Minding the Text: Memory for Literary Narrative

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RUNNING HEAD: Memory for Literary Narrative

Abstract

Memory is arguable the most important cognitive operation involved in literary processing. This paper is an initial foray into the topic of memory for literary text. It begins by examining the research on memory for discourse in the field of cognitive psychology, and then proceeds to identify issues specifically related to memory for literary texts that have not been studied by psychologists or literary scholars. We report on a preliminary, empirical study that we conducted. Finally, we conclude with some thoughts on the pedagogical implications of this research.

Minding the Text: Memory for Literary Narrative

Introduction

Reading fiction can be an immensely pleasurable act. The popular expression, "to curl up with a good book," conjures up a somewhat romantic vision of a relaxed reader, temporarily detached from and/or oblivious to the surrounding environment, and completely engrossed in the act of reading. Leisurely and pleasurable as reading may be, the mind that engages with the literary text is far from calm and still. On the contrary, the mind of the reader is a hub of activity involving a wide range of dynamic and complex mental processes, starting from word recognition, sentence parsing, semantic comprehension, building up to generic and other associations, inferences regarding character intentions, interpretations about authorial intentions and overall meanings, and so on.

Arguably the most important, but perhaps least understood, reading-related processes is memory. For example, the inferences we draw about characters or themes depend upon what we can retain in memory of the details strewn throughout the text. The same is true of our appreciation and/or evaluation of a text's style. Given the enormous amount of information provided in a novel, or even short story, about characters, setting, time, style, and plot, it would seem highly unrealistic to suppose that even the best of readers could remember everything. But just what do we know about readers' memory for text? Surprisingly, very little. In what follows, we briefly summarize the extant research on this topic. Subsequently, we identify the important issues that remain to be addressed. Finally, we report a a preliminary empirical investigation of one aspect of memory for literary style.

What We Know of Memory for Text: Literary Studies

Surprisingly, the issue of memory for text has received no scholarly attention in the field of literary studies, suggesting that for literary critics and theorists, memory is a non-issue. This silence seems to suggest that literary studies are predicated on the assumption that readers have good memory for textual details. Nowhere in the lengthy and detailed descriptions of text and reading process is this capacity ever considered seriously, regardless of theoretical orientation; it is simply taken for granted that readers are naturally equipped with a memory capacity that corresponds to the demands of the text; in other words, memory is conceived as a sponge – the longer and more detailed the text, the more it expands and holds.

This implicit perspective is all the more surprising given that the representation of memory in literature is currently so popular. Studies on autobiographical memory and memory for historical events, both collective and personal, abound. The focus of these studies is the content and function of what is remembered. For example, how is the Civil War remembered in the American post-war period (Melosh 1988; Sachsman et al. 2007)? How do the Japanese remember the American occupation of Japan (Molaksy 2001)? How are the Sandinistas remembered in post-revolutionary Nicaragua (Tatar 2009)? Or, how is the "I" of the past remembered by the "I" of the present in autobiographies, either fictional or non-fictional (Fivush 2003)? One conclusion that emerges from this literature is that memory is reconstruction. Common words used to describe the causes or process of reconstruction include "selectivity," "embellishment," and "distortion." Interestingly, the insight that memory involves reconstruction has not carried over to studies of text processing, although there is no reason to assume that memory for text is necessarily better than memory for historical or autobiographical events.

What we Know of Memory for Text: Psychology

Within the field of psychology there is a wealth of research on human memory in general, and considerable research on memory for discourse specifically. As background to the latter, it is worth considering the major findings on the functioning of memory in general.

