Shared Emotions

the effects of "co-presence" on emotion-related physiological responses

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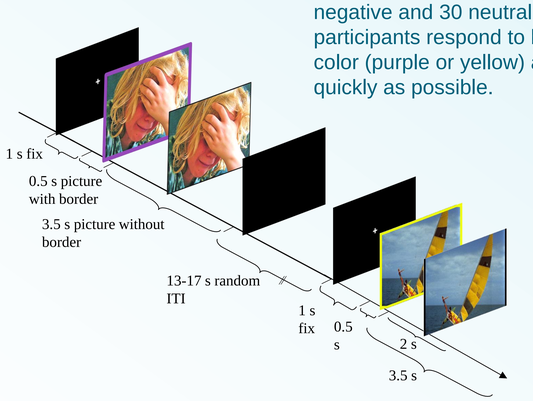
Background

- Social presence can have profound effects on individual behavior in general and on emotional responses in particular.
- One of the most known effects in this field is facilitation of dominant responses in perceptual and cognitive tasks, known as social facilitation (Zajonc, 1965).
- It has been suggested that social facilitation of dominant responses occurs due to increased general arousal (Zajonc, 1965). However, meta-analysis of physiological studies had found only weak empirical evidence for it (Bond & Titus, 1983).
- Centrally to the current study, the effects of social presence on emotional responses have not been investigated.

Here we aim to characterize the effects of social presence on the physiological responses of one's emotional system. We focus on minimal social condition, in which individuals attend to the same stimulus without directly communicating with each other

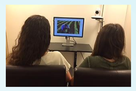
Experiment

Trial schema



IAPS pictures: 30 positive, 30 negative and 30 neutral trials; participants respond to border color (purple or yellow) as quickly as possible.

Social



N=35 dyads of participants

Single

N=40 female participants

Measures

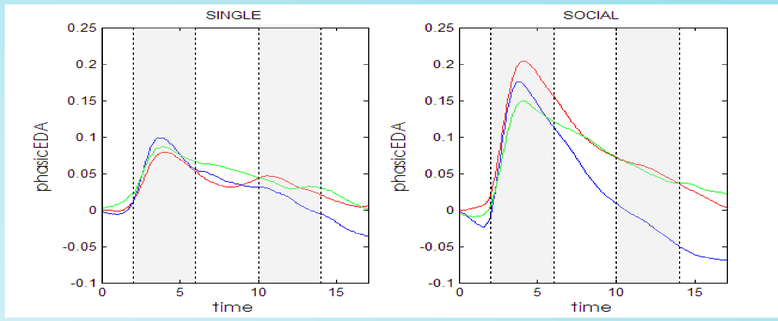
➢ Autonomic Nervous System (ANS):
Electrodermal Activity (EDA); Cardiovascular Activity (HR), Respiration (Resp).

➢ Facial Electromyography (EMG):
Corrugator supercilii muscle (Corr); Zygomaticus major muscle (Zyg).

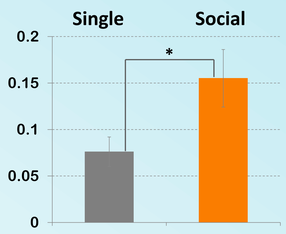
We focus on two physiological markers of emotional responses:
1) **reactivity** - that is change in physiological responses during stimulus presentation from pre-stimulus baseline and 2) **recovery** – that is change in physiological responses following stimulus disappearance.

