

The Effect of Emotional Appraisal on Memory for Typically Traumatic Events

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ABSTRACT

Previous research shows that emotion affects memory for particular events. This experiment was designed to determine if appraisal, positive and negative, had a significant effect on memory for central and peripheral details of a traumatic stimulus. Participants were led to have either a positive or negative appraisal before watching a traumatic video of an individual getting shot. After viewing the video, participants completed a cued-recall test for memory of peripheral and central details. There was a significant effect for appraisal on valence, which means the video was rated as more negative by the negative appraisal group than by the positive appraisal group. In addition, central details were remembered more accurately than peripheral details. However, there was not a significant effect of appraisal on memory for central or peripheral details. One possible explanation for the results was that the stimulus was too traumatic for an effective manipulation of positive appraisal.

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CHAPTER 1

Introduction

“Individual differences in emotion arise when individuals appraise similar situations differently” (Smith & Kirby, 2009, p. 1352). What makes individuals appraise situations differently? The central idea of appraisal theory is that a person’s emotional reaction to an event is determined by their personal interpretation of that event. Imagine individuals that ride the train each morning. One individual is on their way to accept a prestigious award; the other is going to be dismissed from their job. Now imagine that there is a train wreck and the train is delayed for several hours. Each of these individuals will react differently to these circumstances due to their individual personal significance involved. The individual accepting the award will react more negatively to the delay than the individual who is going to be dismissed. Another example of a positive reaction to a negative event, the death of an individual, occurred in May of 2011 with the spontaneous demonstrations and celebrations that erupted at the news of the death of Osama Bin Laden, the mastermind behind the 9/11 terrorist attacks. Jubilant crowds collected outside the White House and at Ground Zero, cheering and singing the national anthem. It was a time of celebration and victory for many Americans. (Welch, 2011) What makes an event positive or negative is the individual’s perception (appraisal) of what is happening. This perception is what influences the individual’s memory of the event. These appraisals can also influence eye-witness testimony. Eye witness identification error is well documented in both

laboratory and field research (Cutler & Penrod, 1988; Wells, Small, Penrod, Malpass, Fulero & Briamacombe, 1998) but what if this could be offset by police using the entire pattern of descriptions to find the perpetrator? The pattern of descriptions formed by the eyewitness is likely determined by emotional appraisal. The eyewitness might get some details wrong, either peripheral or central depending on the appraisal, but s/he might have a greater number of accurate details than inaccurate details (Ebbesen & Rienick, 1998).

The purpose of this research is to explore the effect of positive and negative appraisal on memory for a typically traumatic event: a short video that depicts US soldiers fatally shooting an Iraq citizen. In this section I will discuss arousal and valence, summarize past research on the effect of positive and negative emotion on memory and introduce a hypothesis for the present experiment. I will then present an experiment that was designed to test memory for central and peripheral details as a function of emotional appraisal. After presenting the results of this experiment, I will address some possible limitations in this experiment as well as provide examples of how the results could be beneficial in the use of eyewitness testimony.

Valence and Arousal

To examine what emotional appraisal is, we must first look at the two main aspects of emotion: valence and arousal. According to the Dictionary of Psychology, valence is defined as “the intrinsic attractiveness (positive valence) or aversiveness

(negative valence) of an event, object or situation; however, the term is also used to characterize and categorize specific emotions” (Reber & Reber, 1985, p. 80).

Arousal is the second main component of emotion. The Dictionary of Psychology defines arousal as “a dimension of activity or readiness for activity based on level of sensory excitability” (Reber & Reber, 1985, p. 51). Previous research has shown that “emotionally arousing experiences are recalled more accurately than neutral experiences” (Breslin & Safer, 2011, p. 1). However, results of previous studies demonstrate that the negative emotions associated with an event increases the memory for central details but not memory for peripheral details (Heuer & Reisberg, 1990; Christianson, Loftus, Hoffman, & Loftus, 1991).

