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Does Talking About Emotions Influence Eyewitness Memory? The Role of Emotional vs. Factual Retelling on Memory Accuracy

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Abstract

Eyewitnesses typically talk about the crimes they have seen. The different ways in which a witness talks can also influence later recollections. Indeed individuals can talk about crimes in order to cope with their negative emotions or to provide a detailed report. In the current study we investigated the role of factual vs. emotional retelling on memory accuracy of individuals who have eyewitnessed and discussed an emotional event. Participants were shown a video in which a quarrel between strangers was evident, then they were assigned to one out of three experimental conditions, i.e., (a) talking in group about emotional reactions to the video, (b) talking in group about factual details of the video; (c) completing an unrelated task. We employed a novel procedure in groups that ensured more ecological validity; retelling with other co-eyewitnesses in fact resembles real life situation. Eyewitnesses' memory for details of the video was assessed immediately before the retelling session and after a short delay. Results showed that while factual retelling prevents memory impairment over time, emotional retelling determined less detailed memories. Implications for forensic assessments of eyewitness' memory were discussed.

Keywords: memory accuracy, factual retelling, emotional retelling, eyewitness testimony

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How Eyewitnesses Talk About a Crime: Implications for Memory Accuracy

Memory assessment is a crucial issue in investigative procedures that predominantly rely on recollections of witnesses of crimes. Experimental research has explored several factors that, under different conditions, might improve or impair memory accuracy, i. e. interviewing techniques, social and individual dispositions, distortions occurring during coding, retention and recall of information (Wells, Memon, & Penrod, 2006). When asked to remember an event, people often report information that they have encountered after the original experience (post-event information, PEI), rather than what they originally experienced (Loftus, 1979). PEI has been proposed in different forms (Wright & Davies, 1999): It may arise from biasing questions about the event (Loftus & Palmer, 1974), that is the way in which the questions are asked can distort reports of memory for the event. PEI may also emerge through repeated re-descriptions of the event (Wright & Stroud, 1998) – that is it may be incorporated into written post-event narratives and embedded into people's memory. Finally PEI may be presented by another person during discussions about the original experience (Gabbert, Memon, & Allan, 2003; Wright, Self, & Justice, 2000; Wright & Villalba, 2012).

Even when eyewitnesses have seen the same event, their memories are likely to differ because of naturally occurring variations in the details attended to at that time, as well as actual or perceived differences in each person's ability to accurately recall those details.

Of interest for eyewitness' memory research is whether different ways of talking about the same crime can influence subsequent recall. Eyewitness retellings depend upon the speaker's goals, and feedbacks from the audience and social context (Marsh, 2007). Retelling the crime may be a strategy to cope with stress and unpleasant emotions related to criminal events, and this is a main feature of the so-called emotional retelling. People may also talk about what they have experienced in order to provide as many cues as possible to investigators. In this case, retelling is strictly related to reporting details about events, and it is called factual retelling (Marsh, Tversky, & Hutson, 2005).

To our knowledge, eyewitness retelling was manipulated in two studies (Lane, Mather, Villa, & Morita, 2001; Marsh et al., 2005). In the first one, participants viewed a videotaped crime and then received false suggestions about the event. Results showed that retelling instructions that encouraged rehearsal of previously suggested misinformation led to an increase in the number of errors on a later test (Lane et al., 2001). The second study examined the consequences of emotional vs. factual retellings (Marsh et al., 2005) when no specific error was suggested to witnesses. Participants watched a disturbingly violent film clip, then were assigned to three groups: Individuals in the emotional retelling group were instructed to report how they felt while watching the film events; individuals in the factual group told what happened from the beginning to the end of the film clip; individuals in the control no-talk group did unrelated activities. Then they completed free recall and cue-driven memory tests. Results showed that for cue-driven memory tests the focus of retelling had little effect. Focus of retelling, instead, had a larger effect on free recall. In the first case, retrieval cues constrained participants' responses, minimizing differences between retelling conditions. In the second case, participants had to generate their own retrieval cues, so the effect of different focus of retelling was more evident.

More specifically, talking about emotions led to a better performance in a memory test, but also produced major errors in a free recall task when compared with factual retelling. On the other hand, factual retelling led to better performance on a free recall task by enhancing memory for facts, perceptual details such as spatial, temporal and activity components of the events. Marsh and colleagues (2005) concluded that a matching between retelling focus (emotional vs. factual) and memory test focus was crucial to explain this pattern of results. Indeed, retelling sessions are set up on a schema that can later serve to bias memory retrieval, leading to schema-consistent intrusions and schema-inconsistent omissions (Tversky & Marsh, 2000). According to the Transfer Appropriate Processing account (TAP; Morris, Bransford, & Franks, 1977; Tversky, 1974), when similar retrieval processes are used either during retelling or in final recall test, memory benefits. When there is a mismatch between the retrieval processes used at retelling and the final recall occasion, memory suffers. That is, retelling the event by focusing on factual details would facilitate later recall because of a match between processes involved in retelling and in recall (Dudukovic, Marsh, & Tversky, 2004). Instead, focusing on personal thoughts and emotional reactions to an event would lead to a decrease in perceptual and contextual qualities of the individual's memory trace by enhancing memory for these subjective components of the experience (Suengas & Johnson, 1988).

