

Interpersonal memory monitoring judgments and social attitude towards narrators as a
function of the recollective qualities of their memories

Christine Bastin^{1,2,3} & Marie Geurten^{2,3}

¹ GIGA Research, CRC Human Imaging, University of Liège, Belgium

² Psychology and Neuroscience of Cognition Unit, University of Liège, Belgium

³ F.R.S.-FNRS, Belgium

Corresponding author: Christine Bastin.

Email: Christine.Bastin@uliege.be

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ORCID: Christine Bastin <https://orcid.org/0000-0002-4556-9490>; Marie Geurten <https://orcid.org/0000-0003-3743-5246>

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Abstract

In everyday conversations, other people tell us memories about events they experienced, and this can support vicarious learning and decision making. However, memories are not always true or faithful to what really happened. We assessed whether the richness of perceptual and contextual details in episodic autobiographical memories influenced how individuals rated the degree of veracity and fidelity of others' memory and whether these interpersonal memory monitoring ratings were associated with social attitude towards the narrator. The results showed that raters judged narrators as having more accurate and faithful memories of past events when their recollections were richly detailed than when their memories lacked detail. Moreover, higher interpersonal memory monitoring judgments were associated with more trust and empathy felt towards the narrator and more willingness to interact with them, suggesting a role for interpersonal memory monitoring in social bonding.

Keywords: memory monitoring, interpersonal, recollection, social bonding

Introduction

Humans work together toward shared goals. This is possible because certain cognitive processes allow them to understand and share the psychological states of others (Tomasello et al., 2005). One example of such collaborative activity is vicarious learning. In everyday life, we often rely on someone else's memory to gain information about events that we did not experience ourselves. For instance, if we miss a meeting, we will ask a colleague to tell us what happened. By doing so, the colleague's memory for the meeting is a primary source of information. Some events told by family and friends are even integrated into one's own autobiographical memory, forming vicarious memories (Pillemer et al., 2015). We can also use others' memories to guide decision making. For example, if we want to buy a new car, the narration of a friend's misfortune with a given brand will discourage us from buying such brand. Another example is eyewitness testimony in the case of justice decisions. In that case, eyewitness memory of crime scenes can be critical in informing the jury's decision about whether to convict a perpetrator.

Interpersonal memory monitoring

If we rely on someone else's memory to obtain information about an event that we did not experience ourselves, what we learn depends on the quality of their memory. Yet, because of its reconstructive nature, episodic memory never provides an exact replay of what happened (Schacter et al., 2007; Schacter et al., 1998). While some memories are relatively close to the event unfolding, some are distorted or even false. Therefore, humans need a cognitive mechanism that allows them to decide whether the memory told by another person is veridical and sufficiently reliable to be used (Sperber et al., 2010).

How does this cognitive mechanism work? It has been suggested that one applies to other people's memory the same monitoring processes that one applies to one's own memory (Johnson et al., 1998; Johnson & Suengas, 1989). During retrieval, a decision is made about the source of one's memory based on their characteristics, distinguishing notably between real memories and imagined events or dreams (Johnson et al., 1993). If one's memory contains many perceptual and contextual details, and little information about cognitive operations (e.g., organizing, elaborating...), one judges it as referring to a real event, whereas a memory with the opposite characteristics is attributed to imagination (Johnson et al., 1993). The richer one's memory is in terms of phenomenology and the number of details, the more likely it is to be judged as real (Marche et al., 2009).

Similarly, people are able to accurately evaluate whether other people's memories reflect real or imagined events (Clark-Foos et al., 2015). This ability refers to interpersonal reality monitoring, an interpersonal equivalent of Belief in Occurrence. In autobiographical memory, Belief in Occurrence refers to the metacognitive judgment that an event truly occurred (Scoboria et al., 2014). A few studies examined the characteristics of other people's memories that are used to judge whether these memories are true or imagined. They showed that other people's descriptions of an event that contained more perceptual and emotional information were more often judged as corresponding to a real experience than to an imagined scenario (Johnson et al., 1998; Johnson & Suengas, 1989; Keogh & Markham, 1998). Moreover, raters assessing testimonies in real or simulated forensic contexts judged that truthful testimonies contained more details than lies (Vrij, 2005). Also, raters believed a statement to be true more readily if the narrator claimed

firsthand knowledge (e.g., “I saw it”) than in case of secondhand evidence (e.g., “somebody told me”) (Mahr & Csibra, 2021). Recently, a study asked raters to judge whether a participant’s “yes” recognition memory decision in a lab task was correct or not based on the participant’s verbal justification (Gamoran et al., 2024). Raters were able to discriminate between correct and false recognitions and considered justifications attributed to correct recognitions as more vivid, specific and confident than those attributed to false recognitions.

Thus, these studies suggest that the recollective quality of recounted memories (i.e., their richness and vividness in terms of details associated with firsthand experience) is used to decide whether other people’s memories are true or false. Recollection corresponds to recalling a past event with episodic details, such as what happened, who was there, what things looked like, contextual details about where and when this happened, or what the experiencer thought and felt... According to philosophers Mahr and Csibra (2017), the ability to recollect past events is interpreted as a claim that the information has been obtained firsthand by the person who remembers it and grants them with epistemic authority. Therefore, the person can be confident that their memory corresponds to something that occurred. Critically, in situations of communication between people, the fact that a narrator can produce a recollection of a past event would be taken as evidence by the recipient (or rater) that the narrator is indeed remembering and that one can reliably learn from them (Mahr & Csibra, 2017).

Beyond distinguishing between true and false memories, one also needs to decide whether other people’s memory for a real event is sufficiently faithful to integrate its details into our knowledge or in our vicarious memory. Similarly, only memories judged

as sufficiently accurate should allow us to make an informed decision based on what we learned. This interpersonal judgment mirrors the Belief in Accuracy that accompanies autobiographical memory. Belief in Accuracy refers to metacognitive judgments about the extent to which the event representation accurately reflects prior experience (Rubin, 2006; Scoboria et al., 2015). One previous study asked raters to judge whether a narrator had a reliable memory for a past event (Justice & Smith, 2018). Narrator's memories were presented in the form of vignettes reporting memories of the theft of a personal item. Justice and Smith (2018) found that interpersonal reliability ratings were greater for vignettes that contained specific details and a statement of recollection than for vignettes that were low in detail and recall confidence. However, it is unclear whether interpersonal reliability judgments were influenced by the specificity of the details or by the explicit claim of vivid recollection, as these variables were manipulated together.

