Western Kentucky University
TopSCHOLAR®

Honors College Capstone Experience/Thesis Projects

Honors College at WKU

Spring 5-13-2011

Insincerity and Depravity Get Noticed

Alexandria M. Boswell
Western Kentucky University, alexandria.boswell991@topper.wku.edu

Follow this and additional works at: http://digitalcommons.wku.edu/stu_hon_theses

Part of the Psychology Commons

Insincerity and Depravity Get Noticed

A Capstone Experience/Thesis Project

Presented in Partial Fulfillment of the Requirements for

the Degree Bachelor of Arts with

Honors College Graduate Distinction at Western Kentucky University

By

Alexandria M. Boswell

*****

Western Kentucky University

2011

CE/T Committee: Approved By

Professor Andrew Mienaltowski, Advisor   _____

Professor Farley Norman   Advisor

Professor Jennifer Montgomery   Department of Psychology

ABSTRACT

Previous studies have shown that people use environmental cues to identify the intentions of others with whom they interact. This study sought to examine how an observer's incidental memory for strangers was influenced by the emotional expression displayed by the stranger as well as the type of action in which the stranger was involved. Incidental memory was assessed using a memory task that first asked observers to view a series of faces ("targets") that were each paired with an action. Later, observers were asked if they recognized previously viewed targets amongst novel targets. Incidental memory tasks are used to investigate whether or not observers (a) recognize where they had seen targets that they had been exposed to earlier (a.k.a. source memory) and (b) recognize the details that are idiosyncratic to a given target (e.g., facial expression, behavior within their environment, etc.). Overall, as expected in an incidental memory task, observers displayed a source memory advantage for novel targets that were not originally presented. Inconsistent with previous research, observers' memory for the targets was not greatly impacted by the nature of the activity that they were involved in during the early phase of the experiment (e.g., deed or misdeed). However, the emotional expression displayed by the target did have a substantial influence on the observer's ability to recognize the target. Specifically, observers recognized targets the best when they had been previously seen displaying negative emotions. In addition, although prior

research suggests that individuals who perform good deeds are not readily recognized relative to those who perform bad deeds, observers were far superior at recognizing targets that performed good deeds but that also expressed negative emotions. The inconsistency between the target's emotional expression and action may have strengthened the observer's representation of the target, suggesting that observers may be more sensitive to the actions performed by others if ill-intentions are perceived through their emotional displays.

Key Words: emotion, action, incidental memory

Dedicated to everyone who has helped me along the way,

and also to science.

ACKNOWLEDGMENTS

I would like to thank my friends and family for encouraging me and giving me advice while writing this thesis. I would also like to thank Dr. Farley Norman for giving me the opportunity to begin doing research in general and teaching me so much about the research process. Most of all, however, I would like to thank Dr. Andrew Mienaltowski, who has been helping me in this process every step of the way and without whom I probably would not have a future in academia.

VITA

2008..Graduated from The Carol Martin Gatton

Academy of Mathematics and Science

2010...Presented at the Vision Sciences Society Annual Meeting

2011...Presented at the WKU Student Research Conference

Fields of Study

Major: Psychology

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

People themselves are often described as being a "good guy" or a "bad guy"

depending on their actions and, more importantly, their intentions. Likewise, research

has shown that negative experiences affect us more than positive ones (Baumeister et al.,

2001; Kahneman & Tversky, 1979). Baumeister and colleagues pointed out that negative

events have a larger effect psychologically than positive events, if both are equal (for

example, losing twenty dollars affects you more than finding twenty dollars), possibly

because humans have evolved to be more attuned to negative outcomes to avoid

unpleasant experiences in the future. Baumeister and colleagues believe that animals that

were more sensitive to negative stimuli were better able to survive and pass on their

genes. Baumeister and colleagues also believe that when forming an impression of

someone, we focus on and give more weight to the negative information about that

individual. The hypothesis that "bad is stronger than good" definitely applies to memory.

Observers remember bad behaviors better than good behaviors when viewing pictures of

individuals performing these good or bad deeds (Baumeister et al.). One explanation for

this outcome is that negative behaviors capture more of an observer's attention, which

allows for a stronger memory trace to form, consciously or nonconsciously. The present

study investigates how an observer's incidental memory for a target actor is influenced by

the emotion that the actor is expressing as well as by how socially acceptable the actor's behavior is.

Forming Impressions

When interacting with people who perform good deeds or bad deeds, the initial behaviors that one observes can leave a lasting first impression that may bias subsequent interactions. Vital to first impressions is the spotlight effect that negative behaviors have on one's assessment of a stranger's character. Specifically, Skowronski and Carlston (1987) found that people show a negativity bias when forming first impressions. In other words, negative behaviors were found to be more diagnostic (i.e., more relevant) when forming first impressions of strangers than were positive behaviors. Moreover, if the negative behavior was more extreme in nature (e.g., it is not at all socially acceptable versus justifiable), then that behavior was more likely to be factored into the participant's judgment of the actor.

In addition to weighting the potential for harm that may result from an actor's behaviors, observers' first impressions are also greatly influenced by environmental cues (such as facial features) that signal the true intentions of the target's actions. Ames and colleagues (2004) found that participants analyzed the intentions of helpers (or people who perform good deeds) based on three factors: the helper's affective state, their role in the situation, and the helper's potential for gain. Participants were more likely to interact with a helper and reciprocate in kind if the helper acted based on a desire to create positive affect. However, they were less likely to interact with the helper if he ran a cost-

benefit analysis to determine what he may gain from the situation or if the helper acted because his role obligated him to do so. In addition, upon receiving help, people generally feel indebted no matter what the intentions of a helper might be, but they only feel grateful if the person helped out of benevolence rather than a drive to advance themselves (Tsang, 2006). From a social standpoint, relationships can be facilitated by displaying good behaviors towards others, but there is no guarantee that good behavior is necessarily memorable behavior. In fact, prior research suggests that, regardless of how one feels about an actor, how memorable that actor's behavior actually may be is dependent upon the extent to which the behavior runs counter to social norms.

