



Waiting for Brandon: How readers respond to small mysteries [☆]

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ABSTRACT

When readers experience narratives they often encounter small mysteries—questions that a text raises that are not immediately settled. In our experiments, participants read stories that introduced characters by proper names (e.g., “It’s just that Brandon hasn’t called in so long”). *Resolved* versions of the stories specified the functions those characters’ assumed in their narrative worlds with respect to the other characters (e.g., Brandon was identified as the speaker’s grandson); *unresolved* versions of the stories did not immediately provide that information. We predicted that characters whose functions were still unresolved would remain relatively accessible in the discourse representations. We tested that prediction in Experiments 1 and 2 by asking participants to indicate whether a name (e.g., Brandon) had appeared in the story. Participants responded most swiftly when the characters remained unresolved. In the latter experiments, we demonstrated that the presence of an unresolved character disrupted processing of information that followed that character’s introduction (Experiment 3) but not information that preceded that introduction (Experiment 4). These results support the general importance of providing a theoretical account of readers’ responses to narrative mysteries.

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Introduction

As authors weave their stories, they have complete control over the manner in which they parcel out information. When stories are told in the third person, narrators most often have total knowledge of the story they are charged to tell (Fludernik, 1996; Herman, 2002). What the reader experiences is the information the narrator chooses to share—with whatever structure suits the author’s dramatic purposes. Consider this excerpt from the novel *The Abstinence Teacher* (Perrotta, 2007, p. 7):

Ruth glanced plaintively around the room, hoping for a little backup from her colleagues, but the two other

teachers present—Pete Fontana (Industrial Arts) and Sylvia DeLacruz (Spanish)—were ostentatiously immersed in their reading, none too eager to embroil themselves in the newest installment of Donna’s pre-nuptial tribulations. Ruth didn’t blame them; she would’ve done the same if not for her guilty conscience. Donna had been a kind and supportive friend last spring, when Ruth was the one with the problem, and Ruth still felt like she owed her.

At this moment in the novel, readers have the strong sense that something has gone wrong in Ruth’s life, but they do not learn the exact identity of Ruth’s “problem” until a few pages later. Thus, the text provides a small mystery—a gap between what the narrator knows and what readers have been allowed to know. When encountering this mystery, readers should have reasonable expectations that “the problem” will ultimately be revealed. Still, we can wonder to what extent this mystery commands readers’ attention at the moment they first encounter it. Under most circumstances, readers integrate new information

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into a discourse representation and then forge ahead (e.g., Kintsch, 1988). We suggest, however, that there are certain types of information that cannot be immediately integrated but instead must wait on further information from the text.

If we define a mystery as a gap between what the narrator knows and what readers know, every text provides an infinite number of mysteries. Thus, for the paragraph we quoted from *The Abstinence Teacher*, readers don't know Pete Fontana's age, whether he has a full head of hair, or how he spends his weekends. This claim that each text presents an infinite number of mysteries parallels an identical claim for inferences. Very early in the study of text processing, researchers made the observation that every utterance allows an unlimited number of inferences. Thus, readers could encode the inferences that Pete Fontana and Sylvia DeLacruz each have hearts, lungs, livers, etc. However, readers could not make all those inferences in a finite amount of time nor, presumably, would they wish to do so (e.g., Rieger, 1975). Researchers have devoted considerable effort to the goal of specifying exactly which inferences readers are likely to generate (for reviews, see Guéraud & O'Brien, 2005). For example, McKoon and Ratcliff (1986) examined the extent to which readers automatically encode predictive inferences. Consider this sentence:

The director and the cameraman were ready to shoot close-ups when suddenly the actress fell from the 14th story.

If people linger on this sentence, they might be willing to predict that the actress would die. However, McKoon and Ratcliff provided data to suggest that the inference readers automatically encode is only that "something bad will happen." Subsequent research on predictive inferences has tried to identify circumstances in which readers do, in fact, encode more specific inferences (i.e., "dead" rather than "something bad") and to specify the time course with which these inferences remain accessible (e.g., Casteel, 2007; Cook, Limber, & O'Brien, 2001; Peracchi & O'Brien, 2004). More generally, although controversies certainly remain, progress has been made toward understanding the time course with which discourse context functions to make inferences more and less accessible as narrative experiences unfold in time (for reviews, see Guéraud & O'Brien, 2005).

We suggest that mysteries require the same research agenda. If each text presents an infinite number of mysteries, we can ask whether there are well-defined types of mysteries that regularly have an impact on readers' narrative experiences. Consider a second excerpt from *The Abstinence Teacher*. Tim and his ex-wife Allison have shared an extended discussion of a bootleg song by the Grateful Dead. At the discussion's end, Allison abruptly changes the topic:

She paused, letting Jerry [Garcia] finish a jazzy little run, that clean sunny sound no one else could duplicate. "So how's Carrie?" (p. 79).