More recently, a study asked raters to judge written narratives about other people's memories via scales assessing the accuracy of the memory, its believability and rater's confidence in the truth of the memory. The narratives were constructed so that they differed in the proportion of internal details (i.e., details conveying the episodic nature of the event) and external details (including semantic information, editorializing and metacognitive statements) (Nadel & Simon, 2024). There were 9 levels varying in the ratio of internal and external details, from narratives containing only internal details to narratives containing only external details, with middle levels varying in the relative balance of the two types of details. The results showed that the presence of internal details increased ratings of accuracy and believability and raters' confidence in the truth of the memories.

Altogether, previous studies suggest that various characteristics of other people's memory influence raters' interpersonal memory monitoring. These characteristics include explicit claims of recollection (i.e., I remember), of confidence, or of firsthand experience (i.e., I saw), as well as the presence of internal/episodic details describing perceptual and emotional elements of events. Here we assessed to what extent raters fine-tune their judgements of others' memory based on the recollective quality of the memories. Is it sufficient that memories contain episodic details to make raters believe and trust them? Or does the quality of these details influence raters' judgments? To answer these questions, we focused on memories that contained only episodic (or internal) details and manipulated the degree of specificity of these details. Moreover, previous studies used narratives that differed in content across conditions of interest (Bastin et al., 2022; Justice & Smith, 2018; Nadel & Simon, 2024), so that one cannot exclude that differences in topics or semantics influenced interpersonal memory ratings. Thus, we created well-controlled materials with two versions of the same stories that differed only in terms of the degree of specificity of their details.

The first goal of the present study was to assess whether the degree of specificity of perceptual and contextual details in recounted memories influences raters' metacognitive judgments about the truth and reliability of the memories. Like Nadel and Simon (2024), we assessed interpersonal reality monitoring (or Belief in Occurrence, i.e., whether the event occurred or not) and judgement about the accuracy of the narrator's memory (i.e., Belief in Accuracy). In addition, we added a novel type of judgement relative to the fidelity of the memory (i.e., the narrator has a faithful memory of what happened; things happened like the person told them). This finer judgement was meant to

test whether a memory that adequately reflects the unfolding of events is more valuable than an unfaithful memory if one wishes to learn from others. Also, there is a nuance between ratings of accuracy and fidelity. Ratings of accuracy apply to the story itself (e.g., is the content correct?). In contrast, ratings of fidelity apply to the precision of the narrator's mental representation (e.g., do the person has a faithful memory of what happened?). If the richness of perceptual and contextual details contained in another person's memory narrative is a cue to the truth, accuracy and fidelity of this memory (Johnson et al., 1998; Johnson & Suengas, 1989), one should observe that interpersonal memory monitoring judgments are higher for richer than poorer memories. Additionally, we tested whether interpersonal memory monitoring ratings about a narrator's memory were related to the raters' confidence in their judgments and whether this differed as a function of the richness of the recollection. Indeed, the strength of the raters' judgements may partly reflect their conviction. If so, we should expect a positive relationship: the more accurate and reliable the memory is judged to be, the more confident the rater will feel—regardless of the condition (as observed in Justice & Smith, 2018).

Social attitude towards memory narrators

Beyond monitoring others' memory in communication for checking the value of transmitted information, sharing memories with others contributes to developing and maintaining social relationships (Bluck & Alea, 2009). Critically, the quality of our memories seems to determine the success of social bonding. In young adults, the individuals who recalled fewer specific memories reported lower social support given by friends and romantic partners one year later (Barry et al., 2019). Moreover, participants expressed a more positive social attitude towards narrators who told coherent memories

than towards narrators who told incoherent memories (Vanaken et al., 2020; Vanaken & Hermans, 2021). Coherence refers to a clear structure in terms of context, chronology and theme. One hypothesis is that this coherence is interpreted as evidence that the person holds an accurate and faithful representation of the past, making them a trustworthy source to learn from. Therefore, the second aim of the present study was to test the original idea that interpersonal memory monitoring judgments are associated with social attitude towards the person telling a memory. More specifically, perceiving a narrator as providing an accurate and faithful account of past events should lead to greater trust in that narrator and a stronger willingness to interact with them.

The current study

In this study, 158 raters were presented with two types of memories narrated by other persons: either rich recollections containing many specific perceptual and contextual details, or poorer recollections in which perceptual and contextual details were vague. After each narrative ($n = 8$), raters indicated how much they thought the narrator had a faithful memory of what happened (Memory Fidelity judgments), how much they thought the event told by the narrator truly happened (Belief in Occurrence) and how accurate they thought the memory was (Belief in Accuracy). Additionally, for each narrative, raters indicated whether they would be willing to interact with the narrator (Willingness to Interact) and whether they felt empathy and trust towards the narrator (Socio-Emotional Reactions). Finally, we asked raters to report their confidence in their interpersonal monitoring, willingness to interact and socio-emotional judgments. We hypothesized that narratives with richer recollection will be associated with higher interpersonal memory monitoring judgments than narratives with poorer recollection, and

that higher interpersonal memory monitoring judgments will be associated with more confidence, more willingness to interact and more trust and empathy.

Methods

We report on how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

Participants

Participants will be termed raters to maintain consistency in wording throughout the text. Minimum sample size was estimated based on the results of a preliminary study assessing interpersonal memory monitoring and social attitude as a function of the episodic versus general nature of memories (Bastin et al., 2022). In that preliminary study, 59 raters assessed interpersonal Memory Fidelity, Belief in Occurrence, Belief in Accuracy, willingness to interact and socio-emotional reactions after listening to 4 narratives (2 contained many details about the unfolding of the event and 2 were general memories with very few episodic details). Using the simr function (Green & MacLeod, 2016) in R software (R Core Team, 2017), considering the smallest β value (0.26) obtained in the linear mixed models relating interpersonal monitoring judgments to social attitude judgments and a statistical power of .80, the sample should contain at least 36 raters. However, because the current study compared narratives that differed from each other in a more subtle way than in the preliminary study and in the absence of preliminary data with the present design, we aimed for a larger sample size of at least 36 raters for each

version of the task (see below counterbalancing of materials sets and order of questionnaires).

One hundred and seventy-one French-speaking individuals participated to the study online via Prolific. None of them took part in the pilot studies. Inclusion criteria were: (1) age between 18 and 40 years-old, (2) native French speaker, (3) no self-declared ongoing mental health condition or neurodivergence. Raters were of various nationalities (the most frequent being: 67% France, 11% African countries [Democratic Republic of Congo, Ivory Coast, Gabon, Nigeria, Togo], 10% Canada [Quebec], 5% Belgium). One rater was excluded because of a failure to answer correctly to the attention check and 12 raters did not complete the study to the end. Thus, a total of 158 raters were included in the analyses. They were aged between 18 and 40 years old ($M = 27.9 \pm 5.2$ years old). There were 76 women and 82 men. Most of them had a university degree ($n = 111$), 3 hold a PhD degree, 16 a high school degree and 28 either obtained a secondary school degree or were still undertaking secondary school.

