university of groningen / faculty of behavioural and social sciences / research master

Master's thesis

The Within-Person Effects of Shifting From a Field to an Observer Vantage Point on the Content of Aversive Autobiographical Memories and Their Characteristics

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Programme:	Research Master Behavioural and Social Sciences
Theme:	Deficits, Distress and Disorders
ECs:	30
Date:	07-07-2023
Word count:	8730

Are there deviations of the Master's thesis from the proposed plan?

☒ Yes, please explain below the deviations

The word "autobiographical" was added to the title. The planned sample size of 130 was not reached in the testing period; thus, *N* is smaller. The numbering of hypotheses was changed, as explained in the statement of transparency (see Methods). The manipulation check items were expanded by a count of the number of words in participants' memory statements and were called "equivalence check items" instead. Transformations were applied to Vividness and Total Content to address normality issues in the data. Based on the data, we decided to also conduct non-parametric sign tests on the content category variables (i.e., exploratory analyses) due to violated assumptions for paired sample *t*-tests.

Abstract

Autobiographical memories can be recollected from a field - and an observer perspective. Shifting from a field to an observer perspective is often considered an emotional avoidance strategy in clinical settings. Moreover, vantage points may influence how people re-experience memories and what they remember. This study explored what differences emerge in memory characteristics and content when the same aversive memory is recalled from different perspectives over time. Students retrieved and wrote a negative personal memory from their spontaneous field perspective. After a filler task, participants did so again, yet, half of the sample then recollected their memory from an observer perspective. Results indicated that shifting to an observer perspective reduced the emotional intensity during recollection and led to fewer affective reactions in content relative to when a field perspective was retained over recalls. The total content and the extent to which memories were experienced as vivid, emotionally distant and narrative coherent did not depend on whether participants switched perspectives. Exploratory analyses revealed that students who shifted perspective had fewer details on physical sensations, psychological states and first-person accounts in their memories at the second recall. To conclude, shifting to an observer perspective might lead to the omission of affective reactions in written content and seems to dampen the emotional intensity during the recollection of an aversive personal memory.

Keywords: Autobiographical Memory, Memory Perspective, Memory Content, Emotional Intensity, Vividness, Emotional Distance, Narrative Coherence.

The Within-Person Effects of Shifting From a Field to an Observer Vantage Point on the Content of Aversive Autobiographical Memories and Their Characteristics

Autobiographical memories may be recalled from two distinct visual perspectives: a field - and an observer perspective (Berntsen & Rubin, 2006; Eich et al., 2012; Nigro & Neisser, 1983). Remembering from a field perspective implies that people relive an event through their own eyes, so they perceive it much as they did in the past. Alternatively, adopting an observer perspective indicates that people step into the role of a detached spectator so that they "look" at themselves in a memory image (Eich et al., 2012). The adoption of a vantage point usually happens automatically (Berntsen & Rubin, 2006), although research has also suggested that people can control and change perspectives at will (Robinson & Swanson). Nevertheless, a field perspective is considered the most common vantage point for autobiographical memories (Radvansky & Svob, 2018).

Vantage Points and Phenomenological Aspects of Memories

From the 1980s onwards, researchers have pointed out that a field- and observer perspective may serve different functions (Eich et al., 2012; Rice & Rubin, 2009; St Jacques, 2019) as they seem to determine how people subjectively re-experience events in terms of phenomenological memory characteristics (King et al., 2022; Mitchell, 2016; St Jacques, 2019; St Jacques et al., 2017). In other words, people might perceive a memory differently depending on their vantage point. Relative to a field perspective, an observer perspective has been associated with reduced emotional intensity and vividness during recollection (Berntsen & Rubin, 2006; McIsaac & Eich, 2002; McIsaac & Eich, 2004; St Jacques et al., 2017). Also, an observer perspective is believed to create emotional distance between an individual and their memory (Eich et al., 2012; Kenny & Bryant, 2007), indicating that a person simulates a new perspective to psychologically distance themselves from the emotions in their memory (Powers & LaBar, 2019). Imperatively, emotional distance might be perceived as worthwhile

by people who experienced trauma and want to avoid the distress associated with their memory (Ehlers & Clark, 2000).

The Consequences of an Observer Perspective

Shortly after trauma, the adoption of an observer perspective may provide relief. Besides lessening the emotional impact of a memory (Berntsen & Rubin, 2006; McIsaac & Eich, 2002; McIsaac & Eich, 2004), an observer perspective seems to reduce negative mood and intrusions for a memory when compared to a field perspective. However, its longer-term consequences are likely aversive (Mooren et al., 2019). McIsaac and Eich (2002) suggested that an observer perspective limits the processing of trauma and its associated emotional reactions. In line with this notion, a prospective study by Kenny et al. (2009) showed that physical trauma survivors who shifted from a field to an observer perspective within 12 months after their injury had more severe post-traumatic stress (PTSD) symptoms after a year. Based on this finding, it was proposed that an observer perspective becomes dysfunctional and contributes to the maintenance of PTSD symptoms, such as intrusions, when it is adopted during emotional processing (Mooren et al., 2019).

Relatedly, the question arises of why an observer perspective might become dysfunctional in the long run. It can be speculated that people who intentionally adopt an observer perspective to dampen the negative emotions associated with their memory also tend not to disclose a trauma as that requires recollecting highly distressing information. Moreover, opening up about trauma would make them more prone to reliving the associated negative emotions (Timblin & Hassija, 2022). The barrier to disclosure seems to become even larger when people are afraid of the reactions of others or when they blame themselves for becoming a victim and deal with feelings of worthlessness, powerlessness, self-scrutiny, self-condemnation and the tendency to hide or withdraw (Timblin & Hassija, 2022; Øktedalen et al., 2014). It might be that at some point, when people remain silent, distance themselves from

the negative emotions, and other predisposing factors for developing PTSD, such as limited social support and a history of childhood abuse are in place (McKeever & Huff, 2003), the pathological memory structures (i.e., excessive feared stimuli, responses to them, and related dysfunctional cognitions) that were developed in response to trauma (Foa & Kozak, 1986; Foa et al., 2006) take a prominent role. The latter would result in experiencing psychological and physiological impairments (Pennebaker & Beall, 1986).

The moment a "breaking point" presents itself and trauma-related psychopathology begins interfering with daily life seems different for each person, and likely depends on the interaction between the degree to which risk factors are present and the degree of distress that is felt (Monroe & Simons, 1991). Eventually, confrontation with a trauma memory and reliving the associated negative emotions seem crucial for corrective learning of more adaptive associations, responses, and cognitions (i.e., emotional processing; Foa & Kozak, 1986; Foa et al., 2006) and PTSD symptoms to reduce (Rothbaum & Schwartz, 2002). As long as emotional processing has not occurred, PTSD symptoms will maintain (Foa & Kozak, 1986; Foa et al., 2006).

Memory Content

Vantage points may influence not only the subjective re-experience but also the type of information people recall (McIsaac & Eich, 2002; McIsaac & Eich, 2004). To illustrate, consider a study by McIsaac and Eich (2002) in which students performed manual tasks (e.g., bicep curls and paper folding) in a decorated room. After the last task, participants were randomized to a field or observer condition and recalled their experiences with the tasks and surroundings. The audio-recorded memories were coded for content by blinded assistants. Field memories appeared richer in affective reactions, physical sensations, and psychological states, whereas observer memories contained more details on the physical appearance of

others, their actions, and the spatial layout. In 2004, McIsaac and Eich found similar results when they compared natural field memories to observer memories in people with PTSD.