The main conclusion on which all psychologists concur is that memory is not a video camera that records an event and preserves it in a static form in the brain, where it can be played back at a later time. On the contrary, it is now acknowledged that all experience leaves merely a trace, and that the act of recalling the event necessarily entails reconstruction. A classic demonstration of the reconstruction in memory was conducted by Carmichael et al. (1932). In this experiment, subjects were told a label, such as "eyeglasses," "dumbell," "ship's wheel," or "sun," which was followed immediately by a simple drawing corresponding to the word. Different subjects saw the same picture paired with different words. For example, "eyeglasses" and "dumbells," were both followed by a drawing of two circles connected by a line. During later recall, they were then asked to draw the picture they had seen. Among the drawings that failed to reproduce a close approximation of the original drawing, 74% resembled the spoken label. What this demonstrates is that subjects did not have a picture-like memory for the drawing they had seen, but rather that they reconstructed what they saw on the basis of a fragmentary memory as well as whatever other information was available. In this case, the associated verbal label provided additional information about the picture and influenced how it was drawn.

One of the most influential figures in memory research is Elizabeth Loftus, whose seminal work on eye-witness memory has earned her many invitations to explain to members of the legal profession in American courts of law how memory functions. In a seminal study

conducted four decades ago, she and her collaborators tested witnesses' recollection of details regarding a car accident (Loftus et al. 1978). In this experiment, subjects were shown a series of slides depicting a car accident involving a pedestrian and were instructed to pretend to be eye-witnesses. For half of the subjects, one of the pictures was of a red Datsun at a stop sign, and for the other half, one was of the same Datsun at a yield sign. After seeing all slides, they were asked to answer twenty questions. Among these was a question with a presupposition that either matched or did not match the previous picture, that is, "Did a car pass the red Datsun while it stopped at the stop sign?" or "Did a car pass the red Datsun while it stopped at the yield sign?" Later, subjects were shown pairs of pictures and asked to select the one they had seen. Among these was a pair with the red Datsun, at a stop sign in one version and at a yield sign in the other. Accuracy was 71% when the supposition in the preceding question matched the picture that was actually viewed but dropped to 41% when the supposition was misleading. As with the Carmichael experiment, this result demonstrates that memory is susceptible to suggestion. Far from replaying a fixed recording of an event, memory reconstructs the fragmentary, piecemeal trace of the event, incorporating whatever additional information is available.

Memory for Discourse

There is no reason to assume that recalling text is immune to the the limitations of memory that have been summarized so far. Just as past experience leaves but a trace in our minds, so too does a text after being read. In particular, recalling a text requires reconstruction. This conclusion is borne out by the research conducted by cognitive psychologists on memory for ordinary (nonliterary) discourse. According to this research, three levels of representation are constructed during reading. These levels of representation are depicted in Figure 1. The first is

the surface structure. The surface structure contains information about syntactic phrase structure as well as the choice and order of words in the text. Although the surface structure depends on the parsing of sentences into words of different types, it does not reflect the meaning of the sentence. The second is referred to as the "text base," and represents the semantic content of the text. Sets of coreferential propositions are often used to describe the content of the text base. Importantly, the elements of the text base are concepts in semantic memory and not a representation of the words of the text per se. Finally, the third is the "situation model," which represents the state of affairs alluded to by the text; the literary analogue of the situation model would be the story world and its denizens. The situation model is sometimes depicted as a spatial or visual representation of the entities described by the text and their relationships. Often, knowledge and inferences are used to construct a situation model even if that information is not explicitly mentioned in the text. The memory implications for each of these will be discussed in turn.

Surface Structure. In an often cited study, Jarvella (1971) found that verbatim memory for spoken discourse declined markedly at sentence and clause boundaries. In this study, subjects listened to pairs of sentences and were periodically interrupted and asked to recall a portion of the previous item. When the phrase to be recalled was in the current sentence, recall was substantially better than when the same words were from a preceding sentence, even when the serial position was precisely controlled. Goldman et al. (1980) found a similar result with children's reading: Verbatim recall was substantially better when the items to be recalled were from the sentence currently being read rather than the preceding sentence, even when the number of intervening words was the same. Such results are commonly interpreted as suggesting that surface structure is maintained while a sentence is being processed (presumably to support

syntactic processing and interpretation) but is lost relatively quickly after the sentence has been understood and the information added to the text base.

