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Visual perspective in imagination and memory of factual and fictional stories

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ABSTRACT
Several factors have been found to influence whether events in memory are experienced from a first- or third-person visual perspective. However, the factual/fictional dimension has been little addressed. In the present study, we investigated visual perspective and related memory characteristics of factual and fictional stories as imagined and remembered. Taking the visual perspective of a protagonist in a story was considered a first-person perspective, while other vantage points were considered a third-person perspective. Participants ($N = 153$) read four short stories in English labelled fact or fiction. Results show that fact and fiction are similar concerning first/third-person visual perspective and memory characteristics. Differences in third-person vantage points between fact and fiction indicate that readers of fact are more visually aligned with the protagonist in the story. Trends were found regarding how fictionality interacts with narrative perspective and emotional valence of the stories to produce differences in clarity and fantasy empathy.

Introduction

The visual perspective, or vantage point, from which one sees events imagined or remembered has been studied in recollection from memory and when thinking about future scenarios as well as when one's mind spontaneously wander in fantasising. Nigro and Neisser (1983) identified field and observer vantage points in autobiographical memory when people recalled events from their lives. A field perspective is a first-person perspective as if one is experiencing from one's own eyes, while an observer perspective is a third-person perspective from the outside. Robinson and Swanson (1993) showed how perspective is flexible and can be shifted between first and third person for the same memory. There are also indications that people can switch between perspectives during a single retrieval and that both perspectives may be experienced at the same time (Rice & Rubin, 2009). Instructing people to shift visual perspective during memory retrieval can affect subsequent memories by accelerating forgetting and lowering memory accuracy (St. Jacques, 2019). A general

idea is that the presence of a third-person perspective indicates that reconstructive processes have occurred, since most memories are initially encoded using a first-person perspective.

Third-person perspectives of autobiographical memories have been found to be common. Nigro and Neisser (1983) found that around 42–47% of memories are from a third-person perspective. Rice and Rubin (2009) found third-person perspectives present in around 67% of memories. Regarding imagination, Christian et al. (2013) showed that during mind-wandering, there are roughly even proportions of first- and third-person perspectives present. When imagining future scenarios involving the self (episodic future thought), visual perspective is also present (Atance & O'Neill, 2001; Szpunar, 2010). McDermott et al. (2016) showed that a third-person perspective dominated in both memory and episodic future thought, with slightly more in episodic future thought (71% and 78%, respectively). Moreover, Rice and Rubin (2011) further described the diversity of the third-person perspective by looking at the height, distance, and location of the third-person vantage point. They

showed how third-person perspective can differ depending on the event, such as seeing oneself from the front when remembering giving a public speech or seeing oneself from the back when running from a threat. Future episodic thought and memory have been found to exhibit highly similar distributions of third-person perspectives concerning height, distance, and location (McDermott et al., 2016).

People do not only have memories of events experienced by themselves, but also memories of events reported by others. Larsen and Plunkett (1987) found that the retrieval processes are similar for memories of reported and experienced events, but that retrieval times are much longer for reported events. Pillemer et al. (2015) extended earlier studies and presented a theory of vicarious memories, focusing on memories reported by a relative or a close friend. Results showed that vicarious memories share the same pattern of phenomenological characteristics as autobiographical memories although at a lower intensity. One difference found by Pillemer et al. was that around half of the vicarious memories were remembered from a first-person perspective while the other half had a mix of first- and third-person perspectives. Thus, even though people did not experience the events themselves, they commonly remember them from a first-person perspective.

When reading literature, people construct models of the events described (van Dijk & Kintsch, 1983; Zwaan et al., 1995) and they often experience mental imagery (Brück et al., 2016; Dijkstra et al., 1995; Green & Brock, 2000; Sadoski et al., 1990). The mental images of events described in text also involve visual perspective (Hartung et al., 2016). The reader can adopt the perspective of the protagonist in a story under certain text-based and task-based circumstances, such as a first-person narrative perspective or when being instructed to do so (Creer et al., 2020). In this way, similar to self-experienced events, events described in text can result in memories that are later recalled with an experienced perspective. Relating the experienced perspective in memories of events from text to the experienced perspective when recalling autobiographical events, taking the perspective of a protagonist would mean seeing an event from the protagonist's eyes and would correspond to a first-person visual perspective. Similarly, viewing the event from another vantage point while seeing the protagonist in the scene would

correspond to a third-person visual perspective. Thus, the reader's self would not be present in the memory of an event from the text, but would rather be mapped to the protagonist.

One feature of a literary text is its fictionality whether it is describing factual or fictional content. The fictionality of a text could be signalled within the text, such as by its content or writing style. However, the fictionality of a text is indicated mainly through the paratext information existing outside of the text itself revealing that it is fact or fiction. For instance, paratext could be information on a book cover in the form of the title or the words "novel" or "autobiography". The impact of fictionality on reading behaviour and experience has been studied to some extent. Altmann et al. (2014) studied immediate imagining when reading short narratives labelled as either fact or fiction (that is, manipulating the paratext only). Using fMRI, they found differing brain activation patterns as a function of fictionality, from which they concluded that "factual works relate to the cooperation and alignment of individuals in the real world" while "fictional works follow primarily the task of imagination and simulation" (p. 28). Along the same lines, Jacobs and Willems (2018) suggest that the simulation processes of fiction require perspective taking to a greater extent, which may be different compared to fact. On the other hand, other research on fiction, such as Hartung et al. (2017), has revealed no differences between reading fact or fiction. Hartung et al. had two groups of participants in an online study read the same story either in a fact or in a fiction condition (thus, they manipulated the paratext only), and measured immersion in and appreciation of the story, perspective taking, and memory for events. They found that fictionality did not affect reading behaviour or experiential aspects of reading (including memory perspective). Hartung et al. conclude that it is not the fictionality that matters, but the readers' expectations concerning certain reading situations (for instance, reading a newspaper vs. reading a novel), which influence behaviour and activate connected reading goals.

The factual/fictional dimension of events has been little addressed in previous studies of experienced visual perspective. Fictionality could potentially influence visual perspective so that a stronger involvement in fiction compared to fact (Mar & Oatley, 2008; Oatley, 1999) and increased perspective taking (Jacobs & Willems, 2018) may manifest itself through more first-person

perspectives as the reader identifies with the protagonist and sees things from the protagonist's eyes. With these potential effects in mind, it is noteworthy that the few empirical studies of visual perspective as a function of fictionality (mainly Hartung et al., 2017) found no differences in proportions of first- and third-person perspectives. However, it is unknown whether there are differences between fact and fiction concerning details of third-person perspectives in terms of height, distance, and location (McDermott et al., 2016; Rice & Rubin, 2011) as this has not been studied.

Another factor not previously studied in relation to fictionality and visual perspective concerns time between encoding and retrieval. Earlier studies of fictionality have focused on very short retention intervals. Altmann et al. (2014) studied immediate imagining while reading and Hartung et al. (2017) asked participants immediately after reading a story. However, differences between factual and fictional events may surface in later remembering. How does later recall of fictional events, compared to factual events, affect visual perspective?

The present study

The main interest of the present study is whether there are any differences in visual perspective between the recollection of fact and fiction. Does fictionality itself affect any aspect of the visual imagery of events? The present study is located within a larger research context of the search for differences between fact and fiction, and on the nature of cognitive processing of fictional information. Visual perspective is one such aspect that may differ between fact and fiction. Likewise, the study concerns memories of reported or mediated events (acquired through the medium of text) and is in that way related to a general theory of event memory.