Memory for Negative Events

Previous research has been conducted (Christianson & Loftus, 1987; Johnson & Raye, 1981; Easterbrook, 1959; Thomas, Hannula, & Loftus, 2007) to examine how emotion affects performance in memory tasks. In 1987, Christianson and Loftus began to experiment with the memory for traumatic events. According to Christianson and Loftus (1987), when experimental participants witnessed a traumatic event, such as a murder or car accident, memory for central details about the traumatic event are better retained than memory for central details about a non-traumatic event. Participants were also able to remember the gist of the traumatic event over a long retention interval. If participants were then asked to focus more on central details than peripheral

details of the event, it was found that the participants were able to retain those details. Because traumatic events were both negative and arousing, the strong emotional response caused the individuals to better retain information from that event. It has also been found that individuals remember traumatic events in more detail and recall more emotional content than positive events (Porter & Birt, 2001).

Expanding on Christianson and Loftus' experiments; Bohanek, Fivush, & Walker (2005) found that negative events were rated as more emotional than positive events (Bohanek et al, 2005). Bohanek et al wanted to compare memories that varied by emotional valence and intensity. During this experiment, Bohanek et al recruited 44 undergraduate students to write about four personally experienced events rated by the participants as moderately negative, intensely negative, moderately positive, or intensely positive. Participants were asked to put each personal event in writing during a 10 minute interval and to include both the facts of the event and how they thought and felt about the event. The results of this experiment showed that personal narratives that were categorized as negative were longer and less complex than personal narratives that were categorized as positive. Participants rated negative events as more emotional than positive events. That is, the emotional responses to negative events were longer lasting and more intense than the response to positive events. One of the main limitations of this study was that there was no way to confirm that the participants were remembering the events accurately.

Easterbrook (1959) originally proposed that the degree to which a person's attention is focused on an object is influenced by the arousal that particular object elicits. Mickley-Steinmetz and Kensinger (2013) designed an experiment to test the emotion-induced memory trade-off. For this experiment, Mickley-Steinmetz and Kensinger defined the emotion-induced memory trade-off as an increase in memory for emotional items and a decrease in memory for the surrounding background. In this experiment, Mickley-Steinmetz and Kensinger wanted to examine the extent to which reduction in selective item memory for emotional scenes would be connected to changes in overt visual attention. In the first experiment, the experimenters tested participant's eye-tracking during the viewing of complex visual scenes. These scenes consisted of images of positive, negative, or neutral items placed onto neutral backgrounds. The participants were instructed that after viewing the scenes, two true/false questions would be presented that the participants were to answer verbally. Next, the participants completed a variety of different cognitive tasks to create a retention interval of about 30 minutes. After this retention interval, participants were given a surprise recognition test in which they were asked whether or not they remembered the item or background. In the second experiment, Mickley-Steinmetz and Kensinger replicated experiment one, except participants viewed pictures for both halves of the encoding sessions: the initial viewing of the visual scenes and the post-stimulus elaboration condition. The results of both experiments demonstrated that participants had significantly better memory for emotional items, when collapsed across positive and negative valence, than neutral items. The opposite was found in memory

for backgrounds: worse memory was found for backgrounds paired with positive or negative items than backgrounds paired with neutral items. These results suggest an emotion-induced trade-off: there was an increase in memory for emotional items compared to neutral ones and a decrease in memory for backgrounds paired with emotional items when compared to memory for backgrounds paired with neutral items.

Memory for Positive Events

There have been “inconsistent findings about differences in recall of positive versus negative experiences” (Breslin & Safer, 2011, p. 1). Breslin and Safer (2011) designed an experiment to compare the precision and clarity of long-term memory for two similar events. During this study, Breslin and Safer examined the objective accuracy and subjective vividness of a memory for a single community event that was rated either as positive or negative by the participants of the study: the win or loss of a favorite team’s championship baseball game. Breslin and Safer compared baseball fan’s memories of when their favorite team won and when their favorite team lost. The authors chose the Yankee championship win of 2003 and the Red Sox win of 2004. They used questionnaires designed to test the participants’ memory of each game by asking them to recall details about the two games and to rate their memories of each game. The experimenters “predicted that Yankee and Red Sox fans would remember more details about the game that their team lost, than about the game their team won, but in fact, [they] found the opposite pattern” (Breslin & Safer, 2011, p. 2) The results of this

study showed that the participants had more accurate memories about the game their team won than to the game their team lost. As a result, Breslin and Safer concluded that memories of positive events are generally more likely to be recalled than memories of comparable negative events. Breslin and Safer did not define whether the details that were recalled were central or peripheral, which is a limitation to the experiment.