The Within-Person Effects of Shifting Vantage Points

The notion that shifting to an observer perspective has negative consequences (e.g., Kenny et al., 2009) has given rise to investigating the within-person effects of shifting perspectives in experimental settings (Eich et al., 2012). One of the first research paradigms for this matter was introduced by Robinson and Swanson (1993). It looked as follows: participants were asked to recall autobiographical events from their lives from their spontaneous vantage points and complete rating on, amongst others, the original and current emotional intensity of their memories. This procedure was repeated after two weeks, although participants were then randomly assigned to a field or observer perspective so that they had to recall some of their memories from the alternative perspective. Extensions and variations to this paradigm have been made by researchers who, for instance, used different time intervals between sessions, manipulated perspective differently by asking participants to shift perspectives for only a subset of their memories (King et al., 2022), also considered other memory characteristics such as vividness, the content of memories (Akhtar et al., 2017; King et al., 2022) and the persistence of changes in characteristics and content induced by shifting perspective (King et al., 2022; Sekiguchi & Nonaka, 2013; St Jacques, 2019)

Generally, it has been found that shifting from a field to an observer perspective reduces the emotional intensity (Akhtar et al., 2017; Butler et al., 2016; Robinson & Swanson, 1993) and vividness of autobiographical memories (Akhtar et al., 2017; Butler et al., 2016). However, for the reverse shift or when people retain their natural perspective over time, the emotional intensity and vividness of memories are impacted negligibly (Akhtar et al., 2017; Vella & Moulds, 2014). Furthermore, it has been suggested that with the field-to-observer shift, information on emotions, thoughts (Akhtar et al., 2017; King et al., 2022), sensory-

perceptive details (Akhtar et al., 2017), and personal semantics (i.e., details about the self not linked to a specific time or place and facts about others with a connection to the self) in memories diminish. In contrast, perceptual details seem to increase with the shift (King et al., 2022). However, changes in memory content have appeared not to persist over two days (King et al., 2022) and four weeks (Sekiguchi & Nonaka, 2013). Regardless, changes in emotional intensity (King et al., 2022; Sekiguchi & Nonaka, 2013; St Jacques et al., 2017) and vividness (Butler et al., 2016) induced by shifting to an observer perspective may remain stable over time.

Together, shifting to an observer perspective after experiencing trauma is proposed to hinder the emotional processing of the event and associated reactions (Kenny et al., 2009; McIsaac & Eich, 2002; Mooren et al., 2019), possibly resulting in higher PTSD levels (Kenny et al., 2009). With this clinical implication noted, it is remarkable that many earlier studies on the effects of shifting perspective seemed to focus rather on positive autobiographical memories (Akhtar et al., 2017; Vella & Moulds, 2014), a particular adverse theme such as injury or illness (Akhtar et al., 2017; Robinson & Swanson, 1993), or autobiographical memories in which positive or negative events were not specifically targeted (King et al., 2022). Therefore, it remains unclear what differences emerge when people recall the same aversive autobiographical memory from any theme from different perspectives over a short time. In the context of trauma, people might deliberately avoid content by shifting to an observer perspective.

The Current Study

This study aimed to investigate the within-person effects of shifting vantage points on the content and characteristics of autobiographical memory. Specifically, we intended to answer the research question: “What are the short-term effects of shifting from a field- to an observer vantage point on the content of an aversive autobiographical memory and its rated

emotional intensity, vividness, emotional distance and narrative coherence compared to not shifting perspective?" Participants were instructed to write a negative personal memory. Those who remembered their memory from a natural field perspective were asked to do so again after a 10-minute filler task but from an observer perspective. Memory characteristics were rated after each recall. The experiment included a control condition in which participants recalled their memory twice from their natural field perspective over time. Therefore, changes induced by shifting perspective could be compared against possible changes in the control condition. Written memory content was coded and assigned to the categories of affective reactions, psychological states, physical sensations, self-observations, physical actions, spatial relations, first-person accounts, peripheral details (McIsaac & Eich, 2004), and total content (i.e., the sum of items over all categories).

We anticipated that shifting from a field to an observer perspective would lead to fewer affective reactions in memory content when compared to recalling a memory twice from a field perspective over time (hypothesis 1; Akhtar et al., 2017; King et al., 2022). Exploratory analyses were conducted to examine whether and how the other content categories changed after switching, as previous within-subject studies seemed to have not included these particular categories. Further, relative to not switching perspective, we expected that a field-to-observer shift would reduce the emotional intensity and vividness of a memory (hypothesis 2; Akhtar et al., 2017; King et al., 2022; Robinson & Swanson, 1993) but increase the emotional distance towards it (hypothesis 3; Kenny & Bryant, 2007). Lastly, we explored how changing perspective related to the narrative coherence of a memory. This is relevant as people might deliberately leave out content during an observer recall to avoid distressing information, which might decrease the narrative coherence and, therefore, the completeness (i.e., total content) of a memory (hypothesis 4).

Methods

Statement of Transparency

The study was part of a larger project that was pre-registered on the Open Science Framework (OSF; https://osf.io/j49mg/?view_only=3ec08078685d4660b8ba5eee750d6499) prior to data collection. The project had two purposes: 1) investigating the effects of shifting from a field to observer perspective on the content and characteristics of a negative personal memory, and 2) exploring how this shift relates to habitual cognitive avoidance strategies. The second goal was out of the scope of this thesis. Hence, we did not report on data relevant to hypotheses 4 to 7 and the Cognitive Avoidance Questionnaire (CAQ; Sexton & Dugas, 2008) as mentioned in the pre-registration. However, for the sake of transparency, the CAQ is mentioned in the procedure paragraph below. Moreover, the materials and the complete pseudonymized dataset will be made publicly available at the OSF (i.e., in the folders Experiment materials and Main study data) as soon as all data has been coded.

Relatedly, some deviations from the pre-registration should be noted. Due to time constraints caused by the graduation deadline, this thesis was written based on the subset of the sample collected until April 26. Testing sessions lasted until June 9, but the planned sample size was not reached. Second, an experimenter accidentally deviated from the pre-registered exclusion criteria by debriefing one participant based on the same keyword they wrote for their new memory after their first memory did not exceed the emotional intensity cut-off. Third, the combination of dependent variables in the pre-registered hypotheses was reconsidered. It was decided to split the initial third hypothesis by separating emotional distance from total content and narrative coherence, as the expected increase in emotional distance was based on the literature (e.g., Kenny & Bryant, 2007), while the effects of switching perspectives on narrative coherence and total content were speculated. Fourth, transformations were applied to several variables to address normality issues in the data.

Design and Sample Size Justification

This study utilized a mixed model design. Participants were randomly assigned to one of the two conditions in which they either recalled a negative autobiographical memory from a field perspective twice (i.e., control condition) or in which they shifted from a field to an observer perspective (i.e., observer condition). Hence, recall (first or second) was the within- and condition (observer or control) the between-participant factor.

An a priori sample size calculation was conducted in G*power version 3.1.9.7 (Faul et al., 2007) for a repeated measures ANOVA with within-between interaction, a medium effect size ($f = 0.25$), 80% power, and a significance level of $\alpha = .05$. The results indicated that a sample of at least 130 participants was required. However, only data of $N = 78$ were included. Therefore, a sensitivity analysis for a repeated measures ANOVA with a within-between interaction and 80% power was conducted with G*Power (Faul et al., 2007). The analysis yielded a minimum effect size of $f = .32$. So, despite the lower sensitivity than initially aimed for, detecting a medium effect (Cohen, 1969) was still possible regarding all hypotheses.

