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Readers' Reliance on Source Credibility in the Service of Comprehension

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The current project examined the impact of knowledge about the credibility of sources on readers' processing of texts. Participants read texts in which information about characters was provided by either a credible or a noncredible source; this information suggested that the character potentially possessed a particular trait. A subsequent text episode offered the opportunity for participants to apply any inferred trait to their understanding of unfolding story events. In Experiment 1, participants' moment-by-moment reading times indicated strong expectations for characters to behave in trait-consistent ways, with little effect of credibility on those expectations. Experiments 2 and 3 provided participants with additional encouragement to attend to credibility during reading, but these experiments also revealed little influence of credibility. In Experiment 4, in addition to being given added encouragement, participants were explicitly asked to evaluate the likelihood of future text events; under these conditions, expectations for story outcomes were influenced by the credibility of information sources. This influence was mediated by the degree to which participants self-reported relying on credibility during the task. These findings have implications for contemporary accounts of text comprehension, persuasion, and individual differences in credibility assessment.

Keywords: source credibility, reading, text comprehension, discourse processing, critical thinking

Readers acquire knowledge from the newspapers, novels, blogs, and textbooks they peruse every day. These materials no doubt vary with respect to the reliability and credibility of their content. For example, the *New York Times* might be considered a more credible provider of information about economic and political matters than the *National Enquirer*. Beliefs about credibility also develop based on the sources cited by or associated with providers of information. Knowledge about an individual source (e.g., a respected public figure vs. an accused wrongdoer) could influence whether readers rely on or disregard the propositions provided by that source. Do readers take into account the credibility of sources as they encode information, and if so, how might these considerations impact readers' comprehension of texts?

Prior Research on Source Credibility

To date, much of our knowledge concerning the influence of source credibility has come from work in social psychology on persuasion and attitude change. Credibility, in this work, has been evaluated along several dimensions, including expertise, trustworthiness, and likability (see Pornpitakpan, 2004; Rieh & Danielson, 2007). One way of manipulating credibility in these types of projects has been to vary the degree to which participants find a source of information trustworthy. Trustworthiness refers to the willingness of a source to provide accurate, reliable information, with trustworthy sources influencing readers' beliefs, attitudes, and expectations more so than untrustworthy ones (e.g., Eagly, Wood, & Chaiken, 1978; Petty & Wegener, 1998). For example, individuals tend to agree more with views espoused by trustworthy than untrustworthy sources (Hovland & Weiss, 1951). For the current project, we examined the impact of trustworthy and untrustworthy sources on readers' activities, but we note that future work could certainly investigate the impact of other credibility dimensions.

Process models emerging from this kind of work dissociate the contributions of the content of a message from the credibility of the source providing that content (e.g., Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986). Across these models, source credibility is considered a peripheral cue that is invoked when readers cannot or do not wish to evaluate message content (e.g., Priester & Petty, 1995). Despite this peripheral status, evidence suggests that credibility influences readers' systematic processing (e.g., Chaiken & Maheswaran, 1994) as a function of the timing of source information (Homer & Kahle, 1990; Tormala, Briñol, & Petty, 2007), the credibility of previous messages (Tormala & Clarkson, 2007, 2008), and the strength of arguments (Kaufman, Stasson, & Hart, 1999; for reviews, see Petty & Wegener, 1998; Pornpitakpan, 2004). Thus, source credibility can signal whether a message should be integrated into memory as is or whether more effortful processing is necessary (e.g., Kelman, 1958).

These effects have also been identified in more applied domains with respect to juror decision making and assessment of the credibility of defendants, eyewitness accounts, and expert testimony (for a review, see Spellman & Tenney, 2010). For example, eyewitnesses who provide greater detail regarding critical events are considered more credible than eyewitnesses who provide fewer

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details, even when those details are irrelevant for rendering courtroom verdicts (Bell & Loftus, 1989). In addition, while mock juror's judgments do not appear to be influenced by the credentials of expert witnesses, testimony is nevertheless effective when it provides strong evidence and coherent arguments (Klettke, Graesser, & Powell, 2010). The research employed in legal (and mock legal) contexts has established the importance of considering how credibility impacts perception, reasoning, and decision making (e.g., Cooper, Bennett, & Sukel, 1996; see also Ranganath, Spellman, & Joy-Gaba, 2010). Critically for the present study, however, the extant research has primarily employed offline, attitudinal measures to assess the impact of source credibility on processing of communications. This has included participant ratings of the credibility of communicators (e.g., Hovland, Janis, & Kelley, 1953), postreading thought-listing methodologies (e.g., Cacioppo & Petty, 1981), judgment tasks (e.g., Levett & Kovera, 2008), and recall tasks (e.g., Ratneshwar & Chaiken, 1991). Overall, research has been concerned with how credibility affects readers' explicit evaluations of messages, rather than the cognitive activities readers undertake in the service of comprehending text. In contrast, the current project investigated the influence of source credibility on text comprehension and the inferences that might be constructed or ignored in the service of such comprehension.

Current Research in Text Comprehension

Readers' processing of texts is a function of readers' encoding of and memory for the exact words or sentences in the text, the ideas that underlie the gist of the text, and any connections made among elements of the text and prior knowledge (van Dijk & Kintsch, 1983). Contemporary views of text processing contend that comprehension is best exemplified by this third case, in which readers build situation models for what the text is about rather than what the text explicitly states. Because situation models incorporate information that the reader brings to the reading experience, as well as inferences generated during and after reading, they are presumably the locus for any effects that emerge as a function of credibility. Knowledge of the credibility of information sources could be considered knowledge about information that is external to the text itself, particularly in cases in which information about an informant's credibility is left out of the text. Thus, because readers must integrate that knowledge with information in the text, effects of credibility are likely to occur at the level of the situation model.

Situation models encode information along several text dimensions, including the identity of story characters; their goals; spatial relationships among characters, objects, and settings; and the temporal and causal relations between events (e.g., Zwaan, Langston, & Graesser, 1995; Zwaan, Magliano, & Graesser, 1995). These dimensions can interact in meaningful ways; for example, expectations about time can influence readers' processing of and memory for space and the characters in those settings (Rapp & Gerrig, 2002; Rapp, Klug, & Taylor, 2006; Rapp & Taylor, 2004). Readers track these interactive dimensions, such that when incoming text contradicts the current situation along a dimension or set of dimensions, readers experience comprehension difficulties (Gernsbacher, 1990). For example, when readers encounter descriptions of characters, they demonstrate difficulty integrating subsequent text information into memory that is inconsistent with previous descriptions (Albrecht & O'Brien, 1993; Cook, Halleran, & O'Brien, 1998; Guéraud, Harmon, & Peracchi, 2005; O'Brien, Rizzella, Albrecht, & Halleran, 1998; Rapp & Kendeou, 2007, 2009).[1] Readers' encoding of information about characters and the sources that provide information about those characters (e.g., Graesser, Bowers, Olde, & Pomeroy, 1999) hold much promise for assessing readers' use of credibility.