Rowe, Hirsh, & Anderson, (2007) conducted a study to test whether or not individuals attend broadly or narrowly to the environment as a function of their current emotional state. In this study, participants experienced a mood manipulation in which they either read a cheery or cheerless story, or listened to a positive or gloomy musical selection. The neutral mood was manipulated by reading facts about Canada. Once participants had completed the mood induction task, they were instructed to complete a remote association task (RAT) and a flanker task. For the RAT, participants were given moderately difficult word problems "(i.e. participants were given the words MOWER, ATOMIC, and FOREIGN) and asked to give the one word solution that related all the words (i.e. POWER)" (Rowe et al., 2007, p. 387). The flanker task asked participants to identify the central letter and ignore the flanking letters. In some of the flanker tasks, the letters were compatible (SSSSS); in other tasks the letters were incompatible (HSHHH). The results of this study support the idea that whether or not an individual attends broadly or narrowly on the environment is shaped by how that individual is feeling. Participants in the positive mood group exhibited an increased access to remote semantic associations when compared to the negative and neutral group. The

participants in the positive mood group also displayed a larger flanker compatibility effect and a slower reaction time on incompatible trials when compared to compatible trials, than those participants in negative or neutral moods. This study demonstrates that a positive mood was associated with greater ability to form remote associations, but impaired the ability to focus on a target due to the increased processing of distracters. In other words, positive mood facilitated tasks requiring more global focus while impairing tasks that require a more narrowly focused style.

Several studies have shown that positive emotions enhance the recall of peripheral details when compared to negative emotions (Talarico, Bernstein, & Rubin, 2009; Yeghyan & Yonelinas, 2011). In the Talarico et al. experiment, the researchers wanted to test how emotional arousal and negative or positive affect enhanced the recall of central details of an event. Participants were given 1 minute to reflect on a time in their life that elicited a specific positive emotion: happy, calm, in love, positive surprise, or a negative emotion: negative surprise, angry, sad or afraid. Once the minute had passed, participants were given 5 minutes to record the details of the memories. The experimenters asked undergraduate students to recall and rate the emotional valence, either positive or negative of 8 past events of their lives. Participants were also asked to rate how intense these recalled events were. The events were rated on significance of the event, vividness, remembrance of the event and reliving the event. Details of the events were also rated as central or peripheral. The results of the study showed the participants' memories associated with the four positive emotions had

more peripheral details, as rated by the participants, than the four negative emotions. The primary goal of this study was to determine the influence of emotion on recall of peripheral details of autobiographical memories. Talarico et al (2009) found that more peripheral details were recalled for positively valenced events when compared to negatively valenced events.

Yeghyan and Yonelinas (2011) tested the hypothesis that positive arousal leads to a memory broadening effect, which would increase the memory for peripheral details when compared to low arousal items. They showed 76 participants 72 pictures that were selected from the International Affective Pictures System (IAPS) ranging across a wide variety of topics, such as food, sports, health etc. "There were an equal number of positive and negative pictures (positive pictures had scores >5.5 and negative pictures had scores <4.0 , where 1 is very *negative* and 9 is very *positive*), and an equal number of items at each of 9 levels of arousal (1 is *extremely calm* and 9 is *highly arousing*)" (Yeghyan & Yonelinas, 2011, p. 3). The pictures were shown on a computer screen for 6 seconds and the participants studied the pictures for a later memory test. After each picture was presented, the participants were asked to rate the arousal, positivity and negativity of each picture on a 9-point scale. After the participants had viewed all the pictures, they were then shown a 7-minute video as a distracter task. The authors then tested recognition memory by showing participants an equal number of studied pictures and non-studied pictures, and asking the participants whether or not (yes or no) they remembered the item. Across the test, both central and peripheral details were tested.

To test for central details, the peripheral details were masked. To test for peripheral details, the central details were masked. With positive pictures, as arousal increased, the participant's memory for peripheral details increased while their memory for central details remained relatively stable. With negative pictures, as arousal increased, the participant's memory for central details increased while their memory for peripheral details decreased. With this study, many of the pictures used had limited central or peripheral details. This could have caused the increase in memory for peripheral details of positive pictures and the decrease in memory of peripheral details in negative pictures.

