MASTER'S THESIS

Title of the Master's Thesis

When transmitted memories become autobiographical: Emotionally-charged memories from the war in ex-Yugoslavia.

Submitted by

Ivana Dragicevic

In partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Vienna, 2016

Degree programme code as it appears on the student record sheet:	A1347139
Degree programme as it appears on the student record sheet:	Master Study Joint Degree Programme Mei: Master in Cognitive
Supervisor:	Prof. Dr. Urban Kordeš

Acknowledgements

I would like to thank my supervisor Prof. Dr. Urban Kordeš for his assistance, guidance and support.

Table of Contents

Acknowledgements i

Table of Contents iii

Abstract 1

1 Introduction 3

1.1 Autobiographical memories 3

1.1.1 Autobiographical, episodic and semantic memories 4

1.1.2 Phenomenology of autobiographical memories 4

1.1.3 Imagery, imagination and false memories 5

1.2 Episodic memories 9

1.2.1 Vicarious traumatisation 9

1.2.2 Vicarious memories 10

1.2.3 Event memory 11

1.3 Remembering the past, imagining the future, theory of mind 12

1.3.1 Imagining the future 12

1.3.2 Theory of mind 13

1.4 Anthropological accounts 14

1.4.1 Bloch's Zafiminary fieldwork 14

1.4.2 Caprlietto's Italy fieldwork 15

1.4.3 Sorabji's Bosnia fieldwork 16

2 Methods 17

2.1 The present study 17

2.1.1 Research design 17

2.1.2 The participants 18
2.1.3 Recruitment of participants 18
2.1.4 The Events 19
2.2 Procedure 19
2.2.1 The interview 20
2.2.2 Second-round interviews 21
2.3 Analysis 21
2.3.1 Derivation of categories 22
2.3.2 Definition of categories 23
2.3.3 Analysis of phenomenal properties 24
2.3.4 Analysis of the content of phenomenal properties 25

3 Results 25
3.1 General overview 25
3.2 Factual information 26
3.3 Imagery 27
3.4 Auditory details 29
3.5 Emotionality. 29
3.6 Bodily Details 31
3.7 Visual perspective 32
3.8 Present tense 33
3.9 Commentary. 33
3.10 Remembering the narrative telling 34
3.11 Overall similarities and differences 35
3.12 General vs. self inferencing 35

4 Discussion 36
4.1 ‘I’ instead of ‘they’ 36
4.2 Transmitted memories are made of autobiographical elements 38
4.2.1 Imagery 38

4.2.2 Auditory details 39
4.2.3 Emotionality 40
4.2.4 Bodily/kinaesthetic details 41
4.2.5 Visual perspectives 41
4.2.6 Speech, facts and imagination 41
4.3 Reliability and Validity 43
4.6 Summary and future directions 45

Appendix 54
Curriculum Vitae 67

Abstract

People not only remember events that have happened to themselves personally, but also those which have happened to others and which they have been told about. These memories are often referred to as transmitted memories and can share many of the same features of autobiographical memories. However, is the presence of the same phenomenological properties enough to suggest that transmitted memories are of the same elk as autobiographical memories? Or, is something additional involved in transforming another's memory into a memory that is more one's own? The present study sought to explore this question by examining the nature of the content of the phenomenological properties present in transmitted memories. Of particular interest was the nature of the differences of the phenomenological content of transmitted memories in providing possible clues to the process of the adaptation of another's memory as one's own. The present study explored these questions within the context of memories for events from the war in the former Yugoslavia, under the assumption that these events were relevant for the moral and identity life of the people concerned, thus being of a more highly charged character and increasing the possibility that individuals who only heard about these events, retained them in their memories in a vivid and alive manner. Nine participants of Serb ethnicity were interviewed about six different events. For each event, an autobiographical account was given by a person who had lived through the event and a transmitted account was given by a person who had only heard about the event. The accounts were subsequently coded and compared across phenomenological properties including imagery, auditory details, emotionality, bodily details and visual perspective. The results confirm previous findings that transmitted memories contain the same phenomenological properties as autobiographical memories. However, additionally, these results suggest that the process of incorporating the transformation of another's memory as one's

own involves going beyond the factual information of the narrative and includes inference-making and self-referential imaginings.

1. Introduction

"…all the members of the family, including the children, were showing me what they did then, where they had stayed, and what it had been like, although, of course, they had not been alive in 1947." (Bloch, 1998, p. 120)

The above quote from cultural anthropologist Bloch, M. is referring to the recollections of the Zafiminary villagers of the dramatic events that had occurred in their village in 1947. Interestingly, although they were explaining the events as though they had lived through them, they in fact had not witnessed these events, but had only heard about them. These memories therefore are not autobiographical; they are what is referred to us transmitted memories (memories that have been passed down from one person to another). However, Bloch claims that transmitted memories can acquire the characteristics of lived autobiographical memories. Namely, through the act of imagination, transmitted memories of events that are emotionally charged or important for the moral or identity life of the people, can contain all the rich details and the sense of reliving that is present in recollections of actually lived experiences. While there has been a large amount of research dedicated to memory in general and in particular, autobiographical memory, relatively little focus has been given to the phenomenon of transmitted memories. The current study will explore Bloch's assertion by comparing autobiographical and transmitted memory accounts of events that occurred in the 1990s war in former Yugoslavia – under the assumption that these events are relevant to the moral and identity life of the people.

The first part of the paper will focus on the psychological literature of autobiographical memories, particularly on their phenomenological make-up as well as the role of imagery in the

creation of false memories. Transmitted memories will be discussed in relation to their similarities with true and false autobiographical memories. Following, anthropological accounts of the transmitted memory phenomenon will be presented, as well as literature concerned with other forms of transmission, such as trauma. Method and results will be presented in the second and third part of the paper respectively, and a discussion of the results will form the final section of the paper.

1.1 Autobiographical Memories

1.1.1 Autobiographical, episodic and semantic memories

Autobiographical memories consist of both episodic and semantic knowledge (Williams, Conway & Cohen, 2008). Episodic memory entails specific recollections of events or episodes (e.g. an individual remembers their birthday from last year) while semantic memory consists of general knowledge stored in linguistic form (e.g. an individual knows the date of his or her birth) (Tulving, 1972). Because semantic memories are stores of knowledge and do not involve a sense of reliving, most phenomenological research has focused on episodic memories.

1.1.2 Phenomenology of autobiographical memories

A sense of reliving, or recollection has been identified as a key feature of episodic autobiographical memories (Baddely, 1992) and itself consists of several phenomenological qualities. These qualities include sensory details such as imagery, audition and bodily reactions as well as emotionality and visual perspective (Sutin & Robins, 2007). In particular, strong visual imagery was associated with a more intense sense of reliving (Rubin, Schrauf & Greenberg, 2003). In terms of emotionality, it was its intensity rather than valence (whether the emotion was

positive or negative) which was the more determining factor in the sense of reliving (Talarico, LaBar & Rubin, 2004). In addition to sensory details and emotionality, a sense of reliving is also dependent on the visual perspective one takes. Namely, the observer perspective (viewing oneself in the memory) as compared to field perspective (viewing the scene from a seemingly original perspective) was associated with reduced sensory and emotional reliving (Berntsen & Rubin, 2006). However, it must be noted that viewing the memory from both perspectives in a single recollection is also possible (Rice & Rubin, 2009), which suggests that the sense of reliving may vary within a single recollection, rather than only across different memories. Regardless, visual perspective appears to be an essential phenomenological characteristic of reliving episodic autobiographical memories, along with sensory details and emotionality.

1.1.3 Imagery, imagination and false memories

The most researched phenomenological property of autobiographical memories has been imagery. Past studies have focused on the role of imagery in learning and memory with overall findings suggesting positive effects of visual imagery on recall (Bower, 1970: Marks, 1973). One study examined whether imagery can aid children in recalling stories by training 8-year olds to construct mental images for either sentences, paragraphs or short stories and comparing them to a control group which was not trained (Pressely, 1976). The results indicate that children who were taught how to construct mental images for verbal information subsequently answered significantly more questions about the short story as compared to the children who presumably used less imagery - having been in the control condition and having not practiced. In addition, it has been found that imagery can also act as a mnemonic aid for brain-damaged patients (Lewinsohn, Danaher & Kikel, 1977). Overall, these earlier studies suggest a positive role of mental imagery on both learning and memory.

Notwithstanding the positive aspects of imagery as an aid for learning and memory, a later group of studies have demonstrated that imagery can also produce unwanted, and at times, quite negative consequences for memory. Namely, one study demonstrated that guided imagery led to an increased number of false memories (Hyman & Pentland, 1995). In this study, participants were asked to describe several events that purportedly occurred in their childhood (one event was false and implanted by the experimenters). When participants stated that they did not remember the false event, they were asked to either imagine and describe the event to the experimenters (experimental condition) or to merely think about the event (control condition). Participants who were asked to imagine, were more likely to create a false memory (37.5%) than were participants in the control condition (12.1%). The involvement of mental imagery in eliciting false memories was also confirmed by neuroimaging studies (Gonsalves & Paller, 2000; Gonsalves et al., 2004). Specifically, participants were asked to read words of objects and to visualize these objects. Half the words were accompanied with a corresponding picture of the object and the other half were not. During the test phase, participants were presented with various words and asked to indicate whether they had also seen a picture of the object represented by that word. Participants who indicated that they had falsely seen a picture of the object when they had only imagined seeing it had greater activations in regions engaged in visual imagery during the encoding of that word (Gonsalves & Paller, 2004). Overall, the aforementioned group of studies suggests that false memories, by virtue of being indistinguishable (by the individual experiencing them) from true memories, may through the aid of imagination be experienced like true autobiographical memories. Therefore, assuming that transmitted memories also use mental imagery, it is possible that these memories are also experienced similarly to true autobiographical memories – with the exception that individuals know where these memories came from.

Paradoxically, while mental imagery is one of the elements that increase the likelihood of false memories; it is also a characteristic which can be used to distinguish between true and false memories. In an early study comparing phenomenal characteristics of true and false memories, Johnson, M.K. and Raye, C.L. (1988) found that participants had higher ratings for visual imagery (along with several other elements) for real events as opposed to events they had only imagined. However, this result was only valid for events that had occurred in the recent past. When events from the more remote past were examined, the differences between real and imagined events were diminished. Specifically, when events from participants' childhoods were examined, the only differences that remained were ratings of taste, realism and knowledge of the year of the event. While a similar study also found that perceived events had higher ratings on clarity, sensory details, context and thoughts and feelings than did imagined events (Suengas & Johnson, 1988), this study did not take into account the previous finding that phenomenal differences may be dependent on time and focused only on events that were 24 hours old.

In addition to age of memory, rehearsing or repeatedly imagining an event may result in reduced differences between true and false memories. One study found that differences in imagery and emotionality which initially existed between true and false memories, were eliminated when rehearsal frequency was taken into account (Heaps & Nash, 2001). That is, the more times participants rehearsed an imaginary event, the richer this event became in terms of recollective experience and the closer to the phenomenology of true memories. However, a weakness of this study was that real memories were based on the more remote past (childhood events) while false memories were more recent, formed during the experiment, and thus the results may be a reflection of this time incongruence. Nonetheless, several studies give support that repeated imaginings both increase the likelihood of false memories, a phenomenon referred to as 'imagination inflation' (Goff & Roediger III, 1998) and decrease the qualitative differences

between true and false memories (Lampinen, Odegard, & Bullington, 2003). Namely, in the latter study, while true memories had higher scores compared to false memories for sensory details, thoughts, emotionality and kinesthetic details, these differences were diminished as the number of imaginings that participants engaged in increased. Namely, when a false event was imagined five times, only sensory details and level of confidence about the memory, remained higher for true as opposed to false memories. This is an interesting finding in that it suggests that the frequency of the act of imagination might not only encourage reality-monitoring errors (in terms of producing false memories) but that it can also contribute to those false memories becoming qualitatively more similar to true memories. In addition, the above studies suggest that it may be the combination of the age of the memory (the further in the past it is located) and the number of times it is revisited that increases the phenomenal similarities between true and false memories.

The above results could be partially explained within the reality monitoring framework which posits that both imagination and perception can result in memories, but for correct reality monitoring a past perception (external generation) must be distinguished from a past act of imagination (internal generation) (Johnson & Raye, 1981). It is further posited that externally generated events should have certain phenomenological qualities which could help to distinguish them from internally generated events. Namely, memories for externally generated events should have more spatial and temporal contextual information, more sensory attributes and should be more semantically detailed; that is, contain more specific information. On the other hand, internally generated memories may have more information about the operational attributes associated with the construction of the memory. Hence, if information about the construction of a memory (i.e. the imagination process) is contained, one is more likely to be able to distinguish that the memory came from within and was not a perceived event. However, the act of repeatedly imagining a false event, along with causing it to become qualitatively more similar to a memory

of a real event, may also lead to the loss of operational information in regards to this event. Namely, the more a memory of an event is repeated, the more automatic the remembering of it becomes and the more likely that a loss of operational information occurs leading to a reality monitoring error (Lampinen, Odegard & Bullington, 2003). Although transmitted memories are not false memories, they may be able to shed some light on the reality monitoring theory and false memories.