Readers' Encoding of Character Information

Readers show a strong propensity for building mental models of story protagonists. For example, Rapp, Gerrig, and Prentice (2001) presented participants with behavioral descriptions, such as the following, suggesting (but not explicitly stating) that characters possessed particular traits:

> Albert was listening to the radio. He had finished getting ready to meet his friends at the movies. They were going to see a new comedy that was getting rave reviews. He pulled a sweater over his head. Then he began to look for his shoes. They were buried under old candy wrappers, crumpled magazines, and some dirty laundry.

Previous work on *spontaneous trait inferences* has demonstrated that readers regularly encode trait inferences when presented with trait-implying statements (usually behavioral descriptions) about characters (e.g., Newman & Uleman, 1990; Uleman, Hon, Roman, & Moskowitz, 1996). Thus, the final sentence of this episode was designed to lead readers to infer that Albert is messy.

A second episode, to which readers could potentially apply a trait inference about the story protagonist, immediately followed the first:

> Albert had to take the bus to the movies. He bought a newspaper to read during the ride to the theater. Albert had finished leafing through the paper when the bus driver announced Albert's stop. Albert put the newspaper on the seat next to him. As he waited for the bus to come to a halt, he noticed a sign asking riders not to leave garbage on the bus.

Each second episode concluded with an outcome that was either consistent with (e.g., "Albert ignored the sign and got off the bus") or inconsistent with (e.g., "Albert picked up the newspaper to throw away later") the trait suggested in the first episode. When participants were asked to make explicit judgments as to whether one of the outcomes was likely to happen next, they overwhelmingly preferred trait-consistent to trait-inconsistent outcomes. In a follow-up experiment, Rapp et al. (2001) eliminated the explicit judgment component and instead collected reading times to the outcome sentences. Participants took longer to read trait-

[1] For example, Albrecht and O'Brien (1993) found that participants encountered comprehension difficulty when sentences describing characters' behaviors (e.g., "Mary ordered a cheeseburger and fries") contradicted prior descriptions of those characters (e.g., "Mary, a health nut, had been a vegetarian for 10 years"). Participants took longer to read target sentences inconsistent with previous character information, as compared to when those target sentences were consistent with that information (e.g., when the description indicated that Mary loved junk food). This so-called *inconsistency effect* (i.e., longer reading times for sentences that are inconsistent with information earlier in a text) has been demonstrated under a variety of conditions (e.g., Cook et al., 1998; Guéraud et al., 2005; O'Brien et al., 1998).

inconsistent than consistent outcomes. These findings indicate that readers readily encode inferences about characters' traits and expect characters to behave in ways consistent with those traits in future narrative events (see also Peracchi and O'Brien, 2004; Rapp and Kendeou, 2007, 2009).

In these types of studies, and across almost all studies that have investigated the text dimensions that are tracked or the inferences constructed during reading, the information provided in the text materials is presented as canon. That is, the information is offered by a source (usually a neutral narrator) whose credibility is never called into question (although the inferences that readers might generate could be potentially questionable). Previous work has shown that participants' evaluations of characters are more negative when those characters are the target of incriminating statements levied by credible than noncredible sources (Wegner, Wenzlaff, Kerker, & Beattie, 1981). In the current study, we extended this work by examining whether knowledge about source credibility impacts readers' moment-by-moment processing of texts, with specific respect to the construction and application of inferences about characters.

The Current Project

To address this issue, we modified the Rapp et al. (2001) stories to include behavioral descriptions of characters as provided by a credible or a noncredible source. The descriptions were contextualized within a series of conversations conducted by a reporter who hoped to write a book about life in a small town and, in pursuit of that goal, interviewed townspeople about their lives.[2] Each conversation began with the reporter describing a first scenario. For example,

> The next person in my notes is Albert Johnson. The other day, Albert was listening to the radio. He had finished getting ready to meet his friends at the movies. They were going to see a new comedy that was getting rave reviews. He pulled a sweater over his head. He started to look for his shoes.

Next, the reporter asked one of two informants for more information about the character. The reporter, participants were told, selected these informants because they were prominent individuals in the town and would be able to provide additional details for the stories the reporter collected from other residents. Although readers were aware that one informant was honest and trustworthy (i.e., credible) and the other was dishonest and untrustworthy (i.e., noncredible), the reporter was unaware of this distinction. Thus, the sources employed in this project were constructed to seem equivalent in their expertise but varying in their trustworthiness. When the reporter solicited information as to what happened next in the episode, either source might have offered the following information, which provides crucial behavioral evidence for a potential character trait: "Well, his shoes were buried under old candy wrappers, crumpled magazines, and some dirty laundry. Albert doesn't really care about keeping his room clean, so that is what it usually looks like."

After readers received this information from one of the two informants, the reporter recounted a second episode about the character to which the inferred trait could potentially apply:

> Okay, so then Albert had to take the bus to go to the movies. He bought a newspaper to read during the ride to the theater. Albert had just finished leafing through the paper when his stop was announced. Albert put the newspaper on the seat next to him. As he waited for the bus to stop, he noticed a sign asking riders not to leave garbage on the bus.

At this point, participants could be presented with an outcome that was either consistent or inconsistent with the trait-implying description provided by the informant (e.g., "Albert ignored the sign and got off the bus" or "Albert picked up the newspaper to throw away later").

We evaluated whether the degree to which readers generated and applied a trait inference would be influenced by the credibility of sources providing the crucial trait-implying descriptions. If credibility matters, readers should expect characters to behave in trait-consistent rather than inconsistent ways when descriptions come from a credible source. But when the same descriptions are provided by a noncredible source, individuals may ignore, discount, or reject them (e.g., Hovland & Weiss, 1951). For this latter case, readers might even expect characters to behave in ways contrary to or otherwise different from a source's descriptions.

However, recall that existing models contend that critical evaluation of sources occurs only under relatively prescribed circumstances, if at all. In fact, previous research demonstrates that readers fail to evaluate the validity of messages unless they expend special effort to do so (e.g., Gilbert, 1991; Rapp, 2008). Based on this view, credibility should fail to exert an influence unless tasks specifically encourage attention to it. To test whether readers could be encouraged to rely on credibility, across the four experiments reported here, we gradually increased the instructional prodding asking readers to consider the source of crucial character information.

In Experiments 1, 2, and 3, we measured reading times to narrative outcomes to assess whether credibility influences readers' expectations for characters' behaviors during reading. Participants in Experiment 1 were instructed to read the texts for comprehension. In Experiment 2, participants completed a prereading task requiring them to carefully consider the importance of credibility. Experiment 3 included prereading instructions and a brief time delay before the outcome sentence was presented; during the delay, participants were asked to think about the source's identity and reliability. In Experiment 4, participants explicitly judged the likelihood of story outcomes. If, indeed, readers' credibility assessments occur only with explicit encouragement, we expected to obtain little effect of credibility under conditions when the task did not require such a consideration.