The present experiment specifically examines how positive and negative appraisal of an event influences memory for that event. According to Christianson and Loftus (1987), an individual's memories for central details of a traumatic event are better retained than memory for central details of a non-traumatic event. Similarly to Christianson and Loftus, Bohanek et al. (2005) found that the emotional responses to negative events were more intense and longer lasting than the emotional responses to positive events. However, Breslin and Safer (2011) found that positive events are more memorable and readily recalled than negative events. Similar to Breslin and Safer, Talarico et al. (2009) found that participants recalled more peripheral details of positive emotional memories than negative emotional memories. Yegiyani and Yonelinas (2011) found that positive pictures led to an increase in recognition for peripheral details. Mickley-Steinmetz and Kensinger (2013) found an emotion induced trade-off in their

experiment: there was an increase in memory for emotional items when compared to neutral items. They also found a decrease in memory for backgrounds paired with emotional items when compared to memory for backgrounds paired with neutral items. As the studies have shown, there is an emotion induced trade-off for memories high in emotional content. When memories of central details increased, the memories for peripheral details decreased. Conversely, when memories of peripheral details increased then the memories of central details will decreased.

How does appraisal affect memory broadening and memory narrowing? If a participant is manipulated to view an ambiguous stimulus either positively or negatively, will they remember more peripheral details and central details respectively? Following the definitions set by previous research (Talarico, et al, 2009; Yegiyan & Yonelinas, 2011; Hauer, Wessel, Merckelbach, Roefs, & Dalgleish, 2007), central details will be defined as any fact or item that if changed or removed would change the basic description of the event. Peripheral details are defined as items or facts that if changed or removed would not change the basic description of the event. For example, Talarico et al. (2009) asked participants “Does this detail make a difference? That is, is it possible to leave out/replace this detail without changing the main content of the memory OR what created your emotional reaction?” (p. 386) If the detail could not be left out or replaced without changing the main gist of the memory or the participant’s emotional reaction, then it was defined as central. Any detail that could be left out or replaced was defined as peripheral. Yegiyan & Yonelinas (2011) adapted the definitions set by Heuer &

Reisberg (1990) in which they used “the gist of the event as a basic description judges identified any fact or item that, if changed or eliminated, would change the basic description of the event were considered central. Items or facts that would not have such an effect were considered peripheral” (p. 3). In the experiment conducted by Hauer et al, (2007) central details were defined as “all details that reflect the gist of the visual scene (i.e., thematically essential to the slide). Details that were not relevant to the essential theme (i.e., that can be left out without changing the gist of the visual scene) were counted as peripheral details” (p. 437).

In the present experiment, prior to the participants viewing the stimulus, they were led to have either a generally positive or negative appraisal of the event, and then participants viewed the potentially traumatic video of an individual getting shot. Based on the above review, I predicted that people who interpret the arousing but ambiguous stimulus positively will remember more peripheral details of the stimulus than participants in the control group or in the negative appraisal group. Conversely, people who interpreted the stimulus negatively will remember more central details than those who are in the positive appraisal group or control group.

CHAPTER II

Methods

Participants

The participants were 104 Undergraduate Psychology students who received course credit for participation in the experiment. Two participants were excluded for failure to complete the recall test, and one participant was excluded due to having seen the stimulus video prior to the experiment. The final participants were 101 Undergraduate Psychology students. The participants were 29.7% male, 70.1% female with a mean age of 20.7 years. The ethnicities of the participants included 36.6% Caucasian, 26.7% African American, 8.9% Hispanic, 7.9% other. There were 34 participants in the positive appraisal group, 32 people in the negative appraisal group, and 35 in the control group.

Materials

The participants were shown a short video (5:10 minutes) depicting a US military base in Iraq where an Iraqi citizen has entered. The video pans across a street where an Iraqi citizen is seen pacing. The citizen appears to trip and falls to the ground. Seconds after the citizen falls, there is an explosion and a cloud of black smoke appears next to the citizen. Then citizen then sits up before he is shot by a US soldier ("US Soldiers shoot Bomber, Grenade explodes in his hands," 2010). The video was shown on a projector in a classroom so that all participants had an equal chance of viewing the video. Once participants viewed the video, they were given a filler task of simple math problems to

work on for 7 minutes. After the participants had completed the filler task, they were given a cued-recall test. The cued-recall questions were designed to test the participant's memory for central and peripheral details of the video. A list of the cues can be found in Appendix A. All groups received the same randomized cues, which comprised of 5 questions designed to test the participant's memory for central details and 5 questions designed to test the participant's memory for peripheral details. These cues were in a randomized order, but the same order was presented to each group.