Participants

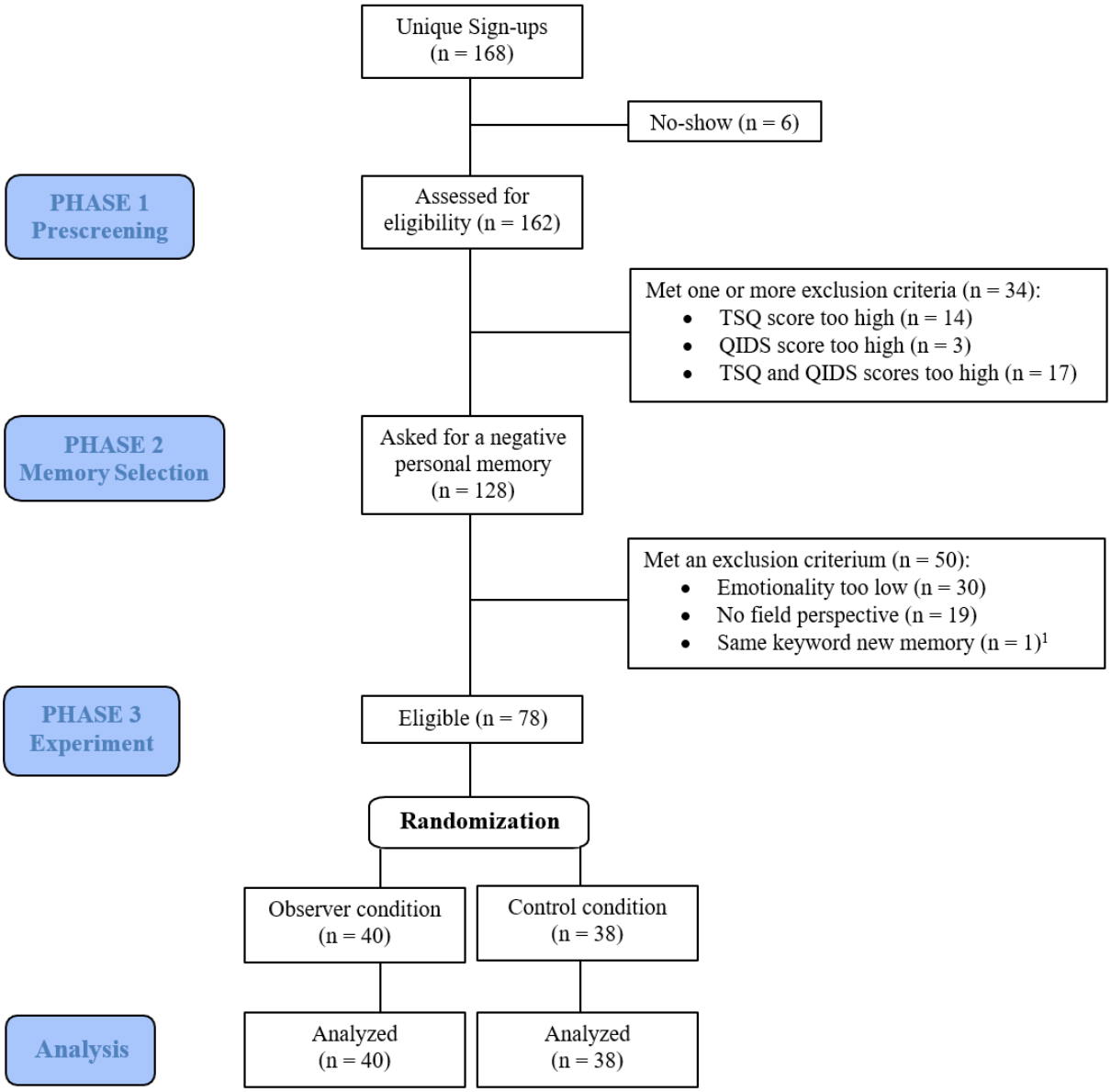
Participants were first-years enrolled in the International or Dutch track of the BSc Psychology at the University of Groningen in the academic year of 2022/23. They were recruited through an online participant management system (SONA, see Sona Systems) and reimbursed with course credits upon completion of each phase. The study was approved by the Ethics Committee of the Department of Psychology of the University of Groningen (PSY-2223-S-0087). All participants provided written informed consent.

We screened N = 162 participants. However, 84 were not eligible, as shown in the participant flow (see Figure 1). Thus, the final sample comprised $n = 78$ students (47 women, 30 men, and one preferred not to say). Their mean age was 20.47 years ($SD = 2.70$; range 17 - 35), and their nationality was diverse. Participants had origins in The Netherlands ($n = 41$),

Germany (*n* = 19), Southern Europe (*n* = 7), Eastern Europe (*n* = 5), India (*n* = 2), Northern Europe (*n* =1), America (*n* = 1) and East Africa (*n =1).*

Figure 1

Participant Flow Diagram



Note. This figure demonstrates the participant flow from sign-ups to completion of the three phases. [1] An experimenter accidentally debriefed one participant after they wrote the same keyword for their new memory after their first memory was below the emotionality cut-off score.

Exclusion Criteria

Eligibility was assessed in a three-phased lab session. In the first phase, we excluded students who scored ≥ 6 on the Trauma Screening Questionnaire (TSQ; Brewin et al., 2002) or ≥ 11 on the Quick Inventory for Depressive Symptoms (QIDS-SR16; Rush et al., 2003). In the second phase, we terminated the participation of those who rated the emotional intensity of their memory < 60 or did not spontaneously adopt a field perspective for their memory.

Materials

The materials of study phases 1 and 3 were presented in English in Qualtrics (Version January 2023) software.

Phase 1

Depressive Symptoms. Depressive symptom severity was measured with the Quick Inventory of Depressive Symptomatology (QIDS-SR_{16}; Rush et al., 2003). Participants answered 16 items converting to the diagnostic criterion domains of major depression. All items are scored 0 to 3 to calculate a total score. In the calculation, only the item with the highest score is taken from symptom domains with more than 1 item. Total scores ranging from 0-5 indicate no depression, 6-10 mild depression, 11-15 moderate depression, 16-20 severe depression, and above 20 very severe depression. A cut-off of 11 was used so that only students in the no or mild depression ranges were eligible.

Posttraumatic Symptoms. The Trauma Screening Questionnaire (TSQ; Brewin et al., 2002) is a 10-item self-report questionnaire designed to screen PTSD symptoms. Participants reported whether (i.e., 0 = *No*, 1 = *Yes*) they experienced PTSD symptoms at least twice in the past week. Items refer to criterion B and D of the DSM-5-TR PTSD diagnosis (American Psychiatric Association, 2022) and have to do with re-experiencing or arousal symptoms (e.g., “upsetting thoughts or memories about the event have come into your mind against your will” and “bodily reactions when reminded of the event”). Adding the positive responses results in

a sum score (range 0 - 10). A cut-off of 6 was used as an indication of being at risk for probable PTSD (Brewin et al., 2002).

Phase 2

Memory Selection Sheet. Participants wrote their answers to the following questions asked by the experimenter: 1) Could you please write down one keyword that describes your memory? 2) Could you write down how emotional the memory still makes you feel now, on a scale from 0 to 100, where 0 stands for not emotional at all and 100 for very emotional? and 3) Could you write down when the event happened (i.e., (. . .) years/months/days ago)?

Phase 3

Memory Content. Independent raters scored memory content according to McIsaac and Eich's (2004) content categories (see Appendix A for the content scoring guideline).

Memory Characteristics Questionnaire. A non-standardized questionnaire with the following items from Boyacıoğlu and Akfırat (2015) was used to assess emotional intensity, vividness, narrative coherence, and emotional distance after each memory recall from the instructed perspective on 100-pt visual analogue scales:

- **emotional intensity**: While remembering the event now, my feelings are intense (0 = *not at all intense*, 100 = *extremely intense*).
- **vividness**: I can remember the event vividly, as though I were there (0 = *not at all*, 100 = *as clearly as if it happened now*)
- **emotional distance**: While writing about the event, I relate what happened rather than what I felt or thought (0 = *not at all*, 100 = *extremely*).
- **narrative coherence**: As I remember the event, there are gaps and some things I cannot remember in the storyline (0 = *nothing is missing*, 100 = *many things not remembered*).

Equivalence Check. Adoption of the vantage points was assessed with three questions on 100-pt visual analogue scales (McIsaac & Eich, 2002). Respectively, 1) What percentage of the total recall time were you able to maintain the (. . .) perspective? (0 = *0%*, 100 = *100%)*, 2) How strongly did you maintain the (. . .) perspective? (0 = *not strong at all*, 100 = *extremely strong)* and 3) How easy was it for you to maintain the (. . .) perspective? (0 = *not easy at all*, 100 = *extremely easy).* Further, Qualtrics tracked participants' recall time, and during the memory scoring, experimenters counted the number of words students used in each recall moment.

Tetris. The HTML game *Tetro Classic* was embedded in Qualtrics (see https://cdn.htmlgames.com/TetroClassic).

Procedure

Participants signed up for three consecutive study phases at the psychology laboratory of the University of Groningen. All experimenters were familiar with the study protocol and individual testing of students as they were involved in the pilot.

Phase 1

The first phase lasted approximately 20 minutes and concerned filling in the QIDS-SR_{16} and TSQ. After completion, scores were assessed by the experimenter. Eligible students proceeded directly to the second phase.

Phase 2

The second phase lasted about 15 minutes. It comprised answering the CAQ, selecting an aversive personal memory, and determining the natural vantage point for this memory.

Selection of an Aversive Personal Memory. Through a standardized interview protocol, participants were asked to retrieve a negative autobiographical memory with an emotional load. If they could not think of a memory immediately, the experimenter offered a list with examples of aversive events (e.g., break-up, illness, passing away of someone close).

When participants could think of a memory, they were provided with the memory selection sheet to write a keyword describing their memory, rate the current emotional intensity and estimate the recency of their memory. When the emotional intensity rating exceeded 59, participants were told to keep the selected memory in mind during the rest of the experiment.

When the emotional intensity rating was below 60, participants were told that it was essential for the study that a memory is experienced as more emotionally intense. Without offering them the list of examples, they were asked whether they could think of another memory with a higher emotional intensity. If so, participants filled in the memory sheet for the new memory. Based on the written keywords, the experimenter checked whether participants chose another memory than before. When the emotional intensity of the new memory did again not exceed 59, or participants could not think of another memory, early debriefing followed.