Text Base (Semantic Content). The second memory representation formed by readers of text is a representation of the semantic content or meaning of the text. We know that this representation is distinct from a representation of the words of the text because, for example, reading time increases with the number of propositions in a text, even if the number of words is the same (Kintsch and Keenan 1973). Researchers have found that although memory for this aspect of the text lasts longer than memory for surface structure, it is far from veridical even after a modest delay. For example, Kintsch et al. (1990) reported measurements of memory that corresponded to accuracies of 64% after 40 m and 60% after 2 days. Moreover, because what is recalled depends on the representation constructed by the reader and not the actual words of the text, it is possible for people to think they recall sentences that are not actually in the text but plausibly could have been. For example, Bower et al. (1979) asked subjects to read descriptions of stereotyped activities (such as eating in a restaurant or going to a dentist) and found that typical actions were often recalled even if they did not appear in the text. Thus, memory based on the text base involves reconstruction and is subject to the same distortions and biases that have been documented for memory in general.

Situation Model. The third level of memory representation is a "situation model" that depicts the state of affairs projected by the text. The situation model contains information about the entities (i.e., people, places, and things) described by the text and the relationships among those entities. Often, in constructing a situation model, readers will make inferences concerning the appearance arrangement, and other properties of those entities even if such information is not

explicitly indicated in the text. A variety of research indicates that a situation model is constructed in addition to the text base. For example, readers can make inferences concerning spatial relationships described by the text that would be slow or difficult using simply the information in a propositional text base (e.g., Bransford et al. 1972). Similarly, under some circumstances, readers seem to track the spatial location of the protagonist in the story world (Morrow et al. 1987). Research has found that readers have better memory for the situation model than for the surface structure or text base. Indeed, after a day or more, readers are likely to be able to recall only information in the situation model (e.g., Kintsch et al. 1990).

Critically, situation models are affected by expectations and knowledge of the reader. A classic experiment that shed light on the role of reader knowledge in text processing and recall was Bartlett's (1932) study of memory for narrative After reading a folk tale from an unfamiliar cultural background, subjects were asked to recall the story. Bartlett found that recall was generally poor and that subjects tended to drop certain events and add others. His explanation was that elements of the text were distorted to match the readers' cultural expectations and schemas. In other words, when the text does not match the reader's schematic knowledge, the material is either not remembered or normalized to to make it more congruent with their expectations. More than four decades later, Kintsch and Greene (1978) replicated the same pattern of results using different materials and more modern methodology. Both of the experiments demonstrate the central role of reconstruction in the recall of narrative.

Bransford and Johnson (1972) discovered that readers also rely on and bring world knowledge to bear on the comprehension of text. In a key experiment, they gave their subjects a short text in which a well know task was described. An excerpt from the passage is as follows:

> The procedure is actually quite simple. First you arrange things into different groups depending on their makeup. Of course one pile may be sufficient depending on how much there is to do... It is better to do too few things at once than too many...complications from doing too many can easily arise After the procedure....one arranges the materials into different groups again. Then they can be put into their appropriate places...(Bransford and Johnson 1972, 722)

If we put ourselves in the place of the subjects of this experiment, we can readily understand that even though we may have a good comprehension of all the words in the passage, we are uncertain about what the passage is about, and, it turns out, memory for the text is poor. However, when subjects were told before reading that the topic was washing clothes, comprehension and memory was substantially improved. The important conclusion from this study is that readers attempt to construct a representation of the situation described by the text and that such a representation cannot, in general, be built out of just the information indicated by the words on the page. Rather, a situation model necessarily depends on the reader's knowledge of the world.

Memory for Literature

With the exception of the experiments that have used folk tales as experimental materials, research on memory for discourse generally has used relatively short and simple prose passages, often created by the experimenters themselves. Thus, the extent to which the findings of these studies apply to memory for extended, real fictional literature is unclear. As a consequence, we

know much less about memory for complex literary text and for extended narrative in particular. Here, we describe three areas in which our knowledge is limited. In each case, we suggest that the common intuitions or assumptions about the comprehension and memory for literary text is apparently at variance with what the research on discourse processing would seem to predict.

