

Anxiety Highlights the Negative

**Electrophysiological
Evidence that
Personality Modulates
Affective Processing**

Emotion & Cognition Interact!

- Emotional Memory

Emotional content makes stimuli more likely to be remembered



- Attentional Bias for Emotional Content

Emotional stimuli capture attention more than neutral stimuli

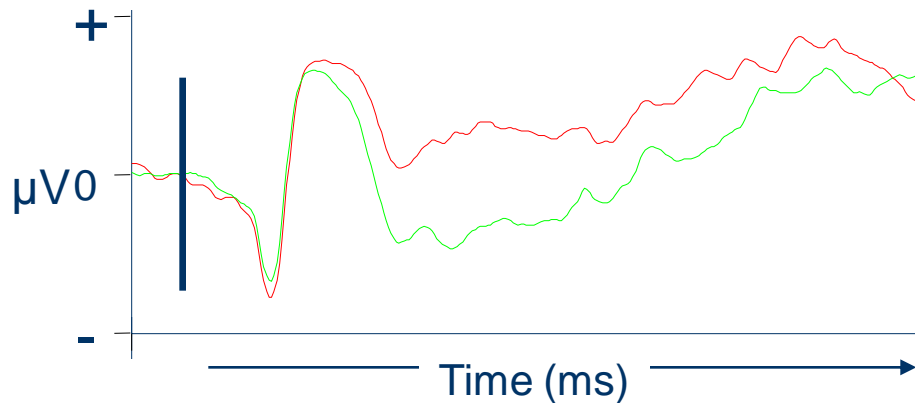
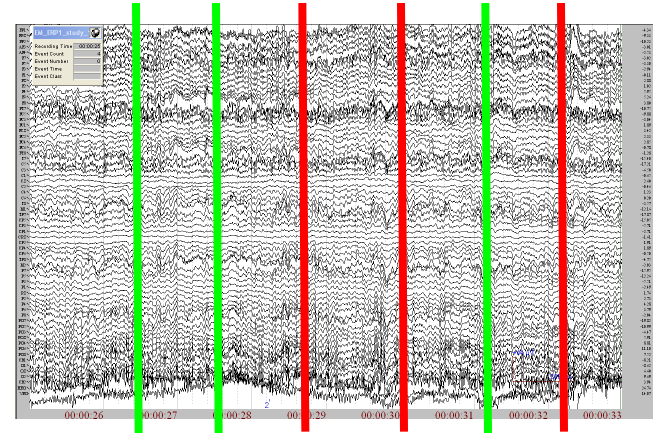


Event-Related Potentials (ERPs)



