Negative affect mediates emotion's effect on perception

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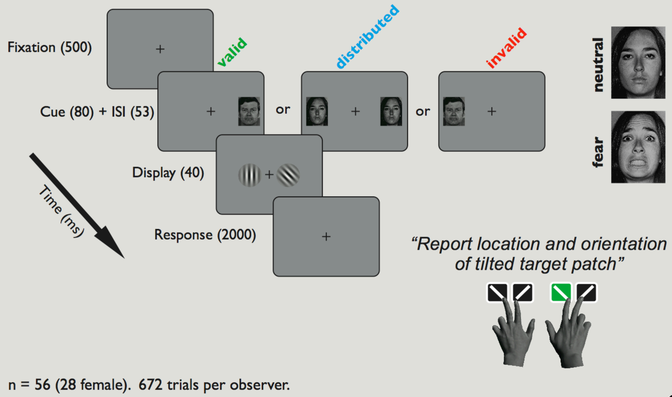
Background

- Exogenous attention produces both **benefits** (*valid cue*) and **costs** (*invalid cue*) on contrast sensitivity [1].
- Attention cued by faces produces both benefits and costs on contrast sensitivity [2].
- Emotion potentiates the **benefits** of attention on contrast sensitivity [3].
- Emotion slows disengagement from cued locations, especially in highly anxious individuals [4].

Questions

Is there a **cost** of emotional attention on contrast sensitivity? Is this cost modulated by trait anxiety or sex?

Methods



n = 56 (28 female). 672 trials per observer.

Stimulus parameters:
Gabors: 7 log contrasts, 1.5 cpd, 3°, 4° ecc., 0° and ±6° tilt
Face cues: 3.5 x 4.6°, 8° ecc., uninformative

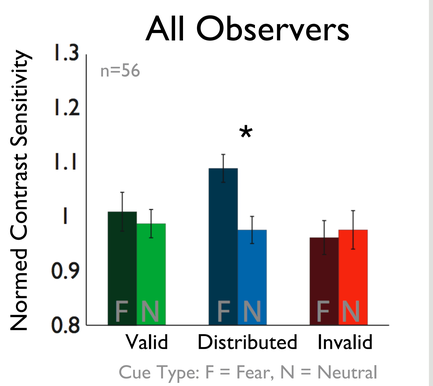
Observer accuracy from each condition was fit with a Weibull function to obtain Contrast Sensitivity (CS) at 67% accuracy.

CS = 1 / (Contrast Threshold)

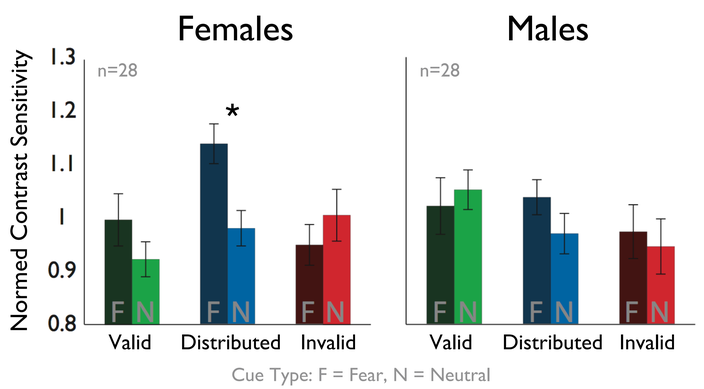
Feedback

Self-Report Measures:
Edinburgh Handedness Inventory [5]
State Trait Anxiety Inventory [6]
Positive and Negative Affect Scale [7]

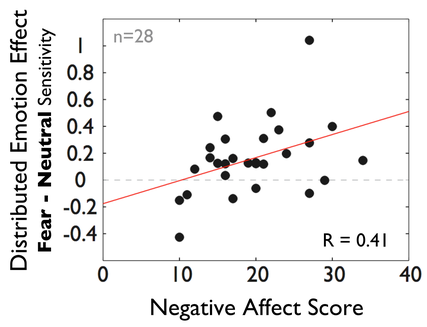
Results



For distributed cues, **fear** lead to **enhanced contrast sensitivity** relative to neutral.

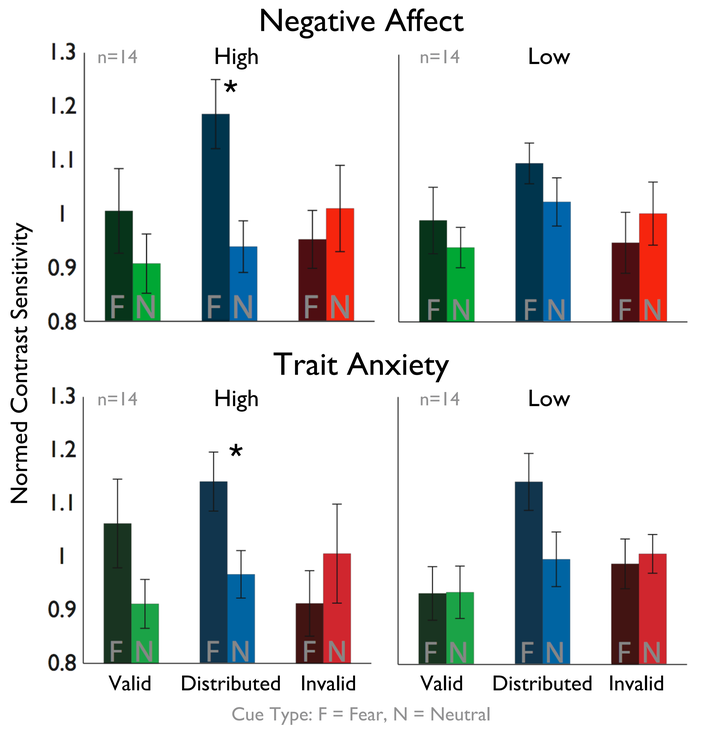


Only **females** showed enhanced sensitivity with fear distributed cues and a significant **emotion** x **attention interaction**.



The **distributed emotion effect** significantly correlated with **negative affect**.

High **negative affect** or **trait anxiety** resulted in enhanced sensitivity with distributed fear cues.



Conclusions

- Distributed fear cues increased contrast sensitivity.
- Effect driven by females, especially those high in negative affect or trait anxiety.
  Consistent with findings that females are better at recognizing emotional expressions [8] and are more prone to anxiety [9].
- Only females showed an emotion by attention interaction.
- Attention may not have been taxed enough to reveal the full effect of valid and invalid emotion cueing on perception.
  We are currently testing a 4-location experiment to further tax attentional resources.

References:
1. Pestilli & Carrasco (2005) **2.** Ferneyhough et al (2010) **3.** Phelps et al (2006) **4.** Fox et al (2001) **5.** Oldfield (1971) **6.** Spielberger (1983) **7.** Watson, Clark & Tellegen (1988) **8.** McClure (2000) **9.** Craske (2003)

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