In the present study, we studied visual perspective (along with associated phenomenological characteristics) in both immediate imagination (while reading) and remembering (after a 10-min delay) of factual and fictional events. We anticipated that differences in visual perspective between fact and fiction may be larger when the story is later recalled from memory. Visual perspective was considered as either first- or third-person, with the assumption that even though the two perspectives may occur simultaneously, one of them is dominant in the spontaneous retrieval of a memory. Further, the analysis of visual perspective is based on Rice

and Rubin (2011) and McDermott et al. (2016) and their detailed analysis of third-person perspectives in terms of height, distance, and location. Additionally, the experienced events were rated in terms of clarity, to what extent they were perceived in black and white or colour, and their amount of visual details. Participants also rated how much they imaginatively put themselves in the place of the protagonist fantasy empathy a subtype of cognitive empathy put forward by Davis (1996).

We wanted to see if Hartung et al.'s (2017) result of no difference between fact and fiction concerning visual perspective can be replicated. We also included the dimension of emotional valance of stories, since Hartung et al. suggested that stories with emotional events may be influenced by fictionality. The aim of the present study is to openly explore differences between fact and fiction concerning visual perspective. Based on earlier theories, we formulate a number of possible outcomes: If a reader identifies with the main character in fiction, this would more likely lead to a first-person perspective for fiction compared to fact. Further, in autobiographical memory, negatively valenced memories lead to more third-person perspectives (suggested to be a regulation of negative emotions) (Kross & Ayduk, 2009; St. Jacques, 2019). Consequently, we predict that negatively valenced stories would lead to more third-person experienced perspectives. We would also like to see if results from earlier studies (Hartung et al., 2017) replicate concerning that first-person stories lead to higher clarity and perspective taking (fantasy empathy).

Concerning the terminology for visual perspective, the *narrative perspective* is the perspective from which a story is written (using first- or third-person pronouns), whereas the *experienced perspective* (first or third person) is the perspective reported by the participants while imagining or remembering.

Method

Participants

Participants were recruited on campus and online through various social media and survey sites (the study was advertised as "a study on imagination"). As compensation the possibility to win a $50 USD gift card was offered. A total of 254 participants started the study[1] of which 158 completed it. Two participants were removed because they were under 18 years old and two were removed

because they did not complete the filler tasks. One participant notified the researchers that he did the study twice and the additional data was removed from the analysis. All participants passed the screening of spending a minimum time of 2 s per question (resulting in a minimum time for the entire study of 8 min); no maximum time was set. They also passed a check that they had moved the data input sliders before proceeding on questions. Thus, the final N was 153 (86 males, 65 females, and 2 other) with ages 18–62 years ($Mdn = 25$), with $n = 79$ for the fact condition and $n = 74$ for the fiction condition. Participants varied in their nationalities; IP addresses indicated that 48% connected from North America, 35% from Europe, 7% from Asia, 5% from Australia, 3% from South America, and 2% were unknown.

Design

An overview of the design can be seen in Figure 1. First, participants were randomly assigned to one condition of either fact or fiction. Thereafter, the study consisted of two parts. In Part 1, participants read and were instructed to imagine four stories (the same for the two conditions). They then answered a questionnaire with ratings of memory characteristics. Part 2 was separated from Part 1 by 10 min of filler tasks. For each of the four stories previously presented, participants were given a cue and asked to remember the story, and do the memory ratings again.

Material

Stories

The stimuli consisted of four short narratives in English, created specifically for the present study, with lengths between 41 and 52 words (similar in length to Altmann et al.'s (2014), stories which ranged between 41 and 57 words). Each story had a two-word descriptive heading above. We manipulated the paratext so that the stories were presented as facts for one group and as fiction for the other group. The fact group had the heading "Four news stories" and the instructions "You will now read four short news stories. The events depicted are real and actually happened". The fiction group had the heading "Four fictional stories" and the instructions "You will now read four short fictional stories.

The events depicted are imagined and did not actually happen". Both groups had the following instructions: "After reading each story, try to imagine it as clearly as you can. Then you will be asked some questions".

Four characteristics were considered while creating the stories: fictionality neutrality, narrative perspective, emotional valence, and character gender. First, narratives were created neutral so that they could be either news stories or fictional stories. This was achieved by including realistic, but generic, situations which contained characters that would not be recognised. No story referred to any specific, known series of events from news or media. Stories were presented in a pre-study to a focus group which provided feedback concerning the fictionality of the stories, resulting in some minor revisions of the texts. Second, two stories were written in a first-person narrative perspective and two in a third-person narrative perspective. Third, two of the stories had positive emotional valence and two had negative valence. Fourth, one of the stories written in a third-person narrative perspective involved a male protagonist while the other involved a female protagonist. The stories are presented in the Appendix, together with how the aforementioned factors were balanced.

Each participant was randomly assigned to a story presentation order (each story occurred in each position an equal number of times across participants). The same order was used for the imagination and memory conditions.

Questions

Four questions on phenomenological characteristics of visual imagery were provided in the form of data input sliders ranging from 1 to 7, with the labels at the endpoints written out. Questions on clarity, colour, and visual detail were adapted from Johnson et al. (1988), using the phrasing "story" instead of the original "event". *Clarity* refers to whether the mental image is dim or sharp/clear. *Colour* is to what extent the visual image is black and white or in colour. *Visual detail* denotes if the mental image is visually detailed so that the look of, for example, people and objects can be discerned. One question asked about fantasy empathy, based on Davis (1996) definition of how likely people are to imaginatively put themselves

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[1]In order to be considered to have started the study, participants need to have filled in at least the first (of eight) stories. There was also a number of people (123 persons) who followed the online link to the study, but did not actually start the study (according to the notion presented here).
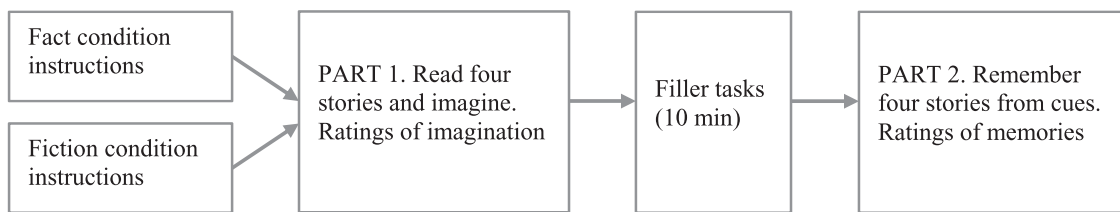
Figure 1. Experiment design.

in the place of someone else. Following that, there were three questions on visual perspective, adapted from McDermott et al. (2016), asking about the height, location, and distance of the origin of the participant's visual perspective in relation to the protagonist in the story. Thus, McDermott et al.'s original questions, asking about the relation to the self, was adapted by mapping the self to the protagonist in the story. The questions and response options are presented in full in the Appendix.

For online data collection, the software Psy-Toolkit was used (Stoet, 2010, 2017), which ran in the participants' web browsers.

Procedure

The entire procedure was carried out online. After giving their written informed consent and filling in their age and gender, the participants were randomly assigned to a fact or a fiction condition.

In Part 1, participants were instructed to read and imagine each story as it was displayed on the screen. The participants answered questions by inspecting their imagination of the story, with the story still on the screen. Reading and rating were self-paced. Each participant answered questions about the four stories, which were presented in a randomly selected order.