EEG

Records voltage changes on the scalp

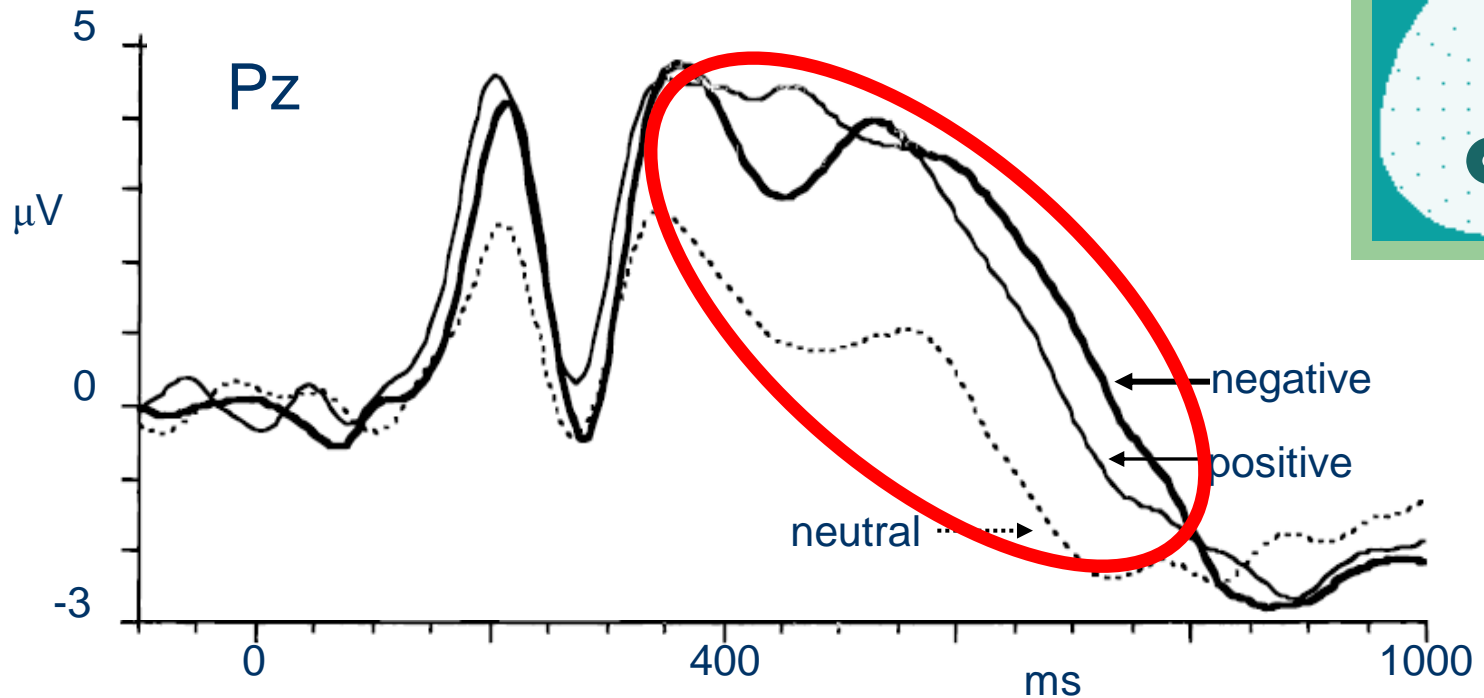


Average many trials time-

