Emotional Suppression and Eyewitness Memory

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*The present study** attempted to expound the effects of emotional suppression on the accuracy of witnessed details. One hundred and twenty high scorer state anxiety subjects with equal number of males and females aged 18 yrs 6 mo to 23 yrs 6 mo (60 males, M=20 yrs 02 mo and 60 females, M=21 yrs 03 mo) served as the participants in the present study who watched a video-clip of three minutes duration followed by filling in an emotional self-report rating scale. The participants returned back after a week and were given three types of post event information followed by a 20-item memory scale. The results exhibited that the mean memory score for non-weapon details was higher as compared to weapon detail in emotional suppression and non-suppression. Thus, the accuracy of recall was patterned after emotional suppression, post event information and types of detail. The results of the present study have been discussed in the light of current theories of emotion regulation and memory.*

Key words: *Emotional Suppression, Weapon Detail, Post Event Information, Emotional Arousal*

Introduction : The trauma of witnessing a criminal assault, life-threatening accidents or some dehumanizing activity renders an observer so high-flung that the knowledge about such a scenario is sometimes obliterated. This state of affairs is complicated by the fact that the eyewitnesses have to manage their own emotionality which is mostly negative and compel them to manage it to avoid disturbance and disruption caused by the witnessed events. A person's cognitive behaviour is vitiated in such an emotionally arousing situation. Emotion suppression is the inhibition of outward expression of one's feelings which belongs to the "response-focused" category of emotion regulation. In contrast to numerous antecedent-focused

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regulation strategies, suppression is one of the behaviours that are strategically employed to cope with emotions once they have been aroused. The excessive and unbound emotionality inherent in a witnessed event exerts pressure to be managed and emotional suppression is a natural consequence. This suppression of emotionality demands investing cognitive resources which in turn shape the indices of cognitive performance.

The context of eyewitness is characterized by emotional arousal. Emotional suppression is a natural consequence whereby people seek to redirect the spontaneous flow of their emotions, manage all of their emotionally charged states, including specific emotions, affect, mood, and stress. Managing and redirecting one's emotionality incurs cognitive costs. Because emotionality is fundamentally embodied in eyewitness situation, all emotion regulation processes must ultimately interface with cognitive functions. The role of emotional suppression in memory accuracy has been examined in small number of studies. The most consistent finding is that expressive suppression, engaged at encoding, impairs explicit memory. In two initial experiments, Richards and Gross (1999) presented participants with low and high arousing unpleasant slides depicting wounded men and paired with biographical information. At encoding, one group of participants passively viewed the slides, while a second group engaged in expressive suppression. Across both experiments, expressive suppression led to worse explicit memory for the biographical information. Intriguingly, this result did not vary according to the emotional nature of the slides—the negative impact of expressive suppression on memory was equivalent across the low and high arousing slide sets.

Richards and Gross (1999) suggested that these results reflect the fact that in order to inhibit ongoing emotion-expressive behavior, individuals must divert attention away from stimulus encoding in order to monitor their physiology and facial expression. Expressive suppression involves altering an ongoing emotional response and has been classified as a response-focused regulation strategy (Gross, 2001). Accordingly, Richards and Gross (2000) predicted that expressive suppression would impair explicit memory. Compared with passive viewing, expressive suppression again led to worse explicit memory for biographical information paired with both low and high arousing slides. In a third study examining the effects of emotion regulation on memory, participants manipulated their facial expressions while viewing pleasant and unpleasant slides (Bonanno,

Papa, Lalande, Westphal, & Coifman, 2004). Compared to the uninstructed condition, both enhancing and suppressing emotion expressive behavior resulted in impaired memory performance. These three studies demonstrate that emotion regulation strategies can affect explicit memory, but the psychological mechanisms underlying these effects are unclear (Gross, 2001). Results from all three studies are consistent with the hypothesis that expressive suppression is cognitively costly and impairs explicit memory. These discrepancies between theory and findings indicate that the mechanisms linking effects of suppression on stimulus encoding and memory are not well-understood. There is thus a need for further investigation of the psychological processes by which this and other emotion regulation strategies influence memory (Richards & Gross, 2000).