As a final point of analysis, we queried participants' self-reported use of credibility information during their reading to examine whether individual differences might be related to the application of such knowledge. Measures of individual differences have been used to predict whether readers will attend to cues beyond the arguments contained in a text, with concomitant consequences for attitude formation (e.g., Cacioppo & Petty, 1982; Cacioppo, Petty, Kao, & Rodriguez, 1986). In a similar vein, we

[2] The modifications were designed to make these texts more expository in nature, similar to human-interest feature stories that describe the experiences of a particular individual and often include quotes about that person from various sources (e.g., friends, family, colleagues). Thus, the journalistic accounts employed in the current project can be suitably thought of as examples of expository materials that readers commonly encounter in newspapers, blogs, and textbooks.

investigated how considerations of credibility during reading were associated with inferences for future text events.

Experiment 1

In Experiment 1, we examined readers' general propensities toward using credibility during moment-by-moment comprehension. Participants read texts that concluded with an outcome that was either consistent or inconsistent with a credible or noncredible informant's behavioral description of a particular character (see Table 1 for examples).[3] Reading times to critical sentences (e.g., the behavioral description, the outcome sentence) were recorded.

We generated two hypotheses with respect to this experiment. First, recall that previous work has shown little evidence for readers' critical evaluation of information during reading. In line with this view, a *no evaluation hypothesis* suggests that readers should fail to consider source credibility during moment-by-moment processing. This would result in longer reading times to trait-inconsistent relative to trait-consistent outcomes regardless of the credibility of the source of character descriptions. In contrast, a *credibility application hypothesis* suggests that readers' processing of narrative outcomes could reflect knowledge about sources of information. Thus, if character descriptions are provided by a credible source, readers should take longer to read trait-inconsistent than trait-consistent outcomes. When the same descriptions are provided by a noncredible source, however, readers should no longer show this pattern (meaning no reading time difference as a function of outcomes or, perhaps more interestingly, longer reading times to trait-consistent than trait-inconsistent outcomes).

Method

Participants. Fifty-six members of the Northwestern University community (mean age = 20.9 years) participated in this experiment for cash payment. Data from four participants were excluded from analyses for failure to follow directions.

Apparatus. The experiment employed a Pentium PC computer running Superlab software. Participants sat in front of a Dell color monitor with their hands on the keyboard; responses were provided through keypresses. Sentences were presented in the center of the screen in standard upper- and lowercase black type. The source of the information provided in each sentence was displayed in uppercase type, 100 pixels above the center of the screen. REPORTER appeared in gray above the relevant sentences when the reporter was speaking, and QUENTIN and ZANE appeared in blue and red above sentences provided by the credible and noncredible informants, respectively. The colors were intended as an additional memory cue to aid participants in distinguishing the two informants. These source cues appeared for 500 ms before the presentation of the relevant speaker's first sentence and remained onscreen throughout the duration of that speaker's set of sentences. Participants' responses, including the keys pressed during the task and reading latencies for each sentence, were recorded as the time interval, in milliseconds, from a sentence's presentation onscreen to a press of the *NEXT* key.

Materials. At the beginning of the experiment, participants were told that they would be reading transcripts of conversations between a reporter named Sally and two informants. These transcripts constituted interviews in the town of River Village, conducted by the reporter for a book chronicling "the everyday life experiences of small-town Americans." The instructions indicated that the reporter had recruited two prominent townspeople for further information because she "needed to add some last minute detail" to the stories. A brief description of each of these informants was provided to encourage beliefs about their credibility.

To ensure the informant descriptions would effectively instantiate appropriate beliefs about credibility, we conducted a norming study. We wrote 12 brief informant profiles that included four credible, four noncredible, and four neutral descriptions. The first sentence of each description introduced the informant, the informant's occupation, and time in that position. Likability can increase the persuasiveness of communicators (e.g., Perloff, 2003), so the next two sentences encouraged a preference for or against the source to strengthen the credibility manipulation (e.g., Allbritton & Gerrig, 1991; Rapp & Gerrig, 2002, 2006). The final sentence described River Village residents' perceptions of the informant's trustworthiness. Neutral descriptions did not include statements about or intended to create preferences with respect to credibility.

We asked 25 undergraduates from Northwestern University to provide credibility ratings for the 12 informants. The instructions read, "For the following stories, we would like you to evaluate the degree to which you believe the person described is credible or not credible . . . How likely would you be to believe something this person said?" For each description, participants provided a rating on a Likert scale ranging from 1 (*not at all credible*) to 7 (*highly credible*). Participants, on average, rated high-credibility sources as 5.75, neutral sources as 5.30, and low-credibility sources as 2.20. We selected the single highest rated description (i.e., $M = 5.92$) and single lowest rated description (i.e., $M = 2.04$) for use as the credible and noncredible informants, respectively. Participants' credibility ratings reliably differentiated between these two informants, $t(24) = 4.88$, $p < .001$, Cohen's $d = 4.2$. The selected informant descriptions are presented in Table 2.

For the transcripts about each of the characters in the town of River Village, we used the 24 texts from Rapp and Kendeou (2007), with modifications as described below. Versions of the texts were previously normed to ensure readers would construct particular trait inferences as a function of the behavioral evidence provided (i.e., Rapp et al., 2001). The 24 texts included 12 suggesting that characters possessed positive traits (e.g., hardworking, generous) and 12 suggesting that they possessed negative traits (e.g., sloppy, cheater). We maintained these features, and any modifications did not substantially alter the underlying plots in any of the texts. Each text was presented as a transcript of a meeting between the reporter and one of the two informants.

Each text transcript began with a preface statement, indicating which informant the reporter was interviewing and the name of the particular character to be discussed. Each text consisted of two episodes in which the reporter conveyed information about the character. In the second sentence of each text, the reporter provided an introduction to a character. This introduction was followed by five sentences describing the first episode. In the eighth

[3] The full set of materials is available online at http://capture.sesp.northwestern.edu/groups/rapplab/wiki/fdb47/Credibility_Stimuli.html

Table 1
Sample Texts

Trait: Cheater

Introductory sentence
1. (In the next segment, the reporter asks Quentin/Zane to provide information about Chris Woods.)
Episode 1
Reporter:
2. The next person in my notes is Chris Woods.
3. Last Tuesday, Chris was going to have a big economics test.
4. It was the midterm for the course.
5. He hadn't prepared enough for it.
6. Economics, cost curves, and number-crunching didn't interest him.
7. But even though he didn't want to think about numbers, he knew he had to at least pass the course.
8. Quentin/Zane, do you know what happened next?
Credibility reminder (Experiments 2 and 3 only)
***** REMEMBER: Quentin/Zane is trustworthy/untrustworthy. *****
Trait description (Sentences 9 and 10)
Quentin/Zane:
9. Well, Chris thought about copying off the student sitting next to him.
10. So he looked over at the other person's sheet and found the answers.
Episode 2
Reporter:
11. Okay, so a few days later, Chris went to his friend Kelly's house.
12. It was a rainy day, so they decided to stay indoors, watch a movie, and play games.
13. They decided to play checkers and Chris lost three games in a row.
14. During their last game, Kelly's mother asked her to go out and walk the dog.
15. Chris examined the board while she was gone.
Recall delay prompt (Experiment 3 only)
***** Please remember what Quentin/Zane said about Chris, and whether Quentin/Zane is reliable or not. After you have done this, press the spacebar. *****
Outcome sentences
16a. [trait-consistent] Chris picked up a piece and moved it to a better position on the board.
16b. [trait-inconsistent] Chris closed his eyes and thought about the best move he could make to win.
Final (spillover) sentence (Experiments 1, 2, and 3 only)
17. Kelly's mom brought some snacks upstairs for them to eat.
Comprehension question
Did Chris lose five games in a row? (*NO*)