Assessment of the Spontaneous Vantage Point. Participants with a suitable memory were told about the possibility of adopting a field perspective when remembering autobiographical events. They were asked whether their natural perspective for their memory concerned a field perspective. Students who confirmed continued to the third phase. Those who did not have a spontaneous field perspective were asked if they remembered their memory as an outside observer (i.e., from an observer perspective) and then debriefed.

Phase 3

In the third phase of about 40 minutes, the focus lay on recollecting and writing down the aversive memory, rating its characteristics, and playing Tetris (see Figure 2 for a visualization of this phase).

First Memory Recall. The importance of taking time to think and writing down everything remembered, even if details, aspects, or feelings related to the memory did not feel crucial, was emphasized to participants. Then, participants received an explanation about the

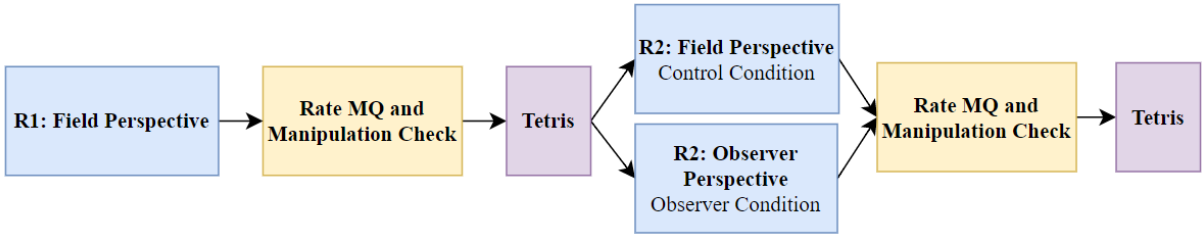
field perspective and were asked to write their memory from this perspective in their preferred language (i.e., English, German, or Dutch) in as much detail as possible to the extent they felt comfortable (see Appendix B for participant instructions). Subsequently, participants responded to the memory characteristic- and equivalence check items.

Tetris and Randomization. To neutralize the effects of the first recall, participants played Tetris for 10 minutes (Holmes et al., 2009). Afterwards, Qualtrics randomly allocated them to the observer or control condition.

Second Memory Recall. Controls recalled and wrote down their memory for a second time after repetition of the field instruction. Participants in the observer condition were first explained the observer perspective (see Appendix B) before they wrote their chosen memory from an observer vantage point. After the recall, participants rated memory characteristics and answered the equivalence check items corresponding to their adopted perspective (i.e., either field or observer). Then, they played Tetris for five minutes, regardless of their condition (Holmes et al., 2009). Ultimately, a debriefing followed.

Figure 2

Visualized Procedure of Phase 3



Note. R1 stands for the first recall, and R2 stands for the second recall.

Data Analyses

Pre-Registered Variables

In this study, Recall (first or second) and Condition (observer or control) were the independent variables. The dependent variables were the number of statements on Affective Reactions, Physical Sensations, Psychological States, Self-Observations, Physical actions,

Spatial Relations, First-Person Accounts, Peripheral Details, Total Content (i.e., the sum of all statements in the content categories) and self-rated scores on Emotional Intensity, Vividness, Emotional Distance, and Narrative Coherence.

Non Pre-Registered Variables

Additional outcome measures were the time participants spent writing their memories (i.e., Writing Time), the number of words they used (i.e., Number of Words), and each item of the equivalence check as a separate variable (i.e., Recall Time, Strength Perspective and Easiness Perspective).

Memory Rating Procedure

Three independent raters scored memory content. To determine the inter-rater reliability, 10 English memories were selected at random. Intraclass Correlation Coefficients (ICCs) and their 95% confidence intervals were calculated for all content categories and the total content based on mean ratings (k = 3), absolute agreement, and two-way random effects models (see Table 1). Reliability varied from good to excellent (Koo & Li, 2016).

Table 1

Intraclass Correlation Coefficients for the Content Variables

Content Categories	First Recall		Second Recall	
	ICC [95% CI]	Classification	ICC [95% CI]	Classification
Affective Reactions	0.94 [0.82, 0.98]	Excellent	0.95 [0.86, 0.99]	Excellent
Physical Sensations	0.93 [0.79, 0.98]	Excellent	0.97 [0.90, 0.99]	Excellent
Psychological States	0.87 [0.63, 0.97]	Good	0.94 [0.90, 0.98]	Excellent
Self-Observations	1.00 [1.00, 1.00]	Excellent	1.00 [1.00, 1.00]	Excellent
Physical Actions	0.96 [0.88, 0.99]	Excellent	0.99 [0.96, 1.00]	Excellent
Spatial Relations	0.80 [0.45, 0.95]	Good	0.95 [0.85, 0.99]	Excellent
First-Person Accounts	0.96 [0.90, 0.99]	Excellent	1.00 [0.99, 1.00]	Excellent
Peripheral Details	0.91 [0.74, 0.98]	Excellent	0.96 [0.88, 0.99]	Excellent
Total Content	0.96 [0.89, 0.99]	Excellent	0.99 [0.98, 1.00]	Excellent

Note. The classification was based on Koo and Li (2016).

Statistical Analyses

Pre-Registered Analyses and Violated Assumptions

Hypothesis 1 to 4. In line with the pre-registration, we checked whether the pre-registered variables (i.e., Affective Reactions, Emotional Intensity, Vividness, Emotional Distance, Narrative Coherence, and Total Content) met the assumptions for two-way mixed ANOVAs. Descriptives were calculated. Boxplots were generated to check for outliers. Through Normal Q-Q plots, normality was assessed. Levene's and Box's tests were conducted to evaluate the homogeneity of variances and covariances. Although not stated in the pre-registration, histograms were made to understand the distribution shapes of the variables better.

A total of 24 outlying cases were identified through boxplots of Affective Reactions (3), Emotional Intensity (5), Vividness (5), Emotional Distance (1), Narrative Coherence (3) and Total Content (7). Some students had outlying values on more than one variable. Therefore, the numbers above do not all represent separate participants. Outliers were checked against entries in the logbook on oddities that occurred during testing and met the pre-registered exclusion criteria. None of the outliers was associated with irregularities, so they were all included in the analyses.

Normal Q-Q plots and histograms suggested that normality was violated for Affective Reactions, Vividness, Emotional Distance, Narrative Coherence and Total Content. Levene's tests indicated heteroscedasticity at the second recall for Vividness ($F(1, 76) = 9.10$, $p = .003$) and Emotional distance ($F(1, 76) = 12.57$, $p < .001$). Box's tests implied heterogeneity of covariances for Vividness ($M = 17.53$, $F(3, 1138621.94) = 5.68$, $p < .001$), Emotional distance ($M = 16.724$, $F(3, 1138621.94) = 5.42$, $p = .001$), and Total Content ($M = 10.18$, $F(3, 1138621.94) = 3.30$, $p = .02$).

With regard to Vividness, a square transformation was applied as its distribution was left-skewed at the second recall (Whitlock & Schluter, 2008). The transformation made the distribution more symmetrical and led to the homogeneity of variances ($F(1, 76) = 3.72$, $p = .06$). Yet, the Box's test remained statistically significant ($M = 8.60$, $F(3, 1138621.94) = 2.79$, $p = .04$). Additionally, a square root transformation was applied to Total Content. After this transformation, the distribution remained asymmetrical in the control condition. However, it solved the heterogeneity of covariances ($M = 2.44$, $F(3, 1138621.94) = 0.79$, $p = .50$). Concerning Emotional Distance, no transformation led to the normality of residuals, homoscedasticity or equality of covariance matrices. It was decided not to transform Affective Reactions or Narrative Coherence as for these, only normality was violated, and a two-way mixed ANOVA is considered robust to this violation (Wilcox, 2012).

Eventually, two-way 2 (Recall: first or second) x 2 (Condition: observer or control) mixed ANOVAs were conducted to examine the interaction effects on the number of Affective Reactions (hypothesis 1), ratings on Emotional Intensity and transformed Vividness (hypothesis 2), Emotional Distance (hypothesis 3), Narrative Coherence and transformed Total Content (hypothesis 4). A correction for multiple testing was not applied as the study was largely explorative. Although outliers were intentionally kept in the analyses, we rerun the analyses without them as they impact the reliability of statistical tests. Yet, their exclusion did not yield different findings, so we only reported the analyses with outliers.