After completing Part 1, participants carried out filler tasks which consisted of writing short texts based on three photographs (unrelated to the stories) and answering some general questions about their imaginative ability. The filler tasks lasted around ten minutes.

In Part 2, participants were asked to remember each story. They were given a two-word cue (the heading of each story used in Part 1) and answered the same questions as in Part 1 the difference being that "memory" was used instead of "imagination" in the instructions.

At the end of the study, participants were debriefed and offered to supply general feedback about the study. The entire study was completed with a median of 23 min.

Results

The main interest of the study is the difference between fact and fiction concerning experienced visual perspective: whether the events are seen from the protagonist's eyes or from a vantage point in which the protagonist is visible. Moreover, investigation of differences between imagination (immediate) and memory (after a 10-min delay) will also be reported. The results section is organised as follows. In order to give an overview, a summary of differences between fact and fiction is presented initially. This is then followed by detailed results in three categories. First, differences between experienced visual perspectives in terms of first or third person are presented. Second, the distributions of third-person experienced perspective locations are compared across fact and fiction. Third, some associated phenomenological characteristics of visual experience are contrasted between fact and fiction.

The α significance level for statistical tests was set to .05, with Bonferroni corrections for multiple comparisons (specified below). Because of the explorative nature of the study and a large number of measures, corrections were applied to all analyses. Since Bonferroni corrections are conservative and decrease power, results are presented both with and without these corrections.

Summary of differences between fact and fiction

A brief summary of the differences between fact and fiction is presented here, and the details are presented in the following results sections. Comparing fact and fiction, the results showed no differences between the proportions of first- and third-person

perspectives. However, third-person perspectives differed between fact and fiction in that participants reported more perspectives from eye level, alongside and from the right side of the protagonist. There were no differences between fact and fiction concerning the phenomenological characteristics related to visual imagery: clarity, visual detail, colour, or fantasy empathy. Three trends of how fictionality interacted with other variables were noted (though not statistically significant after correction for multiple comparisons): First, for fact, negatively valenced first-person stories had higher clarity. Second, for fact, fantasy empathy was higher for negative stories at imagining, and third, for factual first-person stories, fantasy empathy was higher for negative stories, while for fiction, third-person stories resulted in higher fantasy empathy for negative stories.

Visual perspective

First or third person

Following Rice and Rubin (2011) and McDermott et al. (2016), a perspective was coded as first person if the participant reported seeing from the protagonist's eyes (using the logic that the reader's self is mapped to the protagonist) for both of the two questions on distance and location (see Appendix for questions). There was a mismatch between the responses of these two questions in 52 cases (of 1224 total ratings[2]), corresponding to 4.2%. This is comparable to McDermott et al. (2016) who observed 5.5% mismatches. Mismatches were not resolvable because there were no other supporting data available as in McDermott et al.'s study. The mismatches were counted as instances of third-person experienced person perspective.

Table 1 shows the proportions of first- and third-person experienced perspective for fact and fiction while imagining and remembering, for the two narrative perspectives used in the stories.

There were no statistically significant differences of proportions of third-person experienced perspective between fact and fiction (tested for imagination and memory separately as well as together), as tested with Mann–Whitney U tests ($|zs| <= 0.75$, $ps >= .46$). Further, there were no differences between imagination and memory (tested for fact and fiction separately as well as together), as

Table 1. Proportions of first- and third-person experienced perspective in imagination and memory for fact and fiction for first- and third-person narrative perspective.

Fictionality	Imagery mode	Narrative perspective	Experienced perspective	
			First person	Third person
Fact	Imagination	First person	34.2%	65.8%
		Third person	2.5%	97.5%
		First + third person	18.4%	81.6%
	Memory	First person	34.2%	65.8%
		Third person	5.1%	94.9%
		First + third person	19.6%	80.4%
	Imagination + memory		19.0%	81.0%
Fiction	Imagination	First person	31.1%	68.9%
		Third person	1.4%	98.6%
		First + third person	16.2%	83.8%
	Memory	First person	30.4%	69.6%
		Third person	1.4%	98.6%
		First + third person	15.9%	84.1%
	Imagination + memory		16.0%	84.0%
Fact + fiction	Imagination	First person	32.7%	67.3%
		Third person	2.0%	98.0%
		First + third person	17.3%	82.7%
	Memory	First person	32.4%	67.6%
		Third person	3.3%	96.7%
		First + third person	17.8%	82.2%
	Imagination + Memory		17.6%	82.4%

Note. The combined proportions of first and third person are shown as "First + third person" and the combined proportions for imagination and memory are shown as "Imagination + memory".

tested with Wilcoxon signed rank tests ($|zs| <= 0.88$, $ps >= .38$).

The narrative perspective of the stories affected the experienced visual perspective, as can be seen in Table 1. This difference of proportions between first- and third-person narrative perspectives was statistically significant as tested with Wilcoxon sign rank tests, $N = 153$, $z = 7.70$, $p < .0001$. The difference existed also when considering fact and fiction separately, and looking at imagination and memory separately, or together ($zs >= 5.34$, $ps < .0001$). However, third-person experienced visual perspective is still dominant even for stories written in first-person perspective, for both fact and fiction. A third-person narrative perspective lead participants to adopt a third-person experienced visual perspective, but in contrast, a first-person narrative perspective does not lead to a first-person experienced perspective.

The influence of emotional valence of the story on experienced perspective can be seen in Table 2.

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[2]Each participant ($N = 153$) rated four stories for imagination and four stories for memory ($153 \times 4 \times 4 = 1,224$).

Table 2. Proportion of first- and third-person experienced perspective in imagination and memory as a function of story emotional valence.

Fictionality	Imagery mode	Story emotional valence	Experienced perspective	
			First person	Third person
Fact	Imagination	Positive	7.2%	92.8%
		Negative	11.8%	88.2%
	Memory	Positive	7.8%	92.2%
		Negative	12.4%	87.6%
	Imagination + Memory	Positive	7.5%	92.5%
		Negative	12.1%	87.9%
Fiction	Imagination	Positive	7.8%	92.2%
		Negative	7.8%	92.2%
	Memory	Positive	6.5%	93.5%
		Negative	8.8%	91.2%
	Imagination + Memory	Positive	7.2%	92.8%
		Negative	8.3%	91.7%
Fact + fiction	Imagination	Positive	7.5%	92.5%
		Negative	9.8%	90.2%
	Memory	Positive	7.2%	92.8%
		Negative	10.6%	89.4%
	Imagination + Memory	Positive	7.4%	92.6%
		Negative	10.2%	89.8%

Negative stories, compared to positive stories, lead to a lower number of third-person experienced perspectives, as tested with Wilcoxon signed rank tests. Differences were statistically significant generally ($N = 153$, $z = 2.43$, $p = .015$), for imagination separately ($N = 153$, $z = −1.98$, $p = .048$), and for memory separately ($N = 153$, $z = −2.94$, $p = .003$). Considering fact and fiction independently, the difference was statistically significant while remembering facts ($N = 79$, $z = −2.19$, $p = .028$) and fiction ($N = 74$, $z = −1.96$, $p = .050$), but not for imagination or the combination of imagination and memory ($|zs| <= 1.87$, $ps >= .062$).