Trait: Generous

Introductory sentence
1. (In this segment, the reporter asks Quentin/Zane to provide information about Peter Clancy.)
Episode 1
Reporter:
2. The next person in my notes is Peter Clancy.
3. Peter was looking forward to the first day of the spring semester.
4. He was interested in seeing who his new professors would be.
5. His first class was held in a lecture hall.
6. Peter brought a new package of pens with him to class.
7. He was preparing to take notes when a student sat down next to him.
8. Quentin/Zane, do you know what happened next?
Credibility reminder (Experiments 2 and 3 only)
***** REMEMBER: Quentin/Zane is trustworthy/untrustworthy. *****
Trait description (Sentences 9 and 10)
Quentin/Zane:
9. Well, the student sitting next to him asked to borrow a pen and Peter said, "Take two."
10. Peter was willing to give some of his pens to the student who needed them.
Episode 2
Reporter:
11. Okay, so after a long day of classes, Peter headed back to his dorm room.
12. He put his books down and turned on the television.
13. Suddenly there was a knock on his door.
14. A young man was collecting money to help support the school's football team.
15. Peter looked at the small can of coins the young man was using to collect contributions.
Recall delay prompt (Experiment 3 only)
***** Please remember what Quentin/Zane said about Peter, and whether Quentin/Zane is reliable or not. After you have done this, press the spacebar. *****
Outcome sentences
16a. [trait-consistent] Peter said "sure" and pulled some coins from his pocket.
16b. [trait-inconsistent] Peter closed the door without donating to the team's fund.

Table 1 (*continued*)

Final (spillover) sentence (Experiments 1, 2, and 3 only)
17. Then Peter went back to his desk and pulled out the syllabus for one of his classes.
Comprehension question
Was Peter's first class held in a lecture hall? (*YES*)

sentence, the reporter asked the relevant informant, "Quentin/Zane, do you know what happened next?" The informant then provided two statements, one that offered behavioral evidence suggesting that the character possessed a particular trait (Sentence 9) and a subsequent sentence providing support for the certainty of that trait (without explicitly mentioning the trait; Sentence 10). The same statements were provided regardless of the credibility of the source. (Note that these statements were written to make it clear the informant rather than the reporter or an omniscient narrator was providing the information.) Within each text, we equated the number of words in each pair of sentences provided by the informant ($M = 29.17$ words per pair across all texts, with $M = 14.54$ words for Sentence 9 and $M = 14.63$ words for Sentence 10).

Following these statements, the reporter detailed a second, five-sentence episode (Sentences 11–15) about the same character without any informant input. This episode described a situation to which a trait inferred from the informant's preceding description could potentially apply. For each of the texts we wrote two outcome sentences that followed this second episode; one outcome was consistent with the potentially inferred trait, and one was inconsistent with that trait. These outcomes described an action performed or not performed by the character. Within each story, we equated the number of words in the two outcomes ($M = 10.29$ words per outcome across all texts). These outcome sentences were provided by the reporter as part of the second episode. In addition, we constructed a final sentence for each text that followed the outcome sentence; this "spillover" sentence made no reference to the outcome sentence and was designed to be coherent following both trait-consistent and trait-inconsistent outcomes.

We also wrote two practice texts that paralleled the experimental texts in form and content, with the exception that the outcomes were not directly related to traits in any way. These texts were 16 sentences in length, and there was only one version of each text. In addition, we constructed a single comprehension question for each experimental and practice text.

Finally, we constructed a manipulation check questionnaire that asked participants to identify which informant was labeled as trustworthy, which informant was untrustworthy, and which text color was associated with each source cue (i.e., gray, blue, or red). The questionnaire also included three questions intended to assess participants' awareness of and reliance on informant credibility during reading. Question 1 asked, "As you read each line of the transcript, how aware were you of which person was saying each sentence?" Question 2 asked, "Reading through the transcripts, how aware were you of the degree to which each of [the reporter] Sally's informants was described as trustworthy or not?" For these two questions, participants were asked to circle a number on a 7-point Likert scale with endpoints 1 (*totally unaware*) and 7 (*totally aware*). Question 3 asked, "If you were aware of the degree of trustworthiness of Sally's informants, how much do you believe this information influenced your expectations about what would happen next in each anecdote?" Again, participants indicated their response on a 7-point Likert scale with endpoints 1 (*did not influence*) and 7 (*completely influenced*).

Design. There were four versions of each of the 24 texts, in a 2 (source: credible or noncredible) × 2 (outcome: trait-consistent or trait-inconsistent) within-participants design. Using a Latin square, we constructed four lists of texts so that each text appeared in a different version on each list. Participants read one list of 24 texts in random order. Additionally, comprehension questions for the experimental texts were counterbalanced so that each list contained 12 questions requiring *YES* responses and 12 questions requiring *NO* responses.

Procedure. Before beginning the experiment, participants read instructions in which explicit descriptions of the credible and noncredible informants were provided. To become familiar with the task and keyboard controls, participants began with two practice texts followed by the experimental texts. At the beginning of each text, the words "Prepare for the next story" appeared. After 1,500 ms this string was replaced by the first sentence of the text. After reading this sentence, participants pressed the *A* key, labeled *NEXT,* to advance to the next sentence. This response was repeated for each sentence in each text. After the *NEXT* key was pressed following the final sentence of each text, a beep sounded and a prompt read * * * * * THINK OF A TITLE FOR THE STORY * * * * * (cf. Rapp et al., 2001; Rapp & Kendeou, 2007). We included this task to ensure that participants would pay appropriate attention while reading the texts (cf. Rapp & Gerrig, 2006). Participants were never asked to provide the titles. After participants pressed the *NEXT* key to indicate that they had thought of a title,

Table 2
Informant Descriptions

Informant type	Description
Credible	Quentin Carter has been the River Village fire chief for 25 years. Whenever someone's home has been damaged by a severe storm, Quentin helps clean up the debris and pays for a portion of the repairs. Quentin is hardworking and willing to help those in need. Residents know that Quentin is honest and trustworthy.
Noncredible	Zane Anderson has served as treasurer of River Village for 15 years. In the last election cycle, Zane convinced some of his campaign workers to solicit elderly voters for large donations. Zane then used the donations to buy himself a new sports car. Residents know that Zane is dishonest and untrustworthy.

another beep sounded and the prompt * * * * * QUESTION * * * * * was displayed. This prompt was replaced after 1,000 ms with a comprehension question, and participants pressed either the *YES* key (i.e., "Yes, that is true"; *J*) or the *NO* key (i.e., "No, that is not true"; *K*) in response. There was no time limit for responding to the title task or comprehension question. After participants finished reading all of the texts, they completed the questionnaire.

