

Cognitive regulation of love feelings: An event-related potential study

Introduction

- Love feelings declining over time threaten romantic relationships [1]
- Love feelings may be unreciprocated or forbidden
- How convenient would it be if we could regulate love feelings!
- Emotions can be regulated using cognitive reappraisal [2]
- The late positive potential (LPP) amplitude is an objective measure of regulation success [3]
- **Research question:** Can people up- and down-regulate love feelings using cognitive reappraisal?
- **Hypothesis 1:** Up-regulation will increase love feelings, while down-regulation will decrease them
- **Hypothesis 2:** People who are in a relationship will feel better after up-regulation, while people who had recently experienced a romantic break-up will feel better after down-regulation
- **Hypothesis 3:** Up-regulation will enhance the LPP amplitude, while love down-regulation will reduce the LPP amplitude

Methods

- 20 participants - in a romantic relationship (19-25 yrs, 10 men) & 20 participants - recently experienced a break-up (19-26 yrs, 10 men)
- Emotion Regulation Questionnaire (ERQ)
- 30 (ex-)partner pictures & 30 neutral pictures, 3 sec presentation
- View neutral, view partner, up-regulate love, down-regulate love
- Cognitive reappraisal instructions: think of positive/negative aspects of beloved or relationship, or of positive/negative future scenarios
- 32-channel EEG registration (Biosemi)
- Ratings: infatuation, attachment, valence, arousal
- Positive Affect Negative Affect Schedules (PANAS)
- LPP amplitude (time windows: 300-425 ms, 425-650 ms, 650-1000 ms)

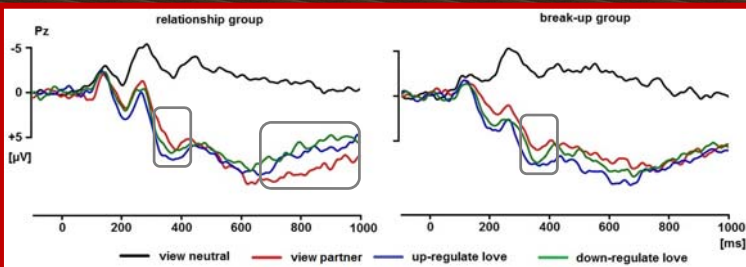


Fig. 2 Event-related potentials (ERPs) at electrode Pz

References

- [1] Hatfield, Pillemer, O'Brien, & Le (2008) *Interpersona*, 2, 35-64.
- [2] Gross (2002) *Psychophysiology*, 39, 281-291.
- [3] Hajcak, MacNamara, & Olvet (2010) *Developmental Neuropsychology*, 35, 129-155.

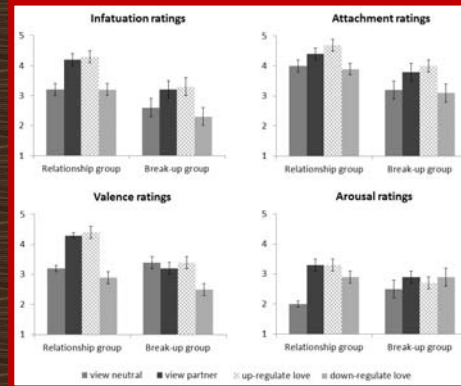


Fig. 1 Ratings

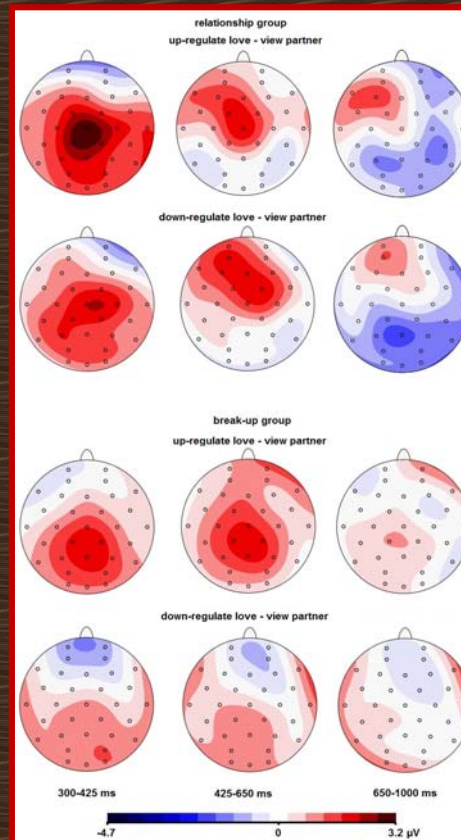


Fig. 3 Topographies of regulation effects

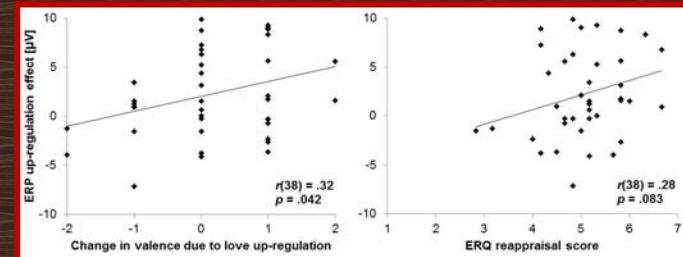


Fig. 4 Positive correlations of the ERP up-regulation effect (300-425 ms) with change in valence and the ERQ reappraisal score

Results

- Infatuation: down-regulation < view & up-regulation (Fig. 1)
- Attachment: down-regulation < view < up-regulation (Fig. 1)
- Valence: down-regulation < view & up-regulation (Fig. 1)
- Positive affect: down-regulation < up-regulation < view, in relationship group only
- Negative affect: down-regulation > up-regulation & view, in relationship group only
- LPP (300-425 ms): up-regulation > view (Figs. 2 & 3)
- This ERP up-regulation effect was positively correlated with the change in valence ratings and ERQ reappraisal (Fig. 4)
- LPP (650-1000 ms): down-regulation < view, in relationship group only (Figs. 2 & 3)

Discussion

- This is the first study to examine explicit love regulation
- Love up-regulation increased attachment
- Love up-regulation enhanced the LPP amplitude (300-450 ms)
- People who felt better after love up-regulation showed greater objective love regulation success
- People who use reappraisal for emotion regulation in daily life tended to show greater objective love regulation success
- Love down-regulation decreased infatuation and attachment
- Love down-regulation reduced the LPP amplitude (650-1000 ms)
- So, explicit love regulation seems feasible
- But, love up- and down-regulation made people feel less well
- It is important to distinguish between the effects of love regulation on love feelings and on affect or mood
- Future research could explore other regulation strategies
- Love regulation could increase the positive effects and decrease the negative effects of love on individuals and on society