Surface-Structure Puzzle. As discussed earlier, psychologists have concluded that memory for the surface structure of a text is extremely short-lived. However, one of the hallmarks of good literary prose is its style, and what is interesting about literature is not just what is told but how it is told. Thus, it is plausible to suppose that, contrary to general conclusion about memory for surface structure, some stylistic features are striking and therefore memorable. Thus, there are two possible resolutions to this apparent contradiction: Aspects of style may be immune to the usual memory limitation for surface structure, and thus literary style is memorable; or stylistic features are are as quickly forgotten as other aspects of the surface structure, such as word choice and order. In order to account for the importance of literary style in the latter case, we might assume that style leaves an impression, a trace, which is retained in some other form, even if the details of the text that led to that impression are lost.

An experiment conducted by Zwaan (1994) provides limited evidence in support of the hypothesis that style is immune to the rapid loss of surface structure. Two groups of subjects read the same short passage, but one was told that the text was a literary passage and the other that it was a news story. When tested for recall of the passage, the group who thought they had read a literary text showed better memory for the surface structure than those who thought they had read a news story. This might be construed as support for the special memorability of literary style. However, memory for surface structure was generally poor, even in the “literature”

condition. For example, performance in distinguishing actual sentences from paraphrases corresponded to an accuracy only 55% correct. However, the material was a brief experimental passage rather than an extended literary text, so the pattern of results may not generalize to more complex materials.

In an effort to shed some further light on the surface-structure puzzle, we conducted our own preliminary study. For our experiment, we chose two stories by James Joyce, "Evelyn," and "After the Race." Words or phrases in the text that we deemed to be particularly interesting or evocative were presented either in the original form or in a more mundane or pedestrian paraphrase that preserved the meaning as much as possible. For example, "the harbour lay like a darkened mirror" was changed to "the harbour lay smooth and dark." As a control, we also changed what we deemed to be more ordinary word choices for other equally mundane ones. For example, "Down far in the avenue she could hear a street organ playing" was changed to "Down far in the street she could hear a street organ playing." Finally, we also changed other words in a way that changed the meaning of the story. For example, "Outside she heard a melancholy air of Italy" was replaced with "Outside she heard a lively air of Italy." Different subjects were given versions of the stories that had different selections of the original or modified sentences. After reading the story, subjects were shown a series of sentences and were asked to rate how confident they were that they had seen each sentence in the story they had just read. Using these responses, we were able to compare the memory for surface-structure style (i.e., the ability to distinguish original, evocative passages from paraphrases), memory for mundane surface structure, and memory for story content (i.e., the ability to distinguish the original from restatements that change the meaning). We refer to these as the style, control, and story conditions respectively.

According to the results shown in Figure 2, there was little memory for surface structure, either when the surface structure reflected mundane word choice or a more evocative literary style. In this figure, the confidence ratings were used to derive an estimate of subjects' ability to distinguish the original from a paraphrase in each of the three conditions. Thus, 0.5 represents chance performance and 1.0 would be perfect accuracy. In both the style and the control conditions, memory for the surface structure was near chance. Performance was substantially better (but still far from perfect) in the story condition in which the changes affected the meaning of the text. This implies that subjects did have some memory for the material, even if they could not distinguish stylistic language use from paraphrases. In sum, the results of the study provide no evidence that evocative style as expressed in the surface structure is immune to the rapid forgetting demonstrated in other research in discourse processing. In this study, style was isolated in particular choices of words or phrases. However, van Peer (1986) found a similar lack of memory for stylistically evocative material as identified a broader consideration of foregrounding.

Distal-Coherence Puzzle. The evidence on memory for text does not seem to provide an adequate account of how complex literary text can be understood at a global level. As we saw from the summary of psychological studies of memory for discourse, memory for the situation model is better than memory for surface structure. However, the level of precision of situation model representations may not be high. Morrow and colleagues (e.g., Morrow et al. 1987) found that people can track the location of characters in a story world as the text describes their movements from place to place, but subjects in his experiments were required to memorize a map of the spatial layout prior to reading the text. The ability to do so under more natural reading conditions is much more limited (Wilson et al. 1993). Further, many readers may construct

spatial representations of limited fidelity (Schneider and Dixon 2009). Graesser et al. (1999) demonstrated that under some circumstances readers can maintain a representation of who said what in a story, but this information was not uniformly accurate, ranging from .63 for third-person narrator, to .72 for characters and .83 for a first-person narrator. This relatively weak memory for the situation model representations of the text creates a puzzle if an adequate understanding of an extended literary work requires integrating information from disparate parts of the text.