Results and Discussion

All analyses were conducted with both participants (F_1) and items (F_2) as random variables. Table 3 presents mean reading times to outcome sentences for Experiment 1. We eliminated response times faster than 700 ms and those falling more than 2.5 standard deviations (*SD*s) above the mean for each participant (de Vega, León, & Diaz, 1996), which resulted in a loss of 3.13% of the data. Because the sentences in the texts were of differing lengths, we transformed the data with a procedure described by Trueswell, Tanenhaus, and Garnsey (1994) and Ferreira and Clifton (1986). For each participant we computed a linear regression equation expressing reading time for each sentence as a function of the number of words in that sentence. Then, for each individual sentence, the predicted reading time from the regression equation was subtracted from the actual reading time, with the resulting residuals submitted to statistical analysis. (For clarity of presentation, all mean reading times provided in this paper refer to raw scores. Analyses based on untransformed reading times obtained largely similar results.)

In line with the no evaluation hypothesis, participants' expectations for characters' future behaviors appeared unaffected by information about source credibility during moment-by-moment reading. Readers took on average 147 ms longer to read trait-inconsistent outcomes (M = 2,128 ms) than trait-consistent outcomes (M = 1,981 ms) regardless of source credibility, significant by participants and marginal by items, $F_1(1, 51) = 18.854$, MSE = 47,470, $p < .001$, $\eta_p^2 = .27$; $F_2(1, 23) = 3.848$, MSE = 127,686, $p = .062$, $\eta_p^2 = .14$. We observed no main effect of credibility and no interaction (Fs < 1.0).

Previous research has indicated that the disruptive effects of inconsistent information can emerge after the reading of outcome sentences (e.g., Albrecht & O'Brien, 1993; O'Brien et al., 1998). Thus, we analyzed the sentence that immediately followed the outcome to determine whether any effect of source credibility spilled over to later processing. Table 4 presents mean reading times and standard deviations for the final sentences of each text. Analyses revealed a main effect of outcome such that readers took, on average, 99 ms longer to read the spillover sentence when it followed a trait-inconsistent outcome (M = 2,119 ms) than a trait-consistent outcome (M = 2,020 ms); the effect was significant by participants and marginal by items: $F_1(1, 51) = 18.854$, MSE = 47,470, $p < .001$, $\eta_p^2 = .09$; $F_2(1, 23) = 3.848$, MSE = 127,686, $p = .062$, $\eta_p^2 = .14$. Again, there was no main effect of credibility and no interaction (Fs < 1.0), indicating that although the impact of the outcome consistency carried over to the final sentence, credibility information had little impact on processing at this point in the text.

An additional question of interest is whether source credibility might exert an influence when readers encode trait information. To address this question, we examined reading times to the trait-implying statements provided by the informants (i.e., Sentences 9 and 10). Longer reading times suggest readers were expending additional effort when encoding statements from a particular source. Mean reading times for Sentence 9 appear in Table 5, and those for Sentence 10 appear in Table 6. Although analyses of Sentence 9 revealed no effects (Fs < 2.0), analyses of Sentence 10 revealed a main effect of credibility; participants spent on average 127 ms longer reading Sentence 10 when it was provided by a noncredible source (M = 2,817 ms) than by a credible source (M = 2,690 ms), $F_1(1, 51) = 4.355$, MSE = 178,130, $p < .05$, $\eta_p^2 = .08$; $F_2(1, 23) = 5.147$, MSE = 60,947, $p < .05$, $\eta_p^2 = .18$. Unfortunately, we could not determine whether this result was a function of encoding effects specific to Sentence 10, spillover effects from Sentence 9, or some other process. But this analysis suggests that readers may engage in different processing activities as a function of the source of text information that can emerge at encoding.

Finally, we were also interested in whether the degree to which participants reported being aware of and relying on credibility during the task might account for some of the vari-

Table 3
Mean Reading Times (in Milliseconds), With Standard Deviations, for Outcome Sentences in Experiments 1, 2, and 3

	Credible source		Noncredible source		
Outcome	*M*	*SD*	*M*	*SD*	*Mean*
Experiment 1					
Trait-consistent	1,956.89	649.49	2,005.62	738.02	1,981.26
Trait-inconsistent	2,117.92	689.03	2,137.29	684.37	2,127.61
M	2,037.40		2,071.46		
Experiment 2					
Trait-consistent	1,925.76	554.70	1,948.15	538.37	1,936.96
Trait-inconsistent	2,093.07	668.09	2,051.34	592.18	2,072.20
M	2,009.41		1,999.74		
Experiment 3					
Trait-consistent	1,887.33	512.26	1,967.59	616.30	1,927.46
Trait-inconsistent	2,046.50	568.91	2,139.07	670.67	2,092.79
M	1,966.92		2,053.33		

Table 4
Mean Reading Times (in Milliseconds), With Standard Deviations, for Spillover Sentences in Experiments 1, 2, and 3

	Credible source		Noncredible source		
Outcome	*M*	*SD*	*M*	*SD*	*Mean*
Experiment 1					
Trait-consistent	2,021.56	697.93	2,017.90	626.78	2,019.73
Trait-inconsistent	2,113.45	649.32	2,124.32	610.81	2,118.89
M	2,067.51		2,071.11		
Experiment 2					
Trait-consistent	1,956.55	567.17	1,980.49	517.59	1,968.52
Trait-inconsistent	2,114.21	630.58	2,064.99	516.97	2,089.60
M	2,035.38		2,022.74		
Experiment 3					
Trait-consistent	1,932.41	530.51	2,119.97	636.66	2,026.19
Trait-inconsistent	2,203.30	721.39	2,148.01	625.95	2,175.66
M	2,067.86		2,133.99		

ance in reading times. To assess this, we averaged each participant's scores from the three questionnaire items into a composite measure of self-reported awareness and reliance on credibility during the task. We then entered this score as a covariate in our analyses of reading time data. We conducted separate analyses of covariance (ANCOVAs) with outcome and spillover reading times as dependent variables. Both of these analyses were nonsignificant (Fs < 1.0), indicating that self-reported use of the credibility information during the task did not predict reading times to outcomes, nor did it spill over into post-outcome sentences.

The questionnaire scores were also entered as covariates for the encoding data (i.e., Sentences 9 and 10). No effects emerged at Sentence 9, but we observed a marginally significant Credibility $\times$ Awareness/Reliance interaction for Sentence 10, $F\text{-}_1(1, 50) = 3.578$, $MSE = 169{,}559$, $p = .064$, $\eta_p^2 = .07$. Participants who reported that they were highly aware of credibility and used this information as they read took 204 ms longer to read Sentence 10 when it came from the noncredible source ($M = 2{,}845$ ms) than the credible source ($M = 2{,}641$ ms). In contrast, participants who reported low awareness of and reliance on credibility during the task took only 28 ms longer to read this sentence when it was provided by a noncredible source ($M = 2{,}747$ ms) than a credible source ($M = 2{,}719$ ms). This result could indicate that individual differences impacted the effort participants applied at encoding of source's statements, but as with the reading time data alternate possibilities for this finding cannot be ruled out.

