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Vantage perspective during encoding: The effects on phenomenological memory characteristics

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ABSTRACT

The vantage perspective from which a memory is retrieved influences the memory's emotional impact, intrusiveness, and phenomenological characteristics. This study tested whether similar effects are observed when participants were instructed to imagine the events from a specific perspective. Fifty student participants listened to a verbal report of car-accidents and visualized the scenery from either a field or observer perspective. There were no between-condition differences in emotionality of memories and the number of intrusions, but imagery experienced from a relative observer perspective was rated as less self-relevant. In contrast to earlier studies on memory retrieval, vantage perspective influenced phenomenological memory characteristics of the memory representation such as sensory details, and ratings of vividness and distancing of the memory. However, vantage perspective is most likely not a stable phenomenological characteristic itself. Implications and suggestions for future research are discussed.

1. Introduction

Memories can either be retrieved from a field perspective (visualizing the scenery through your own eyes) or from an observer perspective (visualizing the scenery through the eyes of an observer) (e.g., Nigro & Neisser, 1983). The vantage perspective from which memories are retrieved influences their emotional impact (Vella & Moulds, 2014). Generally, the observer perspective has been found to reduce, whereas field perspective enhance, the emotionality of memories (e.g., Berntsen & Rubin, 2006). This regulatory aspect of vantage perspective is particularly evident in clinical disorders such as depression and posttraumatic stress disorder (PTSD). In PTSD, the observer perspective has been suggested to be an avoidance strategy to dampen emotions associated with trauma memories (Kenny & Bryant, 2007). Studies on trauma memories have also indicated that the vantage perspective from which memories are retrieved can change the accessibility and vividness of these memories (Sutin & Robins, 2010).

Intrusive memories, which are often experienced in clinical groups (including individuals with PTSD), are highly accessible and vivid. Intrusions are memories that can be defined as "multi-modal mental pictures of highly detailed sensory impressions of an event including sights, sounds, feelings, and bodily sensations and come into consciousness uncontrollable

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and unwanted" (Krans, Näring, Holmes, & Becker, 2009, p. 426). According to the Self Memory System theory (SMS theory; Conway & Pleydell-Pearce, 2000), self-relevance increases memory accessibility. If the observer perspective creates more distance from our personal goals and self-image, memories recalled from this perspective should be rated as less self-relevant, resulting in less accessible memories. In line with this suggestion, some researchers have postulated that observer memories do not only have a distancing function but also a continuity function such that they maintain a coherent self-image (Libby & Eibach, 2002).

The vantage perspective that is adopted during retrieval also affects the phenomenological characteristics of the memory (McIsaac & Eich, 2002). That is, the characteristics of memory representations that are associated with the subjective, or phenomenological, experience of the memory. Naturally recalled memories retrieved from a field perspective tend to be higher in first-person account ("I", "me"), affective reactions, and physical sensations (McIsaac & Eich, 2002), vividness, coherence, accessibility, sensory details, emotional intensity, and time perspective and lower on distancing (Sutin & Robins, 2010). Memories that are retrieved from an observer perspective are typically higher in the extent to which people distance themselves from the memory, contain more spatial relations, contain more thoughts about the self, and more peripheral details, relative to field perspective memories (Brewer, 1996). We refer to these dimensions as (phenomenological) memory characteristics. According to the study by Sutin and Robins (2010), vantage perspective at retrieval is clearly associated with differences in memory characteristics but vantage perspective cannot determine what characteristics of the memory representation are retrieved.

To date, the effect of the vantage perspective adopted during encoding on the emotional impact and accessibility of memories, as well as memory characteristics, have not been explored. Yet, this is a clinically relevant line of investigation in the context of trauma as the tendency to adopt an observer perspective at encoding (i.e., during a traumatic event) is sometimes reported when individuals experience peri-traumatic dissociation (e.g., Cardenã & Spiegel, 1993). McIsaac and Eich (2004) found that almost half of the trauma victims in their study not only retrieved but also experienced their traumatic event from an observer perspective. In addition, there is evidence that peri-traumatic dissociation, which includes observer perspective experiences such as "I felt as though I was a spectator watching what was happening to me, as if I were floating above the scene or observing it as an outsider" is a strong predictor of PTSD (Ozer, Best, Lipsey, & Weiss, 2003). Also in experiments using the trauma film paradigm, dissociation was found to predict intrusion development (Hagenaars, van Minnen, Holmes, Brewin, & Hoogduin, 2008). If more is known about the effects of vantage perspective during encoding of traumatic events in general, more insights could be obtained regarding how vantage perspective might influence intrusion development in dissociation.