In summary, while transmitted memories are not false memories, they may share certain similarities with them. Namely, it is not unlikely that upon hearing a highly charged narrative that mental imagery is evoked. In this sense, if transmitted memories undergo the act of imagination, they may become qualitatively similar to false memories and similarly to false memories, they may become closer to real, episodic autobiographical memories depending on factors such as the age of the memory as well as how frequently it is revisited.

1.2 Episodic memories

1.2.1 Vicarious traumatization

Studies investigating memories arising from accounts of events transmitted to a person rather than experienced by that person have been scarce – excluding one area of study. Research into vicarious traumatization, which has focused mainly on therapists working with traumatized populations such as domestic violence victims (Illife & Steed, 2000) or sexually abused individuals (Schauben & Frazier, 1995) has shown that these workers, having been exposed to the narratives of their clients, can experience elements of their clients' traumas. Specifically, when memories of workers exposed to trauma narratives were examined, it was found that they

contain clear visual images (Etherington, 2007; Illfe & Steed, 2000) as well as strong emotionality (Etherington, 2007). As discussed previously, these are also elements present in autobiographical memories. This pattern of results is not only restricted to workers that spend a long time working with their traumatized clients and as such, can be assumed to develop strong emotional connections that may cause them to be more prone to experience their clients' traumas. Rather, these results were also found in transcribers of trauma narratives who spend only a limited amount of time with the clients. Namely, one transcriber describes – "I had a picture of her being a very helpless person, prone, because she said he kicked her and he jumped on her stomach . . . I don't feel I'll ever forget . . . because it's so graphic" (Etherington, 2007, p. 88). This excerpt indicates that graphic mental imagery was evoked, which may resemble imagery evoked upon recalling one's own episodic autobiographical memory. Hence, studies of vicarious traumatization suggest that highly charged narratives have the potential to form into vivid and emotionally arousing memories of episodes that occurred to others.

1.2.2 Vicarious memories

Indeed, episodic memory research had been criticized for its almost exclusive focus on personally lived events (Pillemer, Steiner, Kuwabara, Kirkegaard-Thomsen & Svob, 2015) while memories for reported events have largely been ignored or classified wrongly into semantic memory (Larsen & Plunkett, 1987). In line with this, Larsen and Plunkett conducted a study based on the distinction between experienced and reported events. They compared memories of personal experiences and memories of reported events; the reported events being from a wide range of sources such as reading, news and stories told by others. They found that reported events were more difficult to retrieve and, in a later review stated that these memories were less vivid, less affectively loaded and less consequential. However, the fact that they used such a wide variety of

reporting styles may have obscured their results. For instance, reading a news report and hearing an event that happened to a close friend may have quite differing effects on emotionality and vividness of these memories.

A more recent study eliminated these issues by narrowing the possible sources of reports to close friends or parents (Pillemer, Steiner, Kuwabara, Kirkegaard-Thomsen & Svob, 2015). Transmitted memories, or 'vicarious memories' as they were referred to in the article, are defined as recollections of specific, salient events that occurred in the life of another person as opposed to general knowledge of that other person's life. The authors argue that vivid memories about such events are possible and would consist of imagery, emotionality, physical reactions and long-lasting life influence that are normally present in memories of personally experienced events. In this way, they argue that the category of autobiographical memories should be expanded to include vivid memories of events that happened to other people. In order to support their arguments they compared participants' recollections of personal past events and recollections of experiences that occurred in the lives of their friends and parents. As predicted, the recollections of specific events that occurred to others contained the same qualities (emotional intensity, physical reaction, vividness and seeing the event) as recollections of one's own personal events. However, similarly to the aforementioned studies on true and false memories, higher ratings of intensity were reported for personal rather than 'other' recollections. Nonetheless, the authors argue that regardless of the differences in intensity, the fact that the phenomenological make-up is the same is indicative of their belonging in the same category - namely, in episodic autobiographical memory.

1.2.3 Event memory

Rubin, D.C. and Umanath, C. (2015) eliminate the above problem entirely, basing their argument on the legitimacy of the episodic and semantic distinction. Namely, they claim that it is much clearer to make a distinction between event (rather than episodic) memory and semantic memory. Event memory is defined as the mental construction of scenes and can involve scenes that did not necessarily occur to the self but that also occurred to others, which are imagined by the person recalling them. The foundation of this argument lies in the observation that recalling events requires an egocentric point of view. That is, an event is viewed from a specific point in a spatial area which is in contrast to recalling factual information (semantic memory), which does not involve an egocentric point of view (one does not judge from where in space one encoded knowledge). Further, event memory does not need to include actions, actors or emotions as long as the person recalling the event is located in space relative to the scene as a whole. Thus, for Rubin and Umanath (2015), the fact that certain phenomenological qualities may be rated as less intense for transmitted memories compared to true memories poses no issues. Memories need only be viewed from a certain spatial perspective. Thus, distinguishing between semantic and event memory in such a way allows for memories which have traditionally existed in a so-called 'limbo' space, to be submerged into event memories.

1.3 Remembering the past, imagining the future, theory of mind

1.3.1 Imagining the future

Some support for the above argument comes from studies exploring the underlying neural mechanisms between remembering the past and imagining the future. One study demonstrated that the two cognitive activities share both similarities and differences in the underlying neural mechanisms (Addis, Wong, & Schacter, 2007). Specifically, all the brain areas involved in retrieving a past memory were also employed in retrieving a future event. However, there were

also additional brain regions which were only active during the imagining of the future event. Interestingly though, these additional brain regions were mainly active during the construction phase while the elaboration phase yielded the largest overlap, comprising many areas of the autobiographical memory retrieval network. This indicates that while bringing a past event and a future event into mind may initially involve different neural mechanisms, the later process of bringing the details of the events into the foreground, and subsequently the recollection of the end product, may be very similar. Consequently, this suggests that it may be legitimate to categorise memories of future imagined events, like memories for past events within episodic, or event memory.

1.3.2 Theory of mind

More pertinent to the case of transmitted memories are studies exploring the similarities in the underlying neural mechanisms of theory of mind and remembering the past. Theory of mind involves attributing mental states to others, understanding that the behaviour of others is motivated by internal states such as thoughts, emotions and beliefs (Spreng, Mar & Kim, 2008). In a review investigating the underlying neural mechanisms in remembering the past, imagining the future and theory of mind, a common brain area involving the medial-temporal lobes, medial parietal regions and the temporo-parietal junction was found (Spreng, Mar & Kim, 2008). Overall, more brain regions were shared across these cognitive domains than were unique and in particular, remembering the past and theory of mind showed the greatest overlap. For transmitted memories to form, individuals must engage in some level of theory of mind. Hence, it follows that transmitted memories, insofar as they engage elements of theory of mind, may also have something in common with remembering the past, and consequently, autobiographical memories.

In summary, converging evidence suggests that hitherto distinctly regarded cognitive activities – remembering the past, imagining the future and theory of mind, share more overlapping brain regions than distinct. Subsequently, this implies that memories may contain events which have not occurred (based in the future), or events which have not occurred to oneself (based on theory of mind projections). Further, it can be argued that theory of mind is linked to the formation of transmitted memories and thus that transmitted memories may also share a common core network with autobiographical episodic memory, which may also involve a similar phenomenological experience.

1.4 Anthropological accounts

1.4.1 Bloch's Zafiminary fieldwork

Initial interest and observations on the phenomenon of transmitted memories have arisen from anthropological fieldwork. The most salient example comes from cultural anthropologist Maurice Bloch (1996) whose work focused on Zafiminary villagers' memories of a rebellion against the invading French army, which occurred in their village in 1947. He noted that all the members of the family, including the children, were showing him what they did there, where they had stayed and how it was like although none of them had lived through the actual event. Furthermore, he states that they were using a 'we' pronoun, implying a proximity to the event that is not unlike the one experienced in the re-telling of an autobiographical memory. Hence, he argues that these transmitted memories encompass more than simply the memory of the told narrative. Rather, he claims that emotionally charged events that did not happen to oneself but that one has been told about, can acquire the qualities of a lived experience - that is, one can "remember the distant past as though its events were events in their own lives" (p. 123). Hence, he argues that transmitted memories are not qualitatively very different to autobiographical episodic memories.

More specifically, Bloch argues that what is being stored is a "mental model containing both imagery and emotion and which could therefore subsequently be searched in the same way as autobiographical memories (p. 121)." This is not to say that the information in the transmitted memory is entirely the same as that in the autobiographical memory but that the mode of experience is similar. He reasons that while a told narrative will have less experiential data available than a lived autobiographical memory, it may not be the case for highly charged events, important to the identity and moral life of the people concerned. For such events, he argues, people infer material far beyond that which has been narrated to them and thus gain a fuller, more alive memory of the event. Thus, when recalling the event, they can search a vivid memory of it, which is much less limited than that contained in the linguistic form in which it was passed down and thus resembles the form (if not entirely the content) of an actual autobiographical memory.

1.4.2 Caprlietto's Italy fieldwork

Caprlietto, E. (2003) makes similar observations after interviewing over sixty Italian villagers who had either witnessed or been told about a massacre that occurred in their village in the Second World War. She states that as the listener hears the story over and over again, it produces the effect of having seen the event. She notes that the general imagery becomes more emotionally bound and detailed, which then consequently draws closer to an autobiographical memory than an historical account of events. She supports this claim through her observation that some of the non-eyewitnesses of the event switched from the objective 'they' to the subjective 'us' whilst recounting the narrative, which also corresponds to Bloch's observation of individuals using personal language to describe an event they did not experience. The crux of Caprlietto's argument is that it is imagery that is the bridge between autobiographical and historical/communal memory – it is the evocation of imagery by certain historical events that causes them to become more like

autobiographical memories and that while this imagery may be different for all individuals involved, it is the emotional memory evoked by these images that can be transmitted from person to person.

1.4.3 Sorabji's Bosnia fieldwork

Sorabji, C. (2006), discusses the above observations within the context of the war in former Yugoslavia in the 1990s. She discusses the potentiality of transmitted memories, which she defines as "personally meaningful images and ideas of younger generations who did not experience the war but who lived in intimate contact with elders who did" (p.1) to influence the current social and political make-up. She supports Bloch's (1998) assertion that the nature, if not the content of the memories is the same – this being a result of the recipient actively transforming the information given. However, what this active transformation involves has not been articulated.

In summary, the anthropological accounts suggest that transmitted memories of events that are highly charged and relevant to the identity of a people take on the character of a more personal, autobiographical-like memory. Until now, there has only been one study (to the best of my knowledge) that has compared the phenomenological properties between transmitted and autobiographical memories (Pillemer, Steiner, Kuwabara, Kirkegaard-Thomsen & Svob, 2015). However, this study contained a few issues. Firstly, it was based only on participants' ratings of intensities of the properties examined and thus might have missed other aspects which a more in-depth qualitative study would not. Secondly, previous research has identified the age of the memory to be an important factor (Johnson & Raye, 1988), which was not controlled for in the study. Lastly, the content of the autobiographical and the transmitted memory events was not matched, which might have also influenced the results. Hence, in order to examine the

phenomenon of transmitted memories more closely, a qualitative analysis controlling for both age of memory and content of events would be beneficial.

2. Methods

2.1 The present study

The present paper sought to explore Bloch's claim that transmitted memories (TM) of events which are highly relevant to the identity of the people concerned, can be experienced in a similar way to autobiographical memories (AM). Further, it sought to explore his claim that it is the 'inferential fleshing out' of the narrative; the use of imagination which allows the individual to go beyond that which is contained in the information of the narrative. The present study addressed these claims within the context of the war in ex-Yugoslavia in the 1990s – under the assumption that these events were also relevant to the morality and identity of the people concerned. Specifically, the present study explores (i) whether TM accounts contain the same phenomenological properties as AM accounts, (ii) whether TM accounts go beyond the information provided in the telling of the narrative, (iii) (if (ii) is positive), what is the nature of the additional information, and (iv) whether participants remember the telling of the narrative.

2.1.1 Research design

For each event, two participants were interviewed – a participant who lived through the event (AM account) and a participant to whom the event was narrated (TM account). Interviews were conducted in two phases, separated by approximately two weeks. Initially, TM holders were interviewed in order to identify the event to be examined, followed by an interview with the AM

holder about the same event. Second-phase interviews were conducted with both participants for cross-checking of information and filling in any gaps.

The TM and AM accounts were coded for the phenomenological properties identified for autobiographical memories (Sutin & Robins, 2007). The nature of similarities and dissimilarities in the content of these phenomenological properties were compared. The interviews were also coded for factual information, and the use of present tense speech and commentary in regards to the construction of the memory. TM holders were asked whether they recall the telling of the narrative.

2.1.2 Participants

Initially, it was planned that participants from all three ethnic groups involved in the war (Bosnian, Serb and Croat) would be interviewed. For each event, one interviewee needed to have lived through an emotionally charged event from the war and the second interviewee needed to have been told about this event orally. While the latter two requirements were fulfilled, the first was not (i.e. participants from Croat or Bosnian ethnicities were unable to be secured). Thus, 9 participants of Serb ethnicity took part in the interviews. Four participants provided autobiographical memory accounts (mean age: 60.9 years) and five participants provided the transmitted memory accounts of the same events. Two TM holders were spouses, (female, mean age 55 years) and the other three were children (1 female, 2 males), mean age (32.4 years).