These results indicate that participants' expectations for future text events did not seem to be influenced by the credibility of information sources when participants were simply instructed to read for comprehension. Participants expected characters to behave in trait-consistent ways, regardless of the credibility of the source of prior character descriptions. Additionally, readers' self-

Table 5
Mean Reading Times (in Milliseconds), With Standard Deviations, for Trait Context Sentence 9 in Experiments 1, 2, 3, and 4

	Credible source		Noncredible source		
Outcome	*M*	*SD*	*M*	*SD*	*Mean*
Experiment 1					
Trait-consistent	3,058.44	1,048.46	2,934.84	901.43	2,996.64
Trait-inconsistent	2,956.96	915.94	2,994.56	847.46	2,975.76
M	3,007.70		2,964.70		
Experiment 2					
Trait-consistent	3,086.29	738.01	3,010.24	978.64	3,048.26
Trait-inconsistent	3,106.00	748.48	2,962.56	898.09	3,034.28
M	3,096.15		2,986.40		
Experiment 3					
Trait-consistent	3,313.01	1,074.57	3,111.32	938.58	3,212.16
Trait-inconsistent	3,288.90	820.93	2,960.53	920.92	3,124.71
M	3,300.95		3,035.92		
Experiment 4					
Trait-consistent	3,382.81	940.62	3,398.69	1,058.87	3,390.75
Trait-inconsistent	3,378.91	1,025.73	3,222.45	931.39	3,300.68
M	3,380.86		3,310.57		

Table 6
Mean Reading Times (in Milliseconds), With Standard Deviations, for Trait Context Sentence 10 in Experiments 1, 2, 3, and 4

	Credible source		Noncredible source		
Outcome	*M*	*SD*	*M*	*SD*	*Mean*
Experiment 1					
Trait-consistent	2,619.51	792.00	2,773.90	881.74	2,696.70
Trait-inconsistent	2,760.47	810.46	2,860.88	913.46	2,810.68
M	2,689.99		2,817.39		
Experiment 2					
Trait-consistent	2,637.17	722.78	2,460.22	757.90	2,548.69
Trait-inconsistent	2,623.19	851.41	2,531.49	736.35	2,577.34
M	2,630.18		2,495.85		
Experiment 3					
Trait-consistent	2,632.29	784.00	2,489.46	763.77	2,560.88
Trait-inconsistent	2,669.64	783.17	2,458.09	772.90	2,563.87
M	2,650.96		2,473.78		
Experiment 4					
Trait-consistent	3,136.84	1,023.96	3,438.63	1,537.13	3,287.74
Trait-inconsistent	3,148.86	929.83	3,245.47	978.75	3,197.17
M	3,142.85		3,342.05		

reported reliance on the credibility information during reading did not appear to have an impact on outcome reading times, although credibility appeared to exert some impact on readers' activities at encoding. In Experiment 2, we examined whether explicitly instructing and reminding readers to rely on their prior knowledge about who was credible might encourage consideration of source credibility during reading.

Experiment 2

Readers often fail to apply prior knowledge as they read because they are unaware it will be useful for comprehending the text (e.g., Chiesi, Spilich, & Voss, 1979; Pearson, Hansen, & Gordon, 1979; Spires & Donley, 1998). The results of Experiment 1 suggest that readers can similarly fail to spontaneously (i.e., without specific prompting or instructions but not necessarily automatically) apply their knowledge of source credibility during comprehension, and this may occur precisely when they have not been asked to use information about sources to guide their comprehension activities. Consider that educational interventions often explicitly activate readers' prior knowledge to encourage critical evaluation and learning from text (for a review, see Guzzetti, Snyder, Glass, & Gamas, 1993). These interventions typically require participants to report what they know about a topic in the hopes that the activation of prior knowledge will prompt more careful, evaluative processing of texts (e.g., Alvermann & Hague, 1989; Rapp, 2008). In Experiment 2, we tested whether reliance on source credibility might be encouraged with (a) prereading instructions intended to activate readers' understanding of credible and noncredible sources and (b) reminders about the source of the information they were reading.

If these additions fail to encourage reliance on source credibility during reading, in line with the no evaluation hypothesis, we would expect the results to resemble those in Experiment 1. That is, participants should take longer to read trait-inconsistent outcomes regardless of credibility. However, if the added activities manage to encourage attention to source credibility, participants should take longer to read trait-inconsistent than trait-consistent outcomes when descriptions are provided by credible but not noncredible sources.

Method

Participants. Fifty-five members of the Northwestern University community (mean age = 19.8 years) participated in this experiment for cash payment. Data from three participants were excluded from analyses for failure to follow directions.

Apparatus. The apparatus was identical to that used in Experiment 1.

Materials and design. The materials were identical to those from Experiment 1 with two changes. First, participants received a warning message about credibility before each informant provided a character trait description. Participants saw one of two messages about the credibility of the source (i.e.,***** REMEMBER: Quentin is trustworthy ***** in blue or ***** REMEMBER: Zane is untrustworthy ***** in red, again to aid in distinguishing the two informants) to increase their awareness of and encourage their consideration of source credibility. Each warning message appeared for 2,000 ms. Second, we constructed a 5-page booklet as a prereading instructional task. The first page of the booklet stated that the experiment was focused on "the influence of trustworthy and untrustworthy sources on how you process simple stories about other people." The booklet provided some useful guidelines for dealing with information from reliable and unreliable sources (i.e., that individuals should try to remember and rely on information from sources they know to be reliable and to ignore or discount information from unreliable sources). Subsequent pages of the booklet contained questions corresponding to the information described earlier in the booklet, and participants were asked to think carefully about and provide their responses to the questions. The questions included "When someone relies on information from an untrustworthy source, what are some of the problems that can result?" "When someone fails to rely on information from a trustworthy source, what are some of the problems that result?"

"When you receive information from a trustworthy source, what should you do?" and "When you receive information from an untrustworthy source, what should you do?"

Procedure. Participants began with the prereading task. Each participant was asked to read the booklet and answer the subsequent questions in order, without skipping ahead or returning to previous questions. There was no time limit for completing this task. Next, participants began the reading task on the computer. They were instructed to keep in mind what they had written on the prereading task and to use their knowledge of credible and noncredible sources as they read to determine whether information provided was something they should rely on or not. The remainder of the experiment proceeded exactly as in Experiment 1.

Results and Discussion

Table 3 presents the mean reading times for outcome sentences in Experiment 2. We eliminated response times faster than 700 ms and those falling outside of 2.5 *SD*s above the mean for each participant, with a resultant loss of 3.31% of the data. We also performed the residual transformation described in Experiment 1.