Characteristics of third-person perspective

The location of third-person perspectives was analysed by dividing it into four categories based on the participants' responses to the questions about their experienced perspectives (following McDermott et al., 2016): (1) height (below eye level, eye level, above eye level); (2) distance (less than six feet, greater than six feet); (3) location–front/back (behind, alongside, in front); and (4) location–side/body (right, centre, left). Table 3 shows the distributions of perspective locations across fact and fiction as well as imagination and memory, while Figure 2 shows the distributions across fact and fiction with differences colour-coded.

Testing differences between fact and fiction, collapsing across stories, there were differences for *height* (all stories for imagination and memory combined): χ^2 (2, $N = 1144$) $= 7.88$, $p = .019$. $\Phi_c = .083$. Adjusted standardised residuals showed that fact and fiction differed so that fact had a higher proportion of eye level perspectives. There was also a difference for *height* when four stories were combined for memory only: χ^2 (2, $N = 571$) $= 7.89$, $p = .019$, $\varphi_c = .12$. The fact had to higher extent perspectives from eye level and to lesser extent perspectives from above eye level. Further, the dimension *location–front/back* differed (all stories for imagination and memory combined): χ^2 (2, $N = 899$) $= 6.30$, $p = .043$, $\varphi_c = .084$. The fact had a higher proportion of alongside perspectives. Finally, *location–side/body* differed (all stories for imagination and memory combined): χ^2 (2, $N = 899$) $= 10.082$, $p = .0065$, $\varphi_c = .11$. The fact had to higher extent perspectives from the right and less from the left. The remaining contrasts, when collapsing across all stories as well as collapsing across only imagination and memory separately, were not statistically significant.

Since each participant contributed multiple responses to a cell in the analysis, tests were performed for each of the eight stories separately (four for imagination and four for memory). There was a difference for *height* for one of the stories ("Heroism Award"), memory: χ^2(2, $N = 137$) $= 7.49$, $p = .024$, $\varphi_c = .23$. Adjusted standardised residuals showed that fact and fiction differed in that fiction produced more perspectives from below eye level. In addition, *location–side/body* differed for one of the stories ("Carpenter Accident"), memory: χ^2 (2, $N = 85$) $= 7.85$, $p = .020$, $\varphi_c = .30$. Fact showed more perspectives from the right and less from the left. The remaining contrasts were not statistically significant. Correction for multiple comparisons (four stories in imagination and four stories in memory) gives $\alpha = .0063$ (.05 8). After the correction for multiple comparisons, fact and fiction did not differ on any of the four dimensions for any story analysed separately for imagination or memory.

Phenomenological characteristics

Four phenomenological characteristics related to visual experience were rated on seven-point scales by participants: clarity, black/white–colour, visual details, and fantasy empathy.

A four-way ANOVA was performed with the between-subjects variable Fictionality (fact/fiction)

Table 3. Distributions of third-person experienced perspective across fact and fiction, for imagination and memory separately as well as combined.

Fict.	Imag. mode	Height			Distance		Location–front/back			Location–side/body		
		Below	Eye-l.	Above	<6 ft.	>6 ft.	Behind	Along.	In front	Right	Centre	Left
Fact	Imagination	15.2%	46.1%	38.7%	46.4%	53.6%	31.4%	16.6%	52.0%	35.8%	43.2%	21.0%
	Memory	15.3%	51.5%	33.2%	48.2%	51.8%	32.0%	15.8%	52.3%	35.1%	44.6%	20.3%
	Imag.+ Mem.	15.2%	48.8%	36.0%	47.3%	52.7%	31.7%	16.2%	52.1%	35.5%	43.9%	20.6%
Fiction	Imagination	18.1%	41.3%	40.6%	47.9%	52.1%	34.1%	10.8%	55.2%	28.7%	41.3%	30.0%
	Memory	18.1%	39.9%	42.0%	48.8%	51.3%	33.8%	10.2%	56.0%	26.2%	47.1%	26.7%
	Imag.+ Mem.	18.1%	40.6%	41.3%	48.3%	51.7%	33.9%	10.5%	55.6%	27.5%	44.2%	28.3%
Fact + fiction	Imagination	16.6%	43.8%	39.6%	47.1%	52.9%	32.7%	13.7%	53.5%	32.3%	42.3%	25.4%
	Memory	16.6%	45.9%	37.5%	48.5%	51.5%	32.9%	13.0%	54.1%	30.6%	45.9%	23.5%
	Imag.+ Mem.	16.6%	44.8%	38.5%	47.8%	52.2%	32.8%	13.3%	53.8%	31.5%	44.0%	24.5%

and the within-subjects variables Imagery Mode (imagine/remember), Narrative Perspective (first-person/third-person), and Story Emotional Valence (positive/negative). Threshold α was corrected for multiple comparisons: There were 14 comparisons per characteristic and 4 characteristics = 56; .05/56 = corrected α = .00089.

## Clarity

First-person narrative perspective resulted in higher clarity, $M_{1st} = 4.92$, $M_{3rd} = 4.56$, $F(1, 151) = 24.03$, $p < .0001$, $\eta^2_p = 0.14$. Also, negative stories resulted in higher clarity, $M_{pos} = 4.60$, $M_{neg} = 4.87$, $F(1, 151) = 11.58$, $p = .00085$, $\eta^2_p = 0.071$. Three additional statistically significant differences were found that did not survive the correction for multiple comparisons. First, there was an interaction between narrative perspective and emotional valence, $M_{1st-pos} = 4.69$, $M_{1st-neg} = 5.14$, $M_{3rd-pos} = 4.51$, $M_{3rd-neg} = 4.61$, $F(1, 151) = 4.59$, $p = .034$, $\eta^2_p = 0.03$. Clarity was higher when a first-person narrative perspective was used in combination with a negatively valenced story. Second, there was a three-way interaction between fictionality, narrative perspective, and emotional valence, $F(1, 151) = 4.81$, $p = .045$, $\eta^2_p = 0.026$. For the case of fact, there was a simple two-way interaction between narrative perspective and emotional valence (negatively valenced first-person stories had higher clarity), which was not present for fiction. Third, there was a three-way interaction between imagery mode, narrative perspective, and emotional valence, $F(1, 151) = 5.20$, $p = .024$, $\eta^2_p = 0.033$. This was constituted by a simple two-way interaction between narrative perspective and emotional valence for memory but not for imagination: Clarity tends to increase at remembering for first-person negative stories. The remaining differences for clarity were not statistically significant ($Fs <= 2.09$, $ps >= .15$), including that between fact and fiction, $M_{fact} = 4.70$, $M_{fiction} = 4.78$, $F(1, 151) = 0.12$, $p = .73$, $\eta^2_p < 0.001$.