2.1.3 Recruitment of participants

Participants were known to the interviewer prior to the interviews. They were approached by the interviewer and asked whether they would be willing to participate in the study. The events ‘Tunnel’, ‘Hill’ and ‘Village’ were described by close family members. The events ‘Storm’,

‘Forest’ and ‘House’ were described by distant family members that were not closely acquainted with the interviewer. The participants of the latter events were recruited via the snowball or chain-sampling method (Goodman, 1961) whereby a previously interviewed participant recommended the eligibility of these participants.

2.1.4 The events

Seven pairs of interviews were conducted for six events. All memories were based on events which occurred 20 – 23 years previously (mean age: 22 years). Table 1 is a brief summary.

Event	Year	Description	Autobiographical memory holder	Transmitted memory holder
Tunnel	1993	Attacked by gun fire while driving in the car.	Father (L.D.)	Daughter (N.S.)
Tunnel	1993	Attacked by gun fire while driving in the car.	Husband (L.D.)	Wife (B.D.)
Village	1992	Visiting a village which had been attacked by armed men.	Husband (M.J.)	Wife (B.J.)
Storm	1994	Being struck by lightening while on duty.	Father (A.D.)	Son (N.D.)
Forest	1992	Being attacked unexpectedly while on a mission.	Father (A.D.)	Son (N.D.)
House	1992	Attacked while inside own home.	Mother (N.D.)	Son (N.D.)
Hill	1995	Being surrounded on a hill by opposing army.	Father (L.D.)	Son (B.D.)

Table 1. Depicts the event, the year of the event, a brief description of the event and the relation between the AM and TM holders.

2.2 Procedure

All participants were interviewed in their homes, at a time chosen by them, according to their availability and comfort. All interviews were conducted on a one on one basis and anyone other than the interviewer and interviewee was forbidden to be present during the interviews. All participants were given as much time as needed to complete the interviews. All interviews were

recorded and transcribed. Participants were informed that the interviews would be recorded and transcribed but that their identities would remain anonymous. Their participation was voluntary and they were advised that they could cancel the interview at any point they wished.

2.2.1 The Interview

TM holders were asked to recall an event that had occurred to a close family member during the war in ex-Yugoslavia. They were informed that the event should have been narrated to them in the past and if there were several events, they should choose the event that had remained most vivid to them. They were informed that the purpose of the study was to compare their recollections to the autobiographical recollections of the family member who had lived through the event as well as to obtain descriptions of how they experienced the memory themselves.

They were first asked to briefly describe the event, focusing on factual information - *('I would ask you to describe me an event that happened to your (father) during the war, something which has stayed in your memory and which he told you about').* They were then asked to describe the first thing that they become aware of when recalling this memory - *('Please now describe what it is that you first become aware of as you recall this memory').* If participants were unsure how to answer, the interviewee would give an example - *('What I would like to know for example, is if you see any images of the event or if you remember him telling you about the event?').* They were then gradually but in more detail questioned about specific qualitative experiences; for instance, when appropriate, they were probed for more auditory details - *('Are the sounds loud or quiet? Far or near?').* This was repeated for all sensory categories. If the participants drifted off into mere descriptions of the event, the interviewer would attempt to bring their focus back to the experience of the memory, using the re-phrasing technique described by Petitmengin (2006) - *('Ok, so that is the second scene. You are looking through the window and*

first see the man sitting on the couch… and the woman holding the coffee grinder on the floor. What is the next image?'). When the interviewer deemed that a particular description of a scene was complete, she would ask - *('What is the next thing you are aware of? What is the next image?')*. This would be repeated throughout the interview. At the end of the interview participants were asked about their visual perspectives - *('From which perspective are you seeing this image? Are you seeing it as though you are an observer of the scene or are you in the scene itself?').* Lastly, all the holders of transmitted memories were asked whether they remember the telling of the event - *('Do you remember when your (father) told you about this, do you remember that moment at all?')*. Once the transmitted memory accounts were collected, the autobiographical memory holders were interviewed about the same event, following the above described procedure.

2.2.2 Second-round interviews

Second-round interviews were conducted one to two weeks later and were centered on information that was missing or inadequate in the first-round interviews. Some involved cross-checking information between the TM and AM accounts while others focused on delving more into the categories that were not very well explored in the first-round interviews.

2.3 Analysis

The transcribed interviews were read several times and open coding was applied to segment certain phrases, words or sentences within the text (Flick, 2009). Next, these segments were grouped into phenomena relevant to the research question – in the case of the present study, they were grouped around the phenomenological properties under investigation. Below is an example of this process of coding:

'I can see that it is night, night is falling. It's the worst moment when the day is still in your eyes but you are beginning to see less well and clear; the eyes have not yet adjusted so well. Usually when it's day there is not much activity but when night falls, then the activities start. I can see it's the moment of the beginning of action and I can see they are fortified in their positions and it's beginning. I believe, actually, first starts the artillery and that's something you cannot defend yourself against but you can hear it whistling. I am looking from the direction where L (his father) was and I can see a hill, or rather, a mountain, and I can see how it is falling and I see the roads on which they are passing and I can see the trenches and how they are defending themselves…You cannot see whether you are shooting at anyone or not, whether you will hit anyone or not, but simply the fear in that moment, the biggest fear is to survive the night. When morning comes it's easier for you – you can see everything in front of you, you're safer.'

BD (Hill)

The underlined sections were the result of open coding segmentation. These segments were then coded into the following terms: 'low visibility', 'artillery whistling', 'hill', 'mountain falling', 'trenches', 'fear of the night'. These terms were then grouped under the more abstract codes including: bodily details, auditory details, imagery and emotionality respectively (see Appendix for full table). The derivation and definition of categories is described below.

2.3.1 Derivation of categories

The categories: imagery, auditory details, bodily details, emotionality and visual perspective were derived from the Memory Experiences Questionnaire (MEQ) (Sutin & Robins, 2007). The category for present tense speech was inspired by Petitmengin's 2006 paper describing the elicitation method interview, whereby present tense speech is used as an indicator of a successful elicitation of the inner experience. The category for commentary was based on the predictions

from the reality-monitoring model (Johnson & Raye, 1981) which posited that memories which have been internally generated (imagined) should be accompanied by more comments relating to the process of the formation of such a memory as opposed to comments about the actual details of the event. Additionally, the factual information category was created as a reference check for determining the extent and nature of imagination used.

The deductive categories arose as sub-categories during the coding of the inductive categories and are based on the nature of differences observed in the TM holders' accounts as compared to the AM accounts.

2.3.2 Definition of categories

Categories	***Sub-categories***
Factual Information: Initial and most minimalistic account of the event	*(i) inference-making:* statements based on TM holder's assumptions & not confirmed by AM holder *(ii) false knowledge:* statements relating to false knowledge of specific details of events *(iii) false memories:* statements containing clearly false memories
Imagery: Scenes or images; the ability to see something in the mind's eye	*(i) false memories:* images based on false memories of the event *(ii) self-relevant images:* images which could not have arisen within the event but which are nonetheless imagined *(iii) vague imagery:* images based on general knowledge (iv) *specific imagery:* images resulting from specific knowledge of place or person
Auditory details: Information pertaining to sounds	

Emotionality: Evocation of emotions throughout the recollection	*(i) self-referential emotions:* emotions that TM holder would have if he/she were in the event *(ii) emotions about the other:* emotions about AM holder *(iii) emotions of the other:* assumptions of emotions experienced by AM holder
Bodily details: Information pertaining to states of the body or describing information through the use of one's body (enactments)	*(i) bodily inferences:* bodily sensations or enactments based on inferences of what it should have been like in the event *(ii) self-referenced bodily details:* bodily sensations or actions occurring as a result of the TM holder referencing to oneself
Visual Perspective: How the memory was being viewed at recollection	(i) *Field perspective (1st person)*: Viewing the memory from an almost original standpoint (ii) *Observer perspective (3rd person):*Viewing the memory from a more detached stand-point; can see oneself in the memory (iii) *Mixed perspective:* Alternating between a field and observer perspective within the same memory
Present Tense Speech: Use of present tense speech when talking about the event	
Commentary: Comments about the construction of the memory or the experience of the memory	
Remembering the telling of the narrative: TM holders were asked whether they remember the telling of the narrative	

Table 2: Definitions and examples of inductive and deductive categories used for coding the raw material. The sub-categories are represented in italics in the first column.

2.3.3 Analysis of phenomenal properties

TM accounts were coded for the following phenomenological properties: imagery, auditory details, emotionality, bodily details and visual perspective. The presence of these properties

within the TM accounts was indicative of their being phenomenologically similar to autobiographical memories. In addition, the use of present tense speech was indicative of a sense of reliving the narrative.

2.3.4 Analysis of the content of phenomenal properties

The role of imagination was explored by noting the differences and similarities between the TM and AM accounts on all the phenomenological properties aforementioned. Instances of similar phenomenological content (for example, similar imagery in both the AM and TM accounts), were treated as indicators of the elicitation of imagination by information transferred in the telling of the narrative. Differences in phenomenological content on the other hand, were treated as indicators of the use of imagination over and above that which was elicited purely from the information within the narrative. The factual information category was used as a reference point for determining whether the participant in general had the right facts concerning the event. In this way, false memories or false knowledge could be ruled out, and the nature of the aspects which were recalled but were not a part of the information of the narrative could be determined. Lastly TM holders were asked whether they remembered the telling of the narrative, which was used as an indicator of the strength of the imagination process and the possibility of overwriting the actual memory of the telling of the narrative.

3. Results

3.1 General overview

In general, TM accounts contained enough information about the event to be categorized and compared to the AM accounts. However, TM accounts were coded for substantially less factual

information than AM accounts. In terms of the phenomenological properties, TM accounts contained the same sensory properties identified for AM accounts and with approximately the same number of occurrences, excluding imagery, where approximately 10 more instances were observed in AM accounts.

In general, for both AM and TM accounts, information pertaining to imagery was most pronounced and information pertaining to audition the least. Emotionality and bodily sensations/enactments were approximately equal.

3.2 Factual Information

Each TM account, excluding the event 'Hill', contained both similar and dissimilar factual information to AM accounts (Figure 1a). Three events (Tunnel (NS), Storm, Forest) contained more differences than similarities. Overall, TM accounts contained more similar than dissimilar information to AM accounts.

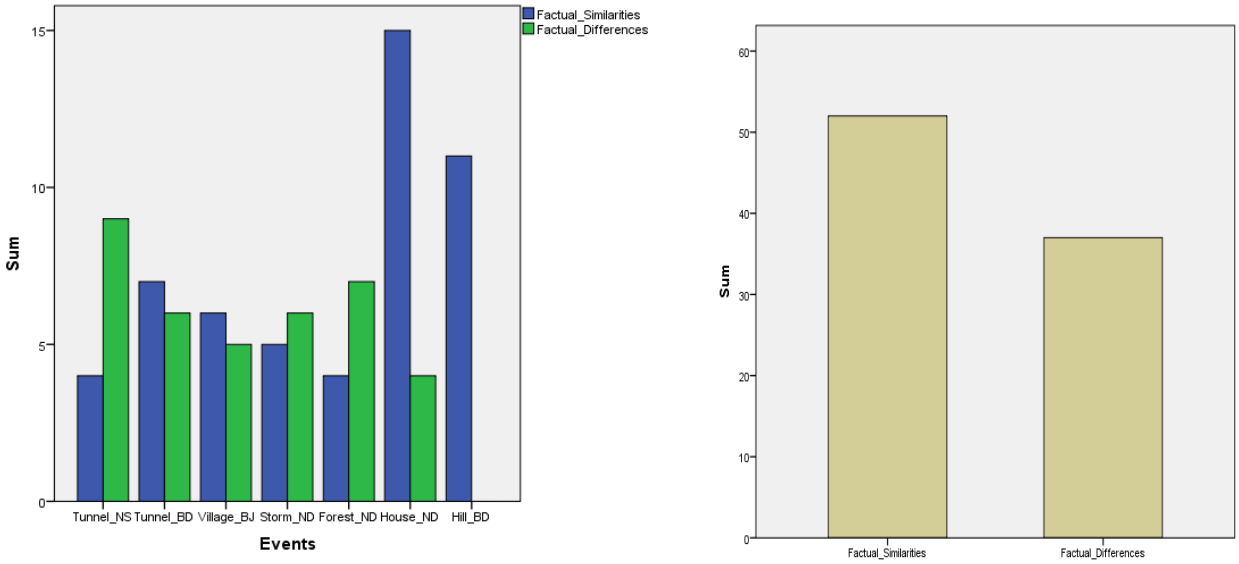

Figure 1a. Number of factual similarities and differences of TM accounts to AM accounts for each event (x-axis).
Figure 1b. Total sum of similarities and differences for factual information.