This is the first time the name Carrie appears in the novel. As such, she presents readers with a mystery: With respect to the other characters, what function will she serve in the novel?

Why might this particular type of mystery have consequences for subsequent text processing? To begin, readers often expect characters introduced by proper names to play prominent roles in stories. For example, Sanford, Moar, and Garrod (1988) demonstrated that readers expect to learn more about characters when they are introduced with proper names (e.g., Claire) rather than role names (e.g., the secretary). Thus, the use of the proper name foretells a further function for Carrie as the novel unfolds.

In addition, Allison's use of a proper name implies that Carrie is salient in the common ground she shares with Tim. Discourse analysis suggests that speakers use proper names with the expectation that addressees will link them to information that is already known to them (Ariel, 1990, 2001). Consider this brief excerpt from a conversation (Kingsbury, Strassel, McLemore, & McIntyre, 1997, #4092, 71.04):

- A: Yeah, so the gym's going well.
- B: Oh.
- A: But I still need to go more often.
- B: Well how often are you going?
- A: Only four days a week.
- B: (()).
- A: Yeah. Got to get that up to five.
- B: Mm. [[drawn out]]
- A: But, I don't really like going with Anne Marie because she doesn't like to stay very long.
- B: Why?
- A: I don't know. She kind of, well unfortunately for some reason she's not like into cardio vascular.

When A refers to Anne Marie, it is the first mention of her in the conversation. To understand this reference, B must retrieve information about "Anne Marie." By the evidence of the transcript, B is able to do so. In a sense, A's use of "Anne Marie" signals how large she looms as a character in the shared lives of A and B. Similarly, Allison's use of "Carrie" signals her importance to Allison and Tim. Thus, readers' ordinary experiences of discourse also support a reasonable expectation that "Carrie" will function in the novel's future.

We suggest that when people read "So how's Carrie?" they have a tacit expectation that the text will ultimately provide more information about her. We predict, more generally, that as readers await additional information about a character's precise function with respect to the protagonists, that character will remain relatively accessible in readers' discourse representations. We patterned our experimental stimuli to echo literary and discourse examples. Consider this brief story:

Carol found no messages on her answering machine. She grabbed an apple from her refrigerator and paced around the kitchen. "You're making me nervous," said her friend Paula. "It's just that Brandon hasn't called in so long," Carol replied. "There are probably lots of good movies on TV on this weekend," Paula joked.

We expect that, introduced in this way, "Brandon" will attain prominence in the discourse representation. We predict that "Brandon" will remain relatively prominent because the text has not yet given information about his function with respect to the other characters in the story.

To test this prediction, we make a contrast to circumstances in which the texts provide information that explains a character's function. Consider a literary example:

Donna had met her soulmate—an overbearing optometrist named Bruce DeMastro—through an internet matchmaking service, and they'd gotten engaged after two magical dates (Perrotta, 2007, p. 5).

In this case, readers are introduced to “Bruce DeMastro” with a proper name, but they get an immediate sense of how he fits into the narrative world. Anderson, Garrod, and Sanford (1983) demonstrated that characters who are introduced in brief texts with role information (e.g., the projectionist) became less accessible in discourse representations after a scenario shift. Characters introduced by proper names (e.g., Jenny) remained relatively prominent across scenarios. When readers meet “Bruce DeMastro” they encounter both a proper name and information about how he fits into the narrative world. Readers learn that he is peripheral to Donna by virtue of being her soulmate. We suggest that the proper noun provides a small mystery—how will Bruce DeMastro function in the story?—to which the compact textual information (i.e., Donna's “soulmate”) provides an adequate answer. That is, we suggest that the information about the character's narrative function creates a context in which the character will become somewhat less accessible in the discourse representation.

For our experiments, we wrote two additional versions of each story. Both versions identified the function of the *focal character* (e.g., Brandon) in the discourse with respect to the protagonists. For this story, readers learn that Brandon is Carol's grandson. In one version, the identifying information was proximal to the proper noun:

Carol found no messages on her answering machine. She grabbed an apple from her refrigerator and paced around the kitchen. “You're making me nervous,” said her friend Paula. “It's just that my grandson Brandon hasn't called in so long,” Carol replied. “There are probably lots of good movies on TV on this weekend,” Paula joked.

In the second version, the identifying information appeared at a greater distance from the proper noun, in the story's first line:

Carol found no messages on her answering machine from her grandson. She grabbed an apple from her refrigerator and paced around the kitchen. “You're making me nervous,” said her friend Paula. “It's just that Brandon hasn't called in so long,” Carol replied. “There are probably lots of good movies on TV on this weekend,” Paula joked.