Deeds Versus Misdeeds

The current study explores the hypothesis that misdeeds label an actor in a way (i.e., negativity bias) that makes him (or her) incidentally more memorable when one comes into contact with that actor during future interactions. In incidental memory research in which an observer is told to passively observe a target rather than carefully study his or her behavior, the exact features of a target's misdeed (e.g., cheating) are not later remembered. Rather, a more general negative feeling about that person is stored and reactivated by the observer (Mehl & Buchner, 2007). Not surprisingly, one's emotional intuition is more accurate immediately after being exposed to a misbehaving target than if examined one week later. This is consistent with a shallow arousal (or surprise) based explanation for enhanced recognition in which the impression of a "bad guy" is temporarily accessible to the participant so that the target can be generally categorized as

someone to avoid.

To further examine the depth of memory that people have for those who perform misdeeds, Buchner and colleagues conducted a follow-up study that focused on source memory (where the participant remembers seeing the target) for cheaters. The authors were interested in determining if the location of a cheater (e.g., initial exposure in the study phase of an incidental memory task) would be remembered even if the details of the transgression could not be bound to the perpetrator. For each target, participants viewed a photo of a unique neutral facial expression paired with a written description of a deed or misdeed (Buchner, Bell, Mehl, & Musch, 2009). Participants did not show enhanced memory for the type of behavior performed by a target (i.e., acceptable or not acceptable), but they did, in fact, display better recognition memory for transgressors who had been presented in the initial study phase. Those who had performed good deeds were less memorable. These findings held regardless of the severity of the deed or misdeed. Interestingly, the authors discovered a similar outcome when repeating the experiment but pairing deeds and misdeeds with fictitious names rather than neutral facial expressions (Bell & Buchner, 2009).

In sum, these findings support the authors' earlier research and demonstrate that some minimum level of processing was taking place to build a superficial memory trace of bad guys found in the participants' environment. What is unclear about these findings is the type of information that people incorporate into their mental representations of transgressors. It appears that only very limited information (i.e., the location of the

4

individual but not specific features of the individual's action) is available to people when asked to recognize those who have committed bad deeds relative to new targets or those who had performed good deeds. Given the differences that exist in the methods of each study (e.g., faces versus names, source memory versus likeability judgments, etc.), the similarity in findings is remarkable. In the current study, we introduced a more salient emotional cue (the target's emotional facial expression) to assist in the feature binding process that takes place when evaluating strangers. A more salient cue should act to disambiguate the intentions of each target, and emotional expressions should create an additional feature to which the participant can associate the target's identity and behavior.

Emotion and Memory

In the current study, we examine whether or not salient emotional cues act to strengthen the memory traces of strangers who are only briefly introduced to participants through an incidental memory task. Mather (2007) believes that the emotional components of a stimulus (especially when arousing) can serve to capture attentional resources and drag them away from other non-emotional components. Consequently, memory for non-arousing, non-emotional stimuli and other background information will be inhibited. This emotional enhancement hypothesis is supported by research showing that source memory is strengthened for arousing images presented amongst non-arousing, neutral pictures (Mather & Nesmith, 2008). The authors, however, also point out that potential gains in memory that stem from the emotional features of a stimulus are bound to that specific stimulus and do not necessarily interfere with memory for other stimuli.

Consistent with this interpretation, participants in eye-witness memory studies have been found to use the emotional nature of a stimulus to build an enriched memory trace that later facilitates the accurate reconstruction of the stimulus at retrieval. For example, Christianson et al. (1991) showed participants a set of slides that depicted a specific event that they would later be asked to describe. Embedded in this set was a critical slide that was either non-arousing or which elicited an emotional response from the participant (e.g., bike riding sequence in which the emotional slide displayed head trauma). Associated with this critical slide was a key feature that was important to the recreation of the event at retrieval. Participants who viewed the emotionally evocative slide were more likely to focus on this critical detail found in both sequences. This is consistent with Mather's suggestion that an emotional feature of a stimulus may capture one's attention, reducing the effort that is required to bind that feature to a memory trace of the stimulus and thus increasing the odds of later remembering the stimulus.

Emotion can similarly enhance one's memory even when the memory component of a task is actually incidental and not intentional. In incidental memory tasks, participants are sometimes asked to classify stimuli using shallow or deep levels of processing (i.e., thinking about characteristics of the word versus thinking about the meaning of the word), but are not specifically told to memorize the stimuli (Craik & Lockhart, 1972). Following this classification phase (a.k.a. a study phase or an exposure phase), participants complete a surprise recognition test (or test phase) in which they indicate whether or not each member of a given stimulus set had appeared in the

classification phase. Recognition memory is typically better for stimuli that were

classified under deep processing instructions than it is for those that were classified under

shallow processing instructions. However, if emotional stimuli capture one's attention,

then perhaps memory for emotional items presented under shallow processing

instructions ("write down the vowels in the word") will be better remembered than non-

emotional items presented under these same conditions. This is exactly what took place

when participants were asked study emotional and neutral words using shallow, moderate

("write down the color that the word brought to mind"), and deep ("write down how

positive or negative the word is") processing instructions (Reber, Perrig, Flammer, &

Walther, 1994). The emotional flavor of a given stimulus drew attention to the stimulus

when the participants' instructions only required a minimal investment of resources. In

other words, the features of the stimulus automatically commanded attention above and

beyond the superficial analysis of the stimulus that the participants performed.