Procedure

Prior to the experiment, I conducted a pretest in which I showed a small group of participants the video (N=19). Prior to viewing the video, I gave the participants the following instructions: "You will be shown a video of American soldiers that have surrounded an Iraqi citizen. Once you have watched the video, you will be asked to rate the video on how emotional and how arousing it was. Once you have rated the video, you will be given a list of questions comprised of details that were present during the video. Please label each item as a central detail or peripheral detail, even if you do not remember that specific detail of the video. Central details would be any item that is essential to the video, which if changed or removed, will alter the gist of the visual scene. Peripheral details would be any item that can be left out without changing the gist of the visual scene." These instructions were adapted from Hauer et al., 2007. I used the descriptions from my pretest participants to construct the cued-recall test (See cues in Appendix A). I selected the questions based off of the central and peripheral details that were agreed upon by the judges. Any items that were not agreed upon by 73% of

the judges were eliminated; this gave me 5 questions for central details and 8 questions for peripheral details. To obtain an even amount of central detailed questions and peripheral detailed question, I eliminated 3 peripheral detailed questions. The pretest allowed me to better understand what participants might remember from the video and allowed me to construct a valid cued-recall test based on those responses.

The participants in the experiment were randomly assigned to one of three groups: positive, negative and control. When participants entered the lab, they were instructed to sit at the tables. Once all participants were seated, written consent was obtained from each participant. Participants were then instructed on what will occur during the experiment: that the study will be testing the effect of violent media on math ability and that they will be shown a video of an individual getting shot, then will complete the filler task of math problems. Participants were not instructed about the cued-recall test so as not to prime them. After receiving the instructions, participants were given the story associated with each group (positive or negative). Participants who were assigned to the control group were not given any story. Each participant was shown a short video depicting a US soldier fatally shooting an Iraqi citizen and the subsequent build up and aftermath. Participants who were assigned to the positive appraisal group were read the following description before viewing the film: "You will be shown a video of an individual getting shot. The individual who is shot is Mohamed Alshehri. Alshehri is responsible for several terrorist attacks against the US. The most infamous attack that is credited, in part, to Alshehri is the September 11 attack on the world trade center. Alshehri is believed to have organized the hijackers responsible for

piloting each of the 4 aircraft. Alshehri also takes credit for several terrorist attacks on US military bases in the Middle East. He has been on the FBI's Most Wanted list since 1996, when he became a known deputy of Osama bin Laden. Alshehri had eluded capture several times and numerous agents and civilians have lost their lives in pursuit of him. Over 5,000 US individuals have died because of Alshehri. In the following video, US troops have surrounded Mohamed Alshehri outside of a village in Iraq in 2005."

The participants who were assigned the negative appraisal group were read the following description: "You will be shown a video of an individual getting shot. This individual who is shot is Mohamed Alshehri. Alsheri is a local cleric that is responsible for many peaceful acts. One of Alshehri's most renowned acts was opening a school in the impoverished town of Tel Keppe since local children had to walk over 7 miles to attend school. Now school attendance has soared and the children are better equipped to learn skills that will help them in their future. Alshehri is also responsible for collaborating with Rabbi Moshe Hurwitz and Pastor Arthur Calvin to promote peace talks between religious sects in the Middle East. In the following video, US troops have surrounded Mohamed Alshehri outside of a village in Iraq in 2005. Alsheri was traveling through the area to meet with Rabbi Hurwitz and Pastor Calvin when the troops mistook him for a terrorist." The participants who were assigned to the control group were given no description of the video prior to viewing it. All descriptions are based on factual events, but the names of the individuals involved have been changed. (Blackstone, 2009; "9/11 Attacks," n.d.; *FBI Press Release*, 2001)

The descriptions of the video are similar in that they use the same made-up name for the Iraq citizen and they are comparable in length and detail. The description for the positive appraisal group has 149 words while the description for the negative appraisal has 146 words. Once the participants viewed the video, they were asked to rate how aroused they felt on a Likert type scale ranging from 1 (not aroused) to 9 (very aroused). The participants were also asked how positive or negative they felt in response to the video on a Likert scale ranging from 1 (very positive) to 9 (very negative). The participants were given a filler task of simple math problems to work for 7 minutes. I have modeled the retention interval after the retention interval that was used by Yegiyani & Yonelinas (2011). After completing the filler task, the participants were given the cued-recall test (Appendix A). After the participants complete the test, they were debriefed and excused from the experiment.