The study was approved by the ethics committee of the Faculty of Psychology of the University of Liège (#2021-064) and was conducted in compliance with the Declaration of Helsinki. Raters provided their informed consent before starting the experiment.

Materials

The materials consisted of narratives and questionnaires.

Narratives. To assess systematically the effect of the specificity of details (perceptually and contextually rich versus poor), we made sure that the narratives in the two conditions

varied only on the variable of interest by creating fictional event accounts. There were 8 pairs of narratives composed each of 8 segments of episodic information describing a unique event situated in time and place. The narrative simulated autobiographical memories told at first person. The pairs corresponded with the two versions of each narrative. Three segments (general context, character, event) were the same in both versions of the narrative. The remaining 5 segments (date, location, details of character, details of environment, and details of actions or objects) differed in the degree of specificity of episodic details. In the high recollective richness version, those segments were rich in precise contextual and perceptual information. Indeed, specific descriptions of time and location enriched contextual information, and characters, environment, actions and objects were described with precise sensory-perceptual details. In the low recollective richness version, the segments contained more superficial and less specific information. One narrative is presented as an example in Table 1. Contrary to Justice and Smith (2018) who included a segment where the narrator claimed either vivid recollection or vague recall, we only included factual details to evaluate specifically the impact of the richness of perceptual and contextual details. Indeed, an explicit claim of recollection may be interpreted by the listener as a sign of epistemic authority (Mahr & Csibra, 2017; Mahr & Csibra, 2021) and may have driven the effect on reliability judgments in the study by Justice and Smith (2018).

The two versions were selected to differ as much as possible in terms of the richness of the recollection (see the Materials creation section in Supplemental materials). The richer recollection version and the poorer recollection version of the narratives significantly differed in terms of degree of details ($t(14) = 7.3, p < .001$), but did not

differ in terms of length (number of words, $t(14) = 0.2, p = .78$), nor emotional valence ($t(14) = 1.5, p = .13$). All narratives were emotionally positive, because previous findings showed that the quality of positive narratives, but not of negative narratives, influenced the social attitude of raters (Vanaken et al., 2020; Vanaken & Hermans, 2021).

Questionnaires. There were 3 questionnaires: Interpersonal Memory Monitoring scale, Willingness to Interact scale, and Socio-Emotional Reactions scale.

The Interpersonal Memory Monitoring scale was composed of 3 subparts: Memory Fidelity, Belief in Occurrence and Belief in Accuracy. The items from the last two subparts came from validated questionnaires and consisted of the 3 items with the highest loadings in factor analyses from the original studies (Scoboria et al., 2014, 2015; Scoboria & Pascal, 2016). The Memory Fidelity subpart was created for the purpose of the current study to test how the narrator's mental representation of the past event was judged. To keep balance in the subparts, the Memory Fidelity subpart also contained 3 items. These items asked whether the person appeared to have a faithful memory of what happened (e.g., "How much do you think that the person has a faithful memory of what happened?"). The 3 items from the Belief in Occurrence scale (Scoboria et al., 2014; Scoboria & Pascal, 2016) and the 3 items from the Belief in Accuracy scale (Scoboria et al., 2015) were adapted to make the narrator the subject of the ratings. For instance, for the Belief in Occurrence scale, the original item "How likely is it that you personally did in fact experience this event?" became "How much do you think the person actually experienced this event?". For the Belief in Accuracy scale, the original item "How confident are you that your memory for this event is accurate?" became "To what extent

are you confident that the memory told by the person is accurate?”. Items from the Interpersonal Memory Monitoring scale can be found in Supplemental Materials.

The Willingness to Interact scale (Coyne, 1976; Vanaken et al., 2020) probed the willingness to engage in future interaction with the narrator and contained 7 items sampling situations like meeting the person, asking the person for advice, inviting the person to one’s house, and so forth (e.g., “How much would you like to meet this person?”). The Socio-Emotional Reactions scale (Vanaken et al., 2020) assessed trust and empathy towards the narrator with 9 items (e.g., “Can you understand the situation of this person?”; “Do you trust this person?”).

Procedure

The experiment was completed via an online survey created with an in-house survey software, posted on Prolific. The survey could only run on computers (not on smartphones or tablets). After giving informed consent to participate to the study, raters completed a demographic questionnaire (asking for age, sex, and education). Then, they performed the experimental task designed to probe interpersonal memory monitoring judgments and social attitude via narrative ratings.

For the experimental task, the 8 pairs of narratives were randomly attributed to two sets, containing the high richness versions of 4 narratives and the low richness versions of the other 4 narratives. In each set, the narratives were presented in random order.

Raters received the following instructions: “You will now see a person’s recount of a memory. After each memory, we will ask you several questions about your

impressions”. Each narrative was displayed on the screen as a text in Arial size 14 points. Raters could read it at their own pace. After reading each narrative, they answered the 3 questionnaires by rating each item on a VAS from 0, absolutely no, to 100, absolutely yes (Interpersonal Memory Monitoring scale, Willingness to Interact scale, and Socio-Emotional Reactions scale). Responding was self-paced.

At the end of each questionnaire, one question asked about the confidence in the answers to the questionnaire (“You are confident in your assessment of the previous questions”) also rated on the same VAS from 0, absolutely no, to 100, absolutely yes.

The order of the questionnaires was counterbalanced across participants, with half starting with the Interpersonal Memory Monitoring scale, followed by the two questionnaires on social attitude (Willingness to Interact scale and Socio-Emotional Reactions scale), and the other half starting with questionnaires on social attitude, followed by the Interpersonal Memory Monitoring scale. So, given that there were two sets of narratives and two orders, counterbalancing involved a random attribution of raters to one of 4 versions (Narrative set A/order 1, n = 39 raters after exclusions; Narrative set B/order 1, n = 40; Narrative set A/order 2, n = 40; Narrative set B/order 2, n = 39).

In the middle of the study, an attention check was included, asking to select 0 on the VAS.

Data availability statement

The study was not pre-registered. The materials used in the experiment and the data are publicly accessible at <https://osf.io/prs7g>.