locked to onset of specific event

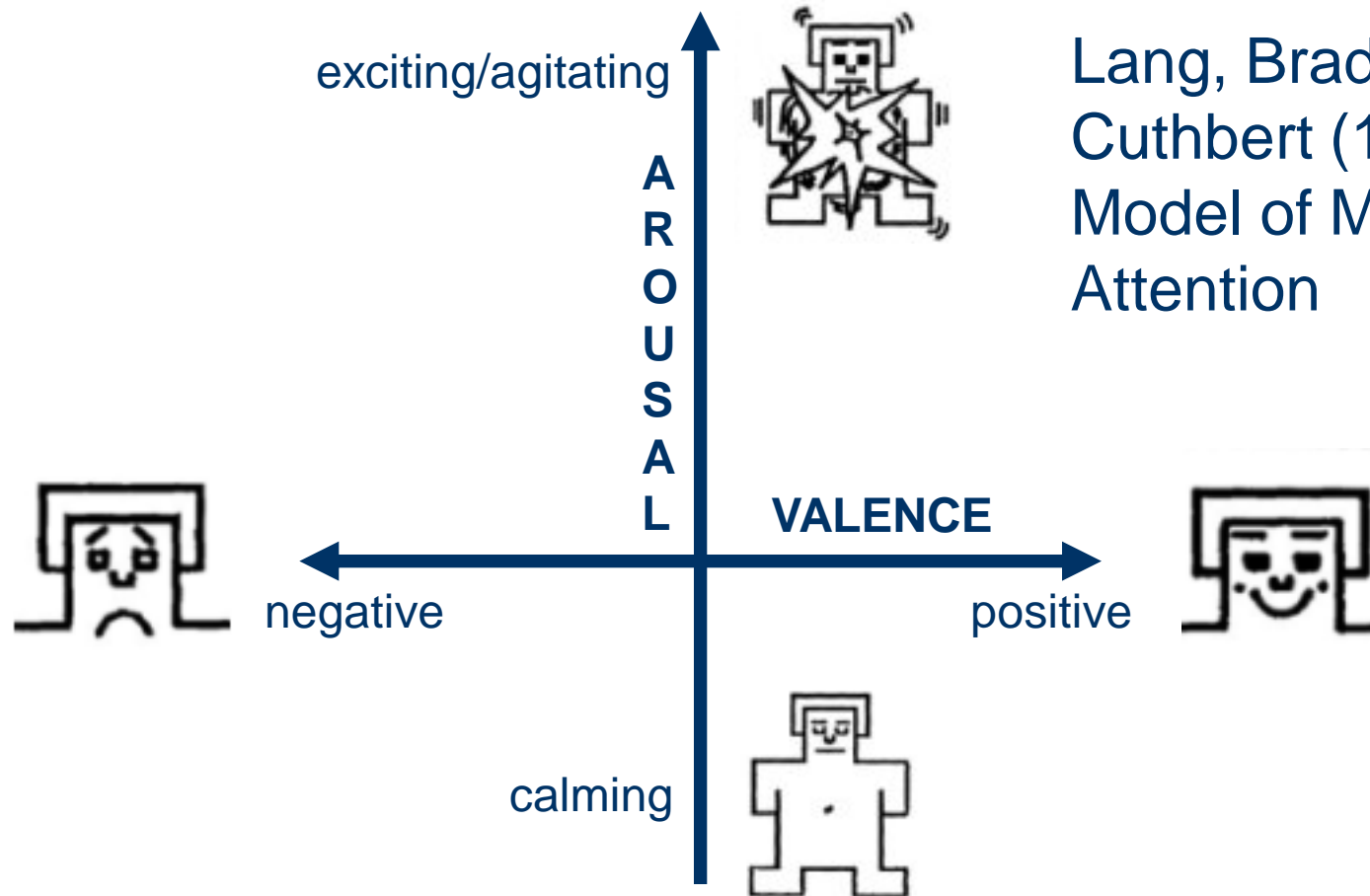
ERP Correlates of Attention are Modulated by Emotion