Researchers have reported many errors in recall or recognition tests of witnessed events (Tiwari, 2012) and in many instances the witness errors account for the most common cause of false conviction of innocent people (Huff, Rattner & Sagarin, 1996). These errors are so common that in a survey of identification line-ups in London, Wright and McDaid (1996) found that approximately 20% of the time the witnesses chose someone other than the suspect. In another survey, Levi (2005) found that 25% of the time when a suspect was identified, he was an innocent person. Keeping this fact in the mind that jurors weigh eyewitness testimony very high in their decision making, these errors lead to many people being convicted falsely (Loftus & Ketchman, 1991). Very clearly, it is of vital importance to understand why do eyewitness errors occur? The present study attempted to study the arousal and emotional regulation aspects of eyewitness performance and thus highlight some of the complex issues in this area of research. The above discussion indicates that there is a dearth of studies especially showing the effects of emotional suppression on eyewitness memory. The present endeavor makes an effort to uncover the intricacies involved in emotional suppression and memory of witnessed details.

Hypotheses :

Following hypotheses have been formulated for the present study:

1. Non-emotional suppression would facilitate accuracy of recall as compared to emotional suppression.
2. Weapon details of the witnessed event would facilitate accuracy of recall as compared to non-weapon details.

Methods and Procedure

Participants : One hundred twenty participants with equal number of males and females and high scorer on state anxiety aged 18 yrs 6 mo to 23 yrs 6 mo (60 males, M=20 yrs 02 mo and 60 females, M=21 yrs 03 mo) served as the subjects in a 2 (emotional suppression, non-emotional suppression) X 3 (consistent, misleading, no information) X 2 (weapon detail, non-weapon detail) mixed factorial design with repeated measures on the last factor.

Materials : A video-clipped event depicting an assailant who had committed some heinous crime against a family of 3 minutes duration was used in this experiment. In addition, the participants also read two passages approximately of three hundred words corresponding to the video-clip. The passage described something that was a direct continuation of the scenario depicted in the corresponding video-segment. To assess the memory accuracy of the subjects after a week, a memory scale was that comprised equal proportion of weapon and non-weapon details contained in the video-clip and passage. An emotional self-report rating scale was used to measure the subjects' emotional arousal level after they had viewed the video-clip and read the passages.

Procedure : The final study was conducted in two sessions. As a subject reported in the laboratory his/her biographical details were noted after which the first session started. In session 1, participants were exposed to the video-clip. After the exposure of video-clip was over, the participants were instructed to fill out a 9-point emotional self-report scale to indicate how emotionally aroused they felt during the period they were watching the video-clip. In session 2, the participants returned back after a week and were randomly divided into three groups and were supplied with consistent, misleading or no information post event information in the form of written passages. Then they were requested to complete accuracy of recall test. The session ended with the completion of accuracy of recall.

Results : The results evinced that mean memory scores of subjects of non-suppression condition, M= 9.30, SD= .80, M= 5.35, SD= .59, M= 6.65, SD= .75 for weapon detail; M= 6.30, SD= .66, M= 3.05, SD= .69, M= 5.70, SD= .66, for non-weapon detail) were higher than their counterparts of suppression condition (M= 6.85, SD= .86, M= 4.20, SD= .83, M= 6.40, SD= .68 for weapon detail; M=4.65, SD= .67, M= 2.95, SD =.76, M= 4.15, SD = .68 for non-weapon detail). The mean memory scores were patterned after types of detail with weapon details having an upper hand under both the suppression

(M=6.85, SD= .86, M= 4.20, SD= .83, M= 6.40, SD= .68) and non-suppression conditions (M= 9.30, SD= .80, M= 5.35, SD= .59, M= 6.65, SD= .75) as compared to non-weapon details for suppression (M= 4.65,SD= ..67; M= 2.95, SD= .76, M= 4.15, SD= .68) and non-suppression (M= 6.30, SD= .66; M= 3.05, SD= .69, M= 5.70, SD= .66).

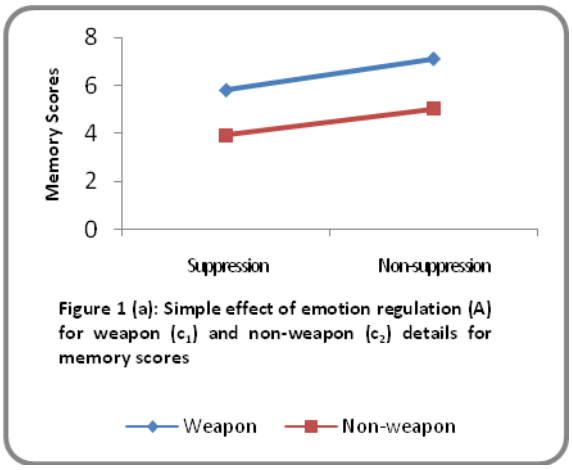

Figure 1 (a): Simple effect of emotion regulation (A) for weapon (c_1) and non-weapon (c_2) details for memory scores