Differing factual information in TM accounts consisted of: (i) 16 instances of inference-making (e.g. *"They knew there was a possibility of being attacked",* NS, Tunnel), (ii) 10 instances of false knowledge of specific details about the event (e.g. wrong date of the event – NS, Tunnel) and (iii) 10 instances of clear false memories (e.g. *"a bullet hit the driver as his side was on the side of the attack and the bullet pierced through the*

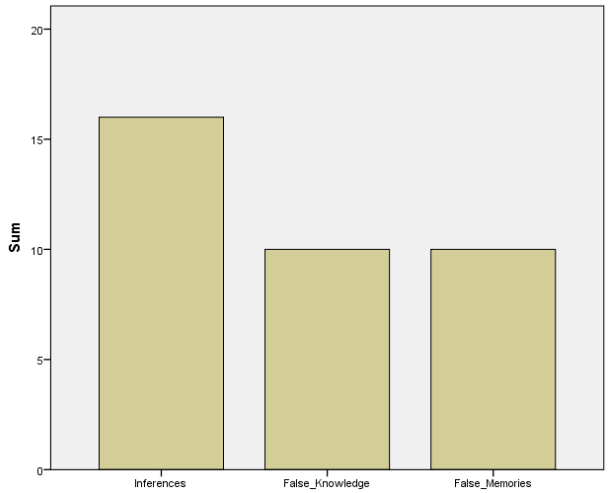

Figure 1c. Sub-categories (inferences, false knowledge, false memories) reflecting differences in factual information in TM accounts.

seat of the car and hit the driver in his buttock", NS, Tunnel – describing an event that her father was involved in but in an entirely separate event).

3.3 Imagery

All TM accounts contained imagery and all contained a greater amount of different than similar images to AM accounts (Figure 2a & 2b). Six instances of similar imagery were based on imagery surrounding actions (Storm, Tunnel (NS), Tunnel (BD), Hill) and a further three instances were based on weather (Storm, Tunnel (NS), Hill) and four on emotionally arousing persons or objects (House, Village).

Dissimilar imagery consisted of: (i) false memories in 4 instances (Forest, Tunnel (BD), Village) - (*e.g. "the man jumped at him from behind a tree"*, ND, Forest), (ii)

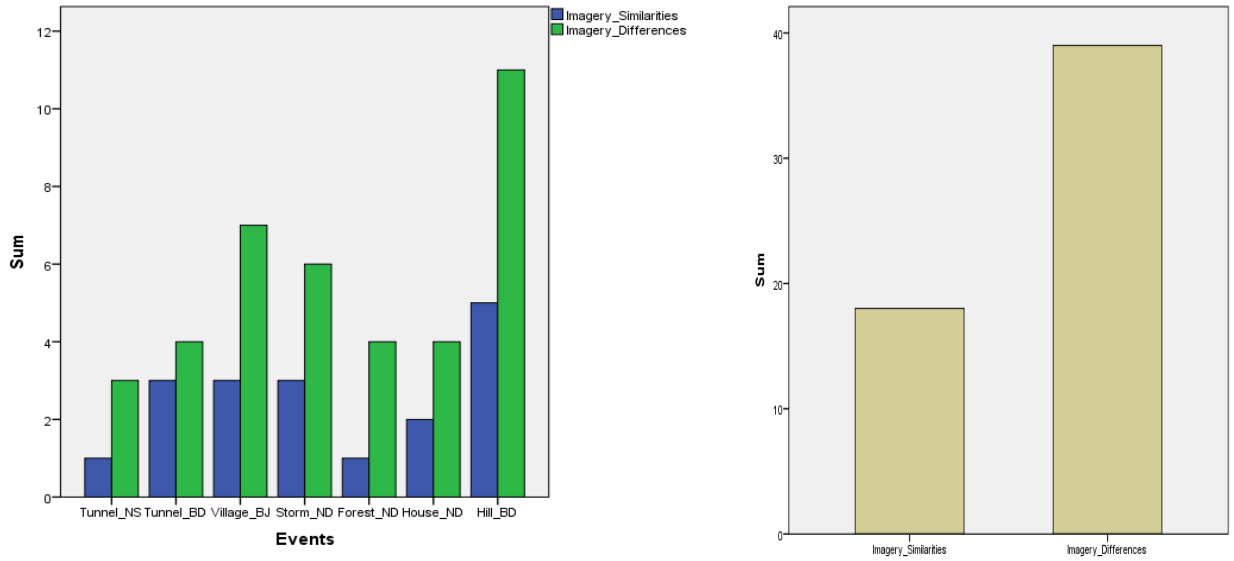

Figure 2a. Number of similarities and differences in imagery of TM accounts to AM accounts for each event (x-axis).
Figure 2b. Total sum of similarities and differences for imagery.

self-relevant information in 2 instances (Village, Hill) – (*e.g. "a grandmother with a coffee grinder in her hands and my mother's face - only a little younger"*, BJ, Village), (iii) general knowledge in 9 instances (Forest, Storm, Village, Hill) – (e.g. *"a hill like any other hill, maybe I used some hill I already know – for me this is a hill I have already*

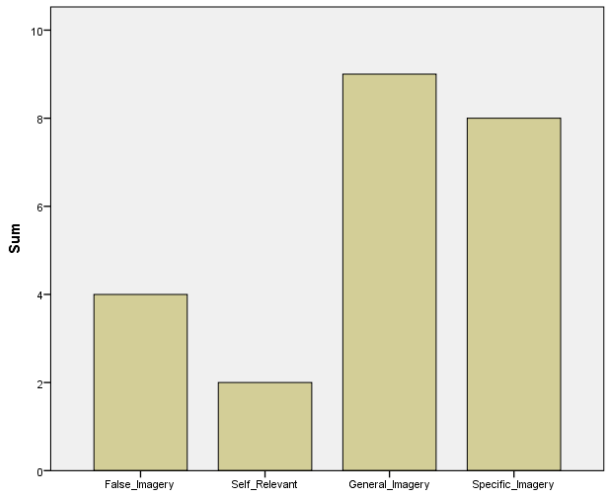

Figure 2c. Sub-categories reflecting differences in imagery in TM accounts (false imagery, self-relevant images, general imagery, specific imagery).

seen somewhere", BD, Hill) and (iv) specific knowledge in 8 instances (Tunnel (NS), Tunnel (BD), Village, Hill, House) – (e.g. *"I see the red golf"*, NS, Tunnel).

3.4 Auditory details

Excluding two events (Village, Storm) which contained no sounds in either AM or TM accounts, all other TM accounts contained auditory information (Figure 3a). Overall, the similarities and differences were approximately equal (Figure 3b). Similarities were noted for battle sounds in 3 events (House, Tunnel, Hill). Differences consisted of miscellaneous sounds in three events (Tunnel (BD), Hill, Forest) reflecting inferences made by TM holders in regards to sounds which might have occurred in the event – (e.g. *"Buzzing of voices"*, ND, Forest).

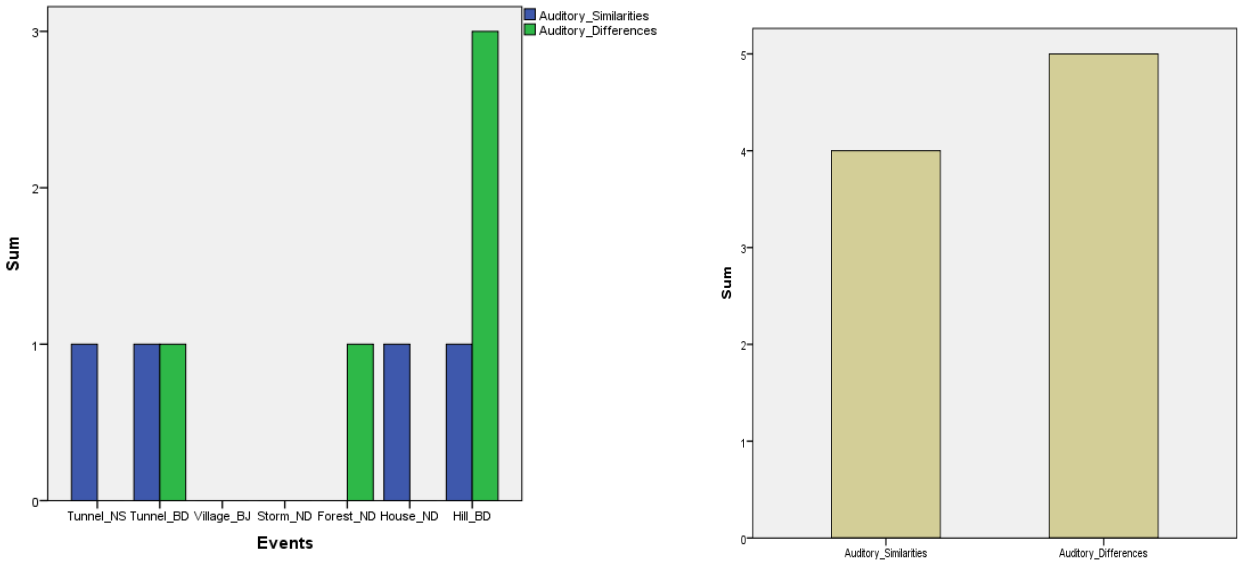

Figure 3a. Number of similarities and differences of auditory details in TM to AM accounts for each event (x-axis).
Figure 3b. Total sum of similarities and differences for auditory details.

3.5 Emotionality

All transmitted memory accounts, excluding the event 'Storm', which contained no reported emotionality in either AM or TM accounts, contained emotionality (Figure 3a). Overall, emotionality differences outweighed the similarities (Figure 3b). A range of similar emotions were reported including fear, sadness, happiness, the feeling of a dilemma, heaviness and the feeling of no control.

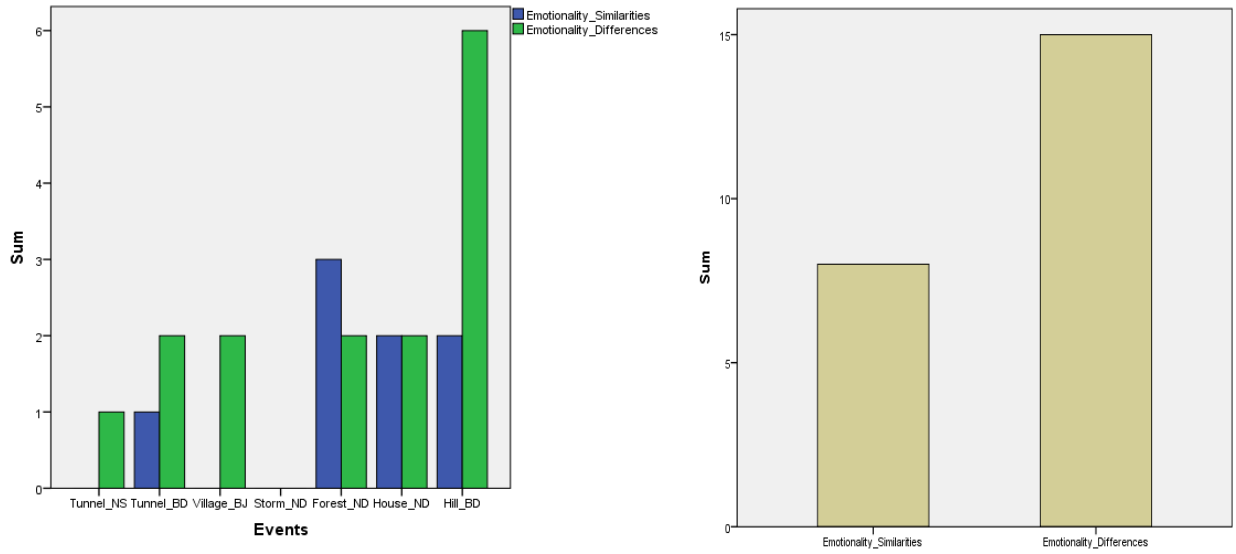

Figure 4a. Number of similarities and differences in emotionality of TM to AM accounts for each event (x-axis).
Figure 4b: Total sum of similarities and differences for the emotionality.

Differences in emotionality were based on (i) self-referential emotions in 7 instances (Hill, Forest, House, Tunnel (BD)) – (*e.g. "but simply the fear in that moment, the biggest fear is to survive the night"*, BD, Hill), (ii) emotions about the AM holder in 3 instances (Tunnel (NS), Hill, Forest) – (*e.g. "I feel that he is not a man that would send you to die for no reason…that's why you trust him…"*, BD, Hill) and (iii) purported emotions of AM holder in a further 4

instances (Village, House, Forest) – (*e.g. "I am feeling sadness and fear. He transmitted these emotions onto me when he told me about the event"*, Village, BJ).

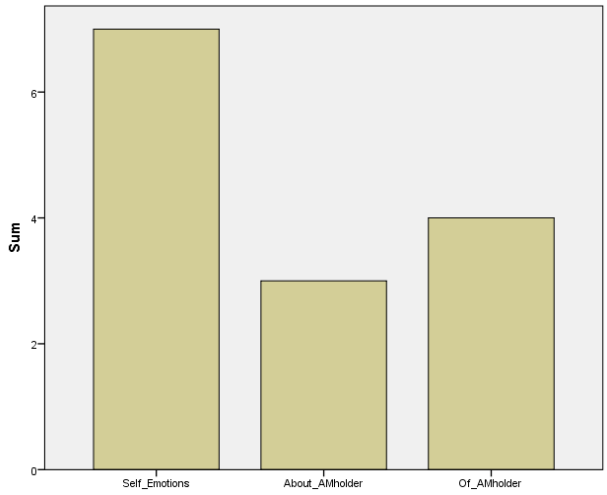

Figure 4c. Sub-categories reflecting differences in emotionality in TM accounts (self-relevant emotions, emotions about the AM holder, assumed emotions of AM holder).