By manipulating perspective during encoding, we can investigate whether the phenomenological memory characteristics that are associated with field and observer perspectives, arise at encoding and remain stable over time, or whether the effects only act at recall, whereby the retrieval perspective determines which information is retrieved. Also, our study aimed to test whether the vantage perspective adopted during encoding influenced the emotions associated with the memory, memory characteristics, self-relevance of the memory, and memory intrusions.

Accordingly, using mental imagery, we manipulated vantage perspective from which participants imagined a stressful event when listening to a verbal report. Mental imagery was used because, in contrast to viewing a stressful film as an analogue to experiencing a trauma, imagery allows the experimental manipulation of the vantage perspective that participants adopt while encoding these images in memory. That is, we used imagery to create a relative field/observer perspective at the time of encoding the event. Furthermore, there are ethical restrictions around the use of stronger trauma-related imagery. Previous studies have shown that imagery of road traffic accidents induced similar levels of distress compared to real-life footage (Krans, Näring, Holmes, & Becker, 2010). Participants rated emotions, self-relevance, intrusions, and memory characteristics immediately after the imagery exercise (time 1), and again after one week (time 2).

2. Method

2.1. Participants

Fifty undergraduate students from the University of New South Wales (32 females) volunteered as participants. For ethical reasons, exclusion criteria were assessed with the M.I.N.I. which is a clinical diagnostic interview (Sheehan et al., 1998): panic attack, panic disorder (current/life time), PTSD (current/life time), major depressive episode (current/life time), social phobia, psychotic episode (current/life time). Further exclusion criteria were; blood phobia, history of fainting, and significant experience with road traffic accidents and were assessed with a brief questionnaire (Krans et al., 2009). Participants received course credit for their participation. All participants provided written informed consent prior to the experiment, but were kept naive with respect to the hypotheses. Participants' age ranged from 18 to 25 years (M = 18.79 years, SD = 1.53). The study was approved by the Human Research Ethics Advisory Panel – Behavioural (HREAP File no. 1917).

2.2. Materials

2.2.1. Verbal report

An auditory version of the trauma film paradigm (Hagenaars et al., 2008) was used as first developed by Krans et al. (2010). An auditory version was used because this allowed participants to use imagery, and thereby adopt a perspective

when generating the imagery. As such, participants' vantage perspective could be manipulated at encoding. Participants listened to a report of four scenes (11 min 42 s) of different road traffic accidents that were based on real-life footage originally compiled by Steil (1996). The audio-report consisted of background sounds of the original film and an emotional voice-over describing the scenes (for details please see Krans et al., 2010). The scenes described images of injured people, dead bodies, and rescuers who provided first aid at the place where the road traffic accidents happened. For this study, we made a new English version with a male voice-over describing the scenes.

2.2.2. Control measures

2.2.2.1. Individual differences. Baseline mood was measured with a negative mood questionnaire (MoodQ; 5 items, from 0 to 10; Holmes, Brewin, & Hennessy, 2004) that measured current happiness, fear, horror, depressed mood, and anger. The State-Trait-Anxiety Inventory State version (STAI-S) (20 items, from 1 to 4) and Trait version (STAI-T) were included (20 items) in order to measure state and trait anxiety (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). Test–retest reliability and internal consistency are good ($r = 0.75$, $\alpha = .85$, and $r = .25$, $\alpha = .88$, respectively; Spielberger et al., 1983). The trait tendency to use imagery was measured with the 12-item (1–5 scale) Spontaneous Use of Imagery Scale (SUIS; Nelis, Holmes, Griffith, & Raes, 2014). Internal consistency of the SUIS is high ($\alpha = 0.98$; Reisberg, Pearson, & Kosslyn, 2003).

2.2.3. Manipulation checks

2.2.3.1. Verbal report. The vividness and distress associated with the imagery of the verbal report were rated on two 4-point scales (1 = totally disagree, 4 = totally agree), and participants' level of attention to the verbal report was rated on an 11-point scale (Holmes et al., 2004).

