Perspective effects during reading: Evidence from text change-detection

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Abstract

We report two text change-detection studies in which we investigate the influence of reading perspective on text memory. In Experiment 1, participants read from the perspective of one of two characters in a series of short stories, and word changes were either semantically close or distant. Participants correctly reported more changes to perspective-relevant than -irrelevant words, and for distant than close changes. However, distance and perspective did not interact, suggesting that adopting a particular perspective did not lead to a more fine-grained analysis of perspective-relevant information. In Experiment 2, participants read one long narrative from the perspective of either a burglar or house-buyer. Results showed that only participants with a low working memory span showed perspective effects, suggesting that individual differences in working memory capacity appear to influence processing of perspective-relevant information.

Introduction

The term ‘reading perspective’ refers to the mental frame of reference that readers adopt whilst reading a text. For example, while reading a story a reader may identify with one central character and the perspective they read from is in respect of “what happens next?” to that character. Early evidence that reading perspective can influence behaviour was reported by Pichert and Anderson (1977), who demonstrated that participants asked to read short descriptions of houses from the perspective of either a burglar or a house-buyer had better memories for perspective-relevant than perspective-irrelevant information (e.g., an expensive stereo versus a damp patch on a wall). Therefore, adopting a reading perspective affects a reader’s representation of a text evidenced in enhanced recall of perspective-relevant information. In the current paper, we investigate the influence of reading perspective on text memory using a method developed by Sanford and colleagues; text change-detection. This method was developed to demonstrate that semantic processing is not uniform and that the resulting text representation is influenced by factors such as focussing devices and sentential load. Here we utilise this method to investigate the influence of perspective on readers’ representation of texts.

Eye movement studies have demonstrated that perspective may directly influence encoding of a piece of text (see e.g., Filik, Brightman, Gathercole, & Leuthold, 2017, for recent discussion). For example, Kaakinen, Hyönä, and Keenan (2002) asked participants to read expository texts on four countries from the perspective of somebody thinking of moving to one of the countries. They reported longer first-pass fixation durations, longer total reading times, and more time spent looking back to perspective-relevant than perspective-irrelevant sections of text. Their results suggest that reading perspective exerts an organising influence as soon as new information is encountered; directing attention to, and increasing encoding time for perspective-relevant information.

Whether reading perspective directly affects depth of semantic processing was investigated by Kaakinen and Hyönä (2008) using narrative text. They monitored participants' eye movements while they read a short story in which an estate agent showed two characters (Susanna and Olli) around a house. Participants were instructed to read the story from the perspective of either a burglar (Olli) or an interior designer (Susanna), with critical sentences identified as being more relevant to one perspective than the other. Whilst they reported the usual memory advantage for perspective-relevant information (assessed through final recall of all text information), this was observed only in the burglar condition (see also Baillet & Keenan, 1986; Borland & Flammer, 1985; Goetz, Schallert, Renolds, & Radin, 1983; Newsome, 1986). However, the eye movement data revealed the opposite pattern of effects, with an overall perspective effect in the designer but not the burglar condition (that is, increased first fixation duration, first-pass rereading time, and look-back fixation time in the interior designer but not the burglar condition). They argued that this difference was due to the influence of stereotypical knowledge, in that participants had a well-developed schema related to burglars, resulting in better recall for burglar-consistent information, even when this information was classed as perspective-irrelevant. In line with this, they argued that schema-consistent information also required less encoding time and so was read faster even when participants were reading from the burglar's perspective.

Whilst these findings clearly show a classic reading perspective effect, the conflicting memory and eye movement results limit the interpretation that reading perspective modulates depth of semantic processing. In Kaakinen and Hyönä's (2008) study, memory effects were measured via a final surprise free recall test which appeared to aid the recall of long term memories consistent with stereotypical knowledge of burglars, rather than demonstrating that reading perspective guides attention and encoding of text information. Furthermore, as the authors acknowledge, the information classed as burglar-relevant was generally found to be memorable and relatively immune to their perspective manipulation and so their results may be the result of stereotypical knowledge for these scenarios rather than memory for the text itself. What is required, therefore, is a technique which limits the effects of long-term memories interfering with perspective effects of text encoding whilst also illustrating variable depth of processing due to reading perspective. One such technique that would permit this and that we have adopted here is text change-detection (e.g., Sanford & Sturt, 2002).