Positive Versus Negative Emotion

In the current study, the effects that positive and negative emotions displayed by

the stimuli have on memory accuracy were also examined. Previous research

demonstrates that negative emotional features of stimuli (e.g., words, scenes, faces, etc.)

create a stronger memory advantage than do positive features. There are a few

explanations offered for this. First, negative emotional stimuli are believed to create more

vivid memories than positive stimuli by focusing participants' attention on key details

(Kensinger, 2007; Talmi, Schimmack, Paterson, & Moscovitch, 2007). This enhanced

7

focus also can act to boost the participants' metacognitive judgments of their memory accuracy as well (however, over confidence can be problematic for eye-witness memory accuracy, see Phelps & Sharot, 2008). Within the brain, negative emotion may cause sensory processing centers to become more active (e.g., Adolphs, 2002; Mienaltowski et al., 2011), allowing the viewer to take in more of the details of the event and have better memory accuracy, whereas positive emotions cause the viewer to only remember the general concept of the event and not the details (Kensinger, 2009).

In their seminal review article on the attentional and memorial advantage conferred to negative stimuli, Rozin and Royzman (2001) propose that a negativity bias often emerges in psychology for four reasons. First, there is negative potency, or, more simply stated, negativity potentiates processing. If you have two equal entities, a negative one will influence an individual more than a positive one. Second, negative emotional experiences become increasingly more negative as their impending doom looms nearer. Timing can matter because, as a negative event draws near, an individual may have to activate a defensive response in order to maintain a stable sense of well-being. Third, negativity dominates our simultaneous experiences of positive and negative emotions. Finally, negative emotions are more complex and differentiated; negative emotions promote deeper thought and often necessitate more cognitive effort to ameliorate than positive emotions (e.g., surprise, glee).

8

Predictions

For the current study, we wanted to replicate and extend prior incidental memory research examining participants' source memory for target actors who performed good deeds or bad deeds by systematically varying the emotional expressions of the target actors. Participants viewed photos of multiple actors, each of which portrayed positive, negative, or neutral expressions and were paired with a unique deed or misdeed. Consistent with prior research, we expected to find better source memory for actors who committed misdeeds than for those who committed good deeds (e.g., Buchner et al., 2009). Given the negativity bias noted in previous memory studies (Baumeister et al., 2001; Christianson et al., 2001; Mather, 2007; Mather & Nesmith, 2008; Rozin & Royzman, 2001; Skrowronski & Carlston, 1987), target actors who expressed negative emotion were also expected to be better remembered than targets expressing positive emotions. This prediction was examined both in terms of (a) the participants' source memory as well as (b) the participants' memory for the acceptable and unacceptable nature of an actor's action if the actor was accurately recognized from his or her initial appearance in the study phase of the incidental memory task.

Furthermore, we know that when forming a first impression, people use environmental cues (e.g., behaviors, emotions, and/or the combination of both) to determine the intentions of a helper or new acquaintance. If we perceive the intentions as being negative, we should be able to notice and remember that information for future interactions. Moreover, the behavior/emotion combinations implemented in the current

9

study are a novel addition to this field. From them, negative intentions can be examined

from a more nuanced perspective. Specifically, aside from interpreting the negativity

from negative facial expressions and misdeeds, observers may also be sensitive to

inconsistencies emerging from the individual target's emotional expression and action.

For instance, if the target is performing a good deed but expressing anger, an observer

should recognize the target's insincerity. In fact, such insincerity may boost the

observer's memory for the target even though, in past research, targets performing good

deeds were not remembered to the same degree as targets performing misdeeds. Also, if

the target is performing a misdeed but expressing happiness, the observer should

recognize the target's depravity. Again, if the observer recognizes the inconsistency in

the target's expression and action, the additional effort invested in considering the

inconsistency should enhance his or her memory for the target. As suggested by previous

incidental memory research, memory performance should be best under those conditions

where a participant spontaneously directs attention to a given face and action pairing to

bind the details in their memory because this pair is particularly interesting (or attention

grabbing).

CHAPTER 2

METHOD

Participants

The sample used in the current experiment consisted of 25 college students (13

women, 12 men) aged 18 to 21 from diverse racial backgrounds (76% Caucasian, 8%

African American, 4% Asian American, and 12% mixed heritage). All of the participants

were students at Western Kentucky University, and each received course credit for their

participation. Informed consent was obtained from each participant before the

experiment began (WKU Human Subjects Review: HS10-217). The participants' visual

acuity scores ranged from 20/20 to 20/50, indicating that the participants had adequate

acuity to detect those facial features relevant to emotion recognition.