3.6 Bodily Details

All of the transmitted memory accounts (excluding House) contained bodily/kinesthetic details (Figure 5a). Overall, there was a greater amount of differing bodily details and/or enactments than similarities (Figure 5b). Similarities were rather disparate, including 2 very specific bodily experiences – levitation (Storm) and low visibility (Hill) as well as 1 instance of the experience of weather (Tunnel, NS) and 1 similar enactment (Tunnel, BD).

Differences in bodily details were based on (i) 6 instances of self-referential bodily experiences (Village, Hill) – e.g. "I can feel the sadness (points to chest) now", (BJ, Village) & "that high level of adrenaline only starts to affect me when all is finished, then I start to tremble", (BD, Hill) and (ii) 6 instances of general inferences – (e.g. enactment of how AM holder was driving (NS, Tunnel)).

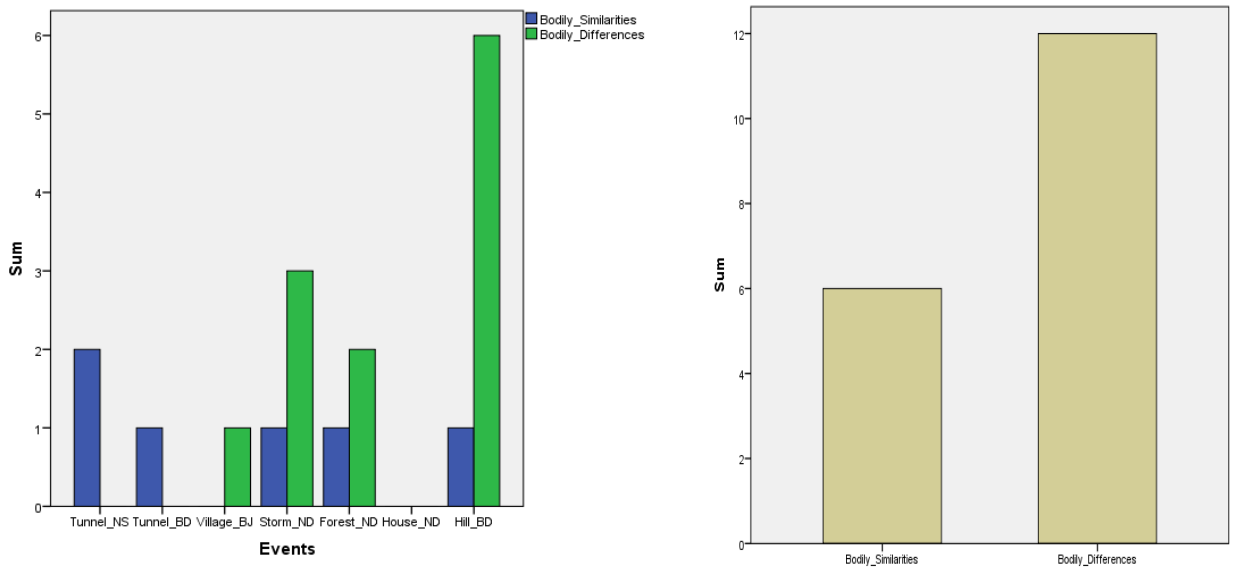

Figure 5a: Number of similarities and differences in bodily/kinesthetic descriptions of TM to AM accounts for each event (x-axis). Figure 5b: Total sum of similarities and differences for bodily details.

3.7 Visual Perspective

In AM accounts, all participants viewed their memories from the field perspective (viewing the unfolding of events as though one is in the event itself). In TM accounts, 3 events (Tunnel (NS), Tunnel (BD), Storm) were viewed from the observer perspective (viewing the unfolding of events as if from the outside), 1 event (Hill) was viewed from both the field and observer

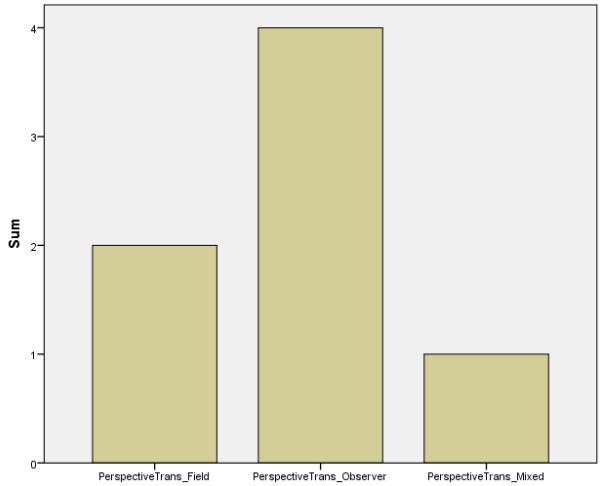

Figure 6. Visual perspectives for TM accounts.

perspectives – (*e.g. "When it is a dramatic situation my focus is right there and I feel as though I am there"*, BD) & *("Now I'm looking at the whole situation, from above, someone who is playing a game, who can see what everyone is doing"*, BD), and 2 more events (Forest, House) were viewed from the field perspective.

3.8 Present Tense

Excluding the event 'Village', all TM accounts contained instances of present tense speech (Figure 7a) – (*e.g. "It is a little dark because it is cloudy and rain is falling"*, ND, House) vs. (*"There were a lot of wounded and dead but they managed to escape",* BD, Hill). Overall, AM accounts contained a greater amount of present tense speech (Figure 7b) than did TM accounts.

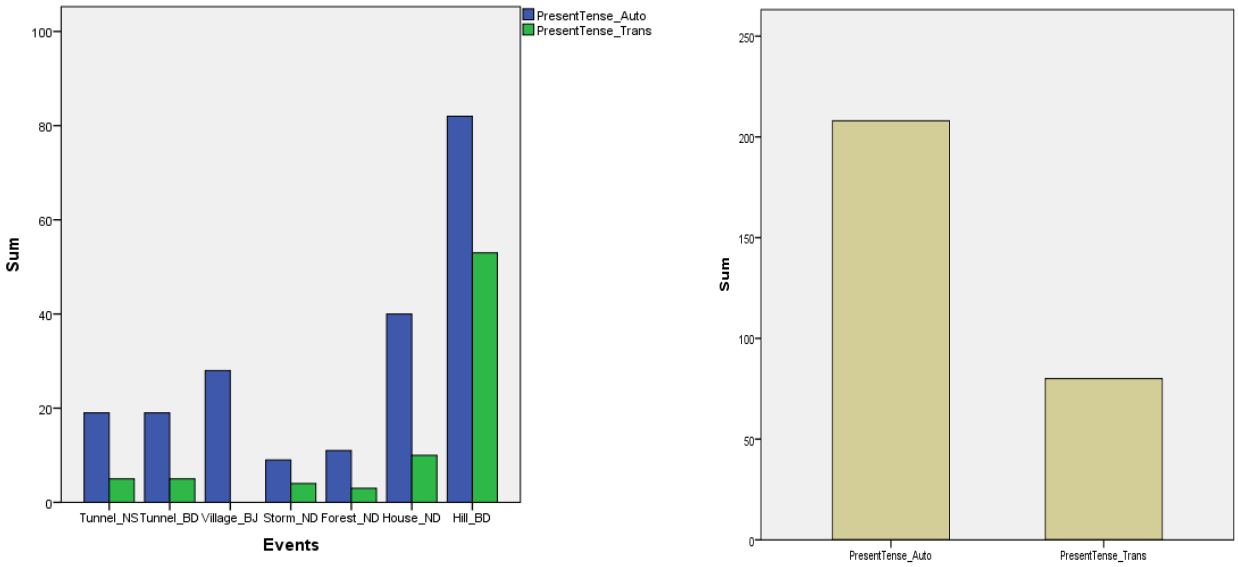

Figure 7a. Number of instances of present tense speech for each event (x-axis). Figure 7b. Total sum of instances of present tense speech in TM and AM accounts.

3.9 Commentary

TM accounts contained more instances of comments about the memory (rather than the event itself) compared to AM accounts (Figure 8). This included comments about the construction of the memory – (*e.g. "Maybe I would not have visualised this scene had he not shown me the road*

where they actually were on", NS, Tunnel) and comments about the experience of the memory – (*e.g. "As if I was in all of it, as if I was the main actor"*, ND, Forest).

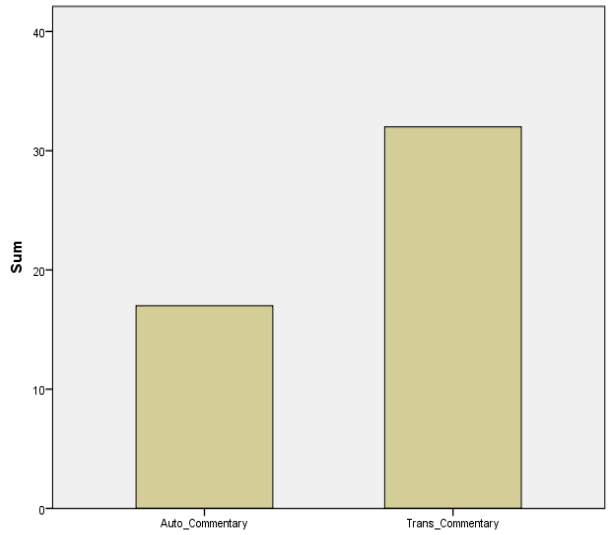

Figure 8. Total number of comments in regards to the memory processes across all events.

3.10 Remembering the narrative telling

Five TM holders stated that they did not remember the moment the narrative was told to them. Only 1 TM holder stated that he remembered the narrative telling for two events (Forest & House) (Figure 9).

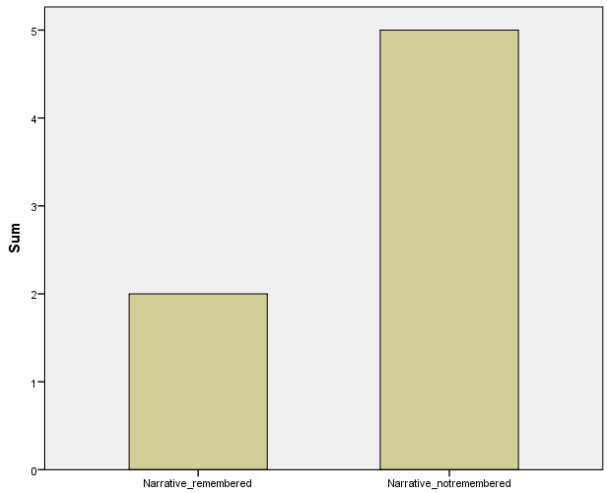

Figure 9. Comparison of TS holders who remembered the telling of the narrative and who did not.

3.11 Overall Similarities and Differences

Figure 10 demonstrates the total number of similarities and differences between the AM and TM accounts, across all the categories and events. Overall, the differences outweighed the similarities.

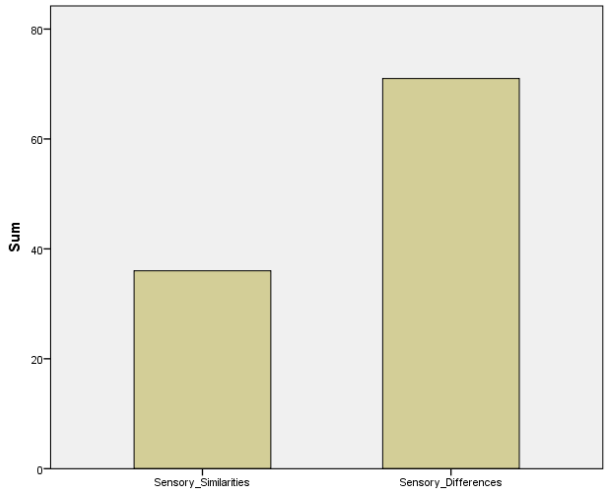

Figure 10. Overall similarities and differences across sensory (imagery, auditory details, emotionality, bodily details) categories and events.

3.12 General vs. self inferencing

The differences (excluding those arising from false memories) in the TM accounts, were further submerged under two broader categories; (i) inference-making which involved filling in information in the event using general knowledge or assumptions or specific knowledge (e.g. knowledge of the location) and (ii) inferences based on self-referencing. Thirty-two differences were submerged under the first broad category including: general imagery, specific imagery, all of the auditory differences, purported emotions of AM holder and event bodily inferences.

Eighteen differences were submerged under the second broad category including: self-relevant imagery, self-emotions, emotions about the AM holder and bodily self-inferences.

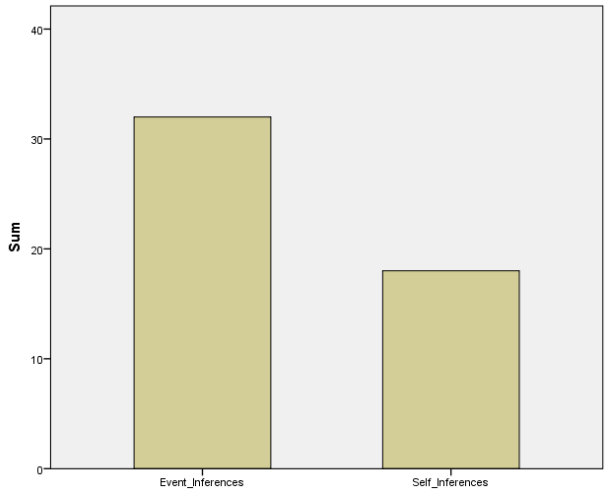

Figure 11. Two broad categories under which the rest of the differences from TM accounts were submerged.