Statistical analyses

Statistical analyses were computed using Jamovi version 2.2. In everyday life memory, beliefs in occurrence and accuracy are strongly correlated (Scoboria et al., 2015), but it can happen that they dissociate (Justice & Smith, 2018; Scoboria & Pascal, 2016). So, we first assessed whether the 9 items from the three subparts of the Interpersonal Memory Monitoring scale (Memory Fidelity, Belief in Occurrence and Belief in Accuracy) converged on a same construct by computing internal consistency with Cronbach's Alpha (see Supplemental materials for a complementary exploratory factorial analysis). For this scale, internal consistency was excellent with $\alpha = .94$. The factorial analysis also indicated that a single factor explained the variance in ratings within the scale. So, ratings for the 9 items were averaged in a single score (max = 100) for the analyses. For the Willingness to Interact (WTI) and Socio-Emotional Reactions (SER) scales, internal consistency was also good to excellent (WTI, 7 items, $\alpha = .93$; SER, 9 items, $\alpha = .83$), and mean scores for each scale were used in the analyses.

To compare Interpersonal Memory Monitoring judgments as a function of the richness of recollection and to assess the relationship between Interpersonal Memory Monitoring judgments and social attitude ratings as a function of the richness of recollection, linear mixed effect models were conducted using the package GAMLj module in Jamovi version 2.2. First, a model tested whether Interpersonal Memory Monitoring ratings, as dependent variable, differed between conditions (i.e., richer versus poorer recollection), as independent variable (fixed effect). Second, models included social attitude scores (WTI ratings in one analysis and SER ratings in a second analysis)

as dependent variables, and Interpersonal Memory Monitoring ratings, conditions and a term representing the interaction between Interpersonal Memory Monitoring ratings and conditions as independent variables (fixed effect). All models included raters and narratives as random intercepts and slopes.

Results

Interpersonal Memory Monitoring judgments as a function of the richness of recollection

Preliminary linear mixed models checked whether the order in which the scales were administered influenced ratings. Scores in the different scales did not differ as a function of order: Interpersonal Memory Monitoring, 95% CI = [-7.04, 0.42], $t = -1.73$, $p = .08$; Willingness to Interact, 95% CI = [-4.82, 4.48], $t = -0.07$, $p = .94$; Socio-Emotional Reactions, 95% CI = [-4.46, 0.73], $t = -1.41$, $p = .16$.

Mean Interpersonal Memory Monitoring judgments (and standard deviations) as a function of the condition (narratives with richer versus poorer recollection) are presented in Table 2. Raters varied their scores on the VAS across narratives, except for 2 raters who provided almost always the same rating to items of the scale irrespective of the condition (one rater provided mainly ratings of 50 across the items and the other gave mostly ratings of 100). Because this lack of variability in responses was rare, the data from these participants were not excluded, so that analyses were performed on all data. A linear mixed model tested whether Interpersonal Memory Monitoring ratings differed as a function of the condition (introduced as fixed effect). The results revealed a significant difference between the condition, Estimate = -5.32, 95% CI = [-9.49, -1.15], SE = 2.13, t

= -2.50, $p < .05$, with narratives being judged as truer, more accurate and more faithful when they contained richer recollection ($M = 72.6$, $SD = 19.9$) than poorer recollection ($M = 67.3$, $SD = 18.8$). In both conditions, ratings were significantly above 50, the midpoint of the VAS that participants may interpret as a “neither” response (Nadler et al., 2015): richer recollection condition: $t(158) = 19.0$, $p < .001$; poorer recollection condition: $t(158) = 15.8$, $p < .001$. Finally, a Likelihood Ratio test on the random effect of narratives indicated that there was significant variability as a function of narratives ($p < .001$), but the inclusion of narratives as random effect in the model allowed us to test for the difference in Interpersonal Memory Monitoring ratings across conditions by controlling for this variability.

Is social attitude associated with Interpersonal Memory Monitoring?

Next, we evaluated whether Interpersonal Memory Monitoring ratings predicted social attitude towards the narrator, as assessed with the Willingness-to-Interact scale and the Socio-Emotional Reactions scale (introduced as dependent variable in separate analyses), and whether the relationship differed as a function of the condition (tested with a condition by Interpersonal Memory Monitoring ratings interaction term in the model). Mean scores on the Willingness-to-Interact scale and the Socio-Emotional Reactions scale (and standard deviations) as a function of condition are presented in Table 2.

For Willingness to Interact, the results of the linear mixed model indicated that raters reported more willingness to interact with the narrator when the narratives were richer in recollection (main effect of condition, richer recollection: $M = 54.1$, $SD = 18.9$; poorer recollection: $M = 49.2$, $SD = 19.0$), Estimate = -3.14, 95% CI = [-4.40, -1.87], SE

= 0.64, $t = -4.87$, $p < .001$. Moreover, the main association with the Interpersonal Memory Monitoring ratings was significant, Estimate = 0.36, 95% CI = [0.28, 0.43], SE = 0.03, $t = 9.67$, $p < .001$, showing that the higher Interpersonal Memory Monitoring scores were, the higher Willingness to Interact scores were (Figure 1A). This association did not significantly interact with condition, Estimate = -0.06, 95% CI = [-0.13, -2.11^{e-4}], SE = 0.03, $t = -1.97$, $p = .05$, suggesting that Interpersonal Memory Monitoring scores and Willingness to Interact scores were related independently of the types of narratives.

For Socio-Emotional Reactions judgments, there was a main effect of condition, Estimate = -7.65, 95% CI = [-8.72, -6.57], SE = 0.54, $t = -13.99$, $p < .001$, with higher judgments for richer ($M = 65.0$, $SD = 13.8$) than poorer recollection ($M = 54.7$, $SD = 16.4$). There was also a significant association between Interpersonal Memory Monitoring ratings and Socio-Emotional Reactions judgments, Estimate = 0.46, 95% CI = [0.40, 0.53], SE = 0.03, $t = 14.64$, $p < .001$. As illustrated in Figure 1B, the more raters judged the narrative as true, accurate, and faithful, the more positive socio-emotional reactions they reported. The condition by Interpersonal Memory Monitoring ratings interaction was not significant, Estimate = 0.02, 95% CI = [-0.03, 0.07], SE = 0.02, $t = 0.70$, $p = .48$, indicating that Interpersonal Memory Monitoring scores and Socio-Emotional Reactions scores were related independently of the types of narratives.