We conclude that talking about witnessed events leads to changes in memory and, more specifically, emotional retelling seems to impair memory accuracy for witnessed crimes, producing more errors in free recall tests (Marsh

et al., 2005). However, no research work so far has tried to investigate the effects of different focus of retelling on memory accuracy adopting a more ecological perspective.

Overview and Hypotheses

In the present study we aimed to investigate the effects of different focus of retelling on memory accuracy when retelling was manipulated at group level.

Participants in the current study were exposed to a video clip of an emotional disturbing event displayed from two different points of view. Participants were then asked to recall the event alone and to discuss about it in a group session. A second recall test was employed to examine the effects of group discussion on subsequent memory reports. In the current study we employed a novel and naturalistic procedure, since participants watched the video clip recorded from two different perspectives in small groups of six people, in order to approach as much as possible a real life situation of exposure to a criminal event. Differently from the procedure employed by Marsh and colleagues (2005), where participants individually talked to a video camera about the film, participants in this study were requested to discuss their experience with their co-witnesses, as it usually happens among people who have assisted to a criminal episode. In addition, they were allowed to confront their memories with other present people's recollections.

Based on the previous study by Marsh and colleagues (2005), we hypothesized that emotional retelling will reduce memory accuracy for the event, instead, factual retelling will facilitate memory performance on a free recall task. This would be explained by considering that, while engaging in emotional retelling, individuals are more concerned with regulating their emotional reactions to the crime instead of reporting accurate details, as it is the case in a factual retelling condition.

Method

Design

The study employed a 3 x 2 mixed design with Retelling (factual vs. emotional vs. control) as the between-participants factor, and Test-retest (pre-retelling vs. post-retelling) as the within-participants factor. The dependent variable was the memory Accuracy index.

Participants

A total of 126 individuals (M_{age} = 24.16, SD = 3.80; 57.90% women) were recruited among friends of psychology students of University of Bari. Each student invited a friend to participate to the study in exchange of course credit. Participants were assigned to one out of the three Retelling conditions (factual vs. emotional vs. control) in groups of six individuals.

Materials and Procedure

Initial Phase. Participants were informed they were taking part in a research investigating memory processes, and signed an informed consent form. Each participant was assigned to a group of six individuals and all individuals in the group simultaneously watched a short video, so that one monitor was available for every three participants in the same room. The two monitors were arranged so that participants watching a monitor could not see what

was displayed to participants watching the other. Participants were led to believe that they were all watching the same video, while they were watching two different perspectives of the video.

Crime Event. The video shown to participants was a short film displaying two lovers conversing in a garden. A stranger approached the bench, began quarrelling with the boy and pushed him violently. A third man passed behind the bench, sipping a drink. Two video clips were filmed, each lasting one minute and 48 seconds. Both clips contained exactly the same sequence of events, but were filmed from different perspectives so as to simulate different witness' perspectives.

Pre-Retelling Free Recall Phase. Shortly after the video presentation, participants were given 10 min to write down a free account of the events seen in the video. This task was performed individually. Instructions were provided for participants to think back to the video clip, to write down as much details as possible and to report the sequence of events accurately and in the order they were held.

Manipulation Check. After the recall session, participants were asked to rate on a 11-point scale (0 = "not at all"; 10 = "extremely") the Emotional Impact of the video clip.

Retelling Phase. Each group was randomly assigned to one out of three retelling conditions: factual condition, emotional condition or control condition. Participants in the control condition did not talk about the video, and they were asked to perform an unrelated task for 5 min. Participants in the other two conditions were invited to discuss within the groups about the events of the video for up to 5 min. Participants assigned to the factual condition were instructed to talk about the events of the film extensively and in the same order in which they had occurred, so that somebody who had not seen the film could exactly imagine what had happened. Participants assigned to the emotional condition were instructed to talk about their emotional reactions to the events of the video, thoughts and feelings about it so that somebody who had not seen the film could exactly imagine how they felt. Similar instructions were employed in previous study by Marsh and colleagues (2005). During the retelling phase, the experimenter supervised the group discussion in order to control the correct execution of the task.

