

# Emotion and Motivation in Early Picture Processing

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## Introduction

- Emotions may be broadly organized around approach and avoidance motivational systems (e.g., Lang, 1995).
- The motivational underpinnings of emotion have been highlighted by research demonstrating that picture contents linked to approach (i.e., erotic) and avoidance (i.e., threat) motivational themes elicit the strongest startle modulation effects (Bradley et al., 2001).
- However, affective startle modulation studies examining earlier stages of picture processing have yielded equivocal results (e.g., Bradley et al., 1993; Codispoti et al., 2001).
- In addition, the impact of motivational salience at early stages remains unexplored.
- The present study uses a startle modulation paradigm to examine valence and motivation effects during early picture processing.

## Participants

- 64 undergraduate students (40 women).

Table 1. Demographics

Age [M(SD)]	20.1 (1.6)
Education [M(SD)]	13.8 (1.6)
Ethnicity (n)	
• Asian	34
• Caucasian	21
• Latino	5
• African-American	3
• Native-American	1

## Methods

### Emotional Stimuli:

- Participants viewed 75 IAPS pictures (Lang et al., 1988) matched on arousal.
- Pictures were selected based on valence and motivational content:
  - Two positive valence categories: high approach (erotic) and less clearly approach (action) motivation
  - Two negative valence categories: high avoidance (threat) and less clearly avoidance (victim) motivation



### Procedure:

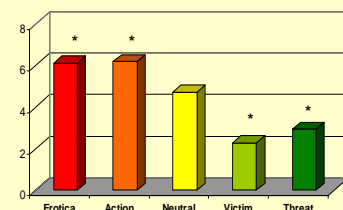
- Startle eyeblink magnitude was measured in response to 50 ms 105 dB acoustic startle probes.
- Probed were presented 300, 800, or 3500ms after picture onset.
- Participants rated their emotional experience after each picture presentation.

### Sample Trial:



## Results: Self-Report Ratings

Figure 1. Mean self-reported emotional experience



## Results: Affective Startle Modulation

Figure 2. Valence effects by probe time

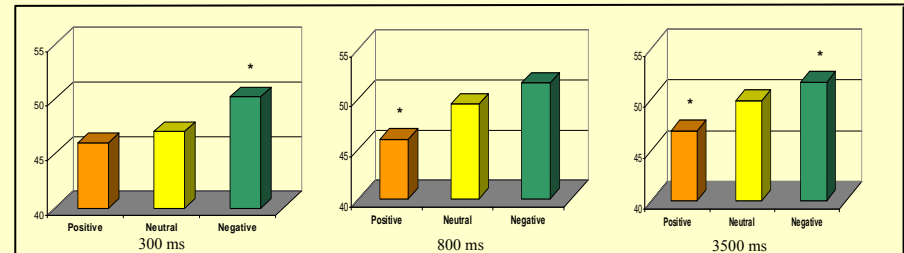
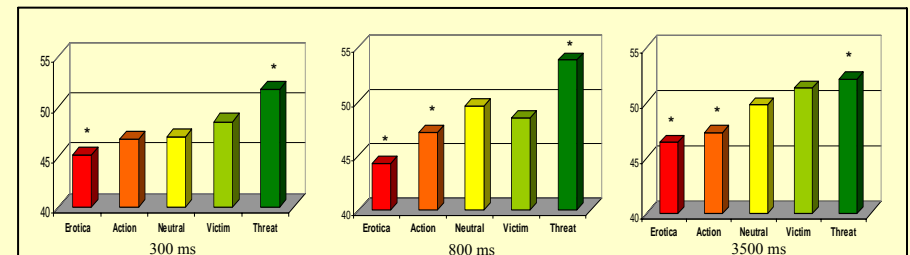


Figure 3. Content effects by probe time



Note:

- An alpha level of .05 was used for all statistical tests.
- Contents that are significantly different from neutral are denoted with an \* above their respective bars in each graph.
- A Bonferroni correction was used to adjust for multiple comparisons.

## Discussion

- Results indicate that startle modulation effects were seen not only at the late (3500 ms) probe time, but also at both early probe times (300, 800 ms).
- Erotica elicited greatest blink inhibition and threat elicited greatest potentiation, relative to neutral, at both early (300, 800ms) and late (3500ms) probe times.
- Startle responses during action and victim slides did not consistently differ from neutral across probe times.
- These results suggest that motivationally salient stimuli elicit robust emotional responses that are present even at early stages of stimulus processing.

## References

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