Confidence

Finally, linear mixed models assessed whether raters' confidence in their answer for each scale was associated with their scores on the scale, and whether this interacted with condition. For Interpersonal Memory Monitoring ratings, the higher the scores, the more

confident the raters were, Estimate = 0.39, 95% CI = [0.32, 0.45], SE = 0.03, $t = 11.17$, $p < .001$. But confidence did not differ as a function of condition (richer recollection: $M = 83.8$, $SD = 18.7$; poorer recollection: $M = 82.0$, $SD = 19.7$), Estimate = -0.26, 95% CI = [-1.48, 0.96], SE = 0.62, $t = -0.41$, $p = .67$, and there was no significant condition by Interpersonal Memory Monitoring ratings interaction, Estimate = -7.96×10^{-4} , 95% CI = [-0.06, 0.06], SE = 0.03, $t = -0.02$, $p = .98$. Of note, 23 raters (14%) gave a maximal score for confidence (i.e., 100) for all narratives. Excluding these raters did not change the results from the linear mixed model which indicated a significant association between Interpersonal Memory Monitoring ratings and confidence in these ratings, Estimate = 0.52, 95% CI = [0.43, 0.62], SE = 0.04, $t = 10.86$, $p < .001$. The effect of condition ($p = .81$) and the interaction ($p = .61$) remained non-significant.

Similarly, for Willingness to Interact, more positive social attitude was related to greater confidence in the Willingness to Interact ratings, Estimate = 0.23, 95% CI = [0.16, 0.30], SE = 0.03, $t = 6.36$, $p < .001$. Confidence in Willingness to Interact ratings did not differ as a function of condition (richer recollection: $M = 78.8$, $SD = 22.6$; poorer recollection: $M = 77.2$, $SD = 24.0$), Estimate = -0.69, 95% CI = [-1.91, 0.51], SE = 0.61, $t = -1.13$, $p = .25$, nor was there a condition by ratings interaction, Estimate = -0.04, 95% CI = [-0.11, 0.02], SE = 0.03, $t = -1.35$, $p = .17$. And for Socio-Emotional Reactions, there was also a significant association between the raters' scores and their confidence in the responses, Estimate = 0.19, 95% CI = [0.13, 0.24], SE = 0.02, $t = 6.70$, $p < .001$. But confidence did not change as a function of condition (richer recollection: $M = 82.7$, $SD = 18.0$; poorer recollection: $M = 80.7$, $SD = 19.8$), Estimate = -0.31, 95% CI = [-1.44, 0.81], SE = 0.57, $t = -0.54$, $p = .58$, and there was no condition by Socio-Emotional

Reactions interaction, Estimate = -0.07, 95% CI = [-0.14, 0.006], SE = 0.03, $t = -1.80$, $p = .07$.

Discussion

Past research has suggested that people use the same memory cues to judge the source of their own memory and the source of other people's memory (Johnson et al., 1998; Johnson & Suengas, 1989). Notably, a narrator's memory that contains perceptual and emotional information is more readily accepted as true by a rater. In contrast, memories that lack such details are more likely to be judged as imagined (Johnson et al., 1998; Johnson & Suengas, 1989; Keogh & Markham, 1998). The current study extended this idea by assessing whether the specificity and richness of perceptual and contextual details during a narrator's recollection of past events also makes the rater believe that the memory is accurate and faithful to what happened. Moreover, we further assessed the social dimension of interpersonal memory monitoring, by hypothesizing that the more one finds another person's memory true and reliable, the more willing one will be to engage in a social relationship with this person. The hypotheses were tested by asking raters to provide Interpersonal Memory Monitoring, Willingness to Interact, and Socio-Emotional Reactions judgments after reading narrators' autobiographical narratives that were controlled to differ only on the specificity and richness of perceptual and contextual information.

There were three main findings. First, when raters read a narrator's richly detailed recollection of a past event, they judged this narrator's memory as more true, accurate

and faithful than when the narrative is poorer in perceptual and contextual details.

Second, the more raters judged the narrator's memory as true, accurate and faithful, the more they reported feelings of trust and empathy towards the narrator and willingness-to-interact with them. Third, the higher the Interpersonal Memory Monitoring and social attitude ratings were, the more confident the raters were in their responses. These results support our hypothesis that individuals make inferences regarding the fidelity of others' memories based on the richness of recollection and that such inferences play a role in social interactions by shaping social attitudes.

Previous studies assessed a variety of judgements about other people's memories. A few studies showed that the quality of narrators' recollection influenced whether the memory is judged as true or false (Gamoran et al., 2024; Johnson et al., 1998; Johnson & Suengas, 1989; Keogh & Markham, 1998). One study assessed the reliability of memories. It showed that raters judged a narrator's memory as more reliable if it contained specific perceptual details and a statement of clear or vivid recall (Justice & Smith, 2018). A recent study included ratings of truth, believability and accuracy and showed that these ratings increased in the presence of internal details in the narrators' memories (Nadel & Simon, 2024). In autobiographical memory, metacognitive judgements about memories are sometimes independent from one another (Scoboria & Pascal, 2016). Therefore, in the current study, metacognitive assessments of narrator's memory included three types of beliefs (truth, accuracy and fidelity). The latter, fidelity rating, is a novel aspect here, assessing how raters appraise the narrator's mental representation of the event. The three types of judgments were found to converge onto the same construct. This may relate to the episodic nature of the memories. Indeed,

vividly recollected events are usually believed both to have occurred and to be accurate (Scoboria & Talarico, 2013). A similar convergence of interpersonal ratings was observed for ratings of accuracy, believability and confidence in truth (Nadel & Simon, 2024).

The study focused on memories that were episodic in nature and tested whether the degree of specificity of the narrative's details was used as a cue for interpersonal memory monitoring. In the current narratives, 5 segments of information out of 8 differed in their degree of specificity and richness, making them well contrasted in recollective richness, while they remain equivalent in structure and meaning. More specifically, what differed between conditions was the richness of information provided about the characters, objects and environment of the story. The results showed that raters were sensitive to this richness as they judged richer memories as more true, accurate and faithful than less rich memories.

It is interesting to note that interpersonal memory monitoring ratings were high even in the case of poorer recollections. So, the mere fact that narrators were able to recollect the event may be sufficient to make the memory credible. Consistently, Johnson et al. (1998) did not report any effect of the number of details on interpersonal reality monitoring. Similarly, Nadel and Simon (2024) did not find any linear effect of the number of details. Rather, memories that included at least some internal details were rated as more credible than memories that contained only external details. Also, past research reported that mock jurors are more readily convinced by a witness who inserts one very precise but trivial detail in their testimony than by a witness whose testimony contains no such detail (Bell & Loftus, 1989; Reyes et al., 1980; Shedler & Manis, 1986).