In both of these cases, the text indicates how “Brandon” fits into the scenario; the text provides an answer to the tacit mystery, “How will Brandon function in this narrative world?” Across the experimental stories, the focal characters assumed familial (e.g., grandson), social (e.g., neighbor), or professional (e.g., editor) relationships with the stories' protagonists. We suggest that information about these relationships provides an adequate resolution to the small mystery of each focal character's narrative func-

tion. As such, we expect that “Brandon” will be less prominent in readers' representations for the resolved stories by comparison to the unresolved stories in which the mystery remains.

We used the two types of resolutions to provide two tests for the prediction that a focal character will be less prominent when the text has revealed the character's function in the narrative world. We suggest that what matters is not the location of that earlier information—relatively near or far—but the availability of the information (cf. Gerrig & McKoon, 2001; McKoon, Gerrig, & Greene, 1996; McKoon & Ratcliff, 1980). As such, we expected that both of these versions of the story would have an equal impact on the relative accessibility of the focal character.

To test our predictions about how the small mysteries provided by unresolved characters affect the relative prominence of discourse entities, we conducted four experiments. The first experiment demonstrated that, in fact, unresolved characters remain relatively more accessible than resolved characters. For Experiment 2, we modified the stories' endings to rule out an alternative explanation for that finding. Experiments 3 and 4 considered the accessibility of other story information, as a function of the status of the focal character (i.e., resolved or unresolved).

Experiment 1

The purpose of the first set of experiments was to demonstrate that characters who are named but whose narrative function with respect to the protagonists is somewhat mysterious remain relatively accessible in readers' discourse representations. Participants read stories in which a pair of characters had common ground for a third individual. For example, in the story given in Table 1, Carol uses “Brandon” without causing Paula any distress, suggesting that “Brandon” is in their common ground. We call the individual in common ground the *focal character*. To test our predictions about the relative accessibility of focal characters, we used a paradigm in which participants controlled reading time for lines of the story. In the middle of each story, we interrupted participants and asked them to tell us as swiftly and accurately as possible whether a particular word had appeared in the story. For the experimental stories, that word was the focal character (e.g., Brandon). We predicted that participants would be swiftest to agree that the name of the focal character had appeared in the story when they had been unable to bind that character to his or her appropriate function.

Method

Participants

There were 20 participants in each of Experiments 1A, 1B, and 1C, participating for credit in an Ohio State University introductory psychology course.

Materials

We wrote 24 stories like the example given in Table 1. (Appendix A provides two additional examples.) Each story was made up of 13 lines. The first six lines provided a set-

Table 1

Example story

Introduction

Unresolved

Carol found no messages on her answering machine.
 She grabbed an apple from her refrigerator and paced around the kitchen.
 "You're making me nervous," said her friend Paula.
 "It's just that Brandon hasn't called in so long," Carol said.
 [Experiments 3 and 4: "It's just that Brandon hasn't been in touch for so long," Carol said.]
 "There are probably lots of good movies on TV on this weekend," Paula joked.

Distal resolution

Carol found no messages on her answering machine from her grandson.
 She grabbed an apple from her refrigerator and paced around the kitchen.
 "You're making me nervous," said her friend Paula.
 "It's just that Brandon hasn't called in so long," Carol said.
 "There are probably lots of good movies on TV on this weekend," Paula joked.

Proximal resolution

Carol found no messages on her answering machine.
 She grabbed an apple from her refrigerator and paced around the kitchen.
 "You're making me nervous," said her friend Paula.
 "It's just that my grandson Brandon hasn't called in so long," Carol said.
 [Experiments 3 and 4: "It's just that my grandson Brandon hasn't been in touch for so long," Carol said.]
 "There are probably lots of good movies on TV on this weekend," Paula joked.

Continuation

Carol decided to busy herself by washing the dishes.
 After she wiped each dish with a soapy sponge, she rinsed them thoroughly.
 Paula helped out by drying the dishes and putting them away. (TEST)

Resolution

Function revealed

Carol decided that she would take matters into her own hands.
 She picked up her phone and dialed Brandon's number.
 When her grandson answered, she could hear a television in the background.
 "Grandma, I've been meaning to call you," he said.

Function not revealed

Paula couldn't figure out where one bowl belonged.
 She held it up so that Carol could have a look at it.
 Carol said, "I bought that bowl for \$2 at a garage sale."
 Carol took the bowl from Paula and put it on top of the refrigerator.

Comprehension question: When Carol called her grandson, she heard a television in the background. (TRUE)

Test words

Experiments 1 and 2: Brandon
 Experiment 3: touch
 Experiment 4: machine

ting for the story and introduced two characters. (One sentence in this initial portion of each story was subdivided into two lines.) In the fifth line of each story, one character referred to the focal character with his or her proper name (e.g., Brandon). There were three versions of each story. In the *unresolved* versions, the stories did not provide information about the focal character's function in the narrative world. In the *proximal resolution* versions, the stories provided that information in the fifth line, right before the name (e.g., "my grandson Brandon"). In the *distal resolution* versions, information about function appeared in the stories' first line. The stories did not refer to the focal character in lines 2, 3, or 4.