Incidental Memory Task

Phase One (Study Phase). Participants were presented with 48 trials where they

would view a face of a target actor that was expressing either a positive (happy), neutral,

or negative (angry) expression. Under the picture of the actor's face, there was a caption

that described an action. The action would either be a good deed ("deed") such as "S.G.

bought someone lunch who didn't have money" or a bad deed ("misdeed") such as "G.H.

plagiarized on a paper for class." Deeds and misdeeds were developed and normed in

conjunction with an honors augmentation project to (a) ensure the implementation of

actions with a wide range of positive and negative impact, and (b) ensure that the actions

were actually activities that the participants were familiar with from their own experiences. The participant was asked to answer a number of questions about each photo and caption pairing. First, participants identified which emotional expression (positive, negative, or neutral) was displayed by the actor. This ensured that the participant examined the actor's facial expression. Participants were also asked to rate how socially acceptable the action was on a scale of 1 (Completely Unacceptable) to 7 (Completely Acceptable), ensuring that the participant considered the target's action. Lastly, the participant was asked to rate how likeable that person was on a scale of 1 (Not at all likeable) to 4 (Extremely likeable). Out of the 48 trials, there were 16 neutral, 16 positive, and 16 negative targets. Each emotion had an equivalent number of male and female faces (8 of each), as well as an equal number of Caucasian and African American faces (8 of each). All photos were adapted from the Montreal Set of Facial Displays of Emotion (Beaupré & Hess, 2005), from the NimStim MacArthur Foundation stimulus set (Tottenham et al., 2009), and from Google Image searches (all photos were open-access). The pictures were presented in grayscale using E-Prime stimulus presentation software and possessed a resolution of 500 x 500 pixels.

Phase Two (Test Phase). After completing the first phase of the experiment, participants completed approximately 11 minutes of filler tasks (tests of verbal ability and inductive reasoning, or the ETS Vocabulary Test and Letter Sets Test, respectively; Ekstrom, French, Harman, & Dermen, 1976) before moving into the second phase of the incidental memory task. In this phase, the participants' memory for the faces in Phase One was measured via a source memory task. Participants viewed 96 faces, half of

which were new to the experiment and half of which were taken from Phase One (old). For each face, participants were asked if they recognized the person. If they did not recognize the face, they responded "new" and that trial would end and another face would be presented. However, if the participant did recognize the face, then they responded "old" and rated how socially acceptable that person's action from the first phase was. Afterwards, the participant was prompted to recall the exact action and type it into a response window that popped up on the computer display. If the participant could not remember the action, they were prompted to type "IDK" (initialism for "I don't know") in the box. There were a total of 96 trials that included 48 new faces (16 each of positive, neutral, and negative faces, distributed evenly across race and gender) and the 48 photos from the first phase. In addition to analyzing the participants' memory for the source of each actor (old – Phase 1; new – Phase 2), we also focused on those trials where the participants correctly identified an old face (one from Phase 1) as "old." This allows us to determine if memory for non-source characteristics (the action for each target) is better given the emotional expressions found on the actors' face.

Procedure

Participants provided informed consent before completing Phase One of the incidental memory task. After Phase One, participants completed filler tasks before proceeding on to Phase Two of the incidental memory task. At the end of the session, participants completed a demographics questionnaire and a test of visual acuity. Overall, the session lasted approximately 60 minutes.

CHAPTER 3

RESULTS

This study used a 3 (target's facial expression of emotion: positive, negative, neutral) by 2 (action: deed, misdeed) by 2 (source: old/Phase One, new/Phase Two) within-subjects design. An initial analysis of variance (ANOVA) was performed to examine the impact that emotion had on the source memory of the targets. Subsequent ANOVAS were performed to examine the influence that each target's behavior and facial expression of emotion had on the number of correctly recognized items from Phase One for each within-subject condition.

As mentioned in the method section above, participants viewed 48 targets, representing 48 emotion/action pairings, in the study phase (Phase One) of the incidental memory task. Of these, 24 involved targets performing deeds and 24 involved targets performing misdeeds. Each of these sets of 24 trials can be further divided using the emotions expressed by the target. Specifically, there were 8 trials for each emotion within each action type. This means that, when examining the influence of emotion and action type on memory accuracy, the range of possible accurate responses can range from 0 to 8 (emotion by action) or 16 (emotion alone) or 24 (action alone). In the test phase, in addition to viewing the same 48 targets presented in the study phase ("old"), participants viewed 48 new targets. Of these, 16 expressed positive emotions, 16 expressive negative, and 16 displayed no emotion (i.e., neutral).

14

Source Memory from Incidental Memory Task

Recognizing targets in the test phase. A 2 (source: old, new) by 3 (emotion: positive, negative, neutral) within-subjects ANOVA was performed on the participants' frequency of accurate responses in the test phase of the incidental memory task. It revealed a main effect of source, $F(1, 24) = 1088.1$ ($p < .001$, $\eta_p^2 = .79$) and emotion, $F(2,48) = 19.7$ ($p < .001$, $\eta_p^2 = .27$). These main effects were qualified by a significant interaction between source and emotion, $F(2,48) = 17.8$ ($p = .002$, $\eta_p^2 = .24$). In the test phase, participants correctly identified more items only viewed in the test phase as being new ($M = 14.8$, $SE = 0.3$) than items that they correctly identified from the study phase as being old ($M = 9.4$, $SE = 0.6$). Please note that a participant would have a perfect score if they correctly identified 16 faces as being new and 16 faces as being old. Participants also displayed more accurate source recognition for targets displaying negative emotion ($M = 12.8$, $SE = 0.4$) than targets displaying positive emotion ($M = 11.6$, $SE = 0.4$) or no emotion ($M = 11.8$, $SE = 0.4$). The interaction emerged because participants' accurate classification of targets viewed only in the test phase was not impacted by the targets' emotional expressions ($M_{positive} = 14.8$, $SE_{positive} = 0.3$; $M_{negative} = 14.8$, $SE_{negative} = 0.3$; $M_{neutral} = 14.7$, $SE_{neutral} = 0.3$), but participants were more accurate at recognizing targets from the study phase when those targets were expressing negative emotions ($M_{positive} = 8.4$, $SE_{positive} = 0.6$; $M_{negative} = 10.8$, $SE_{negative} = 0.7$; $M_{neutral} = 8.9$, $SE_{neutral} = 0.7$).