2.2.3.2. Vantage perspective. The field perspective scale (e.g., "I see the experience in the memory through my own eyes") and the observer perspective scale (e.g., "In my memory, I see this experience through the eyes of others") of the Memory Experiences Questionnaire (MEQ; Sutin & Robins, 2007) were used to assess the perspective of the memory that was created by mental imagery. Additionally, a 6-item questionnaire was used to measure how the perspective could be maintained; (1) "For what percentage of the total recall time were you able to maintain the field [observer] vantage point?" (2) "How strongly did you maintain the field [observer] vantage point?" (3) "How easy was it for you to maintain the field [observer] vantage point?" (4) "To what degree did the field [observer] vantage point influence your recollections?" (5) "How rich in detail were your recollections", and (6) "How rich in emotion were your recollections?" (McIsaac & Eich, 2002). In addition, we included the following two questions; "How strongly did you shift between field and observer perspective?" and "To what degree was the field [observer] perspective your natural perspective that you automatically tended to take during listening to the audio-reports?". All questions were rated on a 7-point scale (1 = not at all, 7 = extremely).

2.2.3.3. Compliance and demand. Participants rated the question "*I have often been unable (or forgotten) to report my intrusions in the diary*" on an 11-point scale from 0 (not at all) to 10 (completely) (Holmes et al., 2004). Participants were asked about their perceptions of the goal of the study with an open-ended question.

2.2.4. Experimental measures

2.2.4.1. Self-relevance. Participants rated how self-relevant they considered their imagery of the report on a 4-point scale (1 = totally disagree, 4 = totally agree).

2.2.4.2. Memory characteristics. The Memory Experiences Questionnaire (MEQ; Sutin & Robins, 2007) was used to assess the characteristics of the memories. The nine dimensions that were assessed in this study were: vividness (e.g., "My memory for this event is very vivid"), coherence (e.g., "When I recall this memory, the sequence of events seems realistic"), accessibility (e.g., "This memory was easy for me to recall"), sensory details (e.g., "As I remember the event, I can hear it in my mind"), emotional intensity (e.g., "The memory of this event evokes powerful emotions"), distancing (e.g., "When I recall this memory, I think, "that's not me anymore.""), valence (e.g., "The experience described in this memory is positive"), field perspective, and observer perspective. The latter two items were described in Section 2.2.3.2. The MEQ has adequate reliability (median alpha = $\alpha = .87$; range = $\alpha = .72$ to $\alpha = .97$; Sutin & Robins, 2007).

2.2.4.3. Intrusions. Intrusive images were assessed using a one-week diary (e.g., Holmes et al., 2004). Participants were asked to monitor and record any intrusions that they experienced. Intrusions were defined as intrusive images that pop into mind spontaneously. For every entry, participants completed ratings of automaticity, level of detail, vividness, and distress, on a scale from 0 (not at all) to 100 (extremely). The degree to which an intrusive image was experienced from a field or observer vantage perspective was rated on two separate scales from 0 (not at all) to 10 (extremely). Intrusion frequency was additionally measured with the 15-item Impact of Events Scale (IES), intrusion subscale (8 items; Horowitz, Wilner, & Alvarez, 1979). Answers were rated on a 5-point scale from 0 (not at all) to 4 (very much). Internal consistency has been found to be good ($\alpha = 0.96$; Sundin & Horowitz, 2002).

2.3. Procedure

Participants first read the Participant Information Statement and then provided informed consent. Participants were then interviewed to check for the presence of any exclusion criteria. Participants who were eligible to participate were then presented with a demographic questionnaire and the MoodQ, STAI-S, STAI-T, and SUIS. Next, participants were randomly allocated to either the field or observer condition and received the relevant imagery training instructions, following the procedure reported by Holmes, Coughtrey, and Connor (2008). Participants first completed a practice task in which they imagined a neutral story from the assigned perspective. Participants then received instructions to adopt the relevant vantage perspective while they imagined the verbal report. In the field condition, participants were instructed as follows: "Imagine viewing the scene through your own eyes. You are at the scene, closely watching the events unfold. Try to imagine your emotions, feelings, and thoughts as you listen to the report". In the observer condition, the instructions were as follows: "You are viewing the scene as a third person spectator, as if you are watching yourself being present at the scene from a distance. You are not actively involved in the situation". Participants then listened to the verbal report whilst imagining the scenes from either a field or observer perspective. After listening to the report, participants rated the distress, attention, vividness, and self-relevance of their imagery. Then, participants were asked to complete the vantage perspective questionnaire, the MoodQ and STAI-S, and received the diary. Next, participants completed the MEQ. After one week, participants returned for a follow-up session in which they were asked to complete the diary compliance rating and the IES, and to provide a written description of the perceived goal of the study. Finally, participants were asked to recall and provide a written description of a specific scene of the reports they listened to the previous week, and to complete the MEQ for this scene.