Exploratory Analyses. Paired-samples *t*-tests were used to explore whether there were differences in the mean number of statements on Physical Sensations, Psychological States, Self-Observations, Physical Actions, Spatial Relations, First-Person Accounts, and Peripheral Details between the first and second recall in the observer condition. Only the differences between recall moments in the observer condition were assumed relevant, as these may occur due to shifting from a field to an observer perspective. Difference scores were

computed for the content categories - and used as outcome variables in boxplots and Normal Q-Q plots to identify outliers and assess normality, respectively.

Boxplots on the difference scores revealed outliers on Physical Sensations (5), Psychological States (2), Self-Observations (5), Physical Actions (2), Spatial Relations (4), First-Person Accounts (1) and Peripheral Details (8). Also, the normality seemed violated for the difference scores of Physical Sensations, Self-Observations, Physical Actions, Spatial Relations, and Peripheral Details.

Despite the violations, paired-samples *t*-tests were performed in line with the pre-registration. However, based on the data, it was decided to also conduct non-parametric tests. Histograms of the difference scores of all content categories revealed that distributions were not symmetrical. Therefore, sign tests were used, as the sign test does not make distributional assumptions (Whitlock & Schluter, 2008). Medians for each recall moment and the median differences between paired observations were calculated. For variables for which the sum of the negative and positive differences was 25 or less, exact sign tests were performed. For a total above 25, asymptotic sign tests were conducted (Harris & Hardin, 2013).

Non Pre-Registered Analyses

It was explored whether the time participants spent writing (i.e., Writing Time) and their number of words (i.e., Number of Words) differed between recall moments and conditions. In the same way as for hypotheses 1 to 4, we checked whether statistical assumptions for two-way mixed ANOVAs were met. Through boxplots, 8 outlying cases were identified for Writing Time and 9 for Number of Words. The normality of both variables seemed violated based on Normal Q-Q plots and histograms. Regardless of the outliers and the deviations from normality, two-way 2 (Recall: first or second) x 2 (Condition: observer or control) mixed ANOVAs were performed on Writing Time and Number of Words.

Further, the “two one-sided tests” (TOST) procedure (Lakens, 2017) was followed to

test for equivalence across conditions on Recall Time, Easiness Perspective, and Strength Perspective. Descriptives were calculated, and equivalence bounds were set based on the benchmark for a large effect (Cohen, 1988). To elaborate, a benchmark for a large and not a medium or small effect was chosen as it has the highest chance of providing information on effects that are likely practically and, thus, clinically relevant (Peeters, 2016). Consequently, the smallest effect size of interest (SESOI) was d =.8, resulting in equivalence bounds of Δ_L = -0.8 and Δ_U = 0.8. As the number of observations was unequal across the conditions, two-sample Welch's *t*-tests were performed on Recall Time, Easiness Perspective and Strength Perspective, as this test is the default (Lakens, 2017)

Computer Software

All analyses except the equivalence tests were performed with IBM SPPS Statistics (Version 28.0.1.0; IBM Corp, 2021). R Studio (R Core Team, 2021) was used to test for equivalence. TOST results were obtained via the TOSTER R package (Caldwell, 2022; Lakens, 2017).

Results

Pre-Registered Analyses

Descriptives on the pre-registered variables (i.e., Affective Reactions, Emotional Intensity, Vividness, Emotional Distance, Total Content and Narrative Coherence) are separately shown for the control and observer condition in Appendix C, Tables C1 and C2.

Hypothesis 1: Shifting From a Field to an Observer Perspective Leads to Fewer Affective Reactions in Memory Content Than Recalling a Memory Twice From a Field Perspective Over Time

A 2 (Recall: first or second) x 2 (Condition: observer or control) mixed ANOVA with recall as the within-subject factor was performed on the number of affective reactions. A statistically significant interaction between Condition and Recall emerged (see Table 2 for means and test statistics and Figure 3 for a visualization of the interaction).

Table 2

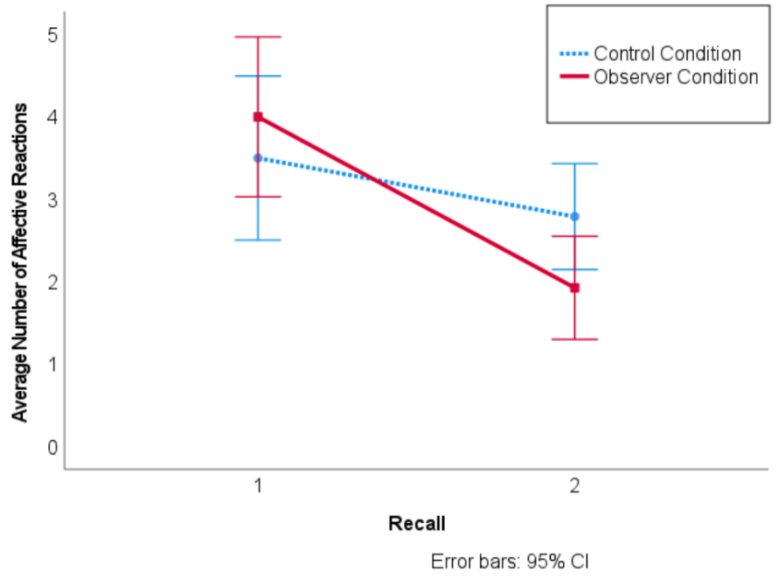
Means, Standard Deviations, Confidence Intervals and Two-Way ANOVA Interactions on Affective Reactions, Emotional Intensity, Vividness, Emotional Distance, Narrative Coherence and Total Content

Variables	Control (n = 38)		Observer (n = 40)		$F(1, 76)$	η^2	p
	Recall 1	Recall 2	Recall 1	Recall 2			
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*			
	95% CI	95% CI	95% CI	95% CI			
Affective Reactions	3.50 (2.84)	2.79 (2.18)	4.00 (3.30)	1.93 (1.79)	5.57	0.07	.02
	[2.51, 4.50]	[2.15, 3.43]	[3.03, 4.97]	[1.30, 2.55]			
Emotional Intensity	69.05 (14.17)	63.47 (17.93)	66.70 (13.31)	47.38 (20.85)	8.64	0.10	.004
	[64.61, 73.49]	[57.18, 69.77]	[62.37, 71.03]	[41.24, 53.51]			
Vividness	78.34 (14.32)	75.45 (17.50)	73.22 (19.48)	60.57 (26.92)	3.17	0.04	.08
	[74.65, 84.27]	[71.33, 83.02]	[70.62, 80.48]	[59.13, 72.49]			
Emotional Distance	44.18 (22.23)	50.45 (19.68)	42.75 (25.54)	58.45 (32.24)	1.46	0.02	.23
	[36.44, 51.93]	[41.77, 59.13]	[35.20, 50.30]	[49.99, 66.91]			
Narrative Coherence	35.32 (28.50)	33.50 (26.18)	33.83 (26.83)	36.00 (25.96)	0.86	0.01	.36
	[26.38, 44.25]	[25.08, 41.92]	[25.12, 42.53]	[27.79, 44.21]			
Total Content	38.29 (22.79)	32.32 (22.34)	40.32 (32.88)	29.00 (30.92)	2.46	0.03	.12
	[27.30, 43.34]	[21.99, 36.42]	[27.78, 43.48]	[18.12, 31.01]			

Note. Condition x Recall interactions are shown.

Figure 3

Line Plot Showing the Recall by Condition Interaction on the Number of Affective Reactions



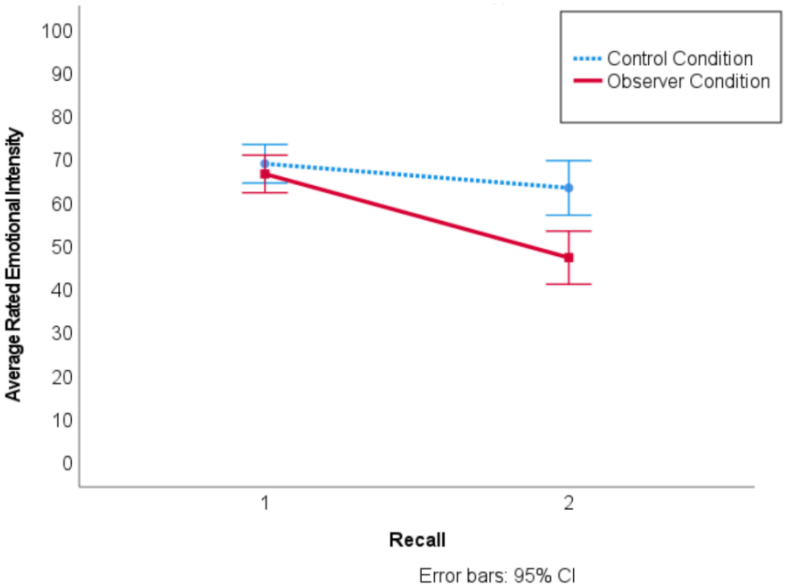
Note. The plot was based on estimated marginal means.