Emotion and action type influence the source memory of targets viewed in the study phase. A 3 (emotion: positive, negative, neutral) by 2 (action: deed, misdeed) within-subjects ANOVA was performed on the number of items that participants correctly

identified as having first appeared in the study phase (i.e., "old" is correct response and "new" is incorrect response). This analysis revealed a main effect of emotion, $F(2,48) = 10.0$ ($p < .001$, $\eta_p^2 = .29$). Participants were more accurate at recognizing the targets in the test phase when the targets had expressed negative emotions in the study phase, relative to expressing positive emotion or no emotion. Please note that a perfect score would be 8 correctly identified targets per category. The means and standard errors for each condition are depicted in Figure 1, separately by action type and emotion. Although no significant main effect of action emerged, $F(1,24) = 2.3$ ($p = .15$, $\eta_p^2 = .09$), the mean difference suggested that there was a trend accounting for a meaningful amount of variance such that misdeeds ($M = 4.9$, $SE = 0.3$) were more accurately recognized than deeds ($M = 4.5$, $SE = 0.3$). There was no significant interaction between emotion and action, $F(2,48) = 0.5$, *n.s.*

  Emotion influences recognition of targets over and above the impact of action type. To get a better sense for the impact that emotion had on the participants' recognition accuracy, we examined the participants' responses in order to isolate only those where (a) the participant correctly identified a target as having appeared in the study phase (i.e., "old") *and* (b) the participant correctly identified the target as having performed a socially acceptable (deed) or unacceptable (misdeed) action in the study phase. A 2 (action: deed, misdeed) by 3 (emotion: positive, negative, neutral) ANOVA was run on the resulting frequencies. The analysis revealed that there was a main effect of emotion, $F(2,48) = 10.9$ ($p = .019$, $\eta_p^2 = .31$) and a rather marginal main effect of action type, $F(1,24) = 2.6$ ($p < .12$, $\eta_p^2 = .10$). The means and standard errors for each

condition are depicted in Figure 2, separately by action type and emotion. Overall, participants displayed better memory for targets expressing negative emotion than those expressing positive or no emotion. Also, there was a trend for participants to remember targets who committed misdeeds better than those who committed deeds. However, this trend did not reach significance.

Summary

During the test phase, participants displayed better recognition for the source of novel targets ("new") than they did for the source of those that were previously seen ("old"). Moreover, "old" negative targets were recognized better than were "old" positive targets or "old" targets that displayed no emotion. Although there was not enough power to detect significant differences in participant recognition based on action type, there was a trend for participants to display better source memory for targets performing misdeeds than for those performing deeds. Across multiple levels of analysis, however, memory for targets was generally better when the targets expressed negative emotion than when they expressed positive emotion or no emotion at all.

CHAPTER FOUR

DISCUSSION

This study was conducted to investigate how incidental memory for target strangers was influenced by the emotion expressed by these individuals as well as by the actions that they have purportedly performed in their community. Incidental memory is particularly important in this study because people use it in day to day activities if they run across something in their environment that at first seems inconsequential but then later becomes the focus of memory retrieval. As expected in an incidental memory task, participants were able to classify faces unique to the test phase (or novel targets) as being "new" better than they were able to classify "old" faces correctly. Unexpectedly, in the conditions where targets were correctly identified as "old," the deed or misdeed that targets committed had no significant effect on memory accuracy. There was, however, a trend to suggest that the source of targets committing misdeeds would be better remembered than the source of those performing good deeds. Although this finding is underpowered, it does support prior research examining source memory for transgressors (Buchner et al., 2009). Conversely, it also supports findings from eye-witness memory research that suggests that the level of detail that people incidentally remember from events is low (Roediger & McDermott, 2000). Our findings also extend past research by demonstrating that negative expressions generally had a greater impact on source memory than did positive or neutral expressions did, and memory accuracy for "old" faces correctly identified as "old" faces was aided by the target's negative expressions.

The findings from the current study partly suggest that the type of action

18

performed by the target can impact memory accuracy in a way that goes beyond source memory. Specifically, it appears that participants focused more on the emotions being expressed by the target if they were negative, regardless of whether the negative target was performing a good deed or a misdeed, and thus were better able to remember negative faces. This is inconsistent with prior research that merely found a source memory effect. On the other hand, it does suggest that the participants in the current experiment formed a deeper representation of the targets that included the emotions that they were expressing. A possible explanation for this is that negative emotional expressions captured the participants' attention and facilitated the allotment of processing resources to the negative targets. We had predicted that this would also likely occur in cases where the action and emotion were inconsistent. Interestingly, our predictions were only partly supported in that recognition accuracy was better when the target was displaying an insincere emotion/action combination (i.e., displaying a negative expression while engaged in a good deed) relative to neutral targets performing deeds or misdeeds. However, we did not find the expected boost to recognition memory when the target's emotion/action combination reflected depravity (i.e., expressing positive emotion while committing a misdeed).

This participant-centered account is consistent with the interpretation that the participants considered targets who expressed negative emotions to be "trouble makers" and possibly experienced increased arousal. More importantly, these findings suggest that Buchner and colleagues overlooked a powerful factor (emotion) that may be as predictive (if not more so) of a person's memory for a "bad guy." As reviewed in the

introduction, emotion builds additional context that participants can use to bind the faces and actions more efficiently in their memory (Craik & Lockhart, 1972). Future research should examine the extent to which emotion expressed by the target either (a) lowers the threshold for information processing by attracting attention to the target/caption pairing or (b) creates arousal that focuses the participants attention on the key details of the stimuli in this incidental memory task. These are two competing accounts for the interface between emotion and cognition.