Black/White–colour

Stories told in first-person narrative perspective lead participants to experience their visual imagery in
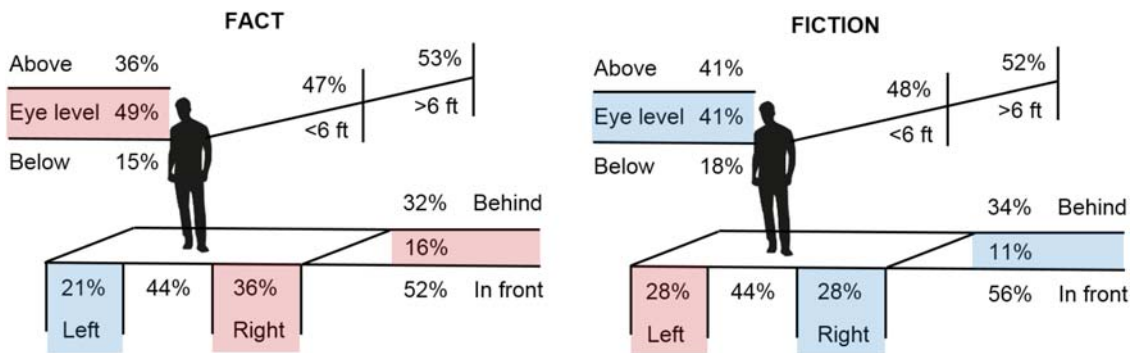
Figure 2. Distributions of third-person experienced perspective across fact and fiction. Note: Distributions of third-person experienced perspective across fact and fiction, presented as in Rice and Rubin (2011) and McDermott et al. (2016) (statistically significant differences between fact and fiction are marked red for higher and blue for lower). Cases in which the sum of percentages do not equal 100 are due to rounding error.

colour to a higher degree, $M_{1st} = 5.56$, $M_{3rd} = 5.22$, F (1, 151) = 18.15, $p = .00004$, $\eta^2_p = 0.11$. There was an interaction that did not survive the correction for multiple comparisons between narrative perspective and emotional valence, $M_{1st\text{-}pos} = 5.39$, $M_{1st\text{-}neg} = 5.74$, $M_{3rd\text{-}pos} = 5.31$, $M_{3rd\text{-}neg} = 5.13$, $F(1, 151) = 10.61$, $p = .0014$, $\eta^2_p = 0.066$. There was a tendency for negative first-person stories to be experienced more in colour, which was not the case for third-person stories. The rest of the comparisons were not statistically significant ($Fs <= 2.26$, $ps >= .14$), including that of fictionality, $M_{fact} = 5.57$, $M_{fiction} = 5.21$, $F(1, 151) = 2.25$, $p = .14$, $\eta^2_p = 0.015$.

Visual detail

Negatively valenced stories lead participants to experience more visual details in their mental images, $M_{pos} = 4.35$, $M_{neg} = 4.9$, $F(1, 151) = 40.11$, $p < .0001$, $\eta^2_p = 0.21$. Two effects did not survive the correction for multiple comparisons: Amount of visual details tended to decline from imagining to remembering, $M_{imagine} = 4.72$, $M_{remember} = 4.52$, $F(1, 151) = 9.67$, $p = 0.0023$, $\eta^2_p = 0.06$. Also, stories told in first-person narrative perspective resulted in experiencing more visual details, $M_{1st} = 4.71$, $M_{3rd} = 4.54$, $F(1, 151) = 4.69$, $p = .032$, $\eta^2_p = 0.03$. The rest of the comparisons were not statistically significant ($Fs <= 3.83$, $ps >= .054$), including the one for fictionality, $M_{fact} = 4.62$, $M_{fiction} = 4.63$, $F(1, 151) = 0.01$, $p = .98$, $\eta^2_p < 0.001$.

Fantasy empathy

Stories told in first-person narrative perspective increased fantasy empathy, that is, made it more likely that participants put themselves in the place of the protagonist, $M_{1st} = 3.83$, $M_{3rd} = 2.25$, $F(1, 151) = 134.45$, $p < .0001$, $\eta^2_p = 0.47$. Further, negatively valenced stories increased fantasy empathy, $M_{pos} = 2.77$, $M_{neg} = 3.31$, $F(1, 151) = 27.96$, $p < .0001$, $\eta^2_p = 0.16$. Four other effects did not survive correction for multiple comparisons. First, fantasy empathy tended to decrease from imagining to remembering, $M_{imagine} = 3.12$, $M_{remember} = 2.96$, $F(1, 151) = 5.37$, $p = .022$, $\eta^2_p = 0.034$. Second, there was a three-way interaction between fictionality, imagery mode, and emotional valence, $F(1, 151) = 5.00$, $p = .027$, $\eta^2_p = 0.032$. The three-way interaction was based on that for fact, there was a statistically significant simple two-way interaction between imagery mode and story emotional valence, which was not present for fiction. That simple two-way interaction consisted of that for fact, fantasy empathy was higher for negative stories at

imagining. Third, there was a three-way interaction between fictionality, narrative perspective, and emotional valence, $F(1, 151) = 5.35$, $p = .022$, $\eta^2_p = 0.034$. For fact, first-person stories empathy was higher for negative stories, while for fiction, third-person stories resulted in higher empathy for negative stories. Fourth, there was a three-way interaction between imagery mode, narrative perspective, and emotional valence, $F(1, 151) = 11.28$, $p = .0010$, $\eta^2_p = 0.069$. For first-person narrative perspective, empathy decreases for positive stories at remembering. Negative stories result in higher empathy at imagination for third-person narrative perspective this difference is not present at remembering. The remaining comparisons were not statistically significant ($Fs <= 1.90$, $ps >= .29$), including that for fictionality, $M_{fact} = 3.04$, $M_{fiction} = 3.04$, $F(1, 151) = 0.001$, $p = .97$, $\eta^2_p < 0.001$.

Correlation between experienced perspective and phenomenological characteristics

We investigated the interrelation between the perspective experienced by the participant and the ratings of the four phenomenological characteristics (clarity, black/white–colour, visual detail, and fantasy empathy). Because each participant contributed to several measurements, each story was analysed separately (four for imagination and four for memory) using independent samples t tests. The numbers of first- and third-person experienced perspectives varied across stories and the ns are specified in the following.

For the four stories for imagination (both fact and fiction), none of the characteristics differed, "Lottery Ticket", $n_{1st} = 45$, $n_{3rd} = 108$, $|ts| <= 0.77$, $ps >= .44$, "Heroism Award", $n_{1st} = 1$, $n_{3rd} = 152$, $|ts| <= 0.88$, $ps >= .38$, "Carpenter Accident", $n_{1st} = 55$, $n_{3rd} = 98$, $|ts| <= 0.83$, $ps >= .41$, and "Mountain Climber", $n_{1st} = 5$, $n_{3rd} = 148$, $|ts| <= 0.73$, $ps >= .50$. For the four stories for memory (both fact and fiction), clarity was higher for first-person experienced perspective for "Heroism Award", $n_{1st} = 2$, $n_{3rd} = 151$, $M_{1st} = 5.00$, $M_{3rd} = 4.66$, $t(150) = 2.20$, $p = .029$, $d = 0.25$, while the other characteristics did not differ, $|ts| <= 0.84$, $ps >= .40$. The remaining stories did not differ, "Lottery Ticket", $n_{1st} = 42$, $n_{3rd} = 111$, $|ts| <= 0.53$, $ps >= .60$, "Carpenter Accident", $n_{1st} = 57$, $n_{3rd} = 96$, $|ts| <= 1.26$, $ps >= .21$, and "Mountain Climber", $n_{1st} = 8$, $n_{3rd} = 145$, $|ts| <= 0.75$, $ps >= .48$. The difference for clarity in "Heroism Award" did not survive the correction for multiple comparisons (8 stories; $.05\ 8 = .0063$).