As with Experiment 1, the pattern of outcome reading times was consistent with the no evaluation hypothesis. We obtained a main effect of outcome sentence, with readers taking on average 135 ms longer to read trait-inconsistent outcomes (M = 2,072 ms) than trait-consistent outcomes (M = 1,937 ms); the effect was significant by participants and marginal by items, $F_1(1, 51) = 15.295$, $MSE = 952{,}876$, $p < .001$, $\eta_p^2 = .23$; $F_2(1, 23) = 3.281$, $MSE = 127{,}026$, $p = .083$, $\eta_p^2 = .13$. We observed no main effect of credibility and no interaction (Fs < 1.1).

We next examined whether any credibility effects might spill over to the final sentence of the text; again, no effects emerged (see Table 4). A main effect of outcome was observed, with participants taking on average 121 ms longer to read spillover sentences when they followed a trait-inconsistent outcome (M = 2,090 ms) than a trait-consistent outcome (M = 1,969 ms), $F_1(1, 51) = 8.462$, $MSE = 89{,}251$, $p < .01$, $\eta_p^2 = .14$; $F_2(1, 23) = 4.583$, $MSE = 75{,}221$, $p < .05$, $\eta_p^2 = .17$. We obtained no main effect of credibility and no interaction (Fs < 2.3).

Next, we tested for encoding effects by analyzing reading times to the trait-implying sentences provided by the sources (Sentences 9 and 10). Analyses of Sentence 9 (see Table 5) revealed no significant effects (Fs < 1.0). At Sentence 10 (see Table 6), however, we obtained a main effect of credibility with readers, on average, taking 134 ms longer to read this sentence when it was provided by a credible source (M = 2,630 ms) than by a noncredible source (M = 2,496), $F_1(1, 51) = 4.878$, $MSE = 188{,}890$, $p < .05$, $\eta_p^2 = .09$; $F_2(1, 23) = 5.320$, $MSE = 42{,}335$, $p < .05$, $\eta_p^2 = .19$. This effect is opposite that observed in Experiment 1, indicating that the instructional manipulations encouraged some differential processing as a function of source, with readers expending less effort when information came from an informant of dubious credibility.

Finally, we examined whether differences in reading times might partially be accounted for by readers' self-reported awareness of and reliance on the credibility information. Separate ANCOVAs with both outcome reading time and spillover reading time as dependent variables revealed no significant effects (Fs $<$ 1.7). However, a marginally significant Awareness/Reliance $\times$ Credibility $\times$ Outcome interaction was found at Sentence 9, $F_1(1, 50) = 3.24$, $MSE = 181{,}180$, $p = .078$, $\eta_p^2 = .06$. High-awareness participants took on average 374 ms longer to read Sentence 9 when it came from a credible rather than a noncredible source; in comparison, participants who scored low on this measure showed only a 9.96 ms difference. Contrary to Experiment 1, no effects emerged at Sentence 10 (Fs < 2.4).

The results of this experiment generally aligned with those of Experiment 1. As before, participants did not appear to apply information about credibility to their moment-by-moment reading of the texts. The addition of the prereading instruction task and reminders failed to influence participants' trait-based expectations for narrative outcomes. But also as before, credibility showed an influence at encoding. That is, participants spent more time reading information provided by credible than noncredible sources. Recall that an opposite effect was reported in Experiment 1: Participants spent more time reading noncredible than credible source information. The additional instructions and reminders may have led readers to focus more on statements from credible sources than they normally might do. Again, though, outcome reading times suggest that this attention did not yield differential expectations for narrative outcomes as a function of source. In Experiment 3, we examined whether even more substantial reminders about the credibility of sources might help to encourage the use of credibility during reading.

Experiment 3

Previous research demonstrates that readers often fail to generate predictive inferences about what will happen next in stories unless they are given ample time (e.g., Calvo & Castillo 1996, 1998) or strategic encouragement to do so (e.g., Calvo, Castillo, & Schmalhofer, 2006). Failure to find credibility effects in Experiments 1 and 2 may be a result of the fact that readers truly did not have sufficient time or motivation to generate relevant inferences. In Experiment 3 we gave participants explicit encouragement to construct trait-based inferences by providing a delay before they read the narrative outcomes; during this delay they were directly asked to think about the previously presented character description and the quality of the source of that description before proceeding to the outcome sentence. Participants were also encouraged to use information about credibility as they read by completing the prereading task from Experiment 2.

If the additions of the delay, reminder, and prereading instructions failed to encourage reliance on credibility, we expected outcome reading times would again resemble those obtained in Experiments 1 and 2, in line with the no evaluation hypothesis. If, however, those additions led participants to consider credibility as they read, the results should align with the credibility application hypothesis; that is, readers should take longer to read inconsistent than consistent outcomes when information is provided by credible rather than noncredible sources.

Method

Participants. Fifty-four members of the Northwestern University community (mean age = 19.9 years) participated for cash payment. Data from two participants were excluded for failure to

follow directions. A third participant's data were eliminated due to extremely fast reading times.

Apparatus. The apparatus was identical to that used in Experiment 1.

Materials and design. The materials were identical to those in Experiment 2, with the following modification. For each text, after the sentence preceding the outcome, a prompt asked participants to recall both the description of the character and the reliability of the source. For example, in the text about Albert, participants saw the prompt ***** Please remember what Quentin said about Albert, and whether Quentin is reliable or not. After you have done this, press the spacebar. ***** on the screen in blue font. An analogous prompt appeared in red font when Zane provided the information. This prompt appeared until participants opted to press the spacebar. After pressing the spacebar, participants were again presented with the sentence they had seen prior to the prompt to remind them of the story context. After they pressed the *NEXT* key to advance, participants were presented with the outcome.

Procedure. The procedure was identical to that in Experiment 2.

Results and Discussion

Table 3 presents mean reading times for outcomes in Experiment 3. We eliminated response times faster than 700 ms and falling outside 2.5 *SD*s above the mean for each participant, for a loss of 3.57% of the data. The residual transformation was also performed.

Similar to Experiment 2, readers took, on average, 165 ms longer to read inconsistent outcomes (M = 2,093 ms) than consistent outcomes (M = 1,928 ms) regardless of source credibility; the effect was significant by participants and marginal by items, $F_1(1, 50) = 18.381$, $MSE = 74{,}478$, $p < .001$, $\eta_p^2 = .27$; $F_2(1, 23) = 4.106$, $MSE = 154{,}695$, $p = .054$, $\eta_p^2 = .15$. In addition, the recall delay led participants to take 86 ms longer to read outcomes following information from noncredible (M = 2,053 ms) than credible sources (M = 1,967 ms), $F_1(1, 50) = 4.236$, $MSE = 91{,}135$, $p < .05$, $\eta_p^2 = .08$; $F_2(1, 23) = 8.321$, $MSE = 19{,}135$, $p < .01$, $\eta_p^2 = .27$. This suggests that participants expended more effort, and perhaps engaged in greater scrutiny of the outcome, for texts with noncredible than credible character descriptions. However, the interaction was still not observed (Fs < 1.0). This provided overall support for the no evaluation hypothesis.