Aside from this novel outcome, it is important to recognize that participants were able to correctly characterize targets in the test phase as having performed good deeds or bad deeds. Specifically, this was highlighted in the results section above when reporting on how well participants were able to recognize a face in Phase Two and identify what kind of action the target committed in Phase One. In Phase Two, participants were able to identify the type of action well, even though many of the actions and emotions were inconsistent. This means that the participants were identifying the action based on their memory of the target in Phase One and not on the emotion being expressed by the target. Past research has found an increase of memory accuracy for source memory based on action, but no studies have found an increase in memory of the action itself prior to the current study. Although our findings are not definitive, with a larger sample, there would be enough power to detect differences in memory for targets performing deeds and misdeeds. Future studies should examine the exact details that participants do re-create when judging the targets at test. A better understanding of the contents of the observers' representations of the targets may help legal councils to establish procedures for

20

improving the veracity of eye-witness testimony.

It is also worth mentioning that, when participants believed that a novel target that was only presented in the test phase was also presented earlier in the experimental session, they falsely recalled the target as having performed a misdeed (i.e., represents 16% of all of the trials involving novel distractor targets in Phase Two). In fact, all incorrect identifications of a target presented only in Phase Two as being "old" involved the participant believing that the target had performed a misdeed (no matter what expression the target was expressing). This speaks to how sensitive humans are to misdeeds in their environment. Given the aforementioned findings and the low recognition of targets that performed good deeds, it is reasonable to assume that the current sample was much more focused on the targets' potential for displaying negativity and being engaged in misdeeds.

What this study adds to the existing body of literature is evidence to support the notion that negative emotion is a strong cue for remembering a target. Negative emotion aids memory in all cases, possibly allowing features of the target to be bound better than those for targets who express positive or neutral emotions. Emotion also matters more than other aspects of the target. One explanation for this is the evolutionary advantages created by being able to accurately identify and recall negative stimuli. For an animal to survive long enough to pass on its genes, it has to be able to identify and avoid negative stimuli (Baumeister et al., 2001). Emotion is closely tied to the "old" brain, including the Limbic system, which once made up the entire brain of our ancestors prior to the emergence of the neocortex. As the human brain has evolved, it is possible that we built

21

upon the emotion center to allow us to judge the intentions of other people. This would also explain why positive emotion and good deeds matter less, as we do not need to pay as much attention to someone who is there to willingly help us and/or someone whom we trust.

The present study is not without its limitations. One limitation of this study is that the memory for target actions was very low. This might be explained by the fact that the participants were not explicitly told to memorize the actions. Effects of race and gender of the targets were not analyzed. Such analyses will have to be performed in the future to determine if the participants display biases in the way that they remember the targets (e.g., poorer recognition of individuals from a different race or better recognition of individuals who are of the opposite sex or rated as being more attractive). Also, with a larger sample size, we would have more power to detect the possible impact that target action type has on participant recognition of the targets. Another limitation is that all of the photographs were presented in grayscale rather than in color. This can be problematic given that some emotional cues are derived by looking for signs of reddening the eyes and cheeks. A final limitation is that the emotions were all static and not dynamic.

Conclusions

It has been said that actions speak louder than words, or in this case, conveyed emotion, but this study does not support that idiom. We do base some of our judgments of people on their overt actions, but, once we have information to form an impression of a person, often times we simply base our judgments on emotion. When we do use actions as a basis, however, misdeeds are more often remembered than deeds. This might be

caused by the deeper processing that is required to judge people by their actions (e.g., integrating several behaviors with the intentions for their behaviors and the target's role in the situation, etc.) and so we rely on easily available emotional cues (e.g., frowns and angry scowls) to make our judgments.

References

Adolphs, R. (2002). Neural mechanisms for recognizing emotion. *Current Opinion in Neurobiology, 12*, 169-178.

Ames, D., Flynn, F., & Weber, E. (2004). It's the thought that counts: On perceiving how helpers decide to lend a hand. *Personality and Social Psychology Bulletin, 30*(4), 461-474.

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, *5*(4), 323-370.

Beaupré, M. G., & Hess, U. (2005). Cross-cultural emotion recognition among Canadian ethnic groups. *Journal of Cross-Cultural Psychology, 36,* 355-370.

Bell, R., & Buchner, A. (2009). Enhanced source memory for names of cheaters. *Evolutionary Psychology*, *7*(2), 317-330.

Buchner, A., Bell, R., Mehl, B., & Musch, J. (2009). No enhanced recognition memory, but better source memory for faces of cheaters. *Evolution and Human Behavior*, *30*(3), 212-224.

Christianson, S., Loftus, E. F., Hoffman, H., & Loftus, G. R. (1991). Eye fixations and memory for emotional events. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *17*(4), 693-701.

Craik, F. I. M., & Lockhart, R. S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior, 11*(6), 671-684.

Ekstrom, R. B., French, J. W., Harman, H. H., & Dermen, D. (1976). Manual for kit of factor referenced cognitive tests: Advanced vocabulary test. Princeton, NJ:

Educational Test Services

Kahneman, D. & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*(2), 263-292.

Kensinger, E. A. (2007). Negative emotion enhances memory accuracy: Behavioral and neuroimaging evidence. *Current Directions in Psychological Science*, *16*(4), 213-218.

Kensinger, E. A. (2009). Remembering the details: Effects of emotion. *Emotion Review*, *1*(2), 99-113.