3. Results

3.1. Statistical approach

The data were scanned for multivariate and univariate outliers according to the procedure by Tabachnick and Fidell (1996). There were no outliers detected. However, because of positively skewed distributions, the following variables were analyzed using negative binomial regression with log link: diary compliance, IES, diary ratings (vividness, details, automatic, distress), visual perspective of intrusive images. Furthermore, 2 Time (baseline, post-report) $\times$ 2 Condition (field, observer) repeated measures ANOVAs with Time as a within-subjects factor and Condition as a between-subjects factor were performed in order to assess change in negative mood (MoodQ) and state anxiety (STAI-S). Each of the memory characteristics from the MEQ were analyzed separately with mixed model repeated measures ANOVAs with Condition as the between-subjects factor, Time (time 1, time 2) as the within-subjects factor, and MEQ scores as the dependent variables. The remaining variables were analyzed using an analysis of variance (ANOVA). The level of significance was set on α of 0.05. The effect sizes reported are Cohen's f for ANOVAs. Each condition contained 25 participants. Please find the tables with descriptive statistics of the control and experimental measures below (Tables A.1 and A.2).

3.2. Control measures

3.2.1. Individual differences

The two conditions were comparable on age, gender, trait anxiety, the spontaneous use of imagery in daily life, baseline negative mood, and state anxiety, all $ps > .625$.

3.3. Manipulation checks

3.3.1. Verbal report

There were no differences between conditions in vividness or distress associated with the imagery immediately after listening to the report, all $ps > .099$. Participants in both conditions rated that they paid comparably high levels of attention to the report, $p = .861$ (see Table A.1).

3.3.2. Vantage perspective manipulation checks

As intended, participants in the field perspective condition rated their imagery as being significantly more from field perspective than did participants in the observer condition, $F(1,48) = 6.55$, $p = .014$, $f = 0.37$. In addition, participants in the observer perspective condition rated their imagery as being significantly more from observer perspective relative to those in the field condition, $F(1,48) = 10.38$, $p = .002$, $f = 0.47$. Thus, the manipulations had the intended effects on perspective. Participants in the field condition indicated that they held their perspective a significantly higher percentage of the time than those in the observer condition, $F(1,48) = 6.35$, $p = .015$, $f = 0.36$. Also, participants in the field condition indicated that the instructed perspective was more in line with their natural perspective than did participants in the observer condition, $F(1,48) = 5.48$, $p = .023$, $f = 0.34$. Finally, participants in the field condition rated their perspective as easier to maintain, $F(1,48) = 4.37$, $p = .042$, $f = 0.30$. There were no differences between the conditions in how strongly they could maintain the perspective, the level of detail or emotionality of the imagery, or the tendency to shift between perspectives during the imagery, all $ps > .057$ (see Table A.1).

3.3.3. Compliance and demand

Diary compliance was high and did not differ between conditions, $p = .318$. No participant detected the goal of the study.

3.4. Experimental measures

3.4.1. Emotional impact

For the MoodQ there was a significant main effect of Time, $F(1,48) = 63.75$, $p = .000$, $f = 1.15$, showing an overall increase in negative mood from baseline to post-report. There was no main effect of Condition and no Time × Condition interaction, $F(2,48) = 0.25$, $p = .619$, and $F(2,48) = 0.22$, $p = .638$. For the STAI-S, there was a significant main effect of Time such that there was an overall increase in state anxiety from baseline to post-report, $F(1,48) = 56.16$, $p = .000$, $f = 1.08$. Again, there was no main effect of Condition and no Time and Condition interaction, $F(2,48) = 0.21$, $p = .650$, and $F(2,48) = 1.63$, $p = .208$, respectively.

3.4.2. Self-relevance

Participants in the observer condition rated the report as significantly less self-relevant directly after listening to the verbal report (time 1), $F(1,48) = 9.04$, $p = .004$, $f = 0.43$.