CHAPTER III

Results

Two one-way ANOVA's were conducted to evaluate whether appraisal (positive, negative, control) had an effect on arousal and valence ratings. The first one-way ANOVA revealed that there was no effect of appraisal on arousal, $F(2, 101) = 1.07$, $MSE = 3.79$, $p = .348$. The second one-way ANOVA revealed that appraisal had a significant effect on valence ratings, $F(2, 101) = 7.87$, $MSE = 2.76$, $p = .001$. The total mean for valence was 4.75 and the total mean for arousal was 3.33. See Table 1 in Appendix C for the descriptive statistics for valence and arousal.

More importantly, a two-way ANOVA was conducted to see whether appraisal (positive, negative, neutral) interacted with the kind of details remembered (central, peripheral). There was a main effect of kind of detail with more central details ($M = 3.57$) remembered than peripheral details ($M = 2.48$), $F = 84.78$, $MSE = 0.73$, $p < .001$. There was not a main effect of appraisal, $F(2, 101) = .79$, $MSE = 0.73$, $p = .458$. There was not a significant interaction, $F(2, 101) = 0.79$, $MSE = 0.73$, $p = .733$. See Appendix D for descriptive statistics (Table 2). To evaluate the simple effects of interests, two a priori t-tests were calculated. The first t-test revealed that the number of central details remembered was similar for positive ($M = 3.65$) and negative ($M = 3.66$) appraisal groups, $t(64) = -.05$, $p = .964$. Likewise, the second t-test revealed that positive ($M = 2.41$) and negative ($M = 2.50$) appraisal groups remembered a similar number of peripheral details, $t(64) = -4.77$, $p = .636$.

CHAPTER IV

Discussion

The results were not consistent with previous research (Christianson & Loftus, 1987; Yeghyan & Yonelinas, 2011) that showed negative emotion leads to memory narrowing in which there would be an increase in memory for central details, but not peripheral details. Conversely, positive emotion leads to memory broadening in which there would be an increase in memory for peripheral details but not central details. In the present experiment, there was no effect of appraisal on memory, but central details were recalled more accurately than peripheral details. There was an effect of appraisal on valence meaning that participants in the control group rated the video as more negative than participants in the positive appraisal group, but not as negative as the participants in the negative appraisal group. A possible explanation for the lack of effect of the appraisal on details recalled could be that the stimulus was too traumatic for an effective creation of positive appraisal. Participants were more readily able to adopt a negative appraisal than the positive appraisal as evidenced by the higher means in the negative appraisal group and control group when compared to the positive appraisal group. Participants in the positive appraisal group did view the video as less negative and more positive than the negative appraisal group. Participants in the positive appraisal group, on average, rated the video as neither positive nor negative. This is evidenced by the mean (4.04) compared to the Likert scale they were asked to rate the video on where 1 was highly positive, 7 was highly negative and 4 was neither negative

or positive. This could be caused by the video being highly negative in nature and the positive appraisal was not enough to override this negativity.

The biggest limitation of the present experiment is that participants in the positive appraisal group did not rate the video as being positive. There are a few possible explanations on why this occurred. One explanation is that the positive appraisal was not an effective manipulation. If the positive appraisal did not effectively manipulate participants; then the participants would not have rated the video as positive, which was the case in this experiment. Another possible explanation is that, due to the current war on terrorism, that participants have been inundated with footage of terrorism in the news and have become unaffected by such footage. This could cause the participants to rate the video as neither positive nor negative, which was the case in this experiment.

Another limitation is that the participants' attitudes toward war or the Muslim religion might have had an effect on the results. Participants who might be a member of the Muslim religion group might have viewed the video more negatively, regardless of the appraisal given. Also, if a participant felt negatively towards war then they might have viewed the video more negatively despite the appraisal given.