Text change-detection was developed by Sanford and colleagues as a tool to access a reader's memory representation of the text without using a traditional recognition memory paradigm. Specifically, text change-detection can be used to examine the level of detail of the mental representation of what is being described. In this task, participants are presented with a text to read at their own pace. This piece of text is then shown for a second time, but during the second exposure, one word might be changed. The task is to report whether a change has occurred, and if so, which word has changed. Whether a participant detects a word change or not is dependent on the depth of processing any individual word has received. If a word has received more extensive processing, and if this word is changed across presentations, then changes to this word are more likely to be detected than changes to a word that has been less extensively processed. As such, this technique permits the experimenter to assess depth of semantic processing after every experimental item, rather than employing a final surprise recall test thus limiting the influence of schema-driven memory effects.

The Sanford lab demonstrated that text change-detection is sensitive to influences of contrastive focus (Sturt, Sanford, Stewart, & Dawydiak, 2004), cleft focussing devices (Sanford, Price, & Sanford, 2009); syntactic complexity, referential load (Sanford, Sanford, Filik, & Molle, 2005), discourse context (Koh, Sanford, Clifton, & Dawydiak, 2008), and “attention capturing” devices such as italics, prosodic emphasis (Sanford, Sanford, Molle, & Emmott, 2006) and sentence fragments (Emmott, Sanford, & Morrow, 2006). For example, Sturt et al. (2004) used text change-detection to investigate whether linguistic focus (either by clefting or *wh*-context) would influence the degree of specification with which the meaning of a word is represented, that is, whether it is represented in more detail when in sentential focus compared to when it is not. Sturt et al. (2004) found that readers detected more changes for semantically related words (e.g., *cider* changing to *beer*) when the changed word was in focus, but there was no difference between focused and non-focused sentences for semantically distant words (such as *cider* changing to *music*). From this, they proposed that a word’s meaning can be represented at different levels of ‘granularity’, or specification (Hobbs, 1985). If text is represented at a coarser level of granularity, then *cider* may be underspecified as a *drink*, so a change to *beer* may not be detected. Linguistic focus, however, causes the reader to represent word meaning to a finer grain of specification, leading to more detections when *cider* is changed to *beer* (see Sanford et al., 2006 for similar findings, and Filik, Paterson, & Sauermann, 2011, for a recent overview of the influence of focus on on-line language processing).

Sanford et al. (2005) utilised text change-detection to investigate whether sentential load influenced the detection of changes, specifically, whether semantic processing proceeds at a 'cruder' level under conditions of high compared to low load. Load was manipulated through syntactic complexity (Experiment 1) or referential load (Experiments 2 and 3). Results showed that higher load conditions reduced performance in a change-detection task. However, in contrast to the studies discussed above, the effect of load did not interact with semantic distance. The authors concluded that the effect of load is qualitatively different from the effect of focus on lexical-semantic processing, specifically, that load effects cannot be explained in terms of the Granularity Hypothesis. One alternative hypothesis put forward was that under manipulations of load, the accessibility of the memory trace for the critical word is reduced, rather than the granularity of its semantic representation.