4. Discussion

The present study sought to explore the phenomenological parallels between autobiographical memories and transmitted memories, and the nature of the process underlining these parallels. The findings of the study and their relation to previous research are discussed below.

4.1 'I' instead of 'they'

Both Bloch (1996) and Caprlietto (2003) noted that some interviewees adopted first-person speech when recounting events which they did not themselves witness but which were narrated to them. In the present study, two participants also switched more than once to this personal mode of speech in their accounts of the events 'Hill' and 'House'. In the event 'Hill', B.D. switched to the use of 'I' in an entirely imaginary scene in which he is the main actor – *"After that my adrenaline falls and then I sit somewhere to cool off if the situation allows. The thing is that that*

high level of adrenaline only starts to affect me when everything is finished. Then I start to tremble, then I start to think how I could have differently reacted, why I reacted this way or that way". Similarly, N.D. switches to the use of 'we' instead of 'they' in the event 'House' – *"This neighbour was a little further away, he was keeping guard. Only when we arrived at K. did we realise that he is not there. In that whole situation, in the quickness of it, pulling one person and the other and then we thought either he was killed or he hid somewhere - those were the options."*

It has been argued that this switching to personal language can indicate that the person feels a proximity to the event, which is not unlike the one experienced for lived autobiographical memories (Bloch, 1996). Insofar as this statement is valid, it would suggest that B.D. and N.D. experienced the recounting of the two events which occurred to their close family members similarly to how they might experience a recount of their own lived experience. Indeed, in terms of the phenomenological categories (presented below), these two accounts contained all the elements contained in the autobiographical accounts of the same events. However, this is also true for the rest of the five interviews even though no use of personal speech was noted. One possible explanation may be that B.D. and N.D. who were boys of approximately the same age when the events occurred may have felt more affiliation with the general events of the war and thus identified more with the stories that were told to them. Indeed, both N.D. and B.D. claim to experience themselves as the main actors when recounting the heard events. In attempting to explain his position as the main actor, N.D. states *"I was very much in the know about certain war happenings, I was under the impression that we should defend, maybe that's the point".* Similarly, B.D. states – *"I am experiencing it as though I am a soldier, I am not experiencing it as a third person; I am there and I am really experiencing this and really seeing this."* In contrast, the other transmitted memory holders who were all female (one daughter and two

wives) did not make such statements nor did they switch to the use of personal language, which might be indicative of a lesser ability to identify with the particular events described. In addition, they viewed these memories from the observer perspective, which can be indicative of an individual distancing oneself from the memory (Libby & Eibach, 2002). However, it must also be taken into consideration that this may be due to a gender difference as one study found that females were more prone to experiencing their memories from an observer perspective (Rice & Rubin, 2009).

4.2 Transmitted memories are made of autobiographical elements

Overall, this study confirmed that transmitted memories contained all the phenomenological properties identified as being a part of autobiographical memories.

4.2.1 Imagery

Imagery in both autobiographical and transmitted memory accounts was the most reported sensory property. This is in line with previous research which has identified that imagery is a particularly prominent element associated with a sense of reliving, which is crucial in the recollection of autobiographical memories (Rubin, Schrauf & Greenberg, 2003). There was in general more dissimilar than similar imagery in the transmitted memory accounts compared to the imagery in the autobiographical accounts. Dissimilar imagery was made up of false memories, which consisted of mixing up separate events, mixing up disparate details within the same event and of wrong associations. Two instances of differing images consisted of self-relevant information – for instance, B.J. in 'Village' imposed her mother's face on one of the victims *("a grandmother with a coffee grinder in her hands and my mother's face - only a little younger")*. The other two groups of differing images were based on general knowledge (e.g.

visualization of terrain by B.D. in ‘Hill’) as well as images based on specific knowledge of the location or person (e.g. picturing the house setting in event House by ND).

These results support previous findings that imagery can lead to false memories (Hyman & Pentland, 1995). However, only a small number of images were actually false – the other images were based on conscious acts of imagination that presumably filled gaps in information, which was not communicated at the time of the telling of the narrative or was subsequently lost. For instance, perhaps the woman’s face in ‘Village’ was not described and thus the transmitted memory holder, roused by certain emotions, imposed the face of her mother onto this woman. Similarly, it is likely that the terrain (unless very relevant to the tale) was not described in detail or was not listened to intently and thus, listeners imposed general knowledge of similar terrains as the backdrop of the story – *“a hill like any other hill, maybe I used some hill I already know – for me this is a hill I have already seen somewhere”* (B.D., Hill). This is also supported in that similar imagery was based mainly on action events that were highly dramatic and thus presumably described in more detail and/or listened to with greater attention – *“the other (non-dramatic) events are something I am approximately imagining”* (B.D., Hill). This asserts Bloch’s (1996) statement that individuals do not only rely on the linguistic information provided to them when remembering these events. Rather, these results suggest that they go beyond that information by searching their own memory for general or specific knowledge and by self-referencing.

4.2.2 Auditory details

Auditory details reported in the events for both autobiographical and transmitted accounts were less prevalent than imagery, with two accounts containing no sounds. The differences arising in descriptions of sounds were miscellaneous and appeared to reflect the inferences made by the TM

holders over the possible sounds that could have arisen in a particular scene – *"I can hear a walkie-talkie over which an order is being given, this crackling of the walkie-talkie"*, (BD, Hill).

4.2.3 Emotionality

All transmitted memory accounts contained emotionality, as did the autobiographical accounts (excluding Storm for both accounts). While some similarities were noted, a larger amount of differences were reported. The largest group of differences were based on self-referential information of TM holders – for instance, B.D. brought in his own fear of the night to the recollection of the event 'Hill'– *"that is in me perhaps the biggest fear, which I am transferring onto the situation because for me, the hardest thing would be waiting for the night to be over"*. Another difference reflected the transmitted memory holder's emotions toward the autobiographical memory holder – *"the feeling that they were in such danger, yet survived"* (Tunnel, NS). Hence, the transmitted memory holder had emotions that were not included within the situation itself but resulted from their own reflections about the event. The third group of differences arose from purported emotions of AM holders, which TM holders' assumed they had – *"I am feeling sadness and fear. He transmitted these emotions onto me when he told me about the event"*, (B.J., Village) or *"I am feeling their relief"*, (ND, House). Interestingly however, these emotions were not reported in the AM accounts, suggesting that they were based on TM holder's own assumptions about how they might have felt during the event or how they were feeling in the moment of reliving the event.

In general, the differences in emotionality of the TM accounts compared to the AM accounts, suggest both inference-making (assuming that certain emotions were felt by the AM holder) and self-referencing (bringing in one's own emotions but not claiming that the AM holder also felt them). These results are consistent with both Caprlietto's (2003) assertion that memory

is passed down as emotion, in that some transmitted memories do entail the same emotional elements as reported in the autobiographical accounts and also with Sorabji's (2006) account that the memories, along with the emotions are actively transformed by the recipient of the narrative – as demonstrated by BD's fear of the night.

4.2.4 Bodily/kinesthetic details

Bodily or kinesthetic details were reported and/or noted in all transmitted memory accounts as well as in the autobiographical accounts. There were more differences than similarities in the TM accounts. Differences arose from self-referenced enactments (e.g. BD clapping his hands upon imagining himself in a certain scenario in the event 'Hill') or self-referenced bodily sensations – *"It's raining, it's muddy, I am wet",* (BD, Hill). The second group of differences arose from general inferences made by TM holders about the event – *"they have gathered, maybe they are talking but you don't hear or see, only a sort of buzzing"*, (Forest, ND).

4.2.5 Visual perspectives

All the autobiographical memory holders stated that they viewed the memory from a field perspective. That is, they viewed the unfolding of events as though they were within the event. In contrast, only ND (House & Forest) viewed the memories from a field perspective and BD (Hill) viewed it from a mixed perspective. Interestingly, some evidence has linked field perspectives to more sensory and emotional reliving (Bernsten & Rubin, 2006) which would support the notion that BD (Hill) and ND (House) who also slipped into the use of personal language in certain instances during the retelling of their TMs identified more closely with the events they were recalling.

4.2.6 Speech, facts and imagination

The use of present tense speech was observed in both AM and TM accounts. This is important because the use of present tense speech can be indicative of an embodied utterance position (Petitmengin, 2006). An embodied utterance position means that the person is in contact with the experience and is indicated by the use of 'I', present tense, and the concrete and detailed character of the vocabulary used. These are signs according to Petitmengin that the person is in the process of describing a particular situation rather than reciting theoretical knowledge. Although the use of present tense speech occurred more frequently in AM accounts, it nonetheless indicates that individuals recalling TMs at least in certain instances of the retelling adopted an embodied utterance position. However, TM accounts also contained more commentary on the construction of the memory or the experience of the memory, which suggests that although they were able to delve into the reliving of the memory, they were also aware of the process which allowed them to experience this memory in a certain way. These results give support to the reality-monitoring model proposed by Johnson and Raye (1988) which states that as opposed to externally generated memories, internally generated memories will have more information pertaining to how the memory was imagined/created. Transmitted memories may be seen as the bridge between true and false autobiographical memories. They contain all the phenomenological properties of autobiographical memories, at the same time not losing contact with the process of creation, as occurs in false memories.

In contrast to the general pattern found in the sensory categories, there were more similarities than differences reported for the factual information in the TM accounts compared to the AM accounts. Excluding a few instances of clear false memories, most differences were based on inference making statements – for example, *"they knew there was a possibility of being attacked"*, (NS, Tunnel) whereas no such statement was made in the autobiographical account. The other category of differing factual information was based on specific facts such as dates of

events, locations or estimations of certain distances. Thus, because most of the factual information was correct, it suggests that the differences found in the sensory details categories were due to imaginative processes rather than as a result of incorrect information.

Lastly, TM holders were asked whether they remember the telling of the narrative; that is, the moment it was told to them, and the circumstances surrounding that moment. Only ND for both 'House' and 'Forest' stated that he remembered the telling of the events. Nonetheless, when reliving the memory, he did not refer to the phenomenological details of his actual lived memory (himself hearing the narrative) but rather, the memory of the imagined unfolding of events. This suggests that emotionally-charged narratives have the potential to trigger strong imaginative processes that can cause the external environment to be less prominent and therefore more easily forgotten. This is further supported in that several participants stated that the scenes they formed originally are the scenes that they are reliving now *("My first impressions of the event is the way I am now still imagining it." BD, Tunnel)*, suggesting that these imaginative processes are triggered by the initial telling of the narrative and in time, may overwrite the memory of the moment they heard the narrative. This may also be suggestive of the TM memory becoming more like an AM memory, in that the internal processes triggered by highly charged narratives usurp the external environment from which the story came from, thus making it more 'one's own'.

4.3 Reliability and Validity

While the personal relationships between the interviewer and the interviewees may be considered an obstruction to objectivity, the specific population needed for these interviews made it difficult to secure participants not known to the interviewer. The intention of the interviewer was to begin the study by interviewing family members who were known to have memories from the war and to acquire further participants via the chain-sampling method (Goodman, 1961). However, in the

present case, this only led to three participants who were of a more distanced relation. Although these three participants were not very well acquainted with the interviewer, there was nonetheless a failure to gain more objective participants. In a few instances, when the interviewer did connect with potential unknown participants, they were unable to confirm the participation of the elder family member, who in most cases had an unwillingness to talk about these specific past events. This brings about the question of the motives of the participants who did partake in the interviews. It is possible that these participants engaged in the interviews for the benefit of the interviewer, whom they knew and thus their responses should be treated with caution. However, it must be noted that the participants were unaware of any particular goal of the interviewer that could have shaped their responses and their voluntary involvement in the project was emphasized. In addition to this, it must also be recognized that the fact that the participants knew the interviewer may have also contributed to a feeling of trust and consequently more openness in answering the questions. Related to this, the ecological validity, which typically refers to the generalizability of results to real-life settings (Schmuckler, 2001) of this study is relatively high - participants were in a familiar environment, in their own homes, discussing events with a person they were familiar and comfortable with.

Another issue of the present study was related to the subjectivity of analysis; in particular, the lack of rigorous inter-rater reliability. Inter-rater reliability or multiple coding, as it is referred to in qualitative research involves the cross-checking of the coded categories and interpretation of data. For the present study it was difficult to secure independent coders due both to the length of the interviews and because they were in the Serbo-Croatian language, which would necessitate either finding a rater fluent in the language or translating all the interviews. Hence, for this study, acquiring experienced raters, fluent in the language and being able to invest some length of time on the transcripts proved difficult. Indeed, it has been argued that multiple coding of entire sets is

both costly and effortful (Barbour, 2001) and that although in one study, six experienced raters showed high agreement in their coding, they nonetheless had differing interpretations of the coded themes (Armstrong, Gosling, Weinman & Marteau, 1997). In addition, Barbour (2001) states that it may be useful enough for another person to 'cast an eye' over certain sections of the data and to check the emerging categories. This was achieved in the present study through supervised overseeing of the general categories created and the data assigned to them.