Discussion

In the present study, we investigated visual perspective as a function of fictionality of events in stories, both in immediate imagining while reading and in later recollection from memory. Experiencing a first-person perspective means seeing an event through the protagonist's eyes, while a third-person perspective means seeing an event with the protagonist in it. Labelling the stories as fact or fiction seems to lead participants to experience a similar amount of first- and third-person perspectives, both for imagination and memory. Stories written in a third-person narrative perspective lead participants to adopt a third-person experienced visual perspective. However, although first-person stories were more often experienced through a first-person perspective compared to third-person stories, they were still dominated by a third-person experienced perspective. The analysis of third-person experienced perspective revealed that the vantage point from which participants see the protagonist in the story differs between fact and fiction. Fact had more perspectives from eye level and alongside the protagonist. This suggests that fact centres the vantage point, while fiction distances it. In terms of phenomenological characteristics related to visual imagery, fictionality had no impact on any characteristic (neither when imagining nor remembering). Experienced perspective was not correlated with any phenomenological characteristic. Stories in first-person narrative perspective increased clarity, colour, and fantasy empathy, while negative (as opposed to positive) valence increased clarity, visual detail, and fantasy empathy. Three trends were noted concerning the difference between fact and fiction in terms of phenomenological characteristics (statistically significant interactions at the .05 level, but not after correction for multiple comparisons): (1) for fact, negatively valenced first-person stories had higher clarity (but not for fiction), (2) for fact, fantasy empathy was higher for negative stories at imagining, and (3) for factual first-person stories, fantasy empathy was higher for negative stories, while for fiction, third-person stories resulted in higher fantasy empathy for negative stories.

Experienced visual perspective

First or third person

The proportions of experienced third-person perspectives in the present study were similar; 81% for fact and 84% for fiction. Thus, we replicated Hartung et al.'s (2017) result of no difference in perspective taking between fact and fiction.

Comparing the proportion of third-person perspectives with previous research on autobiographical memory, our result is higher than that found by Nigro and Neisser (1983) (42–47%), Rice and Rubin (2011) (65%), and McDermott et al. (2016) (71%). Comparing the proportions of the present study to those found for episodic future thought by McDermott et al. (2016) (78%), mind-wandering (Christian et al., 2013) (47%), and vicarious memories (Pillemer et al., 2015) (around 50%), they are also higher. Thus, it appears that participants did not adopt the protagonist's perspective to an extent close to that of remembered self-experienced events, imagined events about oneself, or memories reported by others. This was the case even when the story was written in first-person narrative perspective. Moreover, as a methodological issue, there may be a bias in the response options that could account for the high proportion of third-person perspectives (a bias also present in McDermott et al., 2016), discussed below under study limitations.

Speculating about the function of the high proportion of third-person perspectives (even for stories in first-person narrative perspective), one reason may be that reading invokes construction of a simulation that aids interpretation and performing of future actions. St. Jacques (2019) notes that adopting a third-person perspective in imagining the future may be related to understanding the context of events and the relation to the self, and may thus be oriented towards planning and predicting future behaviour. Altmann et al. (2014) found a difference for fact characterised by "representation or inner imitation of actions" while fiction is more related to "imaginative constructions of hypothetical events or scenarios" (p. 28). Even if such a difference exists between fact and fiction, it could not be seen in a difference in experienced perspectives between fact and fiction in the present study. Nonetheless, if narrative reading regardless of whether it is fact or fiction has the role of preparing for future behaviour, it would be expected to see the high proportion of third-person perspectives found in the present study.

Influences of adopted perspective

What makes people adopt either a first- or third-person perspective on events from a story? The

idea that fiction, as opposed to fact, leads to more experienced first-person perspectives because the reader identifies with the protagonist and therefore sees things from the protagonist's eyes (Jacobs & Willems, 2018; Mar & Oatley, 2008) was not supported by the present study. Further, negatively valenced stories did not lead to more third-person experienced perspectives, which may be expected from the idea that third-person perspectives in autobiographical memory regulate negative emotions (Kross & Ayduk, 2009; St. Jacques, 2019). The opposite was found in the present study; Negative stories lead to more first-person experienced perspectives. It appears there was no need for emotion-regulation of the negative emotions of the stories either the emotions were not intense enough, or they were not experienced as related to the self. On the contrary, negatively valenced stories appear to increase engagement, and in terms of visual perspective, the increased engagement is manifested through a first-person experienced perspective. Moreover, the present study showed that the experienced visual perspective is not determined by the narrative perspective of the story (e.g. first-person narrated stories lead to around one-third first-person experienced visual perspectives). Even when events are reported in first person, people dominantly engage in a third-person visual perspective, both when concurrently imagining the event as well as when they later remember it. This can be accounted for when considering that perspective taking in reading may be fairly limited. Creer et al. (2020) provided evidence that readers do not typically approach the text from the protagonist's view, especially when there is a lack of perspective-relevant contextual information as in the short stories used in the present study.

Distribution of third-person perspectives

Comparing the distribution of third-person perspectives to those obtained for memory and episodic future thought by McDermott et al. (2016), the present study is similar in terms of distance and sideways location (except for the higher proportion of perspectives from the right side of the protagonist for fact). The most striking difference compared to the results of McDermott et al. is that of front/back location, where both fact and fiction were dominated by perspectives from in front of the protagonist. Also, concerning height, both fact and fiction had more perspectives from

eye level while episodic future thought had perspectives from below eye level and more predominantly, from above eye level. The reason for the front perspective in both fact and fiction may be that when reading, people imagine what the protagonist looks like (Brück et al., 2016). For memory and episodic future thought, since they are about the self, there is little interest to view from the front.

The differences in distributions of third-person experienced perspectives between fact and fiction in the present study are intriguing. It seems that for fact, the vantage point is more aligned with the protagonist in the story (with differences in both height and front/back location although distance did not differ). We speculate that this could be due to a more creative use of constructive processes for fiction, so that the protagonist is seen from a more varied set of perspectives, perhaps with influence from people's experience with the visual arts such as cinema. Fact, on the other hand, such as news reports, focus more on a fixed set of events, which may not encourage alternative vantage points. We could not find any explanation for the result that there are more perspectives from the right for the fact than for fiction future studies will have to shed light on whether this is a stable effect or an artefact of the stories used or mere coincidence. Finally, the result of the distributions of third-person perspective in the present study is also in line with previous studies (McDermott et al., 2016; Rice & Rubin, 2011) that the third-person perspective is not fixed but can vary with different events.

Phenomenological characteristics

Differences of phenomenological characteristics between fact and fiction

The data revealed no support for differences between fact and fiction concerning clarity, black/white–colour, visual detail, or fantasy empathy. Fantasy empathy was predicted to be higher for fiction than for fact, following the suggestion by Jacobs and Willems (2018) that fiction requires perspective taking to a greater extent than fact, but this prediction was not met. The finding of no difference between fact and fiction concerning phenomenological characteristics is consistent with the earlier research of Green and Brock (2000) and Hartung et al. (2017).

Associations of phenomenological characteristics to experienced perspective

Is first-person experienced perspective more vivid than third-person experienced perspective? In the present study, experienced perspective was not correlated with any phenomenological characteristic (except for a trend for one of the stories that first-person experienced perspective increased clarity in memory). This trend is in line with the results of McDermott et al. (2016) that first-person experienced perspective increased clarity for people and the feeling of "(p)reexperiencing" a situation (collapsing across both memory and future episodic thought). The lack of association between experienced perspective and fantasy empathy in the present study is noteworthy since we would expect that being able to put oneself in the place of a protagonist in a story would entail a first-person experienced perspective.

Influence of story properties on phenomenological characteristics

First-person narrative perspective lead participants to experience the events with higher clarity and more in colour rather than in black and white. First-person perspective also made participants more likely to imaginatively put themselves in the position of the protagonist (fantasy empathy). This is in line with the results of Hartung et al. (2016) that first-person narrative perspective increased mental imagery and transportation. Additionally, negatively valenced stories increased clarity and fantasy empathy, as well as a level of visual detail. Negative valence, especially in combination with first-person narrative perspective, seemed to provide gripping stories.