In the current study we are interested in the influence of reading perspective on depth of processing, as reflected in performance in a text change-detection task. We report two studies in which participants are asked to read from the perspective of one of two main characters in a series of short stories (Experiment 1), or from the perspective of either a burglar or house-buyer in one long narrative (Experiment 2). One basic aim of the current work (addressed by both Experiments) is to determine whether readers are more likely to notice that a target word has changed when this word is ‘perspective-relevant’ than when it is not. If so, it would suggest that this word has been more extensively processed in the perspective-relevant condition. A further question addressed in Experiment 1 is whether reading perspective works in a similar way to linguistic focus, by increasing the level of granularity in which the reader encodes the text. If so, we would expect an interaction between perspective and semantic distance, with more changes noticed to semantically close words when they are perspective-relevant (see Sturt et al., 2004). Alternatively, it may be the case that perspective works by capturing attention and results in a uniform processing style, so that any main effect of perspective does not interact with semantic distance (following Sanford et al. 2005). An additional question addressed in Experiment 2 is whether any observed perspective effect is modulated by a reader’s working memory capacity.

Experiment 1

Method

Participants: Thirty-two native English speakers were recruited from the University of Glasgow undergraduate population.

Materials and Design: There were two within-subjects independent variables: perspective (relevant vs. irrelevant), and semantic distance (close vs. distant change). The dependent variable was the number of changed words correctly identified by the participant.

There were 24 four-sentence experimental items describing an interaction between two characters. Each item was displayed twice. A single word was changed during the second presentation. The word that changed was always situated in the centre of the second or third sentence, either relating to the perspective-relevant character or the perspective-irrelevant character. The change was either to a semantically related word, or to a semantically distant word. See Table 1 for an example item. A full list of materials is available on request from the authors.

[INSERT TABLE 1 HERE]

Four stimulus files were created so that each material appeared once only in any given file, and each file contained six materials in each of the four conditions (perspective-relevant/close change; perspective-relevant/distant change; perspective-irrelevant/close change; perspective-irrelevant/distant change). Each file also contained 48 fillers items; 12 of which contained a single word change in either sentence one or four to balance out the experimental changes which were in sentences two and three, and 36 that contained no changes. Thus, 50% of materials contained a change. Materials were initially presented in 32 point Arial font as black text on a white background. For the second presentation the font changed to Times New Roman so that participants would not simply use the physical appearance of the text to detect changes.

Pre-test: Materials were pre-tested to ensure that the semantic distance manipulation was effective. Ten Participants (who did not take part in the main study) rated the word pairs for how closely related they were to each other on a scale of 1-7, with 1 being *closely related*, and 7 being *not related*. There were two versions of the questionnaire, so that each participant saw each target word with either its close or distant pair (e.g., *cakes* and *buns* vs. *cakes* and *sweets*). Results showed that semantically close words (M = 2.3, SD = 0.9) were judged as being significantly more related to the target than semantically distant words (M = 4.9, SD = 1.1), $t(89) = 18$, $p < .001$. There was no difference in word frequency (based on CELEX norms, Baayen, Piepenbrock, & Gulikers, 1995) between original words (M = 90.5, SD = 108.7) and semantically close words (M = 95.9, SD = 186.1), $t < 1$, or distant words (M = 74.9, SD = 125.5), $t < 1$. There were no significant differences in length between the original words (M = 6.0, SD = 2.2) and the semantically close words (M = 5.6, SD = 1.7), $t < 1$, or distant words (M = 6.5, SD = 2.3), $t < 1.3$.

Procedure: Participants were presented with a series of texts, with each text displayed twice, and asked to read from a specific character's perspective. They were instructed to read normally and at their own pace. They were informed that they would be asked a question relating to their character and that they must try to answer these correctly. Participants were also informed that a word may have changed across presentations, and that they should report any changes to the experimenter.

Materials were presented to the participant using PowerPoint on a PC. The participant read the first text and pressed the return key when finished. This brought up the second presentation of the text. The participant read the second text and pressed the return key when finished. This brought up a question screen and the participant told the experimenter the answer and also reported any changes within the text.

Results and Discussion

Participants scored on average 95% correct on comprehension questions, indicating that they were reading for comprehension. Table 2 summarises the mean detection rates across all four conditions.