Two additional weaknesses of the study must be mentioned. Firstly, including autobiographical interviews of the transmitted memory holders might have been useful in developing a base of reference for how they experience memories in general. Indeed, personality differences in the experience of autobiographical memories have been noted (D'Argembeau & Linden, 2006) and consequently, it could be the case that these differences extend to the experience of transmitted memories. Secondly, while the transmitted memories entailed all the aspects of autobiographical memories, no ratings of the intensity of these phenomenological qualities was included in this study. The reason was that the one study which did compare transmitted memories and autobiographical memories with the finding that intensity of these qualities was the only difference between the two memory types (Pillemer, Steiner, Kuwabara, Kirkegaard-Thomsen & Svob, 2015), was a recently published study found some months after the completion of the interviews.

4.6 Summary and future directions

Taking into account the limitations aforementioned, the present study suggests that there are phenomenological similarities between autobiographical and transmitted memories. The transmitted memory accounts entailed sensory details such as imagery, audition, emotionality and bodily sensations/enactments, as did the autobiographical memory accounts. Further, the detailed

character of the vocabulary used to describe the event along with instances of present tense speech, suggests that transmitted memory accounts were imbued with a sense of embodied reliving, which is an essential feature of autobiographical memories. In addition to this, the present study provided some insight into the process of how transmitted memories come to resemble autobiographical memories. Namely, by examining the content of the phenomenological properties of transmitted memories, it was shown that individuals draw inferences about the event based on general or specific knowledge and by self-referencing, in order to go beyond merely the linguistic account of the event. In particular, emotionality and bodily details had the highest amount of self-referencing, which suggests that it is perhaps these two phenomenological properties that largely contribute to these memories becoming more 'one's own'.

The present study also shed some light onto some of the differences between autobiographical and transmitted memories. Firstly, there was in general more details in the factual information provided in the autobiographical accounts and additionally in the imagery provided. Secondly, autobiographical memories contained more instances of present tense speech while transmitted memories contained more commentary about the construction of the memory. Thirdly, all autobiographical memories were viewed from a field perspective while transmitted memories included more observer perspectives. However, autobiographical memories can also be viewed from both perspectives (Rice & Rubin, 2009) and it is not clear whether in this study the result was due to gender differences.

Overall, while transmitted memories may be experienced similarly to autobiographical memories, the extent of this may depend on how closely the recipient of a narrative identifies with the story and/or the story teller. When identification is higher, as seems to have been the

case with BD and ND, the sense of proximity or reliving of the narrative also appears to be more intense, illustrated by the fact that in both accounts, field perspectives were utilized along with instances of personal language. Future studies could explore whether the phenomenological make-up of transmitted memories alters in relation to the level of identification of the recipient of the story to the story teller and/or narrative. More importantly, future studies could explore the functional significance of transmitted memories, particularly in light of findings suggesting that autobiographical memories have an important role in establishing a person's narrative sense of self (Wang & Brockmeier, 2002). If transmitted memories are phenomenologically similar, is it possible that they too have similar functional significance to autobiographical memories? To what extent might they also shape a person's sense of self, or their attitudes, goals and behaviour? These questions are not only relevant for the individual but can also be relevant for the wider social and political climate.

References

Addis, D.R., Wong, A.T., & Schacter, D.L. (2007). Remembering the past and imagining the future: Common and distinct neural substrates during event construction and elaboration. *Neuropsychologia, 45*, 1363 – 1377.

Armstrong D, Gosling A, Weinman J, Marteau T. (1997). The place of inter-rater reliability in qualitative research: an empirical study. *Sociology, 31*, 597–606.

Atance, C.M., & O'Neill, D.K. (2001). Episodic Future Thinking, as we have defined it, refers to an ability to project the self forward in time to pre-experience an event. *Trends in Cognitive Sciences, 5*, 533 – 539).

Baddeley, A.D. (1992).*What is autobiographical memory?* In M.A.Conway, D. C. Rubin, H. Spinnler, & W. A. Wagenaar (Eds.), *Theoretical perspectives on autobiographicalmemory*. Dordrecht: Kluwer.

Barbour, R.S. (2001). Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? *British Medical Journal, 322*, 1115 – 1117.

Berntsen, D., & Rubin, D.C. (2006). Emotion and vantage point in autobiographical. *Cognition and Emotion, 20*, 1193-1215.

Blakemore, S.J., & Decety, J. (2001). From the perception of action to the understanding of intention. *Nature Reviews Neuroscience, 2*, 561 – 567.

Bloch, M. (1996). *Autobiographical memory and the historical memory of the more distant past.* Enquete, 2, 59 – 78 (reprinted in Bloch, M. 1998. *How we think they think.* Boulder, Colo: Westview Press).

Bower, G.H. (1970). Imagery as a relational organizer in associative learning. *Journal of Verbal Learning and Verbal Behaviour, 9*, 529 - 533.

Buckner, R.L., & Carroll, D.C. (2006). Self-projection and the brain. *Trends in Cognitive Science, 11*, 49 – 57.

Caprlietto, E. (2003). Long-term memory of extreme events: from autobiography to history. *Journal of the Royal Anthropological Institute, 9*, 241 – 260.

D'Argembeau, A., & Linden, M. (2006). Individual differences in the phenomenology of mental time travel: The effect of vivid visual imagery and emotion regulation strategies. *Consciousness and Cognition, 15*, 342 – 350.

Etherington, K. (2007). Working with Traumatic Stories: From Transcriber to Witness. *International Journal of Social Research Methodology, 10*, 85 – 97.

Flick, U. (2009). *An Introduction to Qualitative Reseaech Fourth Edition.* London, UK: SAGE Publications Ltd.

Goff, L.M., & Roediger III, H.L. (1998). Imagination inflation for action events: Repeated imaginings lead to illusory recollections. *Memory & Cognition, 26*, 20 – 33.

Gonsalves, B., & Paller, K.A. (2000). Neural events that underlie remembering something that never happened. *Nature Neuroscience, 3*, 1316 – 1321.

Gonsalves, B., Reber, P.J., Gitelman, D.R., Parrish, T.B., Mesulam, M., & Paller, K.A. (2004). Neural Evidence That Vivid Imagining Can Lead to False Remembering. *Psychological Science, 15*, 655 – 660.

Goodman, L.A. (1961). "Snowball sampling". *Annals of Mathematical Statistics, 32*, 148–170.

Hassabis, D., & Maguire, E.A. (2007). Deconstructing episodic memory with construction. *Trends in Cognitive Sciences, 11*, 299 – 306.

Heaps, C.M., & Nash, M. (2001). Comparing Recollective Experience in True and False Autobiographical Memories. *Journal of Experimental Psychology, 27*, 920 – 930.

Hyman, I.E., & Pentland, J. (1996). The Role of Mental Imagery in the Creation of False Childhood Memories. *Journal of Memory and Language, 35*, 101–117

Illife, L., & Steed, L.G. (2000). Exploring the Counselor's Experience of Working with Perpetrators and Survivors of Domestic Violence. *Journal of Interpersonal Violence, 15*, 393 – 412.

Johnson, M.K., Foley, M.A., Suengas, A.G., & Raye, C.L. (1988). Phenomenological characteristics of memories for perceived and imagined autobiographical events. *Journal of Experimental Psychology: General, 117*, 371 – 376.

Johnson, M.K., & Raye, C.L. (1981). Reality Monitoring. *Psychological Review, 88*, 67 – 85.

LeCompte, M.D., & Gooetz, J.P. (1982). Problems of Reliability and Validity in Ethnographic Research. *Review of educational Research, 52*, 31 – 60.

Lampinen, J.M., Odegard, T.N., & Bullington, J.L. (2003). Qualities of Memories for Performed and Imagined Actions. *Applied Cognitive Psychology, 17*, 881 – 893.

Larsen, S.F., & Plunkett, K. (1987). Remembering experienced and reported events. *Applied Cognitive Psychology, 1*, 15 – 26.

Lemognea, C., Piolinoc, P., Friszerb, S., Claretb, A., Girault, N., Jouventa, R., Allilairea, J-F., Fossatia, P. (2006). Episodic autobiographical memory in depression: Specificity,

autonoetic consciousness, and self-perspective. *Consciousness and Cognition, 15,* 258 – 268.

Lewinsohn, P.M., Danaher, B.G., & Kikel, S. (1977). Visual imagery as a mnemonic aid for brain-injured persons. *Journal of Consulting and Clinical Psychology, 45,* 717 - 723.

Libby, L. K., & Eibach, R. P. (2002). Looking back in time: Self-concept change affects visual perspective in autobiographical memory. *Journal of Personality and Social Psychology, 82,* 167-179.

Loftus, E.F. & Pickrell, J.E. (1995). The Formation of False Memories. *Psychiatric Annals, 25,* 720 – 725.

Marks, D.F. (1973). Visual Imagery differences in the recall of pictures. *British Journal of Psychology, 64,* 17 - 24.

Petitmengin, C. (2006). Describing one's subjective experience in the second person: An interview method for the science of consciousness. *Phenomenology Cognitive Science, 5,* 229 – 269.

Pillemar, D.B., Steiner, K.L., Kuwabara, K.J., Kirkegaard- Thomsen, D., & Svob, C. (2015). Vicarious Memories. *Consciousness and Cognition, 36,* 233 – 245.

Premack, D. G.; Woodruff, G. (1978). "Does the chimpanzee have a theory of mind"? *Behavioral and Brain Sciences, 4,* 515–526

Pressely, G.M. (1976). Mental Imagery helps eight-year olds remember what they read. *Journal of Educational Psychology, 68,* 355 - 359.

Rice, H.J. & Rubin, D.C. (2009). I can see it both ways: First and third-person visual perspectives at retrieval. *Consciousness and Cognition, 18*, 877 – 890.

Rubin, D.C., Schrauf, R.W., & Greenber, D.L. (2003). Belief and recollection of autobiographical memories. *Memory & Cognition, 31*, 887 – 901.

Rubin, D.C., & Umanath, S. (2015). Event Memory: A Theory of Memory for Laboratory, Autobiographical, and Fictional Events. *Psychological Review, 122*, 1 – 23.

Schauben, L.J., & Frazier, P.A. (1995). Vicarious trauma: The effects on female counselors of working with sexual violence survivors. *Psychology of Women Quarterly, 19*, 49 – 64.

Schmuckler, M.A. (2001). What is ecological validity? A dimensional analysis. *Infancy, 2*, 419 – 436.

Sorabji, C. (2006). Managing memories in post war Sarajevo: individuals, bad memories, and new wars. *Journal of Royal Anthropological Institute, 12*, 1 – 18.

Spreng, R.N., Mar, R.A., & Kim, A.S.N. (2008). The Common Neural Basis of Autobiographical Memory, Prospection, Navigation, Theory of Mind, and the Default Mode: A Quantitative Meta-analysis. *Journal of Cognitive Neuroscience, 21*, 489 – 510.

Suengas, A.G., & Johnson, M.K. (1988). Qualitative Effects of Rehearsal on Memories for Perceived and Imagined Complex Events. *Journal of Experimental Psychology, 117*, 377 – 389.

Sutin, A.R., & Robins, R.w. (2007). Phenomenology of autobiographical memories: The Memory Experiences Questionnaire. *Memory, 15*, 390 – 411.

Talarico, J.M., LaBar, K.S., & Rubin, D.C. (2004). Emotional intensity predicts autobiographical memory experience. *Memory and Cognition, 32*, 1118-1132.

Tulving, E. (1972). *Organization of Memory*. London, Academic.

Vargha-Khadem, F., Gadian, D.G., Watkins, K.E., Connelly, A., Van Paesschen, W., & Mishkin, M (1997). Differential Effects of Early Hippocampal Pathology on Episodic and Semantic Memory. *Science, 277*, 376 - 380).

Wang, Q., & Brockmeier, J. (2002). Autobiographical Remembering as Cultural Practice: Understanding the Interplay between Memory, Self and Culture. *Culture and Psychology, 8*, 45 – 64.

Williams, H. L., Conway, M. A., & Cohen, G. (2008). *Autobiographical memory*. In G. Cohen & M. A. Conway (Eds.), *Memory in the Real World*. Hove, UK: Psychology Press.