So, the recall of qualitative details is considered highly diagnostic of a memory's accuracy and fidelity. This appears to be true for one's own memory and in the context of interpersonal communication (Mahr & Csibra, 2017; Yonelinas, 2002). The current findings nevertheless add some nuance to the picture. Indeed, people seem to finely gauge the quality of recollection. Raters were more inclined to believe a memory when its details are highly specific. This may be because specific details facilitate the mental simulation of the event experienced by the narrator (Sadeh et al., 2025). A specific narrative is likely to trigger a vivid mental simulation. This will give the raters the feeling that they can imagine the event as if they were experiencing it themselves. With such experiential quality, the narrative will qualify as true, accurate and faithful more readily than a less specific narrative.

From a functional point of view, rich recollection of a past event could serve to convince other people that they can learn reliably about the event as the narrator has high memory fidelity for this event (Mahr & Csibra, 2017). The narrator's memory could therefore be integrated into the rater's vicarious memory or general knowledge. More generally, it may serve the same purposes as one's own autobiographical memory, namely to build the sense of identity (which can include the self, close relatives and the communities to which we belong), to anticipate future event and guide decision making, and to foster social bonds (Bluck & Alea, 2009; Bluck et al., 2005). While we will turn to the latter as it was evaluated in the current study, it would be of interest to test in future work the impact that interpersonal memory monitoring has on the way one uses information learned from others to support identity formation and future thinking.

The most original aspect of the current study is that it supports the idea that interpersonal memory monitoring judgments play a role in the creation and maintenance of social relationships. Indeed, higher interpersonal memory monitoring judgments were significantly related to a more positive social attitude (i.e., more trust and empathy, and more willingness to interact) towards the narrator. Previous studies indicated that the quality of one's memory can influence the degree of social support one receives (Barry et al., 2019) and positive social feelings one evokes in others (Vanaken et al., 2020). Consistently, here, raters had a more positive social attitude toward narrators when their narratives contained specific details than when their narratives were poorer recollections. Critically, social attitude ratings were higher when the narratives were judged more true, accurate and faithful. The relationship was present for both types of narratives, possibly because the poorer narratives were still sufficiently detailed and episodic. Future work may contrast rich narratives with very poor and general narratives. This would allow us to test the hypothesis that interpersonal memory monitoring mechanisms mediate the link between the quality of a narrator's memory and raters' social reactions. This hypothesis comes from self-monitoring studies showing that decisions rely more on metacognitive appraisal of one's performance than on objective performance (Metcalf, 2009).

When a participant gave a high rating on the scales (whether interpersonal memory monitoring or social attitude), they also reported being more confident in the judgment. The two types of metacognitive judgments were thus correlated, independently of the richness of the recollection. This was also observed by Justice and Smith (2018). In their study, the stories were recounted from a victim of a theft, so the authors assumed that because of the vulnerability of the victim, "the participants were giving the

rememberer the “benefit of the doubt” – in other words if they did not judge the memory account to be believable / reliable they were cautious in expressing high confidence” (Justice & Smith, 2018, p. 1412). Here, stories were positive and did not concern criminal situations, but we observed the same association. So, when raters provided a high score for a narrative, this partly reflected their degree of conviction. As memory monitoring judgments and confidence judgments are both retrospective metacognitive assessments, their correlation may reflect domain-general resources, i.e., decisional computations that could be common across types of metacognitive judgments (Mazancieux et al., 2020). Indeed, both may rely on the interpretation of similar internal signals and a similar weighing of these signals. In the present case, the main signal could be the ease of the mental simulation of the event told by the narrator (Sadeh et al., 2025).

In the current study, the fact that a narrator could provide many rich perceptual and contextual details about a past event was taken as a cue that their memory was true and reliable. However, there may be situations where such recollection richness may be interpreted differently. Indeed, the use of metacognitive heuristics to assess memories is influenced by the context (Bodner & Richardson-Champion, 2007). Here memories were presented as real personal memories from the narrator, and raters readily inferred that a greater number of specific details suggested higher fidelity of the narrator’s memory. One may reach different conclusions when there is reason to believe that the narrator is lying. Indeed, in the context of possible deception, people stop weighting the number of details presented in narratives in reality monitoring judgments and sometimes even consider a memory as false if it contains too many details (Johnson et al., 1998). Also, in everyday life, many other cues are likely to contribute to the impressions we form regarding the

reliability of others' accounts, including the overt expression of emotions, which can either enhance or reduce perceived credibility (Wessel et al., 2012), or prior knowledge about the person (e.g., one may be less prone to believe the memories of a person suspected of having cognitive impairments) or stereotypes (e.g., based on ethnicity (Lindholm, 2010)).

In terms of limitations, Interpersonal Memory Monitoring ratings were obtained with items from two validated scales (Scoboria et al., 2014; Scoboria & Pascal, 2016; Scoboria et al., 2015) as well as items designed for the current study. The reliability of the items assessing memory fidelity has not been assessed. Another important limitation is the artificial nature of the materials which were created for the experiment. While this allowed us strict control in terms of length, emotional valence and recollective richness, one cannot generalize the findings to everyday life situations of interpersonal communications. Finally, it is likely that individual differences can influence the interplay between richness of narratives, interpersonal memory monitoring and social attitudes. Notably, age and culture are two important variables to investigate in future studies.

In conclusion, one more readily believes that a narrator has a true and faithful memory of a past event when they provide richly detailed recollection of the event. This supports the idea that the presence of specific perceptual and contextual details in another person's memories serves as a cue in interpersonal memory monitoring processes. Moreover, the judgment one poses on the veracity and reliability of others' memory is associated to social attitude towards the others, suggesting that interpersonal memory monitoring contributes to the social bonding function of memory.

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Disclosure of interest

The authors have no competing interests to declare.

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Table 1. Example of a narrative in its high and low recollective richness versions.

	Date	Location	General context	Character	Event	Details of character	Details of environment	Details of actions or objects
High	At nightfall last Friday	in the little wood behind my garden	I was walking	when I saw a deer	that stopped when it saw me.	Its brown fur shone in the moonlight.	An owl's cry rang out	and the deer made a graceful leap to disappear into the thickets.
Low	One day, I think it was quite late	in a wood that is not very big	I was walking	when I saw a deer	that stopped when it saw me.	I think it was brown or red.	There was a sudden noise	and the animal left. I did not see it again.