[INSERT TABLE 2 HERE]

Two 2 (perspective-relevant vs. perspective-irrelevant) x 2 (close vs. distant) ANOVAs were performed on arcsine transformed data (Winer, 1971). There was a main effect of perspective, with more correct detections in the relevant than irrelevant condition $F1(1,31) = 52.1$, $p < .001$; $F2(1,23) = 6.8$, $p < .02$. This suggests that when participants were instructed to read a story from the perspective of one character, information relevant to that character was afforded greater attention than perspective-irrelevant information, making readers more sensitive to perspective-relevant word changes. There was also a main effect of semantic distance (as found in previous studies e.g., Sanford et al., 2006; Sturt et al., 2004), with more correct detections for semantically distant than semantically close changes $F1(1,31) = 142.2$, $p < .001$; $F2(1,23) = 42.6$, $p < .001$. There was no interaction ($Fs < 2$).

Thus, whilst reading perspective may signal text relevancy and so guide attention, it does not necessarily influence the nature of the representation of the text in the same way as linguistic focus (as reported by Sturt et al., 2004), following which we would have predicted an interaction between perspective and semantic distance, with perspective effects being evident for close semantic changes only. Instead we observe an additive effect whereby perspective relevancy appears to equally affect rates of change-detection for both close and distant changes. This is similar to the pattern of effects observed when cognitive load was manipulated in a change-detection experiment reported by Sanford et al. (2005). They hypothesised that cognitive load may have a general dampening effect in that the task is generally made harder, perhaps due to less-accessible memory traces for word meanings. In a similar way, perspective may signal that a section of text requires additional attention, leading to a relative dampening effect for perspective-irrelevant information in general.

One question raised by these results is to what extent all readers utilise perspective-based information (whether reading expository text for a specific goal or following the events of a narrative from the perspective of the main character). It is fair to assume that not all readers are equally affected by reading perspective, and therefore it is an important question whether some readers utilise this information more than others. One factor that may affect the degree to which readers are influenced by perspective manipulations is differences in verbal working memory capacity (WMC). For example, readers with greater WMC may utilise perspective information more effectively. Alternatively, perhaps readers with low WMC may be more ‘perspective-bound’ due to limited resources. In Experiment 2 we investigate the influence of individual differences in WMC on perspective effects. To explore this question and allow easier comparison to much of the existing literature, we developed one story centred around a potential house-buyer and burglar. The story was arguably also more naturalistic since that the reader progressed through the same story over successive paragraphs/trials rather than reading a series of discrete vignettes.

Experiment 2

Experiment 2 investigates whether working memory capacity (WMC) modulates the perspective effect. Language processing is assumed to place a demand on working memory, which is a limited capacity system (Just & Carpenter, 1992). Individuals with a low WMC might find that some linguistic processes are compromised in some way due to limited available resources. Lee-Sammons and Whitney (1991) reported that low-WMC readers were more likely to recall just perspective-relevant information, whereas high-WMC readers recalled both perspective-relevant and irrelevant text information. They concluded that low-WMC readers compensate for WMC deficits by efficiently using perspective information to guide the comprehension process. In contrast, Kaakinen et al. (2002) found no overall difference in perspective effects as measured by memory recall. However, eye movement data revealed that perspective effects were observed in both early and late measures with high-WMC participants, but only late measures demonstrated perspective effects for low-WMC participants. This suggests that readers with a high-WMC are faster at recognising relevant information and devote more processing time to perspective-relevant information than do low-WMC individuals (see also, Kaakinen, Hyönä , & Keenan, 2005).

Therefore, the question of exactly how WMC modulates perspective effects is far from resolved. This question was investigated in Experiment 2 using a text change-detection paradigm. Given these previous findings, two alternative hypotheses are plausible. Firstly, it may be that individuals with low-WMC are more susceptible to perspective effects, possibly because they have fewer resources to effectively process the whole message and so must compensate by selectively processing the text (as in Lee-Sammons & Whitney, 1991). Alternatively, it may be the case that those classed as having a high-WMC are more susceptible to perspective effects, possibly because they use perspective cues more effectively (as in Kaakinen et al., 2005).