The Late-Positive Potential



Adapted from Schupp et al. (2000)

What makes emotion capture attention?



Lang, Bradley and Cuthbert (1997):
Model of Motivated Attention

Is the ERP Modulation driven by Emotional Arousal?

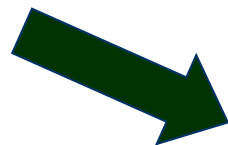
- Negative pictures consistently elicit larger attention effects than neutral pictures
- Evidence for a similar effect of positive pictures is mixed

Similar Effect of
Positive and
Negative Content

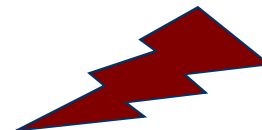


?

Different Effects
of Positive and
Negative Content



Lang et al.



Does the ERP Modulation really depend on Valence?

- Studies use negative and positive stimuli matched for standard ratings of arousal
- **BUT:** Individuals differ in perceived arousal



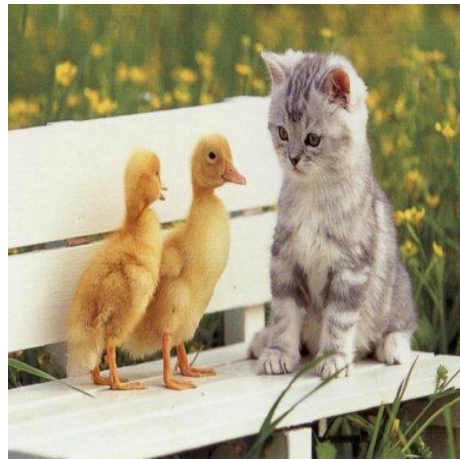
- Trait anxiety is known to modulate levels of arousal associated with emotional stimuli

