

Romantic love and attention: Early and late event-related potentials

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Introduction

- There is behavioral evidence that lovers focus their attention on their beloved¹
- The Late Positive Potential (LPP) reflects sustained motivated attention
- The beloved elicits an enhanced LPP, so people who are in love have enhanced sustained motivated attention to their beloved²
- The Early Posterior Negativity (EPN) reflects early automatic attention
- There is limited data on love and the EPN³
- **Study goal:** To test whether the beloved captures early automatic attention, as indicated by an EPN elicited in a typical rapid serial visual presentation (RSVP) task, while replicating previous findings that the beloved receives sustained motivated attention, as indicated by an enhanced LPP elicited in a standard passive viewing task

Methods

- 24 participants (18-35 years, 9 men) who had been in love for less than one year
- 15 stimuli: five pictures each of the beloved, friend, and a stranger
- RSVP task: three pictures per second, no ITI - 300 trials/condition
- Standard passive viewing task: 500-1000 ms fixation, 1000 ms picture, 1000 ms ITI - 30 trials/condition
- 32-channel EEG registration (Biosemi)
- EPN amplitude (150-225 ms and 225-300 ms) at P7/8 and O1/z/2
- LPP amplitude (400-1000 ms) at F3/z/4, C3/z/4, and P3/z/4
- Valence and arousal ratings

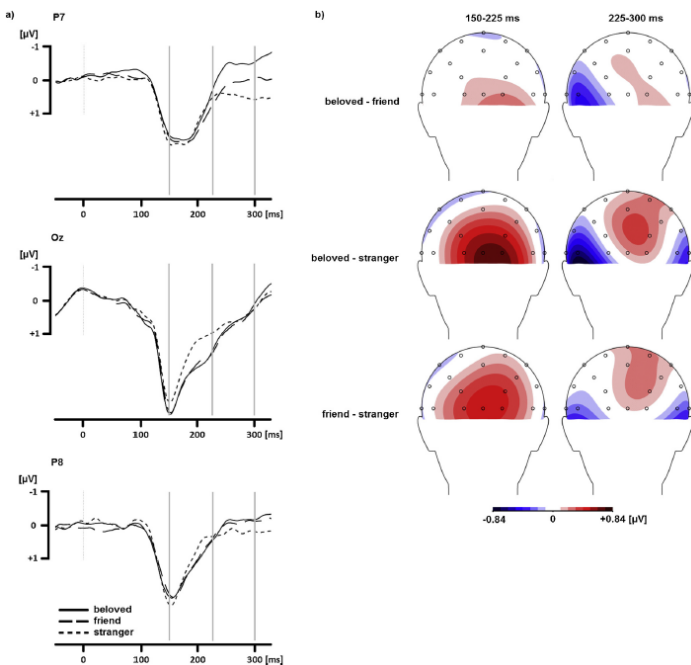


Fig. 1 EPN (average reference)

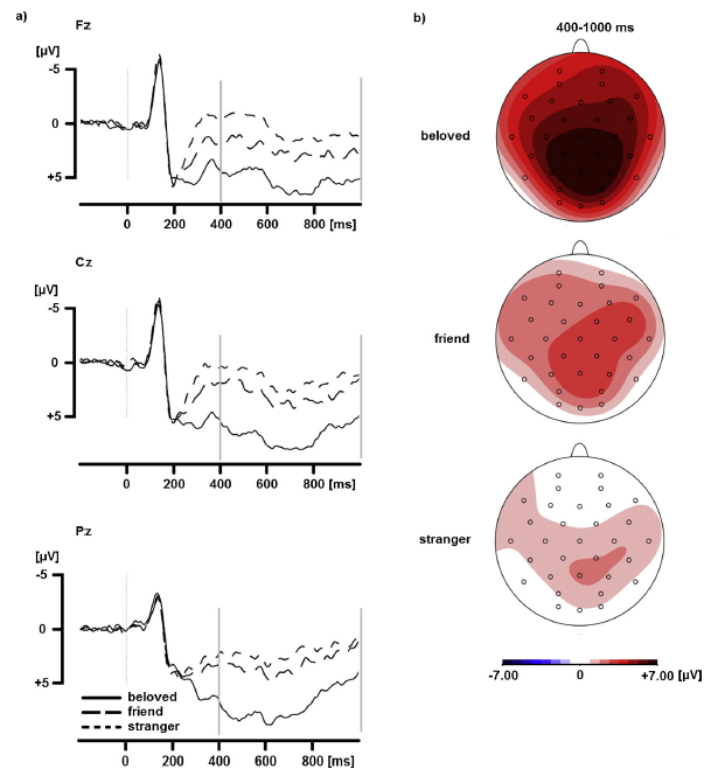


Fig. 2 LPP (averaged mastoids reference)

Results

- Participants felt most pleasant and aroused when viewing the beloved, intermediately pleasant and aroused when viewing the friend, and most neutral and least aroused when viewing the stranger
- 150-225 ms: ERP more positive for beloved than stranger at O1/z/2 (Fig. 1)
- 225-300 ms: ERP more negative for beloved compared to friend and stranger at P7 (Fig. 1)
- 400-1000 ms: ERP more positive for beloved than friend and stranger (Fig. 2)

Discussion

- A left lateral parietal EPN (225-300 ms) occurred for beloved vs. friend and stranger in the RSVP task
- The midline centroparietal LPP (400-1000 ms) was larger for beloved than friend and stranger in the standard passive viewing task
- So, the beloved captures early automatic attention as well as sustained motivated attention
- Likely because the beloved is evolutionarily significant
- The findings have relevance for daily life and for the study of love regulation

Langeslag & Van Strien (2019) *Biological Psychology*, 146, 107737

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References

- 1 Nakamura et al. (2017) *Arch Sex Behav*
- 2 Langeslag et al. (2007) *Biol Psychol*
- 3 Langeslag & Van Strien (in press) *Neuropsychologia*