Method

Participants: Thirty native English speakers were recruited from the University of Glasgow undergraduate population.

Materials and Design: Participants were instructed to read all of the passages from the perspective of either a burglar (Olli) or a house-buyer (Susanna). Thus, perspective was a between-subjects factor. Word changes were either to burglar-relevant or house-buyer-relevant words (within-subjects factor). WMC was also measured and participants were classified as having either high or low-WMC, resulting in a 2 perspective (burglar vs. house-buyer) x 2 word change (burglar vs. house-buyer) x 2 WMC (high vs. low) design. As before, the dependent variable was the number of changed words correctly identified by the participant.

Experimental materials were adapted from Kaakinen and Hyönä (2008) who used a two-paragraph story about a potential house-buyer or burglar viewing a house. These materials were expanded into a longer 60-paragraph continuous story, which was presented as a series of three-sentence paragraphs, each presented twice. In the story, the reader is made aware that one character, Susanna, is genuinely interested in buying a house, whilst the second character, Olli, is described as being a professional burglar.

Of the 60 paragraphs, 36 contained a word change across presentations; 12 changes were more relevant to the perspective of the burglar character, 12 relevant to the house-buyer, and 12 were classified as neutral. Twenty-four paragraphs contained no changes, giving an overall composition of 60% change, 40% no change (comparable to Sanford et al., 2005). Word changes were randomly distributed throughout the story. See Table 3 for an example item. A full list of materials is available on request from the authors.

[INSERT TABLE 3 HERE]

Pre-test: A pre-test established that individual words were more relevant to one character's perspective than the other (e.g., participants rated the size of a room as being of greater interest to a house-buyer than to a burglar, and that radios and hi-fis were of more interest to burglars than house-buyers). Twelve participants were asked to rate the relevance of individual words to the two characters on a 5-point scale. House-buyer relevant words (e.g., How relevant is the size of the house to a house-buyer?) were rated as more relevant to house-buyers (M = 5.0) than burglars (M = 1.1), $t(11) = 47$, $p < 0.001$. Burglar-relevant words (e.g., Would a new radio be of interest to a burglar?) were rated more relevant to burglars (M = 4.9) than house-buyers (M = 1.1), $t(11) = 34$ $p < 0.001$. Original and changed words did not differ in terms of frequency (original mean = 84.7, SD = 142.5, changed mean = 109.0, SD = 286.6), $t < 1$. Changed words were slightly shorter on average than the original words (changed mean = 5.5, SD = 1.7 vs. original mean = 6.6, SD = 2.0). However, this difference is not crucial, as we are principally interested in differences across working memory groups.

Working Memory: Verbal working memory was assessed using Daneman and Carpenter's (1980) reading span test. Participants read aloud a set of unrelated sentences presented serially on printed cards and at the end of each set they were requested to recall the last word of each sentence in the set. Testing ended when the participant was unable to recall the final word of the sentences for all three repetitions of a particular set size.

Procedure: The procedure was identical to Experiment 1.

Results and Discussion

An average of 98% correct responses to comprehension questions indicated that participants had read for comprehension.

Data were partitioned into categories corresponding to high or low-WMC. Participants' WMC scores ranged from four to seven, with an average score of five. Based on this distribution, high-WMC was defined as scores of six and seven, and low-WMC was defined as a score of four. This resulted in 13 participants in the high WM group, and 11 in the low group. Data from those who scored five were excluded from the analyses. Table 4 summarises detection rates for perspective and word change type partitioned into high and low-WMC.

[INSERT TABLE 4 HERE]

A 2 WMC (high vs. low) x 2 perspective (house-buyer vs. burglar) x 2 word change (house-buyer- vs. burglar-relevant) ANOVA was performed on arcsine transformed data. There was a significant 3-way interaction, $F(1,19) = 30.6$, $p < 0.001$. To investigate this further, the data were separated into high- and low-WMC groups and two separate 2 perspective (house-buyer- vs. burglar-relevant) x 2 word change (house-buyer vs. burglar) ANOVAs were performed.