Limitations and future studies

The conceptualisation of experienced visual perspective in the present study, as either first- or third-person, could have impacted the results. We did not measure the presence of both perspectives at the same time, nor the possibility of switching between the two perspectives for the same story. The stories were short but could be argued to contain several events, for which the perspective could be different (this was suggested by a couple of participants in their general feedback). However, the present study sought to measure the dominant visual perspective and providing the option for participants to choose only one

perspective accomplishes this purpose. If a more complex measurement of perspective is desired, options for both first- and third-person perspectives could be offered at the same time, and sub-events in stories could be rated separately.

Another issue concerns the specific stories used in the study. The number of stories was limited. Four stories, rated at two times, resulted in eight cases of rating. The reason for choosing four stories was to cover both first- and third-person narrative perspective and positively and negatively valenced stories. This number was considered the maximum practically possible for participants to remember and rate it can be seen that even this task proved too many for some participants who interrupted the experiment. But it is possible that specific features of the stories affected the results. One should exercise caution when interpreting interaction effects which include both narrative perspective and emotional valence in this study, since they involve ratings of a single story as basis, and the particular features of that story could influence the results, rather than reflecting a general property. For instance, first-person negative valence is represented solely by the story about a carpenter accident. It could be that the particular contents of that story lead participants to experience it in a certain way. However, increasing the number of stories comes at the price of increasing memory interference, lengthening the session and creating participant fatigue and thereby risking lower quality data and fewer completed experiments. As a solution, it would be possible to counter-balance narrative perspective across participants to reduce the influence of the content of stories. Emotional valence, however, cannot be counter-balanced in relation to the content of the stories, since it is integral to the content of the story. Taking all these issues into account, however, for the main comparison of interest between fact and fiction, there is no reason to suspect a systematic influence of specific features of the stories on the results.

A possible bias towards higher frequencies of third-person perspective, rather than first-person perspective, may be present in the procedure used by McDermott et al. (2016). This could explain McDermott et al.'s high frequency of third-person perspectives, and would also influence the frequencies in the present study since we used McDermott et al.'s procedure. In their study of visual perspective remembering and episodic future thought, McDermott et al. provided only one response option for

first-person perspective while there were many response options for third-person perspective: nine options in the location question and five options in the distance question. This could have biased the participants' responses towards a third-person perspective. This problem could be resolved in future studies by providing a question with two options first: "first-person or third-person?", and then, a follow-up refinement of the third-person perspective if that was chosen.

We also note the importance of the paradigm used in various studies to measure perspective and other aspects of memory. A within-subjects design in which participants first imagine and later recall, such as in this study, may produce different results from one in which participants recall only. The imagination task could potentially influence subsequent memory by, for instance, rehearsal or retrieval-induced forgetting. However, comparing the study of Hartung et al. (2017) to the present one, there is a similarity in that in both studies, participants were asked directly after reading the story. In that way, Hartung et al.'s task is similar to the imagination task in the present study, although with the difference that in the present study, the story remained visible on screen during the questions. We also see a similarity in the results concerning visual perspective compared to Hartung et al. as the proportions of first- and third-person perspectives do not differ between fact and fiction.

In the present study, the time delay of retrieval in the memory task was around ten minutes. It would be interesting to see how a longer time delay influences visual perspective in fact versus fiction since it is known that longer retention periods generally lead to greater alterations of memories. It is possible that further differences between fact and fiction concerning visual perspective or associated phenomenological characteristics could surface over longer periods of time.

Conclusion

The present study found no differences between fact and fiction (in terms of proportions of first- and third-person experienced perspectives or phenomenological characteristics related to visual images), which adds to the findings of Hartung et al. (2017) and strengthens the case of no differences in experiential aspects of reading between fact and fiction. However, we also found intriguing differences in details of third-person perspectives

suggesting that readers of fact are more visually aligned with the protagonist in the text. In addition, the data revealed some trends regarding how fictionality interacts with narrative perspective and story emotional valence for phenomenological characteristics. It would be interesting to see how these findings hold up in future studies.

Studying memory of factual and fictional events from stories is not only relevant to theories of fiction reading. A general theory of event memory needs to include memories of events that are not directly experienced but reported or otherwise experienced in a mediated way. The present study contributes to this end by providing a picture of visual perspective in memories of events from stories. Another issue a general theory of event memory needs to explain is how people are able to tell whether a memory is of a factual or fictional event, especially when this cannot be decided based on the content or source. The results of the current study suggest that visual perspective (first- vs. third-person) and the phenomenological characteristics studied are not good candidates for the basis of such a distinguishing process. However, the difference found between fact and fiction concerning details of the third-person visual perspective (i.e. that readers are more visually aligned to the protagonist in factual compared to fictional events) may be a potential component in the process that lets people distinguish memories of factual and fictional events.

Disclosure statement

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References

Altmann, U., Bohrn, I. C., Lubrich, O., Menninghaus, W., & Jacobs, A. M. (2014). Fact vs fiction: How paratextual information shapes our reading processes. *Social Cognitive and Affective Neuroscience*, *9*(1), 22–29. https://doi.org/10.1093/scan/nss098

Atance, C. M., & O'Neill, D. K. (2001). Episodic future thinking. *Trends in Cognitive Sciences*, *5*(12), 533–539. https://doi.org/10.1016/S1364-6613(00)01804-0

Brück, C., Gößling-Arnold, C., Wertheimer, J., & Wildgruber, D. (2016). "The inner theater": Decoding of nonverbal

emotional cues described in literary texts. *SAGE Open*. https://doi.org/10.1177/2158244016635253.

Christian, B. M., Miles, L. K., Parkinson, C., & Macrae, C. N. (2013). Visual perspective and the characteristics of mind wandering. *Frontiers in Psychology*, *4*, 699. https://doi.org/10.3389/fpsyg.2013.00699

Creer, S. D., Cook, A. E., & O'Brien, E. J. (2020). Can readers fully adopt the perspective of the protagonist? *Quarterly Journal of Experimental Psychology*, *73*(5), 664–675. https://doi.org/10.1177/1747021819891407

Davis, M. H. (1996). *Empathy: A social psychological approach*. Westview Press.