As articulated by Zunshine (2006: 60), "the ability to keep track of who thought what, and felt what, and when they thought of it, is crucial" for understanding complex narrative, and it is not clear that the reader's representation of the story world is typically adequate to support such a deep understanding. While it is certainly possible that most readers most of the time do not construct a detailed representation of the story world, this would seem to mean that they cannot arrive at a coherent understanding of the work that would support appropriate inferences about the theme and message that might have been intended. In turn, this would suggest that most readers cannot really appreciate complex literary works. In our view, this is an unpalatable and unwarranted conclusion. Instead, it seems more reasonable to suppose that there are mechanisms involved that allows readers to construct a coherent and informed representation of complex, extended works that overcome the apparent limitations of memory for text. Some theorists, for example, suppose that readers commonly draw "thematic" inferences in understanding text (e.g., Graesser et al. 1994), and perhaps such inferences may be more memorable than other details of the story world. However, the circumstances under which such inferences are drawn and the manner in which they may be used in understanding an extended text are not well understood.

Extended-Text Puzzle. Novels are rarely read in one sitting, for obvious reasons. Perhaps one of the least understood aspects of literary response is the effect of the lapse between reading sessions on memory and literary processing in general. Intuitively, we can assume that when readers resume their reading of a novel after a some time lapse, they pick up where they left off, recalling the information they had encountered, and perceiving the story as coherent. But how much do they actually recall? If memory for story is imperfect immediately after reading, how much is retained after a delay of hours, days, or weeks? Our analysis of memory for text is that readers will largely reconstruct what had been previously read. Reconstruction can entail various sorts of distortions: autobiographical episodes, idiosyncratic inferences, evaluations, and knowledge structures that the reader may have stored in the same memory representation. Another possibility is that during the time that elapses between readings, the reader changes, as a result, perhaps, of emotional events that may have occurred and new insights about life, some possibly generated by the reading and others not. In other words, the reader is constantly changing, and these changes may affect the way the story is recalled. Thus, it seems likely that the story that readers remember differs in small and large ways from the story they had read.

The puzzle then is that, by and large, we are not aware of any discrepancy between the previously read (and recalled) story and the material that is currently being read. One possibility is that readers have low standards of coherence (cf. van den Broek 1995), and it is of little consequence if there are apparent contradictions between the current text and the recalled text. Alternatively, readers may be adept at revising misremembered events so as to match the current material. Still another possibility is that novels are generally written with the reader's limitations in mind, so that they provide the necessary reminders and memory cues to allow the story to be readily understood even in the face of fallible memory. In any case, this is a fertile problem for

empirical studies of literary reception and response because temporal gaps are inevitably part of reading an extended work. Some of the issues related to the extended text puzzle are the role of reader variables, such as literary training and expertise. Do better trained or more frequent readers retain more textual information? And if so, what kind of information do different kinds of readers recall? Given that readers must engage in reconstruction, does literary training help objective recollection? Or does extensive training, actually increase distortion? These still remain unanswered questions.

Conclusions

As instructors of literature, we teach our students stylistic and narratological tools of textual analysis, presumably because those tools will help students analyze and appreciate the important, meaningful features of the text. We then assess this appreciation through exercises and examination practices that presume that readers are able to recall the text under consideration. However, the research on memory for text and literary discourse that we have discussed has shown that the text readers remember is not a verbatim recording of the text they read but instead is a fallible and distorted rendition based on readers' reconstructions. This might seem to suggest that the pedagogical methods used for teaching literature are out of touch with readers' memorial reality and therefore inappropriate. However, we do not believe that such a conclusion is warranted. Even though expertise in textual analysis will never allow readers to reproduce a photographic copy of the text in memory, we would argue that the ability to recognize features of literary discourse allows readers to process and comprehend the text more deeply, promoting better recall, as well as providing some of the relevant knowledge structures to support accurate reconstruction. In other words, knowledge and expertise produce better memory, hence better

representations, better reconstructions, and, ultimately, better appreciation. Perhaps the most critical role of literary training is to improve memory.