In the low-WMC group there was significant interaction between perspective and word change, $F(1, 8)= 138.1$, $p < 0.001$. Decomposing this interaction revealed that reading from the perspective of a house buyer resulted in more house-buyer related changes being detected, $F(1, 8) = 68.8$, $p < 0.001$, and reading from the perspective of a burglar resulted in more burglar-related changes being detected, $F(1,8) = 69.3$, $p < 0.001$. In the high-WMC group there were no significant effects (all *Fs* < 2).

Our findings suggest that readers with a low-WMC are more likely to focus their attention on perspective-relevant information and process this to a suitable depth to at least detect word changes across presentations. However, it would appear that these readers have fewer resources available to process less relevant information, resulting in fewer detections of perspective-irrelevant word changes. Participants with a high-WMC on the other hand appear to be able to process both perspective-relevant and -irrelevant information equally well.

General Discussion

We have reported the results of two studies that investigated how reading perspective may affect the quality of the overall semantic representation of a text. In Experiment 1 we used a series of discrete vignettes where readers were instructed to read from the perspective of one character. Readers were more likely to report text changes when relevant to their character's perspective. In Experiment 2 we investigated the impact that WMC had on readers' ability to utilise perspective information, and found perspective effects for low-WMC participants only.

Perspective effects on memory for text have a long history in reading research, with the consistent conclusion that reading from an adopted perspective produces a memory advantage for perspective-relevant information (e.g., Anderson & Pichert, 1978; Baillet & Keenan, 1986). The assumption is that readers devote more processing resources to perspective-relevant information. This conclusion is supported by eye-movement data, where longer fixation times are reported for perspective-relevant information (Kaakinen et al., 2002), and the finding that readers rehearse perspective-relevant information more readily, as assessed through think-aloud procedures (Kaakinen et al., 2005).

One potential difficulty with interpreting previous findings is that the standard procedure for assessing text memory is via a surprise memory test. However, readers' prior knowledge may influence the recall of text information, as suggested by Kaakinen and Hyönä (2008), who reported a perspective effect for text memory if reading from a burglar perspective but not an interior designer perspective. They argued that this advantage was due to readers possessing well-developed stereotypical knowledge of burglars, which strengthens the recall of more perspective-relevant information. We hypothesised that using a text change-detection paradigm was less likely to be influenced by long-term memory in this way because testing is more immediate. In addition, we employed materials that used non-stereotypical contexts (Experiment 1) as well as the 'classic' burglar/house-buyer context (Experiment 2). It is to the authors' knowledge the first time that this paradigm has been employed to investigate perspective effects and in both experiments our findings replicated a classic perspective effect.

In Experiment 1, in addition to perspective we manipulated the nature of the word change (close vs. distant). Sanford et al. (2006) reported that close semantic changes were more likely to be detected when in focus, but distant changes were equally likely to be detected whether in focus or not (see also Sturt et al., 2004). They argued that focussing devices help to direct attention to key information which is then preferentially processed to a greater semantic depth, resulting in more detailed information being incorporated into the overall representation of the text. The results from Experiment 1 did not conform to this and instead illustrated that perspective resulted in an additive effect, leading to an advantage in detecting all perspective-relevant changes, whether close or distant. This pattern of results mirrors that found for the effect of memory load on text change-detection as reported by Sanford et al. (2005) which was explained as being due to load making it harder to access the memory of the text. Therefore, manipulations of linguistic focus and of memory load appear to have different effects on the nature of the resulting text representation.