After the fifth line, there were three lines that continued the story but did not refer to the focal character. The third of these lines was followed by the test word, which was the name of the focal character (e.g., Brandon). After the test word, four lines brought the story to a close. The relationship of the focal character to the protagonist was revealed

in either the middle two lines or the third line of the resolution section (e.g., "She picked up her phone and dialed Brandon's number. When her grandson answered, she could hear a television in the background.").

We also wrote 26 filler stories, two for practice and 24 mixed in the experiment with the experimental stories. The stories ranged from 8 to 13 lines in length (mean 11.5). The numbers of test words per story ranged from 1 to 3, with a total for all the filler stories of 11 positive and 52 negative test words. 17 of the negative test words were proper names. For each experimental and filler story, we wrote a true/false test item.

Design

In Experiment 1A, participants read unresolved and proximal resolution versions of the stories. In Experiment 1B, participants read unresolved and distal resolution versions. In Experiment 1C, participants read proximal and distal resolution versions.

In each case, assignment of stories to conditions was counterbalanced with a Latin-square design with two factors, 24 stories and 20 participants. Thus, each participant read an equal number of each story version (e.g., unresolved vs. proximal resolution).

Procedure

We presented the stories and test items on a PC computer. Participants responded to the test items by pressing keys on the keyboard.

The experiment began with 30 lexical decision test items to give the participants practice using the response keys, “/?” for a positive response and Z for a negative response. Then there were two practice stories followed by two true/false test items, then 12 blocks of stories. Each block was made up of two experimental and two filler stories, with the instruction to “press the space bar” to begin each story. The four stories were followed by four true/false tests, one for each story in the block. Participants controlled reading time for the lines of the stories by pressing the space bar on the keyboard to clear the current line of text and advance to the next line. Test words were presented immediately after a text line, when the participant pressed the space bar. The test words appeared one line below the text line, they were marked with three asterisks, and they were in upper case letters, as in “*** BRANDON.” Participants pressed the “/?” or Z keys to indicate whether the test word had appeared in the previous story. If participants gave an incorrect response, “ERROR” appeared on the screen for 1500 ms. The stories were presented in

random order except for the requirement that each block have two experimental and two filler stories.

Results and discussion

We eliminated response times longer than 2500 ms and shorter than 300 ms from the analyses—less than 1% of data in each instance. Mean correct response times and mean accuracy levels for filler test items are shown in Appendix B.

Our first contrast was between responses to the focal character test word (e.g., Brandon) for the unresolved and proximal resolution versions of the stories (Experiment 1A). We predicted that response times to the test words would be shorter when a character’s name was mentioned without information about his or her narrative function. Table 2 shows mean response times and accuracy values for the two conditions. As we expected, response times for the focal character’s name were significantly shorter when no function was given. Table 2 also shows the standard errors for the response time means and *F* values for the response times for analyses of variance with participants as the random variable and with items as the random variable. There were no significant differences in accuracy between conditions for any of the five experiments we report.

In the next experiment, we had participants read either the resolved or the distal resolution versions of the stories (Experiment 1B). Once again, we predicted that response times would be shorter when a character’s name was men-

Table 2
Mean response times, confidence intervals, *F* values, and mean accuracy values

Experiment	Version	Test word	Mean RTs (in ms)	Confidence intervals (in ms)	<i>F</i> values for RTs	Mean accuracy (% correct)
1A	Unresolved	Brandon	917	17	$F(1, 19) = 18.0^*$ $F(1, 23) = 10.7^*$ $\text{min}F(1, 41) = 6.7^*$	87
	Proximal	Brandon	974			89
1B	Unresolved	Brandon	946	24	$F(1, 19) = 5.7^*$ $F(1, 23) = 8.6^*$ $\text{min}F(1, 39) = 3.4^\ddagger$	88
	Distal	Brandon	992			88
1C	Proximal	Brandon	1005	23	$F_s < 1.3$ $\text{min}F(1, 42) < 1.0$	88
	Distal	Brandon	1000			89
2	Unresolved	Brandon	935	23	$F(1, 23) = 7.4^*$ $F(1, 23) = 6.0^*$ $\text{min}F(1, 16) = 3.3^\ddagger$	86
	Proximal	Brandon	972			84
3 (Group 1)	Unresolved	touch	988	17	$F(1, 37) = 5.3^*$ $F(1, 23) = 4.3^*$ $\text{min}F(1, 54) = 2.4$	83
	Proximal	touch	961			76
3 (Group 2)	Unresolved	touch	1020	22	$F(1, 25) = 3.4^\ddagger$ $F(1, 23) = 4.2^*$ $\text{min}F(1, 48) = 1.9$	74
	Proximal	touch	990			75
3 (Combined)	Unresolved	touch	1001	13	$F(1, 63) = 9.1^*$ $F(1, 23) = 5.1^*$ $\text{min}F(1, 50) = 3.3^\ddagger$	79
	Proximal	touch	972			76
4	Unresolved	Machine	986	21	$F_s < 1$ $\text{min}F(1, 48) < 1.0$	70
	Proximal	Machine	992			70

Notes: * indicates $p < .05$; ‡ indicates $p < .10$. Confidence intervals are 95% confidence intervals for the differences between the means. We present the analyses with participants as a random variable above the analyses with items as a random variable.

tioned without a function. [Table 2](#) shows the predicted result, with a significant difference in mean response times for the two conditions.