Hypothesis 2: Relative to not Switching Perspective, the Field-to-Observer Shift Reduces the Emotional Intensity and Vividness of a Memory

Similar mixed ANOVAs were performed on Emotional Intensity and Vividness ratings (see Table 2 for means and test statistics). A statistically significant interaction effect emerged only on Emotional Intensity, which is visualized in Figure 4.

Figure 4

Line Plot Showing the Recall by Condition Interaction on Rated Emotional Intensity



Note. The plot was based on estimated marginal means.

Hypothesis 3: Relative to Not Switching Perspective, the Field-to-Observer Shift Increases the Emotional Distance Towards a Memory

A similar mixed ANOVA was run on Emotional Distance (see Table 2 for means and test statistics). The interaction between Condition and Recall on Emotional Distance was statistically non-significant.

Hypothesis 4: Changing Perspective Might Decrease the Narrative Coherence and, Therefore, the Completeness of a Memory

Similar mixed ANOVAs were performed on Narrative Coherence and Total Content (see Table 2 for means and test statistics). None of the Condition-by-Recall interactions on these variables were statistically significant.

Exploratory Content Analyses

Paired sample *t*-tests were conducted to examine whether memories changed in content after shifting from a field to an observer perspective (see Table 3). The mean number of details on Physical Sensations, Psychological States, and First-Person accounts decreased statistically significantly after switching perspectives, whereas the mean number of Self-Observations increased statistically significantly. Based on benchmarks suggested by Cohen (1988), effect sizes ranged from small (d = .20 - .50) to medium (d = .50 - .80).

Table 3

Means, Standard Deviations, Mean Differences Between Recalls and Results of Paired-Sample T-Tests on Content Categories in the Observer Condition (n = 40)

	Recall 1 (field)		Recall 2 (observer)				
Content Categories	*M*	SD	*M*	*SD*	Mean Difference	*t*	*d*
Physical Sensations	1.50	1.71	0.95	1.54	-0.55	-3.73*	.59
Psychological State	4.35	2.87	2.60	2.65	-1.75	-3.70*	.58
Self-Observations	0.00	0.00	0.15	0.43	0.15	2.22*	.35
Physical Actions	12.10	11.94	11.75	13.76	-0.35	-0.32	.05
Spatial Relations	1.53	2.11	1.98	3.14	0.45	1.35	.21
First-Person Accounts	16.18	15.97	9.05	13.40	-7.13	-4.65*	.74
Peripheral Details	0.63	1.48	0.60	1.75	-0.03	-0.13	.02

** $p < .05$*

Due to violated test assumptions, exact sign tests were used to investigate the effect of switching vantage points on the number of Physical Sensations, Self-Observations, Spatial Relations, and Peripheral Details in memory recollections (see Table 4). There was a statistically significant median difference in the number of Physical Sensations between recall moments. Of the 40 participants, 14 had fewer details on physical sensations after switching perspectives. The reverse held for 1 participant. Moreover, changing vantage points did not influence the number of physical sensations in the memory statements of 25 students. The median differences in the number of Self-Observations, Spatial Relations, and Peripheral Details between recall moments were all statistically non-significant.

Table 4

Exact Sign Tests on Medians of Content Categories in the Control Condition (n = 40)

Content Categories	Recall 1 (field) Median	Recall 2 (observer) Median	Median Difference R2 – R1	*p*	Ties
Physical Sensations	1.00	.000	-8.00	< .001	25
Self-Observations	0.00	0.00	0.00	.06	53
Spatial Relations	1.00	1.00	0.00	.26	20
Peripheral Details	0.00	0.00	0.00	1.00	31

Note. A significance level of $\alpha = .05$ was used.

Asymptotic sign tests were conducted to explore the effect of switching vantage points on the number of Psychological States, Physical actions, and First-Person accounts (see Table 5). A statistically significant difference in medians of the number of Psychological States between recalls emerged. After shifting perspective, 25 participants had fewer details on psychological states, whereas nine students had more of these in their memory. Shifting did not impact the number of psychological states in five students. Further, a statistically significant median difference in the number of First-Person accounts was found. Memory recollections of 31 participants contained fewer first-person accounts after switching perspectives, whereas recollections of eight participants contained more of them after

switching. The shift did not impact the number of first-person accounts in one participant. Further, a statistically non-significant median difference in the number of Physical Actions between recalls was observed.

Table 5

Asymptotic Sign Tests on Medians of Content in the Control Condition (n = 40)

Content Categories	Recall 1 (field) Median	Recall 2 (observer) Median	Median Difference R2 – R1	*z*	*p*	Ties
Psychological State	4.00	2.00	-2.00	-2.70	.01	5
Physical Actions	8.00	7.00	-1.00	-0.83	.41	4
First-Person Accounts	12.50	5.00	-6.50	-3.52	<.001	1

Note. R2 stands for recall 2, and R1 stands for recall 1. A significance level of $\alpha = .05$ was used.

Non Pre-Registered Analyses

Descriptives

The memories of eligible participants had a mean recency of 166.50 weeks (*SD* = 177.72; range 0.14 - 782.66) and a mean emotionality of 69.40 (*SD* = 7.93; range 60.00 – 90.00) in the second phase of the experiment. Descriptives of the equivalence check variables (i.e., Recall Time, Strength Perspective, Easiness Perspective, Writing Time and Number of Words) are shown in Appendix D.

Equivalence Checks

It was of interest whether the requested perspectives could be evenly well maintained across the observer and control condition during both recalls (i.e., Recall Time), whether participants across conditions judged it equally easy to maintain the requested perspective at both recalls (i.e., Easiness Perspective) and whether participants across conditions could equally strongly maintain the requested perspective at the recall moments (i.e., Strength Perspective). Therefore, equivalence tests for a two-sample Welch's *t*-test, using equivalence bounds of ± .80, were conducted on the independent variables Recall Time, Easiness Perspective and Strength Perspective. Concerning Recall Time, the TOST procedure yielded a

statistically significant test for the first and second recall, (t(75.01) = -2.79, p = .003) and (t(72.62) = -2.72, p = 0.004), respectively. This indicated that the natural effects were close enough to zero to be practically equivalent. The same holds for Strength Perspective, as indicated by statistically significant tests for the first (t(71.12) = -1.87, p = .03) and second recall (t(73.32) = -2.77, p = .04). Equivalence could not be assumed for Easiness Perspective, as implied by a statistically non-significant test for the second recall (t(75.37) = -1.45, p = .08).

Additionally, two-way 2 (Recall: first or second) x 2 (Condition: observer or control) mixed ANOVAs were conducted on the Writing Time and Number of Words. The main effects of Recall on both variables were statistically significant, while the main effect of condition was not. Also, the Recall-by-Condition interactions were statistically non-significant (see Table 6). It appeared that participants spent more seconds on the first (M = 716,01, SD = 523.46) than on the second recall (M = 445.07, SD = 325.84). Also, memory recollections were longer at the first (M = 293.73, SD = 213.04) than at the second recall (M = 219.93, SD = 191.04).

Table 6

Results of Two-Way ANOVAs on Writing Time and the Number of Words

Variables	ANOVA			
	Effect	F (1, 76)	η^2	p
Writing Time	R	40.09	0.35	<.001
	C	0.07	0.00	.80
	R x C	0.17	0.00	.68
Number of Words	R	28.22	0.27	<.001
	C	0.18	0.00	.67
	R x C	0.85	0.0	.36

Note. N = 78. ANOVA = analysis of variance; R = recall; C = condition; R x C = recall by condition interaction. A significance level of α = .05 was used.

