

# Influences of Emotion on Context Memory While Viewing Film Clips

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# Emotion and Memory

## Cognitive Perspectives

How does Emotion Impact Our Memory?



# Theoretical Framework

## Cognitive Effects of Emotional Arousal (Cahill et al., 1994)

What's the Role of Emotional Arousal in Memory Enhancement?



# Attentional Focus

## Cue Utilization Hypothesis (Easterbrook, 1959)

How do Emotional Events Narrow/Enhance Our Attention in Different Ways?



# Tunnel Memory

## Focus on Central Details

What is Tunnel Memory?

What's an example of Tunnel Memory you've experienced?



# Memory Tradeoffs

## Item-Source Tradeoff Effect (Jurica & Shimamura, 1999)

How Does the Item-Source Tradeoff Explain Memory Tradeoffs?

Does This Explain Tunnel Memory?



# Research Challenges

## Addressing Confounds in Emotion and Memory Studies

What Challenges Arise in Studying Emotional Impacts on Memory?

How Can Emotional Content Confound Results?



# Influences of Emotion on Context Memory While Viewing Film Clips

- Participants
  - 40 Undergraduate students from University of California Berkeley
    - 14 men, 26 women
    - Average age – 19.8 years
  - Motivation – received course credit
  - All participants reported normal hearing and normal to corrected-to-normal vision



# Influences of Emotion on Context Memory While Viewing Film Clips

- Design - Experiment 1
  - Film Survey
    - 2-minute film clips
      - Neutral (control) – cooking commercial person mixing batter
      - Positive – penguins running and jumping playfully
      - Negative – surgical arm amputation
      - Arousal – car chase scene through city and country streets
  - Context Memory, Free Recall
    - Measured using a list of 15 neutral nouns that played during film clips through participants headphones

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- Procedure
  - Each participant watched all four films (neutral (control), positive, negative, arousal), simultaneously listening to neutral words through headphones
  - Free recall test for words presented during the films
    - 4 minutes to recall as many words as possible that played throughout the four clips
  - Film survey test on the details of the films
    - 7 questions for each film with short answer responses
  - Context recognition test
    - Participants were presented with 60 study words (from the four 15 word lists) randomly intermixed with 30 new words
    - For each trial, a word was presented with five choice options – “cooking film”, “penguin film”, “operation film”, “car chase film”, “new word”
- Independent ratings of film clips on pleasantness, arousal, and dominance
  - 21 participants rated each film on the basis of one of the 3 dimensions above after watching each film with no sound and no word lists, Self Assessment Manikin Scale

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Table 1. Percentage (*SE*) of correct responses on film survey, word recall, and source recognition tests in Experiment 1

	Film type			
	Control	Negative	Positive	Arousal
Experiment 1				
Film survey	58.6% (2.7)	49.5% (2.5)	54.9% (2.6)	55.7% (3.1)
Word recall	18.5% (2.0)	7.0% (1.5)	15.7% (2.3)	18.2% (2.4)
Source recognition	29.5% (2.5)	22.8% (2.2)	29.3% (2.4)	36.5% (3.2)
Experiment 2				
Film survey	58.7% (3.3)	58.6% (2.9)	63.2% (2.9)	65.7% (3.3)
Word recall	16.7% (2.2)	7.3% (1.7)	15.0% (2.1)	19.3% (2.3)
Source recognition	31.8% (2.1)	25.2% (2.2)	30.5% (2.6)	37.2% (2.8)

*Note.* Standard errors in parentheses.

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- Results – Experiment 1
  - **Film Survey** - Participants had good memory of all details across the four films
    - The exception was for the negative film which a planned comparison statistical test suggested that memory for details of the negative film was poorer than that of control
  - **Free Recall** – Significant Main Effect,  $p < .01$ 
    - Word Recall was significantly lower for words presented during the negative film than for words presented during the three other films
  - **Context Recognition** – Significant main effect for memory performance across the four film clip,  $p < .01$ 
    - Context memory for words presented during the negative film was significantly lower than context memory for words presented during the other films
    - Context Memory for words presented during the arousal film was significantly better than context memory for words presented during the control and negative films

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- Experiment 2
  - Performed to ensure the effects of experiment 1 were not based on factors specific to the context of the films
  - Used a different set of films but the same control (neutral) film
  - Other methods were exactly the same as Experiment 1
  - Participants
    - 40 undergraduate students from the University of California at Berkley
      - 16 men and 24 women
      - Average age – 19.2 years
    - Participants reported normal hearing and normal or corrected-to-normal vision

# Influences of Emotion on Context Memory While Viewing Film Clips

- Results – Experiment 2
  - **Film Survey** – No significant differences across film clips and none across planned comparison statistical tests
  - **Word Recall** – Significant Main Effect Across Films,  $p < .01$ 
    - Planned Comparison statistical test showed word recall was poorest for words presented during negative film
    - Replicated findings from experiment 1 results
  - **Context Recognition** – Significant Main Effect of Film Type,  $p < .01$ 
    - Context memory was significantly lower for words presented during the negative film
    - Context memory for the words presented during arousal films was enhanced
    - Replicated findings from experiment 1 results

# Discussion and Implications of the Study

- Reduced context in negative films
- Enhanced context memory for arousing films



# Theoretical Implications

- Selective Attention
- Emotional Withdrawal
- Arousal and Interest





# Considerations

- Valence and arousal
- Longitudinal Studies

# Relevance

- Educational and Clinical Settings
- Eyewitness testimonies
- Advertising and Media



Thank you!