Authors: Lisa Anderson & Arthur P. Shimamura, 2005

Presenters: Lauren M., Jonah W., Hongkang X.

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?







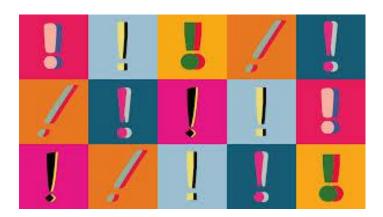
Memory Tradeoffs

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?







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

- 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

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 trail, 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 Manikan Scale

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
	E	xperiment 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)
	E	xperiment 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.

- 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

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

- 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!