Discussion

This study aimed to investigate the within-person effects of shifting from a field to an observer perspective on the content and perceived emotional intensity, vividness, emotional distance and narrative coherence of a negative autobiographical memory. The results implied that the number of affective reactions in memory content declined statistically significantly more with the field-to-observer shift than when the field perspective was retained over recall moments. Further, exploratory analyses showed that students assigned to the observer condition had statistically significantly fewer details on physical sensations, psychological states and fist-person accounts in their recollection when they recalled their memory from an observer perspective. Additionally, partial support was found for the second hypothesis, as emotional intensity but not vividness declined greater in the observer than in the control condition. Other unanticipated findings concern that relative to not shifting perspective, switching to an observer perspective did not statistically significantly increase emotional distance nor decrease narrative coherence or total content, as specified in the third and fourth hypotheses, respectively. An equivalence check revealed that participants across conditions could maintain the requested perspective evenly well during the second recall in terms of time and strength. However, an observer perspective was judged as harder to adopt than a field perspective. Also, the changes in the time participants spent writing their memory and the number of words used between recall moments did not statistically differ between conditions. Students used more time and words to write their memory statement at the first recall than at the second recall in general.

Embedding the Results in the Literature

Finding that the number of affective reactions and emotional intensity declined statistically significantly more with the field-to-observer shift than with no shift aligns with the results of earlier studies. In particular, King et al. (2022) also found that university

students who shifted to an observer perspective over recall moments wrote fewer details on emotions in narratives of autobiographical memories, and rated their recollection as less emotionally intense at the second recall than students who wrote their memories from a spontaneous field perspective over the experimental sessions. Similarly, Robinson and Swanson (1993) implied that students who shifted to an observer perspective experienced the recollection of autobiographical memories as less emotionally intense than those who did not change perspective over time. Also, Akhtar et al. (2017) indicated that the emotional intensity and number of affective reactions decreased with the field-to-observer shift. However, in their study, the changes over recall moments, and thus, the effects of the shift, were not compared to a control condition in which the vantage point remained constant. Moreover, it should be noted that participants in the current experiment retrieved their memory for a second time after only 10 minutes, whereas in previous research, recall moments were separated by either one week (Akhtar et al., 2017; Robinson & Swanson, 1993) or two weeks (King et al., 2022).

Additionally, it is striking that the exploratory content analyses revealed that students who shifted perspective wrote fewer details on physical sensations, psychological states, and first-person accounts, as Akhtar et al. (2017) also found that with the field-to-observer shift, the details on sensory-perceptive details and cognitions in memories diminished. Yet, it was not well elaborated on what they interpreted to be sensory-perceptive details and cognitions, so it remains a guess that these variables implied the exact same as what we considered psychical sensations and psychological states, respectively.

Further, the null result on vividness contrasts with the literature describing that vividness declines when people shift from a natural field to an observer perspective (Butler et al., 2016). However, the latter idea seems mainly built upon studies that relied on between-subject designs and suggested that an observer perspective is associated with reduced

vividness relative to a field perspective (e.g., Berntsen & Rubin, 2006; McIsaac & Eich, 2002; McIsaac & Eich, 2004).

Regarding emotional distance, researchers seem to have only argued rather than supported with empirical findings that an observer perspective increases the distance relative to a field perspective (e.g., Eich et al., 2012; Kenny & Bryant, 2007). Hence, this study might be unique in that it considered how shifting to an observer perspective related to the perceived emotional distance and in that we explored how shifting might influence the total memory content and narrative coherence.

Theoretical Implications

Based on the current experiment, shifting from a field to an observer perspective seems to dampen the emotional intensity experienced when recollecting aversive autobiographical memories that happened at least one day up until 15 years ago, relative to when a natural field perspective is retained over recall moments. So, our findings support the idea that shifting to an observer perspective might provide relief immediately (Akhtar et al., 2017; Berntsen & Rubin, 2006; King et al., 2022; McIsaac & Eich, 2004). When psychology undergraduates remember an aversive event from a spontaneous field perspective and may experience distress, shifting to an observer perspective seems to make remembering less emotionally intense.

Relatedly, researchers suggested that the supposed increased emotional distance associated with an observer perspective might help to perceive a memory as less emotionally intense than when remembered from a field perspective (Eich et al., 2012; Kenny & Bryant, 2007; Kenny et al., 2009). Yet, this study does not find support for this notion, as there was no statistically significantly larger increase in psychological distance in students who shifted to an observer vantage point compared to participants who did not change perspective. An explanation for this null finding might lie in the possible “mismatch” between the item used to

measure emotional distance and the instructions participants received about an observer perspective. After each recall, students rated the emotional distance towards their memory based on the statement, "While writing about the event, I relate what happened rather than what I felt or thought *(*0 = *not at all*, 100 = *extremely*)" (Boyacıoğlu & Akfırat, 2015). Retrospectively, this item seems tailored most to what is called objective distance (i.e., a form of emotional distance; Powers & LaBar, 2019) as it more or less makes participants think about whether they could take a "neutral" perspective with a focus on what happened rather than on their emotions and thoughts. Nevertheless, participants read instructions noting to "look at the situation from an external vantage point (e.g., a bird's eye view)" so that they "could see themselves in their memory". It can be guessed that these instructions incited spatial distance, another form of emotional distance, that refers to taking a spatially distant perspective from the event (Powers & LaBar, 2019). However, the spatial distance was likely not measured, or at least to a suboptimal extent, with the item we relied on.

An alternative option is that an increase in psychological distance is unnecessary for dampening a memory's emotional intensity. The possibility exists that the statistically significantly larger decline in written affective reactions is causally linked to the reduction in emotional intensity during recollection. However, it should be stressed that this is only a speculation and remains unclear based on this study. Furthermore, it can be guessed that participants felt less pressure to focus on the associated negative emotions when asked to recall their memory from an observer perspective (Eich et al., 2012). If an observer perspective induced a sense of safety, students might have felt calmer during remembering, which could have led to reductions in rated emotional intensity. Notably, our data underscore the need to explore these speculations further.

Additionally, why vividness did not statistically significantly decline more with a field-to-observer shift than with no shift can be wondered. It has been proposed that shifting

to an observer perspective may accelerate forgetting and leads to the permanent loss of visual information, lowering the level of vividness in autobiographical memories (Butler et al., 2016; Cooper & Ritchey, 2022). Yet, in the current study, the total content did not reduce statistically significantly more in the observer than in the control condition. Moreover, we consider it unlikely that people instantly forgot parts of their memory when they recalled it from an observer perspective when retention intervals varied even up until 15 years. Furthermore, research has shown that changes in memory content induced by a field-to-observer shift do not persist over time (King et al., 2022; Sekiguchi & Nonaka, 2013). Thus, although several studies noted that vividness declines with shifting to an observer perspective (Akhtar et al., 2017; Butler et al., 2016; Vella & Moulds, 2014), a grounded theory on how vividness might relate to shifting perspective seems to be missing in the literature.

Further, we speculated that shifting to an observer perspective would result in perceiving more gaps in the memory due to the proposed omission of distressing content compared to when a field perspective was retained over recall moments. However, the results do not support this idea, as the reductions in total content and narrative coherence were not statistically significantly larger in the observer than in the control condition.

Practical Implications

Although the results support the idea that shifting to an observer perspective after an adverse life-event might be a good thing to do in the short-term, many clinicians would probably disagree with this interpretation. Emotionally processing by reliving a negative memory through their own eyes is usually a clinical goal in treatment to reduce PTSD symptoms (Eich et al., 2012). Moreover, based on this study, it remains unclear what the effects of shifting perspective are in the long run, as only the immediate impact of switching to an observer perspective was taken into account. Imperatively, earlier studies have proposed that the longer-term consequences are aversive (Akhtar et al., 2017; Kenny et al., 2009; King

et al., 2022; McIsaac & Eich, 2004) and even associated with a worse prognosis for PTSD symptoms (Eich et al., 2012). Therefore, it should be said that our results require caution.

Nevertheless, based on our findings, it seems that asking clients plagued by a negative autobiographical memory about their initial and current vantage points might be helpful in the context of psychological therapy. Especially when relatively little emotional intensity during recollection is experienced by a patient, a therapist who is unaware that a memory was initially remembered from a field perspective and thus perceived as more distressing might underestimate the impact of a memory on the issues (e.g., anxiety problems) a patient deals with. Consequently, they might give an aversive memory too little attention during therapy, possibly making it more challenging for a patient to get a grip on the issues in their life.

Methodological Limitations

Several caveats of this study should be noted. First, students received a written explanation about a field perspective before getting information on an observer perspective. Moreover, eligible participants remained unaware that the study was about shifting vantage points until the observer perspective was introduced in the third study phase. This specific order of providing participants with theory served to prevent that knowledge of an observer perspective would interfere with the field recall. However, it came with the drawback that checking whether participants understood the perspectives was not part of the procedure, as phase three, and the provision of instructions was entirely online without interruption by the experimenter.