From a pedagogical perspective, instructors of literature must respect the fact that memory for text always involves reconstruction. After all, the beauty and power of good literature is that it has the ability to engender memorable representations, that it allows readers to absorb and integrate the text, to apply it to their lives, to derive meaning from it, to make it theirs. Subject and object merge to create a new, meaningful product – the reader's mental model of the literary text.

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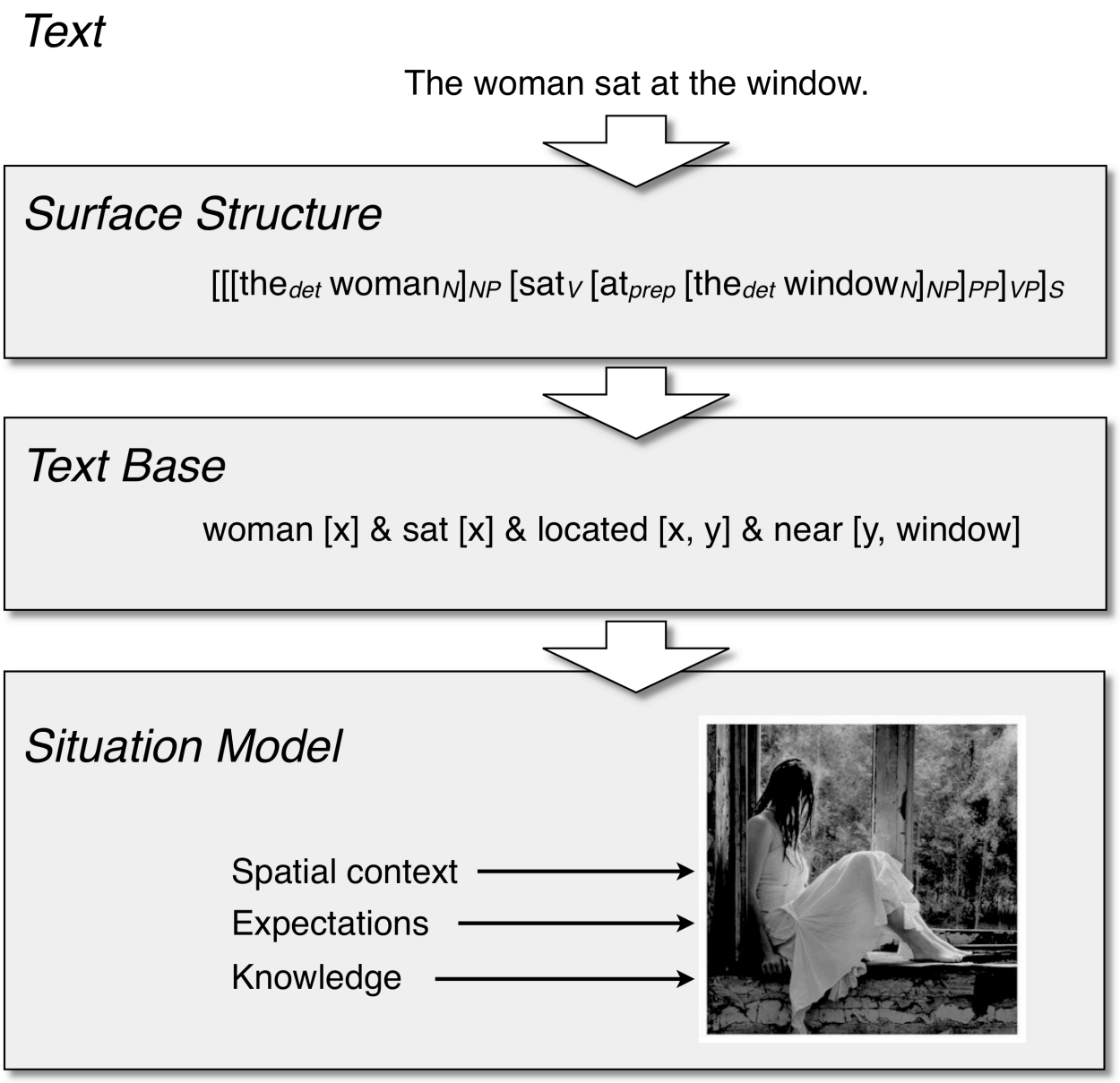