3.4.3. Memory characteristics

Overall, there was a significant Time effect showing that memory vividness, coherence, sensory details, and emotional intensity decreased over the course of the week, smallest $F(1,48) = 9.20$, largest $p < .01$, smallest $f = .44$. Significant main effects of condition were found, showing that vividness, sensory details, and field perspective were higher on average in the field perspective condition, whereas observer perspective and distancing were higher in the observer perspective condition, smallest $F(1,48) = 4.08$, largest $p = .049$, smallest $f = .29$. No other main effects reached significance, and there were no interaction effects, all $p > .05$, indicating that normal forgetting occurred in both groups and that relative group differences were maintained over time.

3.4.4. Intrusions

A total of 139 intrusive images were reported in the one-week diary. There was no significant difference between conditions in the frequency of intrusive images recorded in the diary, $F(1,48) = 1.90$, $p = .175$, or the IES-intrusion subscale, $F(1,48) = 2.23$, $p = .135$. There were no differences in the diary ratings (automaticity, details, vividness, distress), all $ps > .062$ or vantage perspective of the intrusions, all $ps > .188$ (see Table A.2).

4. Discussion

The main aim of this study was to investigate whether vantage perspective has similar effects at encoding as it has at recall with respect to emotional impact, phenomenological memory characteristics, self-relevance, and memory accessibility. Our first hypothesis was that participants who were instructed to adopt a relative observer perspective at the point of encoding would report reduced emotional impact of imagery directly after encoding, relative to those who adopted a perspective predominantly from field perspective. Although the imagery resulted in an increase in negative mood and state anxiety, this was not different for the two conditions. This is in contrast to the findings of studies in which researchers manipulated vantage perspective at recall and found that observer perspective dampens, whereas field perspective enhances, negative mood and distress (McIsaac & Eich, 2002). The regulatory function of vantage perspective may therefore be less evident at encoding than it is during recall. This is in line with a recent study that shows that self-distancing had no effect on self-reported emotional reactivity (Wisco et al., 2015).

Our second hypothesis was that participants who experienced a relative observer perspective at encoding would report lower self-relevance of the verbal report and fewer intrusions, compared to participants in the field perspective condition. Participants in the observer perspective condition indeed reported lower levels of self-relevance. This suggests that adopting a more observer perspective could be used to distance the self from the memory. However, participants in the observer condition did not report reduced intrusion frequency, a finding which is at odds with the results of earlier studies in which memories that were naturally recalled from field perspective were rated as more accessible than memories that were recalled predominantly from an observer perspective (Sutin & Robins, 2010).

Finally, we expected that memories encoded from an observer perspective would have lower levels of dimensions related to the reliving of the memory such as sensory details, emotional intensity, and vividness, and would be higher in distancing. Consistent with our hypotheses, relative to participants in the field condition, participants in the observer perspective condition reported less vividness, sensory details, and field perspective from their imagery. Participants in the observer condition reported more observer perspective and distancing in their imagery. In contrast to our hypotheses, there was no significant difference for emotional intensity. During the week, vividness, coherence, sensory details, and emotional intensity decreased on average in the whole sample, likely because of normal forgetting. Interestingly, the lack of interaction effects indicates that the relative difference in memory characteristics among the two conditions was maintained over the course of the week.

Overall, we found that vantage perspective appeared to have different effects at encoding than it does during retrieval. Whereas the impact of perspective at retrieval has been investigated previously (e.g., Vella & Moulds, 2014), the effect of vantage perspective during encoding has not received any attention in the literature to date. The present study has two preliminary conclusions that follow from the findings. First, vantage perspective during encoding appears to guide the encoding of vividness, sensory details, distancing and vantage perspective, and the relative difference in these characteristics between the two vantage perspectives is maintained over time. This is in contrast to the retrieval effect of vantage perspective, which does not appear to shape memory characteristics (Berntsen & Rubin, 2006). Second, in line with earlier suggestions (Sutin & Robins, 2007), vantage perspective itself was also maintained.