In both Experiments 1A and 1B, responses to the focal character's name were faster when the character was introduced without any function compared to circumstances in which the character's function was given. This was true for both proximal and distal resolutions. For a final contrast, we directly compared the two types of resolution (Experiment 1C). As we expected, there was no significant difference in response times between the two conditions ([Table 2](#)).

This trio of experiments supports our prediction that characters who cannot be bound to already known information (e.g., their function in a story) remain relatively accessible in discourse representations. However, there is a possible objection to these findings. In Experiment 1, each story ultimately revealed the focal characters' functions (e.g., "She picked up her phone and dialed Brandon's number. When her grandson answered, she could hear a television in the background.") We wrote the stories in that fashion, because that's what authors do: They ultimately inform readers about the identity of characters in the narrative world. (Perhaps the most famous exception to this norm occurs in Samuel Beckett's "Waiting for Godot." Godot's identity remains perpetually unresolved.) Although our stories followed literary practice, the incipient revelations might have prompted readers to engage strategic processes to retain the focal character in working memory until the revelations occurred. To address this possibility, we conducted an experiment in which we changed the stories so that the concluding portions of the stories no longer provided the characters' narrative functions.

Experiment 2

For this experiment, we wanted to eliminate readers' expectation that they would always, ultimately, discover what function the focal character had in the story world. We wrote new endings that continued the topics of the story's middle portions instead of returning to the topic that involved the focal character. For the example in [Table 1](#), the story remains focused on the dishes. Brandon remains unresolved all the way to the story's end. If the results of Experiment 1 were contingent on readers' expectations for ultimate revelations, the response time differences between the unresolved and resolved versions of the stories should disappear. We predicted, however, that the response time difference will remain even when the stories provided no resolutions.

Method

Participants

Participants were 24 students each of whom was fulfilling a course requirement in introductory psychology at Ohio State University.

Materials

We used the same 24 stories as in Experiment 1. We modified the concluding lines of each story so that they

no longer provided information about the narrative function of the focal character (see [Table 1](#) and [Appendix A](#)).

Design and procedure

We followed the design and procedure for Experiment 1. Participants read unresolved and proximal resolution versions of each story.

Results and discussion

Response times longer than 2500 ms and shorter than 300 ms were eliminated from the analyses—less than 1% of data. Mean correct response times and mean accuracy levels for filler test items are shown in [Appendix B](#).

As shown in [Table 2](#), we replicated the results of Experiment 1. Despite the change in the stories, response time for the test words (i.e., the focal characters) were significantly shorter when the character was introduced without his/her function (e.g., without grandson) than when his/her function was given.

The results of Experiments 1 and 2 converge on the conclusion that characters whose functions are unknown remain relatively more accessible in readers' discourse representations. In Experiments 3 and 4, we tested the possibility that the relative accessibility of the focal character comes at a cost to the accessibility of other information in the story.

Experiments 3 and 4

Our interpretation of the results of Experiments 1 and 2 rests on the idea that when a story introduces a character whose function is unknown, a small mystery is created: Who is this character and how does he or she relate to the story? We hypothesized that the comprehension system responds to this situation by keeping the character readily available in anticipation of further information. In our experimental stories, the resolved versions (both proximal and distal) provided readers with information that allowed them to fit the focal characters into the story world. For the unresolved versions of the story, such information was not available and so we expected that readers would apportion relatively more attention to that character. For this reason, we expected a decrement in attention to other information in the story. The consequence of that lessening of attention should be that other story information would be less well encoded in the story representation.

To test that prediction, we replicated Experiment 1 but we used other concepts in the story as test words. For Experiment 3, the critical word appeared in the story downstream from the focal character but in the same line. For example, for the story in [Table 1](#), "touch" followed "Brandon" in the fifth line (i.e., "It's just that my grandson Brandon hasn't been in touch for so long"). When the focal character remained unresolved, we predicted that participants' responses to subsequent story information (as represented by our test words) would be slower.

In Experiment 4, we used test words that appeared in advance of the focal character (e.g., "machine" for the example in [Table 1](#)). Because this information preceded any changes in attention brought about by the unresolved

focal character, readers should attend equally to it across the different versions of the story. For that reason, we did not expect any differences for information that preceded the focal character.