Post-Retelling Free Recall Phase. Participants were once again given 10 min to write down a free narrative of the events seen in the video. This task was performed individually. Instructions provided to participants were the same as the ones given in the first pre-retelling recall phase.

Coding. Two independent raters employed a checklist of details visible in both versions of the video (inter-raters reliability on a random sample of twenty transcripts: $r = .98$, $p < .01$). A score of 1 was assigned for each accurately reported detail. The Accuracy index consisted of the proportion of details correctly reported by participants (max: 24).

Results

Manipulation Check

In order to evaluate the presence of relevant differences in the emotional reaction to the event between participants assigned to the experimental conditions of the design, a one way ANOVA was run with Retelling (factual vs. emotional vs. control) as the between subjects variable on the index of Emotional Impact of video clip. Results showed no main effect of Retelling ($F_{2,123} = 2.57$, *n.s.*), thus indicating that participants' emotional reactions did not differ across the three retelling conditions.

Analysis on the Accuracy Index

A 3 x 2 repeated measures ANOVA was run on the Accuracy index with Retelling (factual vs. emotional vs. control) as between subjects factor, and Test-retest (pre-retelling vs. post-retelling) as a within subjects factor. The main effects of Retelling and Test-retest were not found to be significant (respectively: $F_{2,123} = 0.04$, *n.s.*; $F_{1,123} = 1.55$, *n.s.*; see Table 1).

Table 1

Average Proportions on the Accuracy Index

	Retelling			
	Factual	**Emotional**	**Control**	**Total**
	M	***M***	***M***	***M***
	(SD)	***(SD)***	***(SD)***	***(SD)***
Pre-retelling	.57	$.61_a$	.59	.59
	(.19)	(.22)	(.25)	(.22)
Post-retelling	.59	$.55_a$	.58	.57
	(.18)	(.21)	(.22)	(.20)

Note. Means in a column sharing the same subscript are significantly different at $p < .05$. For all conditions, higher means indicate higher memory accuracy.

Instead, the interaction effect of Retelling by Test-retest resulted as significant ($F_{2,123} = 3.62$, $p < .05$; see Figure 1).

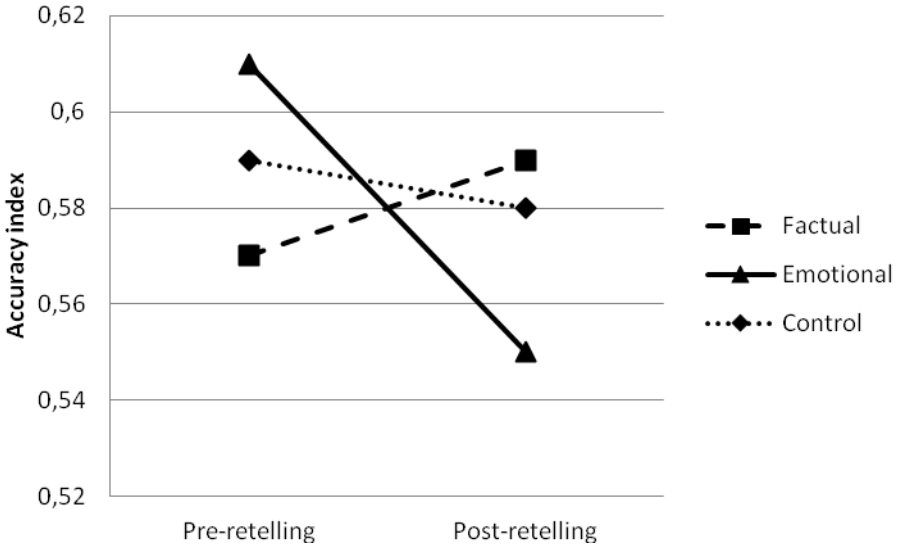

Figure 1. Interaction effect of retelling by test-retest on Accuracy index.

Simple effects analyses showed a significant decrement in the Accuracy index moving from the pre to post-retelling phase ($F_{1,123} = 8.52$, $p < .05$) only for participants assigned to the emotional retelling condition (see Table 1).

Discussion

In the present study the role of factual and emotional retelling on memory accuracy was experimentally investigated in individuals who had witnessed and discussed in group a criminal event.