Our findings may be of relevance in terms of the impact of the vantage perspective adopted during traumatic events, given that there is evidence that an observer perspective at encoding is sometimes reported during trauma (McIsaac & Eich, 2004). Based on our findings, it may be expected that the experience of an observer perspective during a trauma (e.g., during dissociation) leads to lower encoded vividness, sensory details and a greater sense of being distant from one's memory. Earlier studies on peri-traumatic dissociation, which often involves the adoption of an observer perspective, demonstrated poor outcomes in terms of PTSD symptoms (Ozer et al., 2003). However, in our study there were no between-condition differences in emotionality of memories and intrusions, which aligns with more critical findings of peri-traumatic dissociation being a predictor of PTSD (van der Velden & Wittmann, 2008). Nonetheless, we found evidence that the two perspective conditions had differential effects on memory characteristics (e.g., less vividness, sensory details and more distancing reported by participants in the observer perspective condition). It is possible that these differences might influence how memories will be stored and also retrieved after the event. There is evidence that retrieving trauma memories from an observer perspective is related to more severe PTSD symptoms in the long-term, especially when memories are intentionally retrieved from the third-person, as an avoidance behavior (Kenny et al., 2009).

It may be the case that individuals with PTSD who recall the memory of their trauma from an observer perspective may not necessarily have encoded their trauma from an observer perspective, but rather that observer perspective recall is a coping strategy adopted at recall as a strategic means by which to lower memory-related emotion. Even so, this does not preclude the possibility of encoding an event from an observer perspective. For a neuropsychological account of this possibility, we refer to Trehub (2013), who provides ample evidence that our phenomenological self and our phenomenological body do not necessarily have to coincide or overlap in our phenomenological world.

Some limitations should be mentioned. First, participants were better able to maintain field perspective than observer perspective during imagery, and they indicated that the field perspective was more in line with the perspective that they were naturally inclined to adopt. This means that the cognitive load of the imagery task may have been higher in the observer condition. As such, we cannot rule out the possibility that any differences (or lack of differences) between the two conditions were due to differences in cognitive load instead of perspective. However, participants in the two conditions rated their attention for the imagery as equally high, so it is unlikely that this was the case. Nevertheless, future studies may benefit from the inclusion of a control condition with a cognitive load in order to control for this possible confound. Another limitation is that we used imagery instead of a real trauma or movie with different recorded vantage perspectives. Imagery is more susceptible to individual differences (i.e., in the extent to which one uses imagery in everyday life) and this may have influenced the manner in which the audio-reports were imagined. Finally, we acknowledge that vantage perspective may be on a continuum rather than a dichotomous concept. As such, although our manipulation checks confirmed that participants indeed adopted the intended perspective, we assume that participants in both conditions adopted elements of both perspectives, but with the instructed perspective being dominant.

In addition, we note that the number of intrusions reported in the diary was relatively low in comparison to previous studies in which the trauma film paradigm was used instead of mental imagery (Krans et al., 2009). Importantly, in comparison to previous studies that used imagery, the number of intrusions reported here was similar (Krans et al., 2010). The low number might suggest a floor effect. Yet, we observed a significant increase in emotional distress after imagery, which suggests that the imagery had an emotional impact. In this study we aimed to answer a theoretical question regarding the possibility that adopting a field versus observer vantage perspective at encoding may lead to differential outcomes. While using imagery in a lab-based study allowed us to examine this question in a reliable manner, it certainly does not induce the level of emotional distress that is comparable to actual trauma – and this potentially compromises the ecological validity of our data. As such, the results should be interpreted with caution and considered as a first step toward understanding the impact of vantage perspective at encoding.

In terms of future research, an interesting question that arises from the current results is how the interaction between vantage perspective at encoding and retrieval works. Based on our findings, vantage perspective at encoding might partly guide certain memory characteristics, but we do not know the effects of congruent versus incongruent retrieval in respect to the vantage perspective that was adopted during encoding. Another question regards the extent to which the vantage perspective adopted at encoding is predictive of the vantage perspective that is predominantly adopted at retrieval. It could be hypothesized that a memory that is already encoded in a less emotional manner will be retrieved from a perspective that maintains this format. Nigro and Neisser (1983) postulated that the vantage perspective during the event at encoding could influence the vantage perspective that is adopted at retrieval. Others have postulated that the emotionality at encoding increases the likelihood that the event is recalled from observer perspective (D'Argembeau & Van der Linden, 2006).

In conclusion, our study showed that the vantage perspective adopted at encoding guides the encoding of sensory details and ratings of distance from the memory. However, vantage perspective is most likely not a stable phenomenological

Table A.1
Descriptive statistics of control measures across and within conditions.