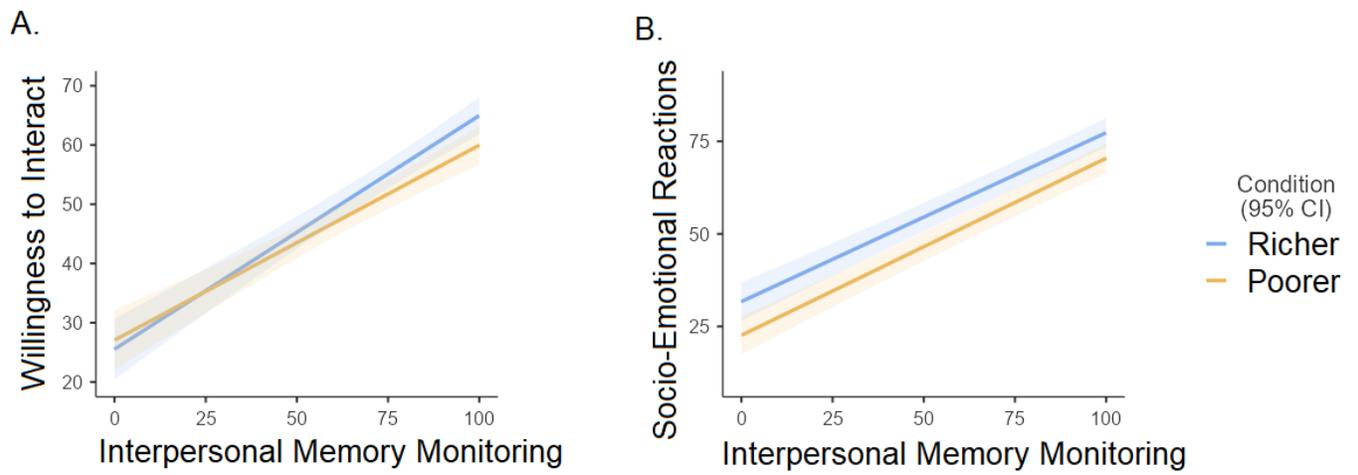
Table 2. Interpersonal Memory Monitoring and social attitude ratings for narratives rich in perceptual and contextual details (richer recollection) and narratives poorer in details (poorer recollection).

	Richer recollection	Poorer recollection
Interpersonal Memory Monitoring	72.6 (19.9)	67.3 (18.8)
Willingness to Interact	54.1 (18.9)	49.2 (19.0)
Socio-Emotional Reactions	65.0 (13.8)	54.7 (16.4)

Note. Standard deviations in parentheses.

Figure caption

Figure 1. Relationship between Interpersonal Memory Monitoring and (A) Willingness to Interact and (B) Socio-Emotional Reactions



Supplemental materials

Narratives

The original version in French is on OSF: <https://osf.io/prs7g/>

Narrative 1

High richness version: On January 15, on platform 6 of Brussels Midi station, I was waiting for a TGV to France. I noticed a young woman drawing on a pad of paper. She was wearing a long red coat with black embroidery. She was sitting on a suitcase full of stickers representing works of art. Her drawing was a mountain landscape.

Low richness version: A few weeks ago, on a train platform, I was waiting for a TGV to France. I noticed a young woman drawing on a pad of paper. She was wearing a coat because it was cold. She had sat on her suitcase to draw on the pad. I looked at her drawing as I passed. I don't remember what it was.

Narrative 2

High richness version: On the eve of August 15, in a bookstore near the Grand Place in Brussels, I was waiting to pay for my purchases while listening to the conversation of two customers behind me. They both wanted to buy the same book, but there was only one copy left. The man was tall and dark, and the woman had red hair. They stood next to a large metal counter and tried to convince the other to give up the book. The book was a fantasy novel with a pirate image on its beautiful emerald cover.

Low richness version: One summer day, in a bookstore, I was waiting to pay for my purchases while listening to the conversation of two customers behind me. They both wanted to buy the same book, but there was only one copy left. Judging from their voices, the customers were a man and a woman. They were a little further behind me, in the bookstore. I could hear them talking about the book. The book was a novel, I think. I looked at it quickly to see what it looked like.

Narrative 3

High richness version: The day after Christmas, at my grandmother's house in the country, I was out on the porch when I saw a man leave a gift on the doorstep of the house next door. He must have been in his early thirties, but there was already gray in his hair and wrinkles around his eyes. He knocked on the frozen pane of the door and left in a hurry, almost running. The red and gold gift remained on the doorstep until nightfall.

Low richness version: During the holiday season, at my grandmother's house, I was out on the porch when I saw a man leave a gift on the doorstep of the house next door. I couldn't see him very well. I would say he wasn't very old, but he wasn't very young either. He stood outside the door for a while. Maybe he was waiting for someone to open it. Then he left. I don't think he took the gift with him when he left.

Narrative 4

High richness version: Last July, at the Musée des Arts Forains in Paris, we were watching the rides. My children wanted to go on the bike ride. My daughter chose a racing bike and my son got on a mountain bike. The ride was going so fast that they couldn't keep their feet on the pedals. Their hair was flying in the wind. After the ride, the children were disheveled and laughingly said that they had been hot.

Low richness version: During the holidays, during one of our visits to Paris, we were watching the rides. My children wanted to go on the bike ride. They each sat on their bikes. They were spoiled for choice. Once the children were seated on the bike, the ride started to turn, slowly at first and then faster and faster. I think the children enjoyed the attraction which was quite sporty, apparently.

Narrative 5

High richness version: At nightfall last Friday, I was walking in the little wood behind my garden when I saw a deer that stopped when it saw me. Its brown fur shone in the moonlight. An owl's cry rang out and the deer made a graceful leap to disappear into the thickets.

Low richness version: One day, I think it was quite late, in a wood that is not very big, I was walking when I saw a deer that stopped when it saw me. I think it was brown or red. There was a sudden noise and the animal left. I did not see it again.

Narrative 6

High richness version: The day I turned 20, I was partying with my friends in a pizzeria. My girlfriend Julie had invited her cousin. He was handsome, with blond hair and blue eyes. He looked like the actor Chris Hemsworth. I couldn't stop staring at him. In fact, I was devouring him with my eyes. He winked at me and I blushed all the way to my ears. I didn't know where to stand.

Low richness version: On my birthday, I was partying with my friends in a restaurant. My girlfriend Julie had invited her cousin. He wasn't bad. He was just the type of guy I like.

Several times during the meal, I glanced at him because I thought he was handsome. I wonder if he noticed. I tried to be discreet, but maybe he saw that I was staring at him.