Second, the effects of the filler task (i.e., Tetris) were not investigated. Hence, whether the game was sufficient to distract participants from continuous engagement in their memory can be questioned. Notably, distraction is imperative as continuous engagement might influence what people remember and how they rate memory characteristics at a second recall.

Third, for practical reasons, the current study relied on a non-clinical sample with only first-year psychology students. Therefore, whether the outcomes can be generalized to "healthy" people with an aversive memory from different ages and educational backgrounds is unknown. Besides, there is no guarantee that the present study's findings hold for clinical samples.

Implications for Future Research

Various directions for future research should be noted. To elaborate on our methodological limitations, future studies could rely on a different or more varied sample to get insight into the extent to which findings can be generalized.

Further, including a verbatim check and practising adopting each vantage point immediately after introducing it should be considered. Researchers could ask for multiple aversive memories and use only a subset for practising each vantage point so that the most emotionally intense memory can be used for the field-to-observer comparison. Practising adopting perspectives might prevent participants from finding it more challenging to adopt an observer perspective than a field perspective. It might also counteract the possible unintended omission of memory content because a perspective is poorly understood.

Further, examining whether participants' active engagement in their memory decreased after Tetris by including a baseline item before - and a check-up item after the game is recommended (e.g., "My current thoughts are mostly about the memory", 0 = *Yes*, 100 = *No*). Alternatively, the interval between recall moments could be extended by scheduling a session at a later time. This would force participants to leave the safe lab environment and might prevent continuous engagement in their memory after the first recall (Nemeroff et al., 2006).

Additionally, the importance of aligning instructions about vantage points with the rating items on memory characteristics should be underlined, as that was likely suboptimal in

this study. The observer instructions might determine what type of distancing (i.e., spatial or objective distance) participants use during an observer recall (Powers & LaBar, 2019). So, including an item that matches the vantage point instructions is warranted. Also, it would be of interest to consider including an item measuring the sense of safety an observer perspective might induce to understand how this might relate to emotional intensity.

Finally, examining whether the numbers of statements on physical sensations, psychological states and first-person accounts – as well as self-observations, physical actions, spatial relations and peripheral details – change statistically significantly different across a shift-perspective and maintain-perspective (i.e., control) condition is recommended to discover whether changes can be attributed to the shift.

Conclusion

The present study contributes to the research base on the immediate within-person effects of shifting from a field to an observer perspective over time. Most importantly, the evidence suggested that shifting to an observer perspective reduces the emotional intensity during recall and leads to reporting fewer details on affective reactions than when a field perspective is retained over recall moments. Notwithstanding the limitations of this study, future research is recommended as the results have implications for theory, research methods and clinical practice.

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Appendix A: Scoring Guideline for the Content Categories

Definitions were based on the scientific literature (McIsaac & Eich, 2002; McIsaac & Eich, 2004) and agreements between experimenters within this study. We distinguished statements on:

- **affective reactions:** whether emotional or motivational (McIsaac and Eich, 2004, p. 251).
- **physical Sensations:** from any sensory modality (McIsaac and Eich, 2004, p. 251).
- **psychological states:** such as thoughts or subjective evaluations.
- **self-observations:** pieces of information in which the participant describes seeing themselves in the memory.
- **physical actions:** made in the course of the event.
- **spatial relations:** between objects, between an object and the participant or between the participant and other people.
- **first-person accounts:** indexed by first-person singular pronouns (e.g. “I”, “Me”, “Myself”).
- **peripheral details:** not related to the focal trauma (McIsaac and Eich, 2004, p. 251)

Appendix B: Participant Instructions Vantage Points

Field Perspective

When remembering an event, people can imagine the scene in various ways. One way that people remember an event is through their own eyes, from roughly the same viewpoint it was originally experienced. Please adopt this so-called field perspective.

Describe and write your memory from your own eyes in as much detail as you can or feel comfortable with. *Note: in your preferred language (English, German, Dutch).*

Observer Perspective

Another way that people can remember an event is as an outside observer, or onlooker, looking at the situation from an external vantage point (e.g., a bird's eye view), where one can see him or herself in the memory. Please adopt this perspective for your selected personal memory.

Although it might feel redundant, we ask you to describe and write down your memory again, but this time from a bird's eye view, in as much detail as you can or feel comfortable with. *Note: in your preferred language (English, German, Dutch).*

Appendix C: Descriptives of the Pre-Registered Variables

Table C1

Descriptive Statistics for the Number of Affective Reactions in Memory Content, the Total Content, Ratings on Emotionality, Vividness, Emotional Distance, and Narrative Coherence in the Control Condition (n = 38)

Variables	Recall 1							Recall 2						
	M	SD	Median	Range	5% Trimmed mean	Skewness	Kurtosis	*M*	*SD*	Median	Range	5% Trimmed mean	Skewness	Kurtosis
Content														
Affective Reactions	3.50	2.84	3.00	(0; 14)	3.27	1.39	3.76	2.79	2.18	2.00	(0; 7)	2.71	0.53	-0.78
Total	38.3	22.8	34.5	(6; 90)	37.2	0.66	-0.25	32.3	22.3	28.5	(3; 93)	30.9	1.09	0.62
Characteristics														
Emotionality	69.1	14.2	70.0	(27; 100)	69.4	-0.30	2.12	63.5	17.9	65.5	(24; 100)	63.6	-0.17	-0.29
Vividness	78.3	14.3	78.5	(39; 100)	79.2	-0.74	0.97	75.5	17.5	79.5	(30; 100)	76.5	-0.85	0.48
Emotional Distance	44.2	22.2	45.0	(0; 92)	44.3	-0.08	-0.30	50.5	19.7	50.0	(0; 82)	51.2	-0.61	0.08
Narrative Coherence	35.3	28.5	30.0	(0; 93)	34.2	0.54	-0.95	36.0	26.0	33.5	(0; 89)	35.1	0.59	-0.61

Table C2

Descriptive Statistics for the Number of Affective Reactions in Memory Content, the Total Content, Ratings on Emotionality, Vividness, Emotional Distance, and Narrative Coherence in the Observer Condition (n = 40)

Variables	Recall 1							Recall 2						
	M	SD	Median	Range	5% Trimmed mean	Skewness	Kurtosis	*M*	*SD*	Median	Range	5% Trimmed mean	Skewness	Kurtosis
Content														
Affective reactions	4.00	3.30	3.00	(0; 14)	3.75	1.13	1.21	1.93	1.79	1.50	(0; 7)	1.75	1.19	1.47
Total	40.3	32.9	27.5	(4; 129)	37.4	1.66	1.96	29.0	30.9	19.0	(2; 152)	24.2	2.70	7.79
Characteristics														
Emotionality	66.7	13.3	66.5	(40; 97)	66.4	0.33	-0.23	47.4	20.9	46.5	(9; 83)	47.5	0.08	-0.74
Vividness	73.2	19.5	76.0	(27; 100)	74.2	-0.88	0.36	60.6	26.9	63.0	(8; 100)	61.2	-0.35	-0.91
Emotional distance	42.8	25.5	42.5	(0; 90)	42.5	0.07	-0.96	58.5	32.2	65.5	(1; 100)	59.3	-0.53	-1.08
Narrative coherence	33.8	26.8	27.0	(0; 92)	32.5	0.84	-0.28	36.0	26.0	33.5	(0; 89)	35.1	0.59	-0.61

Appendix D: Descriptives on the Equivalence Check Items

Variables	Control (*n = 38)*		Observer (*n* = 40)	
	Recall 1	Recall 2	Recall 1	Recall 2
	M (SD)	*M* (SD)	*M (SD)*	*M (SD)*
Recall Time	74.24 (17.66)	71.95 (18.95)	70.98 (20.88)	67.85 (24.89)
Easiness Perspective	69.71 (23.00)	69.03 (22.49)	67.73 (24.10)	57.58 (25.97)
Strength Perspective	75.34 (17.06)	71.97 (18.61)	67.58 (23.55)	68.25 (23.82)
Writing Time	736.49 (524.70)	447.79 (349.82)	695.52 (528.17)	442.35 (305.79)
Number of Words	295.76 (199.60)	235.55 (177.54)	289.70 (227.58)	204.30 (204.12)

Note. Recall Time was measured in %, Easiness, and Strength Perspective on 100-pt VAS and Writing Time in Seconds.