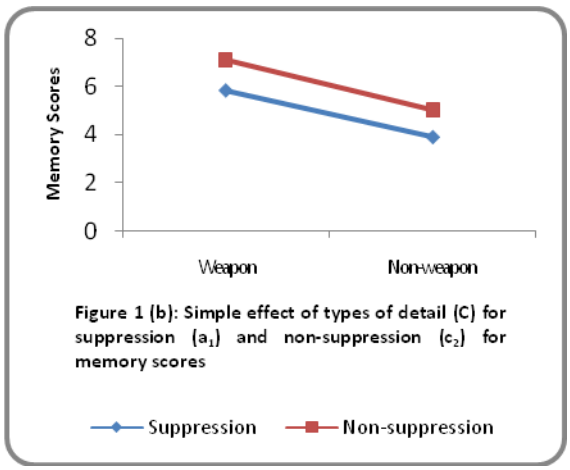

Figure 1 (b): Simple effect of types of detail (C) for suppression (a_1) and non-suppression (c_2) for memory scores

The statistically significant main effects of emotion regulation, F (1, 114) = 140.11, p = .000, and types of detail, F (1, 114) = 543.47, p = .000 were observed. The simple effects of emotion regulation (A) for weapon (c_1), F (1, 114) =112.29, p = .000, and non-weapon details (c_2), F (1, 114) = 82.51, p = *.000*, types of

detail (C) for suppression (a_2), F (1, 114) = 246.14, p = .000, and non-suppression types of emotion regulation, F (1, 114) = 295.93, p = .000.

Discussion : The results of the present study extend the notion that the emotional suppression and types of details significantly shaped the amount of memory of the participants. The results indicated that the mean memory scores of subjects of non-suppression condition for weapon detail and for non-weapon detail were higher than their counterparts of suppression condition for weapon detail and for non-weapon detail. It is explicit that non-suppression subjects evoked higher memory scores as compared to suppression subjects. These results confirm the hypothesis 1 and 2. These facts received further support from the statistically significant main effects and interaction effects of emotion regulation and types of detail. The participants evoked higher memory scores for these details in non-suppression emotion regulation condition as compared to suppression condition and thus, the two types of emotion regulation strategies shaped the memory patterns of the participants.

The results of the present study unequivocally support the notion that emotional suppression shaped the acquisition of memory scores. The results of the present study find support from the earlier studies conducted in this field. Results of the present study extend the theory that emotional suppression significantly affects the processing and retention of the details of a witnessed event. These results can be explained in terms of several theories related to emotion and cognition interface. Research has already established that the emotion and cognition are closely associated. Affective states affect perception, memory and attention (Vermulen, 2010). In particular negative emotions decrease the speed and accuracy of cognitive processes and executive functioning (Chepenik, Farah & Connew, 2007).The results of the study indicate that effects of emotion regulation on memory reflect strategic influences on stimulus elaboration (Craik & Lockhart, 1972**;** Richards & Gross, 2000). Emotion regulation strategies influence memory via effects on emotional arousal. The self-monitoring efforts invested in order to suppress emotion have been reported to affect memory and other cognitive behaviours. A recent study, Richards, Butler & Gross (2003) found heightened self- monitoring efforts among suppressors relative to control participants. A quite different possibility is suggested by Baumeister and colleagues in their ego-depletion model (Baumeister, Bratslavsky, Muraven,& Tice, 1998; Muraven, Tice, &

Baumeister, 1998), which holds that any sort of self-regulation depletes mental resources.

The mean memory scores were patterned after types of detail with weapon details having an upper hand under both the suppression and non-suppression conditions as compared to non-weapon details. Lastly, mean memory score for weapon detail was higher than that of non-weapon detail. Irrespective of post event information, memory of weapon details was better as compared to non-weapon details. The weapon detail channelizes the attentional energy towards them and compels the viewer to invest greater amount of mental energy consequent with which the memory of such details improves. This is termed as weapon effects in eyewitness research. The weapon focus effect suggests that the presence of a weapon narrows a person's attention, thus affects eyewitness memory (Robinson-Riegler, Bridget, 2012). A person focuses on the central detail (the weapon) and loses focus on the peripheral details (the peripheral characteristics). While the weapon is remembered clearly, the memories of the other details of the scene suffer (Robinson-Riegler, Bridget, 2012).

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