Paradigm

- Participants viewed 222 IAPS Pictures for 2000ms each



high arousing
negative



high arousing
positive



low arousing
neutral

Paradigm

- Participants complete Beck's Anxiety Inventory (BAI)
- Sample split into

Non-anxious Group

N = 12
M/F = 6/6

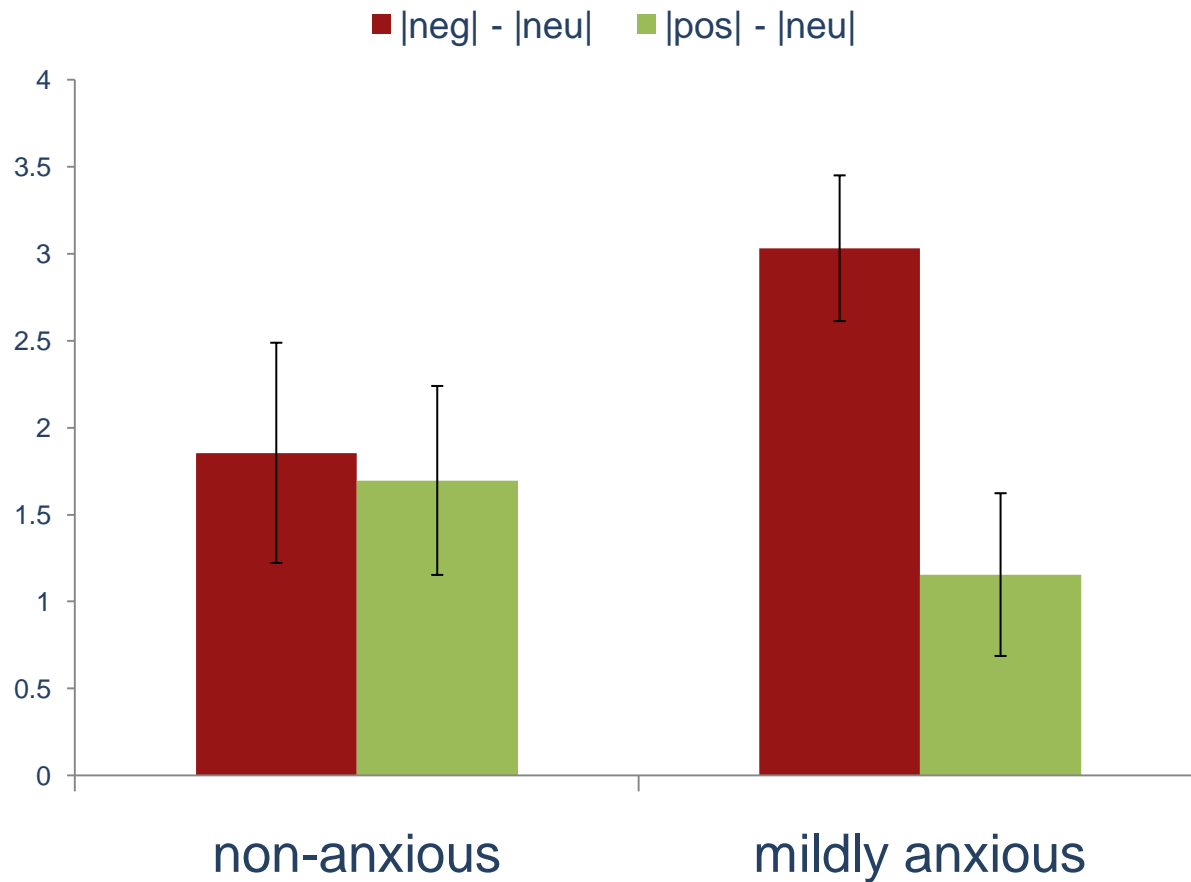
Mean BAI = 2.75

Mildly anxious Group

N = 12
M/F = 6/6

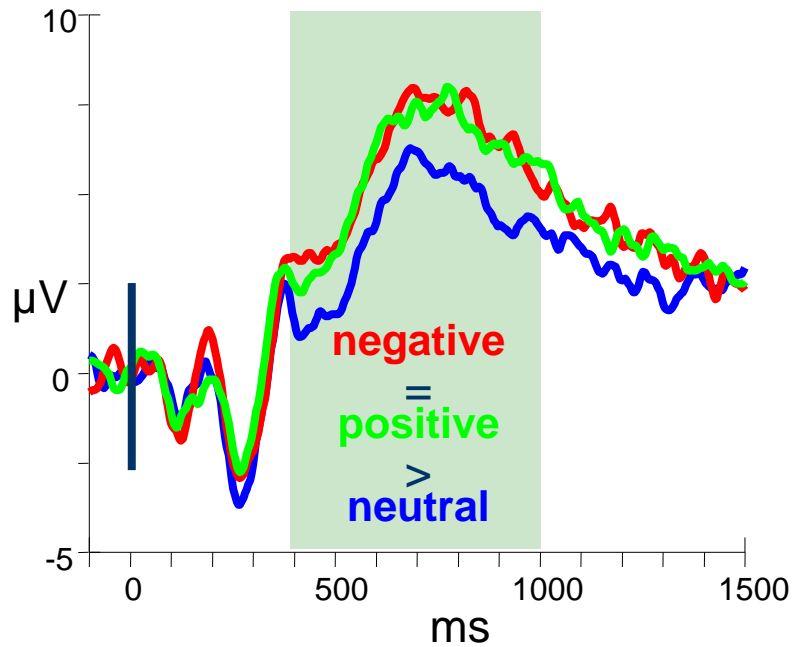
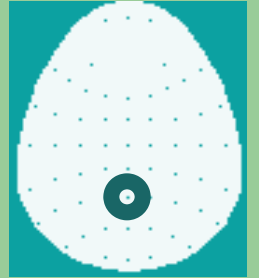
Mean BAI = 10.08