In line with our hypothesis, emotional retelling was found to affect memory accuracy (Marsh et al., 2005) by decreasing the proportion of correct details reported by participants in free recalls. By contrast, participants assigned to the factual retelling and control condition were found to report the same proportion of correct details of the event at both the test and retest recall sessions. The detrimental effect of emotional retelling might be due to the schema generated during retelling that later serves to bias memory retrieval, leading to schema-consistent intrusions and schema-inconsistent omissions (Tversky & Marsh, 2000). According to the TAP (Morris, Bransford, & Franks, 1977; Tversky, 1974), a match between processes involved during retelling and in a final recall occasion facilitates memory tasks (and this is the case for the factual retelling), instead a mismatch impairs retrieval processes. In case of emotional retelling, the switch between the schema generated during emotional retelling and the (factual) schema required at the free recall seemed to have impaired memory accuracy.

However, in our study the factual retelling and control conditions were not found to differ as to the proportion of details correctly reported. This result diverges from evidence by Marsh et al. (2005) for different reasons. First, Marsh and colleagues (2005) assessed the number of major errors committed by participants instead than the proportion of details correctly reported, as in the present study. In this respect our evidence seems not to be comparable with Marsh et al.'s results. Second, the lack of a significant difference between the factual retelling and control conditions might be explained by assuming that, in our study, the filler task served as a form of protection for the original memory trace. In this regard, the effects of the control condition seemed to parallel the effects of the factual retelling induction, which instead implied a match between the processes activated at retelling and final recall test, and a consequent facilitation on the subsequent memory performance.

The present findings concerning the effect of the focus of retelling on memory accuracy need to be explained by considering two alternative accounts. One, which is referred to as the Emotional Retelling as Deep Encoding hypothesis, is that emotional retelling should have positive consequences for memory accuracy. According to this hypothesis, when retelling with an emotional focus, individuals are likely to retrieve the most important events, and to relate them to themselves: Both rehearsal and relating events to the self are likely to have positive consequences for memory (Symons & Johnson, 1997). The other possibility, which is called Emotional Retelling as Selective hypothesis, is that emotional retelling would have selective effects on emotional aspects of memory (Dudukovic, Marsh, & Tversky, 2004). According to this hypothesis, focusing on personal thoughts and emotional reactions to an event leads to a decrease in perceptual and contextual qualities of the memory trace (Suengas & Johnson, 1988). Results from the present study seem to support the Emotional Retelling as Selective hypothesis confirming that emotional retelling, even when performed in group, creates an organizing schema of the event which subsequently biased memory retrieval reducing the proportion of correct details reported in the recall task (Tversky & Marsh, 2000).

One important merit of the present study is that it preserves ecological validity in an experimental paradigm traditionally employed for investigating the effect of retelling on memory accuracy. Participants were shown film clips in groups, in order to approach as much as possible a real life situation of exposure to a criminal event. Moreover, participants were requested to discuss their experience with other people as it usually happens among

eyewitnesses of a criminal episode who confront their memories with other present people's recollections. Furthermore, no misinformation was suggested to participants as in the experimental studies on post event information. The adoption of this procedure adds to the validity of the experimental approach for the investigation of memory accuracy, and contributes to the generalizability of the present findings to real-life situations.

Findings from the present study contain important practical implications for the forensic context. People are normally expected to discuss their experiences with others especially if they concern something out of the ordinary, such as witnessing a crime (Rimé, 2009). However, as the present results demonstrate, if witnesses have discussed an event with one another, the way in which one person talks about it can influence what eyewitnesses report. This study demonstrates that if eyewitnesses retell with an emotional focus, this might compromise the accuracy of later testimony.

Despite these interesting findings, the present study has some limitations. First, although during the retelling session the experimenter supervised the group discussion in order to control the correct execution of the task, participants could have tried to switch the topic of their discussions from factual to emotional focus and vice versa. This might have had the effect of activating memory details not congruent with the retelling condition, subsequently impacting on the accuracy of participants' recollections. At the very least, this switching could have happened in the participant's memory representation of the experience instead of the explicit discussion with co-witnesses. This point entails a second limitation of the study, in which we did not have a direct control on the cognitive processes activated during the retelling session and the recall phase for participants assigned to different retelling conditions. Third, in the experimental manipulation of retelling we did not include a control condition in which participants were free to discuss whatever topic they wanted, and this might limit to some extent the generalization of our conclusions to real-life situations. Finally, in the present study we operationalized memory accuracy as the number of details correctly reported. A qualitative analysis on the types of errors generated by different focus of retelling is warranted (Gabbert et al., 2006).

In sum, eyewitness to criminal event might retell the event in order to cope with unpleasant emotions related to crime or to recall as much cues as possible for investigative aims (Marsh et al., 2005). The present study demonstrated that eyewitness testimony is highly vulnerable to the focus of retelling. This conclusion accounts for the importance of employing structured protocols of interview, such as the Cognitive Interview (Fisher & Geiselman, 1992). This instrument, in fact, helps eyewitnesses to focus on factual details of their memories and simultaneously to cope with their emotional reactions to crimes.

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