Mather, M. (2007). Emotional arousal and memory binding: An object-based framework. *Perspectives on Psychological Science*, *2*(1), 33-52.

Mather, M., & Nesmith, K. (2008). Arousal-enhanced location memory for pictures. *Journal of Memory and Language*, *58*(2), 449-464.

Mehl, B., & Buchner, A. (2007). No enhanced memory for faces of cheaters. *Evolution and Human Behavior, 29*, 35-41.

Mienaltowski, A., Corballis, P. M., Blanchard-Fields, F., Parks, N. A., & Hilimire, M. R. (2011). Anger management: Age differences in emotional modulation of visual processing. *Psychology and Aging, 26*, 224-231.

Phelps, E. A. & Sharot, T. (2008). How (and why) emotion enhances the subjective sense of recollection. *Current Directions in Psychological Science, 17*, 147-152.

Reber, R., Perrig, W. J., Flammer, A., & Walter, D. (1994). Levels of processing and memory for emotional words. *Swiss Journal of Psychology*, *53*(2), 78-85.

Roediger, H. L., & McDermott, K. B. (2000). Distortions of memory. In E. Tulving & F.

I. M. Craik (Eds.) *The Oxford Handbook of Memory* (pp. 149-162). New York: Oxford.

Rozin, P., & Royzman, E. B. (2001). Negativity bias, negativity dominance, and contagion. *Personality & Social Psychology Review*, *5*(4), 296-320.

Skowronski, J. J., & Carlston, D. E. (1987). Social judgment and social memory: The role of cue diagnosticity in negativity, positivity, and extremity biases. *Journal of Personality and Social Psychology*, 52(4), 689-699.

Talmi, D., Schimmack, U., Paterson, T., & Moscovitch, M. (2007). The role of attention and relatedness in emotionally enhanced memory. *Emotion*, *7*(1), 89-102.

Tottenham, N., Tanaka, J., Leon, A. C., McCarry, T., Nurse, M., Hare, T. A., Marcus, D. J., Westerlund, A., Casey, B. J., Nelson, C. A. (2009). The NimStim set of facial expressions: Judgments from untrained research participants. *Psychiatry Research, 168*, 242-249.

Tsang, J. (2006). The effects of helper intention on gratitude and indebtedness. *Motivation & Emotion*, *30*(3), 198-204.
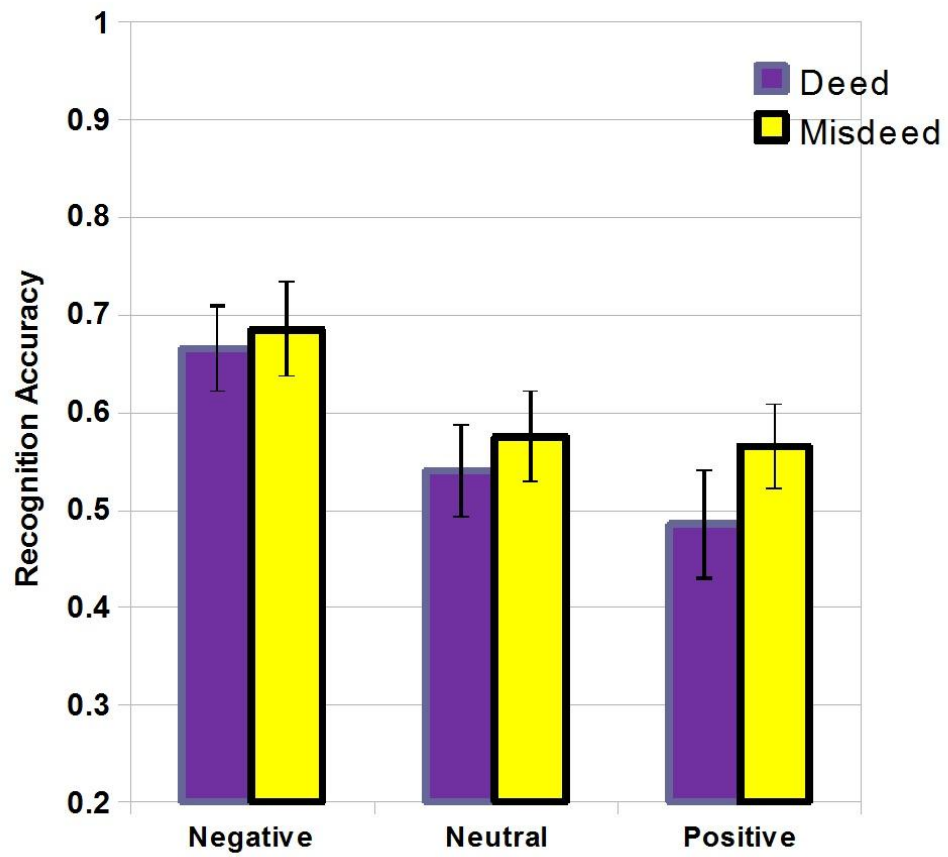
Figure 1