The results of this experiment can have practical implications. One implication in this research regards eyewitness memory. Police will often focus their interrogations on particular key details of a crime, imploring the witness to remember specific details. Based on the present research, if a person views a crime in a negative way then s/he will remember more central details of the crime than peripheral details of the crime. This can be useful during police interrogations of witness of a crime. One way that this

research can improve interrogations of eye witnesses, is tailoring the interview towards central or peripheral details based on how the witness felt. Instead of asking the witness if they remember any peripheral details of a crime that they felt negatively about, the interrogator can focus more on the central details of the crime than the peripheral details.

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APPENDICES

APPENDIX A

List of Cues

Central Details:

- 1) What was the citizen doing in the beginning of the video?
(walking/pacing/standing)
- 2) What was the citizen holding? (nothing)
- 3) What kind of gestures did the citizen make? (hand gestures, wave/move arms)
- 4) What kind of weapon(s) were the soldiers carrying? (gun/machine gun)
- 5) What type of clothing were the soldiers wearing?
(fatigues/camouflage/military uniforms)

Peripheral Details:

- 6) How many individuals were kneeling during the video? (one)
- 7) What color was the box in the video? (blue)
- 8) What side of the street were the trees located on? (left)
- 9) Was it cloudy or sunny during the video? (sunny)
- 10) Were the vehicles facing towards or away from the camera? (towards)

APPENDIX B

Demographic Questions:

- 1) What is your age?
- 2) What is your race?
- 3) What is your gender?
- 4) Do you have any combat or military experience?
- 5) How arousing did you find the video? (1-7 where 1 is not arousing at all and 7 is highly arousing)
- 6) How emotional did you find the video? (1-7, where 1 is highly positive and 7 is highly negative)
- 7) Have you seen the video before?
- 8) What type of emotions did you feel after viewing the video?

APPENDIX C

Table 1

Descriptive Statistics for Valence and Arousal by Appraisal Group

	Mean	Std Deviation	N
Arousal			
Positive	3.03	1.83	34
Negative	3.72	2.20	32
Control	3.26	1.81	35
Total	3.33	1.94	101
Valence			
Positive	4.04	1.53	34
Negative	5.64	1.56	32
Control	4.58	1.84	35
Total	4.75	1.64	101

APPENDIX D

Table 2

Recall of Central and Peripheral Information as a Function of Video Appraisal

	Mean	Std. Deviation	N
Central Details			
Positive	3.65	.849	34
Negative	3.66	.787	32
Control	3.42	1.030	35
Total	3.57	.901	101
Peripheral Details			
Positive	2.41	.743	34
Negative	2.50	.762	32
Control	2.53	.687	35
Total	2.48	.724	101

APPENDIX E

1/15/2014

Investigator(s): Tiffany N. Grissom, Stephen Schmidt
Department: Psychology
Investigator(s) Email: tng2p@mtmail.mtsu.edu, stephen.schmidt@mtstu.edu
Protocol Title: "The Effect of Emotional Appraisal on Memory for Typically Traumatic Events"

Protocol Number: 14-175

Dear Investigator(s),

The MTSU Institutional Review Board, or a representative of the IRB, has reviewed the research proposal identified above. The MTSU IRB or its representative has determined that the study poses minimal risk to participants and qualifies for an expedited review under 45 CFR 46.110 and 21 CFR 56.110, and you have satisfactorily addressed all of the points brought up during the review.

Approval is granted for one (1) year from the date of this letter for 140 participants.

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918. Any change to the protocol must be submitted to the IRB before implementing this change.

You will need to submit an end-of-project form to the Office of Compliance upon completion of your research located on the IRB website. Complete research means that you have finished collecting and analyzing data. **Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date.** Please allow time for review and requested revisions. Failure to submit a Progress Report and request for continuation will automatically result in cancellation of your research study. Therefore, you will not be able to use any data and/or collect any data. Your study expires **1/15/2015**.

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to complete the required training. **If you add researchers to an approved project, please forward an updated list of researchers to the Office of Compliance before they begin to work on the project.**

All research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion and then destroyed in a manner that maintains confidentiality and anonymity.

Sincerely,
Kellie Hilker
Compliance Officer/ MTSU Institutional Review Board Member