Appendix

		Event Tunnel	
Comparative Categories	**Autobiographical Memory (LD)**	**Transmitted Memories (Similarities)**	**Transmitted Memories (Differences)**
Factual Information			
	direction V		NS: direction S &BD: direction U (FK*2)
	driver friend	NS & BD: driver	
	visiting positions	NS: visiting location	
			NS: Bosnian army on surrounding hills; war happenings, shootings heard in city; knew there was a possibility of being attacked (I*3)
	ambush	NS & BD: Bosnian army shooting at car	
	attack from my side		NS: attack from driver's side (I)
	bullets hitting concrete wall the whole length	NS & BD: bullets hitting concrete wall	
	300 meters no shelter		NS & BD: 500 meters (FK*2)
	driver scared		
	told him to give gas		NS: told him to lower his head (I)
	pushed his head down	BD: pushed his head down	NS: both lowered heads (I)
	with left hand drove	BD: operated with steering wheel	
	told him not to be scared, nothing will happen	BD: told him not to be scared, nothing will happen	
	tyres ripped, 27 bullets in doors and behind, but not windows	BD: did not hit windows	BD: few bullets hit car, did not hit in the door (I)
	Uniform ripped by bullet		
	car motor died at first shelter; large rock and curve		NS & BD: shelter tunnel (FM*2)
	No one wounded		NS: driver wounded (FM)
	V. army intervened		
	driver asked how I knew		
Time perspective	16.6.1993, Sunday, 11		NS: 94 (spring or summer), afternoon (FK) BD: 94, spring, morning (FK)
Imagery			
	Sunny	NS: Sunny	
			NS & BD: red golf (SK*2)
			BD: terrain (SK)
	driver panicked	BD: driver panicked	
	lowers driver's head	BD: lowers driver's head	
			NS & BD: laid low
	hand on wheel	BD: hand on wheel	
			NS: checking
	curve and rock		BD: tunnel (FM)
Auditory			
	sound of bullets	NS & BD: sound of bullets	
	loud voice (driver)		BD: loud, strong voice

Emotionality			BD: fear, unpleasant feeling (SR)
	feeling that nothing will happen		
	fear of reaching shelter		
	happiness	BD: happiness	
Bodily/ Kinesthetic			
	warmth	NS: hot day	
	hand gesture lowering head	BD: hand gesture lowering head	
		NS: hand holding imaginary steering wheel	
Visual Perspective			
	Field		NS & BD: observer
Commentary			
	LD: no emotions		
	LD: observer		
			NS: cannot see faces
			NS & BD: knowledge of location
			NS & BD: knowledge of car
			NS & BD: same images
Memory for the telling of the narrative?			NS & BD: No

Table 1. Categorization of the event Tunnel for both NS and BD.

		The Event: Village	
Comparative Categories	**Autobiographical Memory**	**Transmitted Memory (Similarities)**	**Transmitted Memory (Differences)**
Factual Information			
	Bosnians attacked Serb village	Bosnians attacked Serb village	
	arrived at village at night		arrived around 10, 11 in the morning (FK)
	had to wait to connect to other people		first heard about it, saw the smoke, then arrived (I)
	people explained the situation	7, 8 people	
	house and barn burning		
	at dawn, went out to investigate		
	visited first house with burning barn		
	an older man in dung		
	waited for him while he was putting the sheep away		
	wife of the man killed by rifle fire		
	second hosue, window broken		
	on the couch a man		
	went inside house for a coffee		
	an explosive was thrown inside		
	owner of house sitting by the table		
	woman lying on back holding coffee grinder		grandmother with coffee grinder (FM)
	next house burnt down completely	some houses were burnt	
	the ownder by the gate, shooting back at them		man tried to run away, wire prevented him (I)
	killed by rifle fire		
	near the house, a boy, 10 years	boy in grass, 10 years	
	left hand in ash, burnt	some people burnt, parts of skin	
	moved him out of the ash		
	mother on her hip		
	udnerneath grandmother another small girl		
	waited until the killed were collected		
Time Perspect	1st August, 92, 9 p.m.	92 or 93	July, 7 a.m. (FK)
Imagery			
	The boy: lying on back; burnt hand; fearful face	The boy in grass	flowers; rosy face
	old house burnt	some houses and people burnt	
	old man at gate; legs crossed; bullet in hand		man's back; wire
	mother lying on hip		
	grandmother by gate		
	bench and plum tree		
	rifle leaning on table		
	three glasses of schnapps		
	door entrance		
	blue travel bag		
	broken window		
	man on couch		
	woman with coffee-grinder; skirt, jumper	coffee-grinder; black skirt; by the kitchen door	grandmother with coffee-grinder (FM), mother's face (SR); white shirt
	man at table		

	small room, one couch		
	old man in dung; wound; stick in hand		
	two barns; one burnt		
			small village house; pathway (G)
			three men (SK); military car
			M. in uniform (SK); rifle in hand
			rooster
Auditory			
Emotionality			
			scary (Of_AM)
			sad (Of_AM)
Bodily/Kinesthetic			
	a little cool but pleasant		sadness in chest (points to chest) (SR)
Visual Perspective			
	Field		Observer
Commentary			
	cannot remember all details of face	cannot see his face	
	nowness		
	not re-living emotions		re-living emotions
	special date		
	dramatic events remembered		
	film watching	film watching	
			same images
Memory for the telling of the narrative?			No

Table 2. Categorization of event Village.

		Event: Storm	
Comparative Categories	**Autobiographical Memory (AD)**	**Transmitted Memory (Similarities)**	**Transmitted Memoy (Differences)**
Factual Information			
	guarding		
	7, 8 people in trench		
	cloudy		
	lightening strike 50-100 meters away		
	in front of trench		everything happened inside trench (I)
	wire telephone, arm next to it, possible	right hand next to telephone	
	if it had been the left arm, would not have survived	if left arm might not have survived	
	lightening struck, levitating	levitation	heaviness (I)
	in front of door, fell half outside, half inside		
	fireplace, did not hurt myself anywhere		
	hands, legs immovable, could not speak	could not move	
	taken out of trench		trench undug, just had to throw soil over them (I)
	buried in soil	buried them	
	coming to consciousness		
	stayed buried 10-15 minutes		
	stood up, ambulance arrived		
			all felt the lightening (I)
			the less affected helping others (I)
	7, 8 people to hospital, check-up		
	sent home for 10 days break		
Time perspective	94, afternoon		
Imagery			
	cloudy	cloudy	dark, rain (G)
			pine forest, bushes (G) trench half a meter
	telephone		antenna
	fireplace		pile of wood
	being buried	throw earth less impacted helping	inside trench
	faces undefined, scared, changed		
Auditory			
Emotionality			
Bodily/ Kinesthetic			
	levitation	levitation	
	consciousness, sensations in arms, legs, pain on back	immobile	
			foggy vision (G)
			no sounds (G)
	enactment: shows how arm was placed next to telephone		
Visual Perspective			
	Field		Observer

Commentary			
	Re-living		not re-living
			feeling rather than seeing (levitation)
			imagination and knowledge
Memory of the telling of the narrative?			No

Table 3. Categorization of event Storm.

		The Event: Forest	
Comparative Categories	**Autobiographical Memory (AD)**	**Transmitted Memory (Similarities)**	**Transmitted Memory (Differences)**
Factual Information			
	morning mission	mission	
	from left side gun shots		
	two people attacked me	attacked by two Bosnians	
	walking 50 m apart		walking 5 - 10 meters apart (FK)
	from right side M shoots and wounds one	friend managed to shoot this one	
			walking in between trees (I)
	through a creek and behind our backs		jumped on him from behind a tree (FM
	grabbed me by the belt		
	that man ran away		managed to throw him off (FM)
	shot after him	shot after him	
	the wounded man crawling toward gun		a second man jumped from another tree (FM)
	abandoned the mission		continued, finished the mission (I)
	returned to school, asked commander for leave		
Time Perspective	92, august, morning		autumn or spring, twilight (FK)
Imagery			setting/weather (G)
	grabbing of belt		attacked from behind tree (FM)
	holding tree		
	wounded man		
	quick like deer		
			shoved off (FM)
			man shot at
	undefined faces	undefined faces	
Auditory			
	sound of gun shots		
			buzzing of voices
Emotionality			
	trauma		
	heavienss	heaviness	
	fear		
			shock (of_AM)
			wish for warmth of home (SR)
			father a good man (About_AM)
Bodily/Kinesthetic			
	trembling hands		
	enactment: chest		
			enactment: throw off (G)
			visibility and sound muted (G)
Visual Perspective	Field	Field	
Commentary			
	re-living situation	re-living; father's shoes; main actor	
	re-living emotions	big impact; own shock	
			knowledge of forest
			own experience
			scene not dramatic so not important

Memory for the telling of the narrative?			Yes

Table 4. Categorization of event Forest.

		The Event: House	
Comparative Categories	**Autobiographical Memory (ND)**	**Transmitted Memory (Similarities)**	**Transmitted Memory (Differences)**
Factual information			
	before dawn, 5 a.m.	before dawn	
	asked to make coffee	survived night, further plans	
	grandmother warning		
	bathroom window, man behind tree		from the hill shooting (I)
	shots fired	bombs thrown, then bullets fired	
	bullet past head		
	from hallway into room		
	A lying, rifles next to him	A. sleeping	
	told them to get up	told him to get up	
	to put frame on rifle, frame in hand	to put frame on rifle, frame already there	
		awoke and became aware	
	threw munition out of window		
	they started throwing bombs on roof		
	attacking the terrace, where the entrance is		
	grandmother took her shoes		
	grandmother informs that M. is wounded		
	jumped out of a window, not so high	jumped out of window, not so high	
	no A.		
	A. comes out with a bag		
	behind house, behind pear trees		
	took a hill above our house		
	when they saw us, started shooting	didn't realise they had left straight away	
	came to K.	arrived at K's house	
	grandfather's house already burning		
	a small army forms	people gathered there	
			only then realised that M. is wounded (
	came back for M around 10 a.m.		he was saved the day after (I)
	wounded through thigh		
	rolled down until pear tree and hid	rolled down and hid behind a tree	
	ripped out grass because of pain		
	day after, house burnt, robbed	saw house burning	
	kandil taken, squashed	kandil squashed	
Time Perspective	17 Juni, 92, 5 a.m.	Beginning of war, spring, 5 a.m.	
Imagery			
	familiar person behind tree		
	bullet past head		bullets passing through doors, windows
	men jump up, boots		
	A. rifle, frame		
			moving through house; house setting (
	grandmother, shoes		
	window		
			escape by side of house
	outside setting (forest, hay)		outside setting (hill, bush, plum trees, flatland, small path) (SK)

	grandmother in front		
	Wounded M., grass		
	House burning	House burning	
	flour, wheat		
	kandil squashed	kandil squashed	
Auditory			
	bullets whistling, bombs	shooting, bombs loud and near	
	voice low, scared		
Emotionality			
			relief (Of_AM)
	body trembling (fear)	fear	
			shock (SR)
	crying (sadness)	sadness	
Bodily/Kinesthetic			
	whispering		
	soul trembling		
	enactment: lowers her head		
	body trembling		
	starts crying		
Visual Perspective	Field	Field	
Commentary			
	re-living	re-living	first person
			kowledge of territory
			total film
Memory for the telling of the narrative?			Yes

Table 5. Categorization of event House.

		Event Hill	
Comparative Categories	**Autobiographical Memory (LD)**	**Transmitted Memory (Similarities)**	**Transmitted Memory (Differences)**
Factual information			
	unexpected task	Unexpectedly there	
	Bosnian offensive	Bosnian offensive	
	100 young soldiers, first battle	young soldiers	
	surrounding 15 - 20Km empty		
	can see their movements	can see their movements	
	given order to leave but did not	he stayed there 2, 3 days	
	3 days of artillery, no direct attack	did not attack hill	
	2nd, 3rd day help arriving		
	fourth day no artillery; afternnon artillery, followed by direct attack; forced fighting		
	4, 5 in the afternoon thunderstorm; soldier killed by lightening gap in line muslim army made advance		
	early darkness because of rain, retreat	retreat in the night; reason: killed soldier	
	defense on the next appropriate territory		
	RS war emergency announced, 5, 6 thousands of people who left are being returned		
	every day - two or three dead or wounded	daily basis, a couple of people died	
		consolidated lines, returned territories	
Time Perspective	95	95	
Imagery			
	hill, bushes, unprotected, flat plateau	hill	mountain, trenches, territory line (G)
	house interior vague		
	sunny day great rain, thunderstorm, mud	rain, mud	
	early darkness	night, dark	
	being surrounded	walking on roads	
	grenade precision	grenades falling	
	commander's disappointed face		
	familiar people arriving		
	familiar person P		
	men like ants, bee-hive		
	men running visible on flat plateau		
	ugly man		
	paper-boxes; box falls, blood, mud; lifts box, bandages; rifle on shoulder		
			trenches, running to each other (G)
			mountain falling, earth rising
			man checking (G)
			L. running (SK)
			pile of dead, military cars (G)
			himself in emergency (SR)

			enemy conquering territoy
			no faces, positions, army uniforms, raincoats (G)
			happy undefined faces
			people in fear, positive people
Auditory			
	boiler-storm beginning of thunder		
	sound of gun-fire	whistling of gun-fire	explosion of ground strong sounds of grenades
	excited tone sharp voice		
			Crackling of walkie-talkie
Emotionality			
	Conflict: expectation not directly responsible	dilemma	
			trust (About_AM)
			safety & unease (SR)
	no control	no control	
			surprise (SR)
	Fear: fear grenades fear surrounding		Fear: fear night (SR) fear after emergency (SR)
	suspicion		
	premonition		
	feeling powerful		
	pride		
	relief		
Bodily/Kinesthetic			
	low visibility	low visibility	
			autumn (G) wetness (SR) coldness (SR)
			Adrenaline: adrenaline after emergency, falling (SR) trembling (SR)
	Enactment: holding boxes stands up		Enactment: claps hands (SR)
	holds chest		
	nearness		
Visual Perspective			
	Observer	Observer	Field
Commentary			
	sees actions		
	characteristic images	images	
	story fading away		
			own fears
			re-living
			mixing of himself and father
			dramatic scenes
			no faces

Memory of the telling of the narrative?			cannot remember the telling of the story

Table 6. Categorization of event Hill.