Figure 1. Source Accuracy by Action Type and Emotion Expression
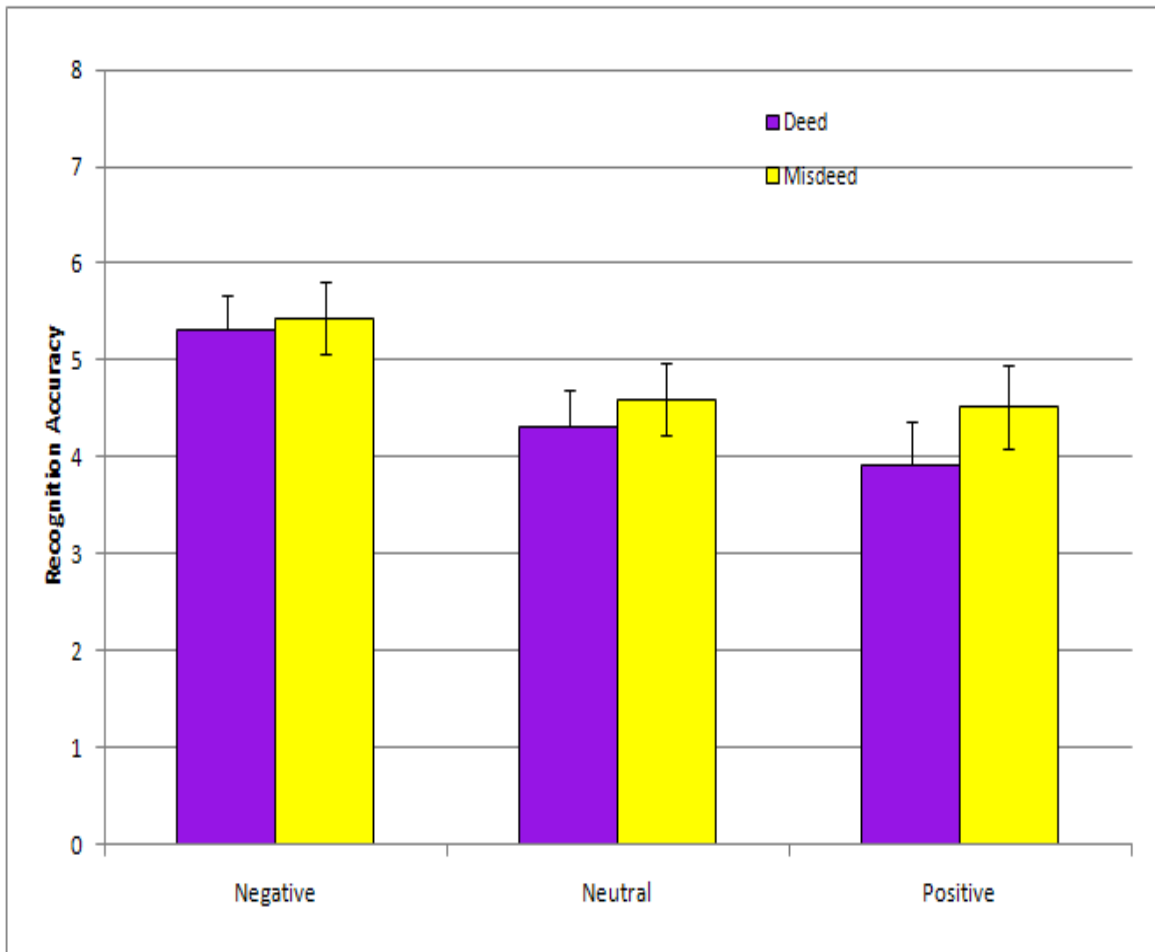
Figure 2

Source Accuracy by Action Type and Emotion Expression for Targets Correctly Identified

as "Old" and as Acceptable/Unacceptable

Appendix A

List of Deeds

A.Y. mowed the yard for a neighbor who couldn't do it themselves.

T.G. helped and supported a friend who overcame a drug addiction.

G.B. took care of a hospitalized friend's pet dog.

E.W. gave someone spare change for laundry.

W.J. volunteered for an inner city outreach organization.

W.F. read a story to a sick child in a hospital.

J.V. helped a friend move their belongings to college.

D.G. comforted someone who was stressed.

S.G. bought someone lunch who didn't have money.

M.J. babysat so a married couple could go on a date.

M.T. dove into a pool to save a child who was drowning.

K.M. bought food for a friend who couldn't afford to shop.

H.D. donated old clothing to a charity.

D.Y. let someone use their phone in an emergency.

T.I. gave a lost person directions and showed them where to go.

D.W. drove a friend to the store on a rainy day.

I.D. sent cards to our armed service men and women at Christmastime.

Q.I. helped someone change a flat tire.

Q.D. rescued a dog from the animal shelter before it was put down.

L.A. helped a friend with a paper they had trouble with.

M.D. returned a lost wallet without taking any money.

L.E. carried groceries to a car for an elderly person.

J.Y. gave helpful advice to someone with a problem.

F.H. helped someone with their algebra homework.

Appendix B

List of Misdeeds

W.F. broke something that belonged to someone else and denied it.

Y.B. ran over their neighbor's dog and didn't stop.

F.G. cheated on their significant other.

J.H. murdered their parents with a hatchet.

K.U. used someone's phone to call long distance without telling them.

E.F. cut in front of people in line at the grocery store.

J.J. physically forced themselves on someone at the end of a date.

V.F. blackmailed someone with very personal information.

A.D. made a mean comment about someone with a disability.

W.I. lied on taxes about donating to charity.

D.A. didn't leave a tip for a good waiter.

R.G. knowingly smoked in a non-smoking area.

G.H. plagiarized on a paper for class.

S.D. loudly used their phone during a movie in a theater.

F.K. talked about their inheritance at a funeral.

G.U. stole a car from a parking lot.

F.W. left a friend at a party without transportation.

W.K. stole a puppy they wanted from a neighbor on their street.

P.T. left after hitting someone else's car in the parking lot.

Q.L. laughed at someone when they fell instead of helping them.

G.S. cursed in front of children who they were watching.

U.D. drove under the influence of alcohol.

A.K. made lots of noise while their roommate was sleeping.

S.R. stole money from friends while visiting them.