Perspective does not appear to operate in as dynamic a fashion as focus. Instead, it appears that adopting a certain perspective results in more accurate text memory for all perspective-relevant information. On-line studies have illustrated that this information is largely utilised at time of encoding and behavioural changes result in longer reading times and rehearsal strategies (Kaakinen et al., 2002). This may be a different strategy to that observed with linguistic focus which may modulate depth of processing at time of encoding but not result in elaborate rehearsal strategies as observed when adopting a reading perspective. However, an alternative explanation may be that the interaction between focus and semantic distance reported by Sanford et al. (2006) and Sturt et al. (2004) is instead the result of a ceiling effect observed in the distant conditions. Scrutiny of their data suggests that distant semantic changes were at near 100% in focus and non-focus conditions and that these obvious changes were 'popping-out' to readers because they were so obviously different. Further work could explore this issue further with graded semantic distance to investigate the reliability of the effect of semantic distance on focus manipulations.

In Experiment 2 we investigated the role of WMC on the utilisation of perspective information. This was to explore conflicting results reported in the literature, which on the one hand suggest that readers with low-WMC are more likely to utilise perspective-relevant information (Lee-Sammons & Whitney, 1991), presumably as a strategy to compensate for limited WMC, whilst on the other hand suggest that readers with high-WMC are more likely to identify perspective-relevant information at the time of encoding and use this strategically (Kaakinen et al., 2002). Experiment 2 revealed perspective effects for low-WMC participants only. This supports Lee-Sammons and Whitney's results and could suggest that such readers utilise perspective cues as a strategy to compensate for a smaller WMC. However, this difference may not necessarily be due to the strategy that low-WMC readers adopt, but rather to what high-WMC readers do. For example, it may be that high-WMC readers are just more likely to use rehearsal strategies when reading for a purpose compared to low-WMC readers. Future work should explore how the differential effects observed are not simply explained as due to differences in set storage capacity, but rather the behavioural differences readers adopt when adopting a perspective, and whether different strategies can be employed by readers.

In conclusion, this paper demonstrates the effect of perspective-taking on text comprehension using a novel research paradigm: text change-detection. The results demonstrate that reading from a set-perspective has an important organising influence on the comprehension of a piece of text, so that perspective-relevant information is more likely to be encoded in the representation of a piece of text, as evidenced by successful text change-detections. In addition we demonstrated that readers who are classed as having a lower WMC are more susceptible to this effect, however the exact cause of why this might be requires further investigation.

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Table 1: Example item for Experiment 1

Read from John’s/Jane’s perspective.
John and Jane went to a weekend cookery school. John thought he was good at making [cakes -> buns/sweets] and biscuits. Jane felt she was good at making sauces and soup but struggled with seafood. The chef was surprisingly a very friendly man who encouraged them both.
Comprehension question: What is John good at making?

Read from John’s/Jane’s perspective.
John and Jane went to a weekend cookery school. John thought he was good at making cakes and biscuits. Jane felt she was good at making sauces and [soup ->broth/pasta] but struggled with seafood. The chef was surprisingly a very friendly man who encouraged them both.
Comprehension question: What is Jane good at making?

Table 2: Mean word change-detection rates in Experiment 1

Perspective	Semantic Distance	% Mean (sd)
Relevant	Close	49 (22)
Irrelevant	Close	34 (21)
Relevant	Distant	80 (16)
Irrelevant	Distant	60 (19)

Table 3: Example items for Experiment 2

House buyer relevant change:

Susanna was excited to view the house. She had already looked at the pictures on the estate agent’s website and thought the house looked beautiful. She thought it was very [**spacious** > **roomy**] and would be perfect for raising her children.

Burglar relevant change:

Next to the microwave was a brand new [**radio** > **hi-fi**] blaring out Take That. It was much like the one Olli had seen the previous weekend, but could not afford. Olli was beginning to get bored with downstairs and longed to go upstairs to view the bedrooms.

Table 4: Mean detection rates for participants with high- and low-WMC for perspective-relevant and irrelevant word changes.

		% Word Changes Detected (sd)	
Perspective	WMC	House-buyer	Burglar
House-buyer	High	81 (4)	72 (7)
House-buyer	Low	87 (5)	58 (18)
Burglar	High	74 (12)	75 (14)
Burglar	Low	52 (14)	88 (10)