Methods

Participants

We expected that the target test words in these experiments would not be as easily remembered as the focal character test words that we used in the previous experiments, so there were more participants in Experiment 3 than in the previous experiments. For one group of participants (Experiment 3A), the endings of the stories were those used in Experiment 1. That is, the endings included information that linked the focus character to his/her function. There were 38 participants in the first group, 18–30 years old, recruited by flyers on the Ohio State campus and paid \$10 for their participation. For the second group of participants (Experiment 3B), the stories ended without any reference to the character or his/her function, as in Experiment 2. There were 26 participants in the second group, participating for credit in an Ohio State University introductory psychology course.

There were 26 participants in Experiment 4, participating for credit in an Ohio State University introductory psychology course.

Materials

Each story in Experiment 3 needed to have a target word that occurred in the fifth line of the story after the focal character was introduced. Many of the stories used in Experiments 1 and 2 had such a word; we made appropriate modifications to those that did not. For example in the story in Table 1, we modified the original story to provide an appropriate test word. With the modification, *touch* occurs after *Brandon* (in the unresolved version) and after *my grandson Brandon* (in the proximal resolution version). For Experiment 4, we chose words from the first two lines of each story.

Design and procedure

As in Experiments 1A and 2, participants read either unresolved or proximal resolution versions of each story. For Experiment 3A, participants read the versions of the stories (from Experiment 1) in which the endings of the stories included information that linked the focus character to his/her function. Participants in Experiment 3B read the stories ended without any reference to the character or his/her function (as in Experiment 2). Participants in Experiment 4 read stories with the endings that revealed the focal characters' functions. The filler stories, the procedure, and the Latin-square design were the same as in earlier experiments.

Results and discussion

The data in Experiments 3 and 4 were more variable than in prior experiments, so we eliminated response times longer than two standard deviations above the mean from the analyses, 3% of the data. Mean correct response times and mean accuracy levels for filler test items are shown in Appendix B.

For Experiments 3A and 3B, we predicted that participants would find it more difficult to verify that the target words (e.g., *touch*) were present in the story when the focal character remained unresolved. As shown in Table 2, this result obtained with both groups of participants. Recall that the stories are the same for both groups to the point at which the test word appears. As such, we also combined the data across the two groups of participants. As shown in Table 2, the combined data also demonstrated that response times to the target word were significantly slower in the context of unresolved focal characters. These data support the prediction that the lack of resolution for the focal character disrupts encoding of subsequent information. As in the previous experiments, there were no significant differences among the accuracy rates.

For Experiment 4, we tested information that preceded the focal character. We predicted that the subsequent status of the focal character (i.e., resolved vs. unresolved) would not have a differential impact on participants' ability to respond to these words. As seen in Table 2, there was no significant difference in response time for the test words from the first line of the story.

Reading times

The finding in Experiments 1 through 4 is that focal characters remain relatively more accessible when they are introduced alone, without information about function. It might, therefore, be possible that reading times for the lines of the story differed depending on the way in which the stories introduced the characters. Experiments 1A, 2, 3, and 4 all used the same manipulation: the stories introduced the character alone in the fifth line (the unresolved versions) or with his/her function in the fifth line (the proximal resolution versions). To test for reading time differences, we combined these four experiments. We compared reading times in the two conditions for the line that immediately followed introduction of the character (the sixth line) and the following three lines (the last of these lines was followed by the test word). There were no differences between the two conditions. Averaging over the four lines, the mean reading times were 2354 ms for unresolved stories and 2355 ms for proximal resolution stories.

General discussion

The purpose of this project was to demonstrate that one particular type of small mystery has consequences for how readers experience narratives. The stories introduced focal characters (e.g., *Brandon*) with or without some indication of how they would function in the story world with respect to the protagonists. Experiment 1 bore out the prediction that the focal character would remain relatively more accessible in readers' discourse representations when the focal character's function was unclear. Specifically, in the absence of relationship information, readers were able more swiftly to indicate that the focal character's name had appeared in the story. In Experiment 1, each of the stories ultimately revealed the focal character's function. To ensure that readers weren't making a strategic adjustment to this regularity—by, perhaps, expending effort to keep the focal character relatively accessible until the informa-

tion arrived—we wrote new versions of the stories that ended without such revelations. Despite these changes, participants in Experiment 2 still responded more quickly when the early portions of the story failed to provide information about function.

Experiments 3 and 4 demonstrated the impact of the small mystery on other story information. We predicted that when the focal character's identity remained unresolved, participants' encoding of subsequent information would be disrupted. Experiment 3 supported that prediction by demonstrating that participants found it more difficult to verify that downstream words had appeared in the stories. In Experiment 4, we tested words that preceded the focal characters' introduction. We found no differential performance on those earlier words.