Measure	Field condition		Observer condition		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*
Verbal report and compliance						
Imagery attention	8.04	1.93	7.96	1.21	8.00	1.59
Vividness of imagery	7.72	1.90	6.84	1.80	7.28	1.86
Distress of imagery	5.72	2.39	4.80	2.38	5.26	2.41
Self-relevance of imagery	5.64**	2.66	3.32	2.80	4.48	2.94
Diary compliance	2.40	2.92	3.32	3.51	2.86	3.23
Vantage perspective imagery						
Percentage of time the vantage perspective was maintained	81.12*	15.87	67.28	22.42	74.20	20.45
Strength of the vantage perspective maintained	5.64	.95	5.04	1.21	5.34	1.12
Easiness to maintain the vantage perspective	5.04*	1.24	4.16	1.70	4.60	1.54
Natural vantage perspective	5.28*	1.21	4.44	1.33	4.86	1.33
Tendency to shift during imagery	3.56	1.87	4.28	1.77	3.92	1.84
Vantage perspective recollections						
Degree the vantage perspective influenced recollections	5.60	1.00	5.20	1.32	5.40	1.18
Richness of details of recollections	5.52	1.12	5.08	1.26	5.30	1.19
Richness of emotion of recollections	4.76	1.59	4.52	1.64	4.64	1.60

* $p < .05$.
** $p < .01$.

Table A.2
Descriptive statistics of experimental measures across and within conditions.

Measure		Field condition		Observer condition		Total	
		M	*SD*	*M*	*SD*	*M*	*SD*
Emotional impact							
MoodQ	Baseline	7.20	3.73	6.96	4.20	7.08	3.93
	Post-imagery	18.28	9.54	16.80	10.53	17.54	9.97
STAI-S	Baseline	31.92	6.96	33.16	10.51	32.54	8.84
	Post-imagery	48.68	13.27	45.04	13.86	46.86	13.56
Memory characteristics							
Vividness	Time 1	22.56*	4.45	20.80	3.77	21.68	4.18
	Time 2	20.96	5.74	17.92	5.54	19.44	5.79
Coherence	Time 1	25.60	5.03	26.56	3.49	26.08	4.31
	Time 2	22.36	6.08	23.44	5.58	22.90	5.80
Accessibility	Time 1	18.92	3.70	17.44	2.95	18.18	3.39
	Time 2	17.44	4.68	16.60	3.48	17.02	4.10
Sensory detail	Time 1	27.44*	5.84	24.36	5.10	25.90	5.64
	Time 2	24.56	5.09	21.24	4.76	22.90	5.16
Emotional intensity	Time 1	19.60	5.19	17.56	5.34	18.58	5.31
	Time 2	15.48	5.36	13.08	4.62	14.28	5.10
Field perspective	Time 1	11.52*	2.65	9.44	3.08	10.48	3.03
	Time 2	11.16	2.90	10.12	2.88	10.64	2.91
Observer perspective	Time 1	7.28	2.28	9.32**	2.19	8.30	2.44
	Time 2	7.48	2.54	9.00	3.08	8.24	2.90
Distancing	Time 1	15.20	4.14	18.80**	4.77	17.00	4.78
	Time 2	14.12	4.64	17.56	5.27	15.84	5.21
Valence	Time 1	11.48	4.69	12.28	5.02	11.88	4.83
	Time 2	11.24	4.98	12.76	3.21	12.00	4.21
Intrusions							
IES-intrusion		12.20	4.64	10.72	3.50	11.46	4.14
Intrusions diary		4.42	6.47	3.21	3.24	3.81	5.10
Automaticity of intrusions		21.15	47.15	11.88	12.39	16.51	34.43
Details of intrusions		20.23	47.40	7.17	7.87	13.70	34.25
Vividness of intrusions		20.75	44.45	10.63	12.32	15.69	32.67
Distress of intrusions		19.96	51.21	5.50	9.55	12.72	37.17

* $p < .05$.
** $p < .01$.

memory characteristic of the memory representation, as vantage perspective was not maintained in the memory over time. Finally, imagining a distressing event from field or an observer perspective resulted in equally distressing and similarly frequent intrusions. These effects are in clear contrast to the known effects of vantage perspective during recall. Given that our

findings are very preliminary, replication is necessary and more research into the interaction between vantage perspective at encoding and retrieval is warranted.

Appendix A

see Tables A.1 and A.2.

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