Results- Autonomic activity

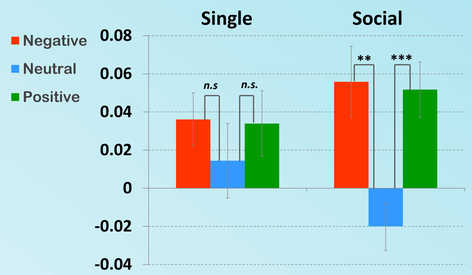
Electrodermal Response



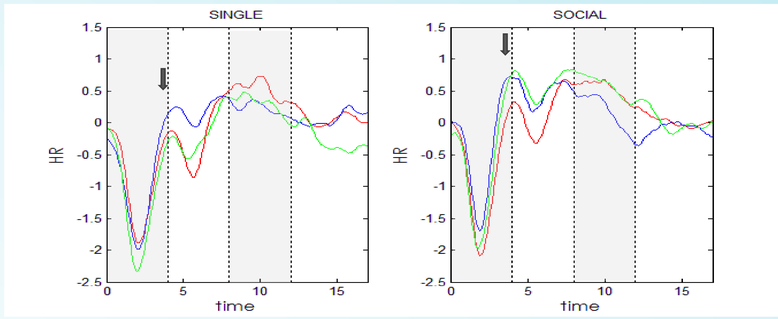
Reactivity:



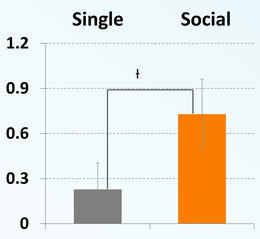
Recovery:



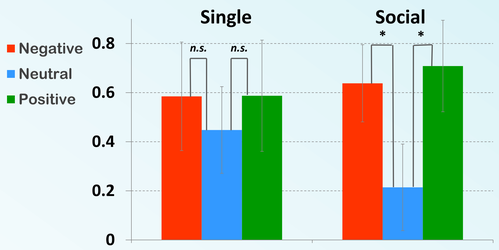
Cardiovascular Response



Reactivity:

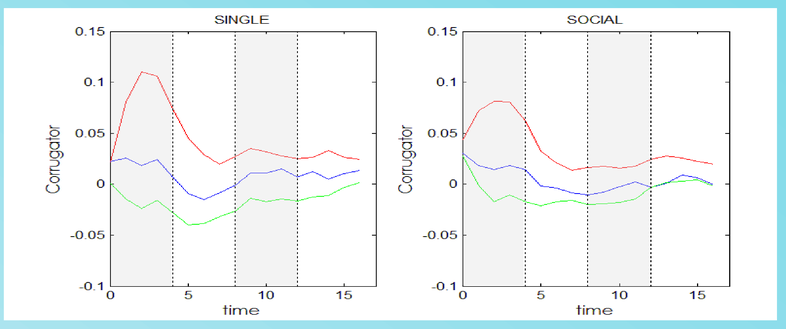


Recovery:

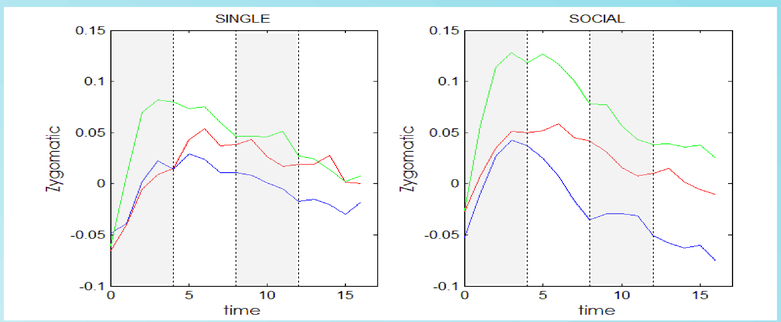


Results- Facial activity

Corrugator supercilii muscle Response



Zygomaticus major muscle Response



Conclusions

- **Increased Attentional Component**: Social presence enhances physiological reactivity to events, regardless of their affective valence
- **Increased Emotional Sensitivity:** Social presence amplifies the long-term impact of emotional events, leading to significant valence effects during recovery in social but not in the non-social condition
- **Increased Positivity:** Social presence leads to enhanced positive emotional expressions, both during the emotional event (picture presentation) and during recovery

References:
Bond, C. F., & Titus, L. J. (1983). Social facilitation: a meta-analysis of 241 studies. *Psychological bulletin, 94*(2), 265.

Zajonc, R. B. (1965). Social facilitation. *Science,149*, 269-274.