Figure 1. Three levels of representation of text. See text for explanation.

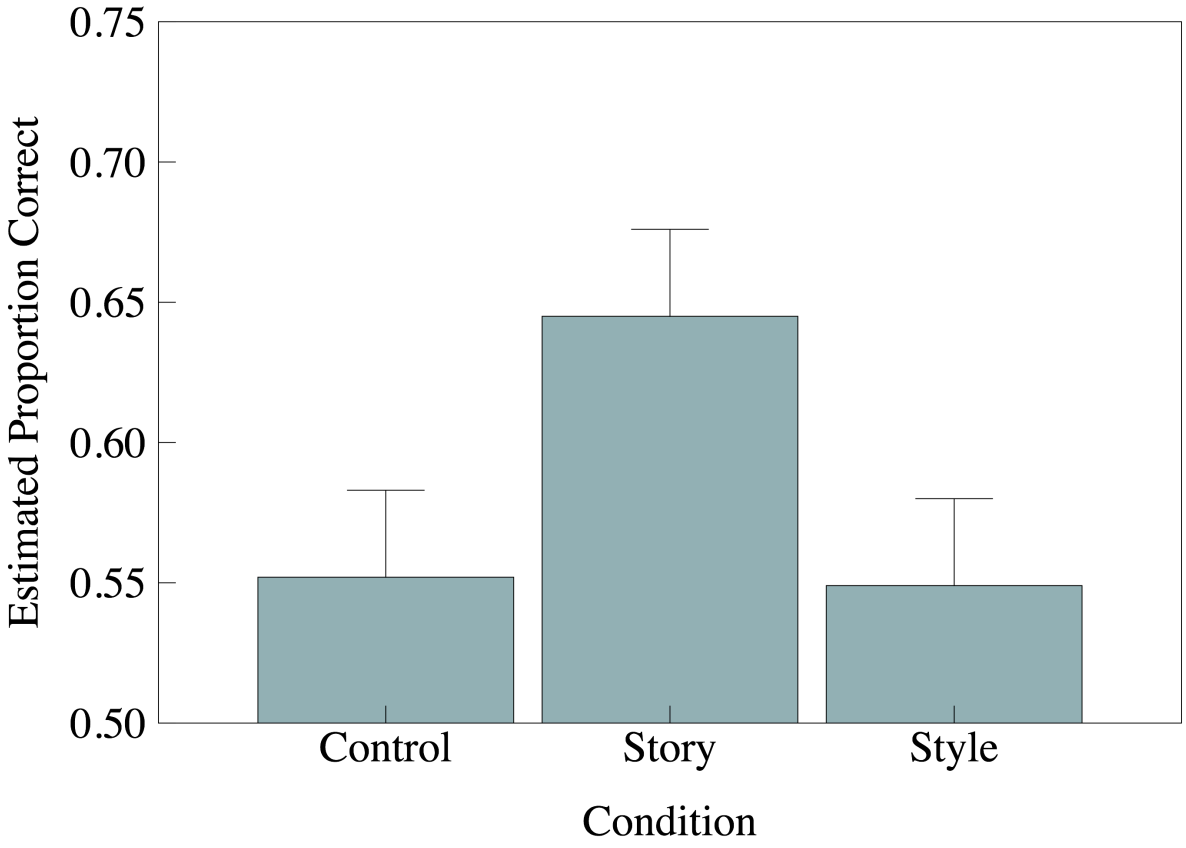

Figure 2. Results of an investigation of memory for style.