = -0.32*.

Please note that for the regression analyses we used the difference scores for emotional reactivity and regulation.

DISCUSSION

- During passive viewing, participants showed enhanced LPP responses to affective pictures, but, in contrast to other studies, we did not replicate previously found emotion regulation effects.
- Emotional reactivity appears to be independently associated with self-reported habitual emotion regulation strategies of actively approaching, seeking social support, refocusing on planning and acceptance while emotion regulation appears to be independently associated with seeking distraction, putting into perspective and rumination.
- Due to the small sample, 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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