Narrative 7

High richness version: It was April 9th, on the Grand Place in Brussels. I was having a drink with two friends when an acquaintance of one of them stopped near us. She had beautiful black hair that shone in the sun. She said, with a beautiful English accent: "I'm sorry to bother you". We immediately moved our wicker chairs back to make room for her, happy to meet her.

Low richness version: It was early spring in the city center. I was having a drink with two friends when an acquaintance of one of them stopped near us. We looked at her as she approached us. She was a stranger, I thought. She spoke to us. We invited her to sit at the table with us. There was enough room for everyone.

Narrative 8

High richness version: When I was in the second year of secondary school, in geography class, we had to give a presentation about a country in front of our classmates. We could bring culinary specialties from the country. I talked about Finland, its lakes and forests. I had cooked piirakkas with my mother. Everyone loved it. They are Karelian tartlets with rice inside.

Low richness version: When I was in secondary school, in one of the classes at school, we had to give a presentation about a country in front of our classmates. We could bring culinary specialties from the country. I talked about a country in Europe by explaining its geography. What I brought to eat pleased the class. It was a traditional dish from the north of the country.

Materials creation

This section describes how the narratives were created and the pilot studies that were run to select and validate the narratives.

Characteristics of the narratives

We created an initial list of 2 versions of 12 narratives describing an emotionally positive everyday life event told at the first person to simulate an autobiographical memory recounted by a narrator. Each narrative consisted of 8 segments of information. Each segment is episodic in nature as it pertains to the unfolding of a unique event situated in place and time. Three segments (general context, character, event) were the same in both versions of the narrative. The remaining 5 segments (date, location, details of character, details of environment, and details of actions or objects) provided in essence the same information but differed in the degree of specificity of episodic details across versions. In the high recollective richness version, those segments were rich in precise contextual and perceptual information. Indeed, specific descriptions of time and location enriched contextual information, and characters, environment, actions and objects were described with precise sensory-perceptual details. In the low recollective richness version, the segments contained more superficial and less specific information.

Pilot study 1

The aim of the pilot study was to select narratives with two versions that significantly differed in terms of details, but not in terms of emotional valence. Seventeen French-speaking participants (14 women, age: 25.1 ± 4.7 years old) rated the 12 original narratives via the platform Prolific. They were presented with the text of the 12 narratives

in random order. Half of the narratives were presented in their high richness version and the other half in their low richness version. The attribution of a narrative to the high richness and low richness conditions was counterbalanced across participants. So, a given narrative appeared in its high richness version for 8 participants, while it appeared in its low richness version for the other 9 participants.

The instructions were as followed: “You will see a person’s recount of a memory. After each memory, we will ask you two questions. (1) To what extent do you find the memory to be detailed? (2) Do you find the memory negative, positive, or neutral?”. After the participants read each text, they answered the two questions on a visual analog scale (VAS) from 0 to 100. First, they rated the extent to which they think that the memory was detailed (i.e. contained precise information) from 0 (little detailed) to 100 (extremely detailed). Second, they rated the extent to which they thought that the memory was emotionally negative or, on the contrary, positive (the middle of the scale corresponding to neutral) from 0 (very negative) to 100 (very positive).

Table S1 presents the mean and standard deviations of ratings for degree of details, emotional valence, as well as number of words of the 12 narratives as a function of the condition (high versus low richness). To select narratives to include in the main study, the criteria were as follows: the average details ratings for the high richness version must be above 50 on the VAS, and the difference in details ratings between the two versions must be at least 20 points. These criteria ensured sufficient contrast in the degree of specificity between the two conditions. To check the criteria for each narrative, ratings for the details question were averaged for each narrative across participants. The difference in ratings between the high richness and low richness versions was also

computed for each narrative. Only four narratives satisfied the criteria and showed sufficient difference in terms of degree of details across their two versions. Therefore, these 4 narratives were kept as they were, but we modified the text of the other 8 narratives to accentuate the difference between the two versions.

Pilot study 2

The new list of 12 narratives was submitted to a second pilot online assessment. Twenty-six French-speaking participants who did not participate to the previous pilot were included (14 women, age: 25.8 ± 4.8 years old). The procedure was the same as in pilot study 1, involving ratings of the degree of details and emotional valence of the narratives. Means and standard deviations of the ratings as well as number of words of the 12 narratives are presented in Table S1. Applied to the average ratings of each narrative, the selection criteria of the narrative for the main study were the following: the average details ratings for the high richness version must be above 50 on the VAS, the difference in details ratings between the two versions must be at least 20 points, and the range of details ratings must not overlap between the two versions. Eight narratives satisfied the criteria and were selected for the main study. Their mean ratings, range of detail ratings and number of words appear in Table S1.

Table S1. Ratings (mean and standard deviation) of degree of details and emotional valence and number of words of the narratives from the two selection pilot studies and the final set of materials

	Richer recollection	Poorer recollection
Pilot 1 (n = 12 narratives)		
Details	74.1 ± 10.3	50.2 ± 11.4
Emotional valence	66.9 ± 11.1	58.1 ± 8.7
Number of words	77.7 ± 19.6	75.6 ± 19.6
Pilot 2 (n = 12 narratives)		
Details	72.4 ± 7.6	48.4 ± 11.5
Emotional valence	73.9 ± 11.0	66.0 ± 11.0
Number of words	82.5 ± 15.6	81.4 ± 15.5
Final materials (n = 8 narratives)		
Details	73.3 ± 4.7	44.0 ± 10.2
	Range: 67.7 - 81.6	Range: 28.6 - 55.8
Emotional valence	71.5 ± 10.1	63.8 ± 9.3
Number of words	78.3 ± 14.2	76.5 ± 12.8

Interpersonal Memory Monitoring scale

1. How much do you think that the narrated memory corresponds to what the person has actually experienced?
2. How much do you think that the person has a faithful memory of what happened?
3. How much do you think that things happened like the person told them?
4. How much do you think the person actually experienced this event?
5. How much do you think the event actually happened?
6. How true do you think it is that the event happened?
7. How confident are you that the memory is correct?
8. How accurate do you think all the elements of the memory are?
9. To what extent do you think the accuracy of the memory can be doubted?

Factorial analysis on the Interpersonal Memory Monitoring scale

The scores from the 158 participants to the 9 items of the Interpersonal Memory Monitoring scale were submitted to an exploratory factorial analysis with maximum likelihood extraction, varimax rotation and selection of factor(s) based on eigenvalues superior to 1. The analysis yielded a single factor (67.3 % of variance) with the following loadings from items 1 to 9: .80, .76, .86, .92, .92, .90, .80, .76, .56.