As we indicated in the Introduction, we selected this particular type of small mystery for both literary and cognitive psychological reasons. On the literary side, as we exemplified with the excerpt from *The Abstinence Teacher*, authors do on some occasions withhold information about the relationships new characters bear to other protagonists. Thus, this is the type of mystery that occurs as a natural part of readers' experiences of narrative worlds. At the same time, we were able to draw upon theories from discourse and text processing to predict why this particular type of mystery should have consequences for readers' representations.

In the Introduction, we noted that texts permit both an infinite number of inferences and an infinite number of mysteries. We suggested that mysteries require the same type of empirical attention that inferences have accrued. The current demonstration leads naturally to the question of what other types of well-defined mysteries might have consistent consequences on how readers encode texts. Recall our opening example, in which readers encountered the mystery of Ruth's "problem." We suspect that, in parallel to our results with proper names, readers would apporportion at least tacit attention to "the problem" while awaiting information about its identity. It seems quite possible to construct experiments around examples of this sort in which narrators withhold information that is marked as known (i.e., *the problem*) within the narrative world.

The mysteries on which we have been focusing represent circumstances in which the possible resolutions are quite open-ended. That is, "Carrie" could assume a diversity of functions in the narrative world and Ruth's "problem" could have been more or less anything. These types of open-ended mysteries appear to be quite common in literature. As another example, consider the opening paragraph of *The Abstinence Teacher* (Perrotta, 2007, p. 3):

On the first day of human sexuality, Ruth Ramsey wore a short lime green skirt, a clingy black top, and strappy high-heeled sandals, the kind of attention-getting outfit she normally wouldn't have worn on a date—not that she was going on a lot of dates these days—let alone to work. It was a small act of rebellion on her part, a note to self—and anyone else who cared—that she was not a willing participant in the farce that would unfold later that morning in second-period Health & Family Life.

As an opening paragraph, this passage immediately presents a series of open-ended mysteries. The most

prominent one, perhaps, is exactly what farce will transpire later in the morning. However, readers might also wonder why Ruth hasn't been going on a lot of dates lately, what she *would* wear on a date, and so on. The empirical question is what consequences these open-ended mysteries have for readers' experience of the narrative.

Narratives also provide mysteries that are more constrained with respect to their solutions. For example, *The Abstinence Teacher* provides a compelling scene in which Ruth's daughter takes possession of the ball in the last seconds of a tied soccer game (p. 65):

Maggie took control of the ball near midfield, with nothing but grass between her and the goal. It looked to Ruth like one of those scenarios from a wish-fulfillment dream—one player way out front, everyone else stampeding behind, unable to catch up.

In this case, the mystery focuses on well-defined oppositions for both actions and outcomes: Will Maggie shoot? Will she score? Will her team win?

When mysteries have well-defined outcomes, they are especially likely to give rise to readers' experiences of suspense. Researchers have studied the types of text structures that give rise to suspense (see Vorderer, Wulff, & Friedrichsen, 1996, for several reviews). For example, Brewer (1996) suggested that "suspense is produced by having an initiating event in the discourse that has the potential to lead to [a] significant outcome for one of the characters" (p. 119). The excerpt from *The Abstinence Teacher* meets that condition. At the same time, Ortony, Clore, and Collins (1988), for example, argued that suspense requires "a Hope emotion and a Fear emotion" (p. 131) in the presence of uncertainty between two (or more) outcomes. On this account, readers experience suspense because they hope that Maggie's team will win but fear that they will not. Thus, past research allows concrete predictions to be made about when readers are likely to experience suspense. However, as our experiments have demonstrated, we need also to be able to make specific claims about how readers respond in the moment as they experience suspense. For example, Gerrig and Bernardo (1994; see also Gerrig, 1993) provided evidence that suspense will sometimes prompt readers to engage in problem solving—to try to find a way that a dilemma could be resolved toward the hoped-for outcome. However, their experiments did not include moment-by-moment measures to document those processes of problem solving. Our most important goal here is to document exactly how readers respond to mysteries exactly when they occur.

We have motivated the parallel between inferences and mysteries to indicate why both domains should be important to theories of text processing. Current perspectives on inferential processes are informed by a good deal of empirical research. We believe that it is premature to offer a general theory of mysteries in advance of a broader range of data. It seems important, for example, to demonstrate circumstances in which readers *do not* respond to certain types of mysteries in a text. We expect that some mysteries will not disrupt readers' moment-by-moment

experiences (e.g., they will not change the relative accessibility of discourse entities). This expectation arises from precedents in the text processing literature. For example, global goals do not remain accessible even when characters fail to realize those goals (McKoon & Ratcliff, 1992). Thus, when participants read a story that stated a goal plainly (e.g., “The assassin wanted to kill the president”) that goal was no more accessible when the characters failed to achieve the goals than when they did. Based on this result, we might also expect that a global mystery (e.g., “How will the assassin kill the president?”) would not remain accessible in a way that would disrupt processing of subsequent text (in the way, for example, that our unresolved names did).