Dijkstra, K., Zwaan, R. A., Graesser, A. C., & Magliano, J. P. (1995). Character and reader emotions in literary texts. *Poetics*, *23*(1–2), 139–157. https://doi.org/10.1016/0304-422X(94)00009-U

Green, M. C., & Brock, T. C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology*, *79* (5), 701–721. https://doi.org/10.1037/0022-3514.79.5.701

Hartung, F., Burke, M., Hagoort, P., & Willems, R. M. (2016). Taking perspective: Personal pronouns affect experiential aspects of literary reading. *PLoS ONE*, *11*(5), e0154732. https://doi.org/10.1371/journal.pone.0154732

Hartung, F., Withers, P., Hagoort, P., & Willems, R. (2017). When fiction is just as real as fact: No differences in reading behavior between stories believed to be based on true or fictional events. *Frontiers in Psychology*, *8*, 1618. https://doi.org/10.3389/fpsyg.2017.01618

Jacobs, A. M., & Willems, R. M. (2018). The fictive brain: Neurocognitive correlates of engagement in literature. *Review of General Psychology*, *22*(2), 147–160. https://doi.org/10.1037/gpr0000106

Johnson, M. K., Foley, M. A., Suengas, A. G., & Raye, C. L. (1988). Phenomenal characteristics of memories for perceived and imagined autobiographical events. *Journal of Experimental Psychology: General*, *117*(4), 371–376. https://doi.org/10.1037/0096-3445.117.4.371

Kross, E., & Ayduk, Ö. (2009). Boundary conditions and buffering effects: Does depressive symptomology moderate the effectiveness of distanced-analysis for facilitating adaptive self-reflection? *Journal of Research in Personality*, *43*(5), 923–927. https://doi.org/10.1016/j.jrp.2009.04.004

Larsen, S. F., & Plunkett, K. (1987). Remembering experienced and reported events. *Applied Cognitive Psychology*, *1*(1), 15–26. https://doi.org/10.1002/acp.2350010104

Mar, R. A., & Oatley, K. (2008). The function of fiction is the abstraction and simulation of social experience. *Perspectives on Psychological Science*, *3*(3), 173–192. https://doi.org/10.1111/j.1745-6924.2008.00073.x

McDermott, K. B., Wooldridge, C. L., Rice, H. J., Berg, J. J., & Szpunar, K. K. (2016). Visual perspective in remembering and episodic future thought. *Quarterly Journal of Experimental Psychology*, *69*(2), 243–253. https://doi.org/10.1080/17470218.2015.1067237

Nigro, G., & Neisser, U. (1983). Point of view in personal memories. *Cognitive Psychology*, *15*(4), 467–482. https://doi.org/10.1016/0010-0285(83)90016-6

Oatley, K. (1999). Why fiction may be twice as true as fact: Fiction as cognitive and emotional simulation. *Review of General Psychology*, *3*(2), 101–117. https://doi.org/10.1037/1089-2680.3.2.101

Pillemer, D. B., Steiner, K. L., Kuwabara, K. J., Thomsen, D. K., & Svob, C. (2015). Vicarious memories. *Consciousness and Cognition*, *36*, 233–245. https://doi.org/10.1016/j.concog.2015.06.010

Rice, H. J., & Rubin, D. C. (2009). I can see it both ways: First- and third-person visual perspectives at retrieval. *Consciousness and Cognition*, *18*(4), 877–890. https://doi.org/10.1016/j.concog.2009.07.004

Rice, H. J., & Rubin, D. C. (2011). Remembering from any angle: The flexibility of visual perspective during retrieval. *Consciousness and Cognition*, *20*(3), 568–577. https://doi.org/10.1016/j.concog.2010.10.013

Robinson, J. A., & Swanson, J. A. (1993). Field and observer modes of remembering. *Memory (Hove, England)*, *1*(3), 169–184. https://doi.org/10.1080/09658219308258230

Sadoski, M., Goetz, E. T., Olivarez, A., Lee, S., & Roberts, N. M. (1990). Imagination in story reading: The role of imagery, verbal recall, story analysis, and processing levels. *Journal of Reading Behavior*, *22*(1), 55–70. https://doi.org/10.1080/10862969009547694

St. Jacques, P. L. (2019). A new perspective on visual perspective in memory. *Current Directions in Psychological Science*, *28*(5), 450–455. https://doi.org/10.1177/0963721419850158

Stoet, G. (2010). Psytoolkit: A software package for programming psychological experiments using linux. *Behavior Research Methods*, *42*(4), 1096–1104. https://doi.org/10.3758/BRM.42.4.1096

Stoet, G. (2017). Psytoolkit: A novel web-based method for running online questionnaires and reaction-time experiments. *Teaching of Psychology*, *44*(1), 24–31. https://doi.org/10.1177/0098628316677643

Szpunar, K. K. (2010). Episodic future thought: An emerging concept. *Perspectives on Psychological Science*, *5*(2), 142–162. https://doi.org/10.1177/1745691610362350

van Dijk, T. A., & Kintsch, W. (1983). *Strategies of discourse comprehension*. Academic Press.

Zwaan, R. A., Langston, M. C., & Graesser, A. C. (1995). The construction of situation models in narrative comprehension: An event-indexing model. *Psychological Science*, *6*(5), 292–297. https://doi.org/10.1111/j.1467-9280.1995.tb00513.x

Appendix

Stories Stimuli.

Narrative Perspective	Valence	
	Positive	Negative
First person	LOTTERY TICKET "I work as a hotel cleaner and I was cleaning out a room when I saw a lottery ticket in a waste basket. I took it and didn't think much about it. When I saw the lottery draw on television, I could not believe my eyes! I had won 10 million dollars"	CARPENTER ACCIDENT "I was cutting some wood using an electric saw on a construction site I work at. Everything was as usual, but suddenly I was blinded by the sun. My hand slipped and I was cut by the saw. I rushed to hospital but I lost two of my fingers"
Third person	HEROISM AWARD "A fifteen-year old boy received a special award for heroism. He had saved a little girl from drowning. The boy was given a medal in the town hall by the mayor in front a crowd of more than two hundred people"	MOUNTAIN CLIMBER "A female mountain climber was caught in a heavy rain storm. She slipped and became stranded on a rocky ledge high up on a tall mountain side. She was badly injured and had to spend two nights on the rocky ledge until she was airlifted by rescue workers"

Note: Capital letters indicate the heading displayed above the story and later used as a cue for the memory condition.

Questions on Phenomenological Characteristics of Imagery.

Clarity. My imagination/memory of this story is (1 = dim, 7 = sharp/clear).

Visual detail. My imagination/memory of this story involves visual detail (1 = little or none, 7 = a lot).

Black/white–colour. My imagination/memory of this story is (1 = black and white, 7 = entirely colour).

Fantasy empathy. I imaginatively put myself in the place of the person in the story (1 = not at all, 7 = completely).

Visual perspective: Height. When referring to the height, we are interested in the height of the origin of your visual perspective. That is, does it seem that you are floating above the scene or lying on the floor looking up at the scene? We are interested in the ORIGIN of the perspective, NOT where you are looking. (Eye level of the person, Slightly above head of the person, From waist height, From ceiling height, From above ceiling height, From level of floor/ground, Other).

Visual perspective: Location. When referring to the spatial location, we are again interested in the location of the origin of your visual perspective. That is, does it seem that the origin is directly to the left of the person's location during the event or is it in front and to the right of the person's location during the event? We are interested in the ORIGIN of the perspective, NOT where you are looking. (Directly in front of the person facing the person, Directly behind the person, To the left and behind the person, To the right and behind the person, To the left and in front of the person, To the right and in front of the person, Directly to the person's left, Directly to the person's right, From the person's own eyes, Other).

Visual perspective: Distance. When referring to the distance, we are again interested in the distance of the origin of your visual perspective from the person in the story. That is, does it seem that you are approximately a foot away from the person's location during the event or 10 feet away from the person's location? (From the person's own eyes, 3 feet away (1 m) or closer (arm's length is approximately 2–3 feet), 3–6 feet away (2 m) (6 feet is the wingspan of a 6-foot-tall person), 6–20 feet away (2–6 m) (20 feet is approximately the distance from the top of the key on the basketball court to the basket), 20–100 feet away (6–30 m) (100 feet is approximately the length of a college basketball court), 100 feet away (30 m) or more).

Note: the phrasing using "imagination" was used in Part 1 (immediate imagination) while the phrasing using "memory" was used in Part 2 (remembering after a delay).