Participants' Arousal Ratings

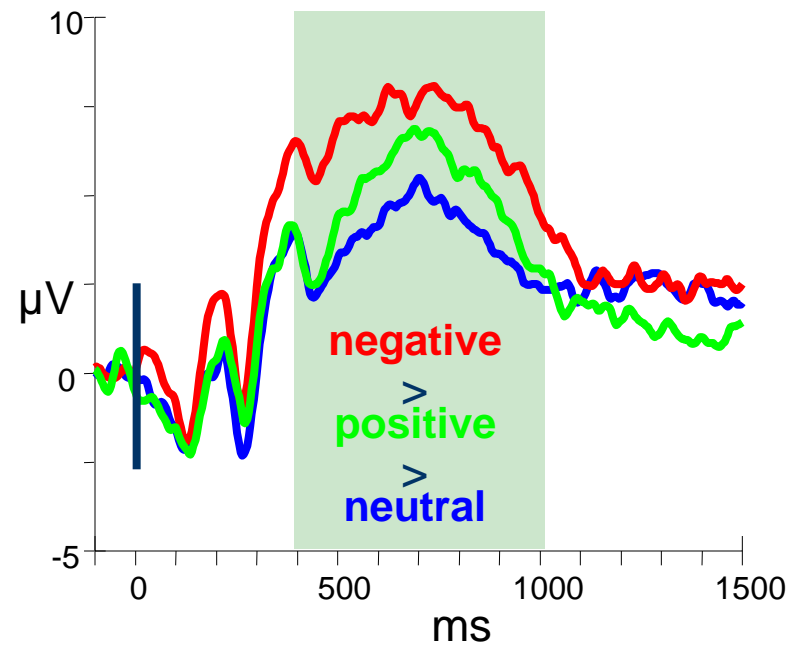


LPP Waveforms

Electrode Pz



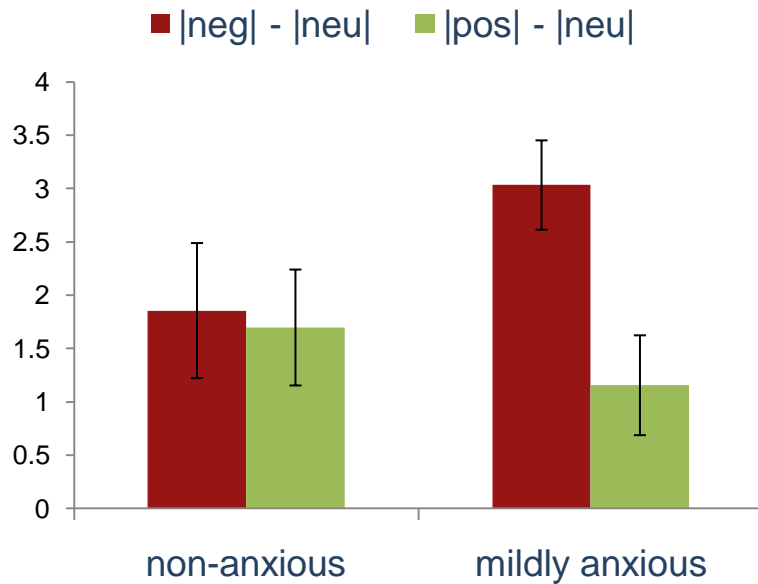
non-anxious



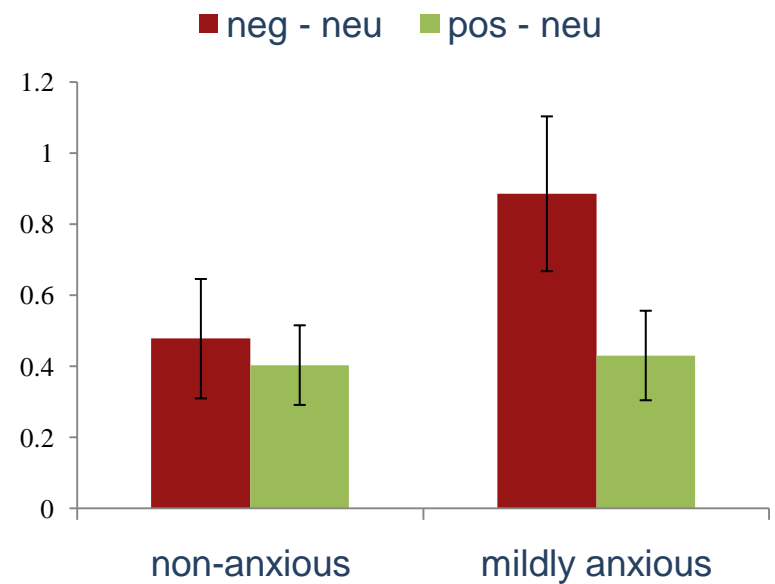
mildly anxious

Differences in ERP correlates of attention map onto differences in perceived arousal

Mean LPP Amplitude

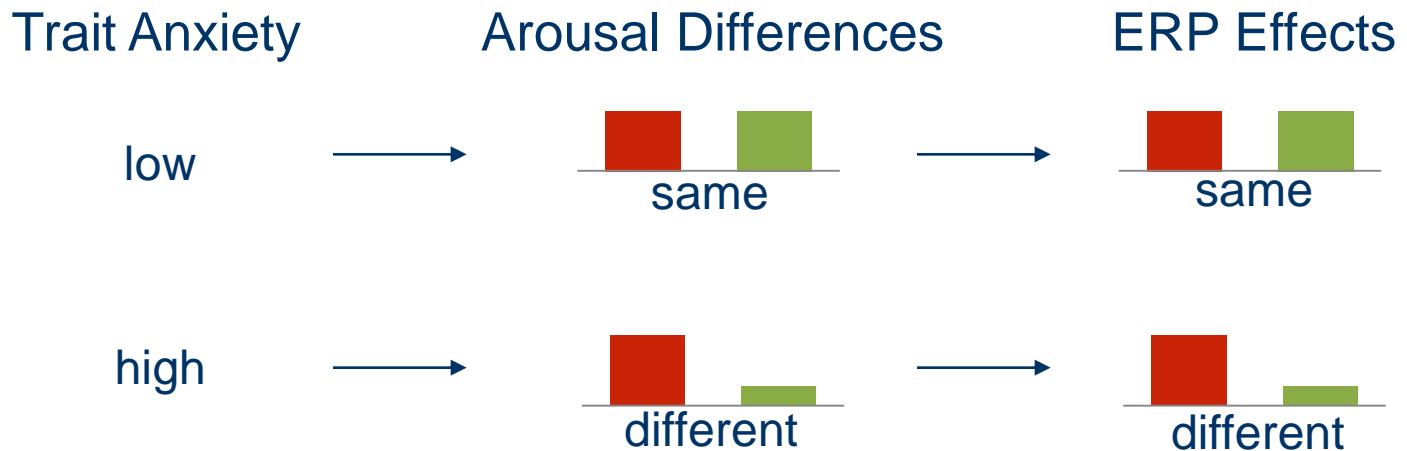


Arousal Ratings



Conclusions

- Anxiety Highlights the Negative
 - Even very mildly anxious participants found negative stimuli more arousing and attended to them more than non-anxious participants



Acknowledgements

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Thank you for your attention!

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