In general, we believe that it will be most informative to study the types of mysteries that authors regularly use in their texts. In addition, we suggest a focus on mysteries of the type we have developed here, for which it is possible to predict the mysteries’ consequences based on theories from discourse and text processing. Theories of text processing have often emphasized how readers make sense of each element of a text as it appears. We intend the experiments we present here to demonstrate that readers, under appropriate circumstances, also make tacit note of what they don’t yet know.

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Appendix A. Example stories

1. Judy

Introduction

Unresolved

Frank was not looking forward to presenting his latest ideas.

He gathered his notes and computer and headed toward the meeting room.

On the way, his pal Maria gave him a reassuring smile.

“I’m certain Judy will admire what you show her,” said Maria.

“I hope so,” said Frank, “but I’m not so sure.”

Distal resolution

Frank was not looking forward to presenting his latest ideas to his principal.

He gathered his notes and computer and headed toward the meeting room.

On the way, his pal Maria gave him a reassuring smile.

“I’m certain Judy will admire what you show her,” said Maria.

“I hope so,” said Frank, “but I’m not so sure.”

Proximal resolution

Frank was not looking forward to presenting his latest ideas.

He gathered his notes and computer and headed toward the meeting room.

On the way, his pal Maria gave him a reassuring smile.

“I’m certain our principal Judy will admire what you show her,” said Maria.

“I hope so,” said Frank, “but I’m not so sure.”

Continuation

Frank stopped to fill his mug with hot coffee.

He couldn’t find any cream so he had to use plain milk.

When the coffee had cooled down enough, he took a gulp. (TEST)

Resolution

Function revealed

The meeting room was dark, so Frank opened some blinds.

Frank set up his posterboards and waited for Judy to arrive.

The second the principal entered, Frank asked her to be seated.

Frank cleared his throat and began his presentation.

Function not revealed

The coffee had a wonderful vanilla flavor.

Frank had gotten a 12-pack of flavored coffees for his birthday.

For a couple of months, he’d been doing a flavor a week.

It was possible that this vanilla coffee was the best one so far.

Comprehension question: Frank stopped to fill his mug with hot coffee. (TRUE)

Test words

Experiments 1 and 2: Judy

Experiment 3: admire

Experiment 4: ideas

2. Lawrence

Introduction

Unresolved

Anton was getting course credit doing volunteer work.

Every evening, without fail, he wore a jacket and tie to work in an office for three hours.

A co-worker named Jeremy asked Anton why he’d gotten involved.

Anton said, “If I work for Lawrence, it will count for my major.”

Jeremy replied, “It’s important to get a solid education.”

Distal resolution

Anton was getting course credit doing volunteer work for the senator.

Every evening, without fail, he wore a jacket and tie to work in an office for three hours.

A co-worker named Jeremy asked Anton why he’d gotten involved.

Anton said, “If I work for Lawrence, it will count for my major.”

Jeremy replied, “It’s important to get a solid education.”

Proximal resolution

Anton was getting course credit doing volunteer work.

Every evening, without fail, he wore a jacket and tie to work in an office for three hours.

A co-worker named Jeremy asked Anton why he’d gotten involved.

Anton said, “If I work for the senator, Lawrence, it will count for my major.”

Jeremy replied, “It’s important to get a solid education.”

Continuation

Anton had spent most of the morning doing filing.

Whoever had done it before wasn’t very good at the alphabet.

In a lot of places, the M documents were filed in front of the L documents. (TEST)

Resolution

Function revealed

Anton looked up from his work when he heard a commotion in the hallway.

He watched Lawrence stride confidently out of the building.

Wherever the guy was, you could always tell that he was a senator.

Anton thought that someday he might want to run for office.

Function not revealed

Anton extracted another lump of folders to fix their order.

He kept running through the alphabet in his head.

He didn’t want to make any new mistakes to add to the chaos.

Still, Anton was reasonably sure that M came later than L.

Comprehension question: Lawrence was getting course credit to be a volunteer fireman. (FALSE)

Test words

Experiments 1 and 2: Lawrence

Experiment 3: count

Experiment 4: credit

Appendix B. Mean response times and accuracy for filler test items

Experiment	Test word ^a	Mean RT (in ms)	Accuracy (% correct)
1A	Positive	1105	90
1A	Negative	1064	85
1B	Positive	1023	88
1B	Negative	1028	92
1C	Positive	1050	86
1C	Negative	1051	91

Appendix B (continued)

Experiment	Test word ^a	Mean RT (in ms)	Accuracy (% correct)
2	Positive	1068	82
2	Negative	1002	91
3 (Group 1)	Positive	951	92
3 (Group 1)	Negative	936	94
3 (Group 2)	Positive	1049	91
3 (Group 2)	Negative	979	93
4	Positive	1027	84
4	Negative	1004	91

^a Filler items required either positive (“yes”) or negative (“no”) responses.

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