A different pattern emerged for the spillover sentences (see Table 4). As before, analyses revealed a main effect of outcome, such that participants took, on average, 150 ms longer to read these sentences when they followed trait-inconsistent outcomes (M = 2,176 ms) than trait-consistent outcomes (M = 2,026 ms), $F_1(1, 50) = 10.998$, $MSE = 97{,}588$, $p < .01$, $\eta_p^2 = .18$; $F_2(1, 23) = 4.990$, $MSE = 93{,}825$, $p < .05$, $\eta_p^2 = .18$. There was no main effect of credibility (Fs < 2.8). However, there was a significant Credibility × Outcome interaction, $F_1(1, 50) = 7.552$, $MSE = 100{,}512$, $p < .01$, $\eta_p^2 = .13$; $F_2(1, 23) = 9.278$, $MSE = 45{,}269$, $p < .01$, $\eta_p^2 = .29$. Planned contrasts revealed that participants took, on average, 271 ms longer to read the spillover sentences following trait-inconsistent outcomes (M = 2,203 ms) than trait-consistent outcomes (M = 1,932 ms) when character descriptions came from a credible source, $F_1(1, 50) = 16.35$, $MSE = 222{,}433$, $p < .001$, $\eta_p^2 = .25$; $F_2(1, 23) = 11.51$, $MSE = 154{,}223$, $p < .01$, $\eta_p^2 = .33$.[4] For noncredible sources, no difference in outcome reading times was obtained (both Fs < 1.0). Thus, evidence for the credibility application hypothesis appeared for spillover sentences but only with the inclusion of a delay, within-text reminders, and prereading instructions.

We again investigated participants' reliance on credibility to guide encoding of the character descriptions (Sentences 9 and 10). Analyses of Sentence 9 (see Table 5) revealed a main effect of credibility, with participants taking, on average, 265 ms longer to read this sentence when it was provided by a credible source (M = 3,301 ms) than a noncredible source (M = 3,036 ms), $F_1(1, 50) = 7.385$, $MSE = 470{,}557$, $p < .01$, $\eta_p^2 = .13$; $F_2(1, 23) = 12.453$, $MSE = 115{,}850$, $p < .01$, $\eta_p^2 = .35$. No other effects were significant (Fs < 2.1). Results for Sentence 10 were similar (see Table 6): Participants took 177 ms longer to read this sentence when it was provided by a credible source (M = 2,651 ms) than a noncredible source (M = 2,474 ms), $F_1(1, 50) = 8.375$, $MSE = 183{,}893$, $p < .01$, $\eta_p^2 = .14$; $F_2(1, 23) = 15.650$, $MSE = 50{,}653$, $p < .01$, $\eta_p^2 = .63$. Again, no other effects were significant (Fs < 1.2). These results are similar to the encoding analyses in Experiment 2. The prereading instruction task in conjunction with the warning messages encouraged readers to expend greater effort when processing descriptions from credible relative to noncredible sources.

As before, we examined whether participants' self-reported awareness of and reliance on credibility information influenced reading. Separate covariate analyses were conducted with reading times to the outcome and character descriptions as dependent variables. None of these analyses revealed significant results (Fs < 2.4), indicating that readers' processing activities were not influenced by reported considerations of source credibility during the task.

The results of this experiment replicate and extend the results from Experiment 2. Although the prereading instruction task led participants to take more time reading information from credible rather than noncredible sources, the combination of those instructions with a delay and reminder failed to reveal an immediate influence of credibility on reading times for narrative outcomes. Encoding analyses revealed that readers spent relatively more time processing character descriptions from credible than from noncredible sources. It is unclear whether this effect results from participants' enhanced attention to credible information, or whether they exerted even less effort when the source was noncredible. The pattern of mean reading times to trait sentences for the three experiments thus far suggests either interpretation might be plausible, particularly given the lack of a baseline comparison group. For example, reading times to Sentence 9 (see Table 5) indicate that participants took somewhat longer to read trait-implying statements from noncredible sources as additional instructional prompting was added across experiments. This suggests that readers expended equivalent if not slightly more effort to read these descriptions when given instructions and warnings. In contrast, reading times to Sentence 10 (see Table 6) indicate that participants spent less time processing additional trait support from

[4] The significance level for all planned contrasts was adjusted to .025, with a Bonferroni correction used for multiple comparisons.

noncredible sources as instructional prompting was added across experiments. The discrepant findings make it impossible, from these data, to discern how readers' processing efforts guide distinct encodings of information from credible and noncredible sources.

More generally speaking, the results of the spillover analyses in Experiment 3 nevertheless suggest that readers began to take credibility into account as they read. The addition of the delay and reminder likely encouraged more explicit, strategic consideration of credibility information in relation to the narrative outcomes, as compared to the tasks employed in Experiments 1 and 2. This consideration would explain the interaction observed for reading times to the spillover sentence. In Experiment 4, we investigated whether readers would rely on credibility to an even greater degree with a task that required explicit, strategic consideration of the appropriateness of outcomes.

Experiment 4

In this experiment, readers were presented with an outcome sentence and asked to make a judgment as to whether they believed the outcome was likely to happen next in the text. Recall that readers tend to agree with outcomes that are consistent with their trait-based expectations and disagree with inconsistent outcomes after reading texts containing behavioral evidence for traits (Rapp et al., 2001; Rapp & Kendeou, 2007, 2009). This method was used to test whether, when given the explicit task to consider the appropriateness of text descriptions, readers would rely on source credibility in making their decisions.

If the explicit decision task fails to encourage reliance on credibility, as the other tasks largely failed to do, participants should agree more so with trait-consistent than trait-inconsistent outcomes regardless of the credibility of a source. However, because the task now requires that readers make a judgment as to the appropriateness of outcomes, the importance of credibility for comprehending the stories may be enhanced. Previous projects have shown that explicit judgments can encourage readers to contrast what they know with what texts describe (e.g., Egidi & Gerrig, 2009; Fletcher, Hummel, & Marsolek, 1990; Rapp, 2008). Therefore, if evidence for the credibility application hypothesis were likely to be observed, it should be under these conditions. If so, participants should prefer trait-consistent relative to inconsistent outcomes when descriptions are provided by credible sources; when descriptions are provided by noncredible sources, the difference in agreement rates for the two outcome types should be reduced.

Method

Participants. Thirty-four Northwestern University undergraduates (mean age = 19.5 years) participated in this experiment in exchange for cash payment or course credit. Two participants' data were eliminated for failure to follow instructions.

Apparatus. The apparatus was identical to that used in the previous experiments.

Materials and design. The materials and design were identical to those in the previous experiments, with the exception that the warning messages, recall delay messages, and final sentences appearing after the outcome sentences were omitted.

Procedure. The procedure was identical to that in Experiment 1, with the following modifications. A beep sounded from the computer immediately before an outcome sentence appeared on the screen. Participants were instructed "When this sentence appears, your task is to decide, based on what you've read, whether you think this sentence accurately describes what would most likely happen next." Participants indicated *YES* (i.e., "I agree [that this would happen next]") or *NO* (i.e., "I disagree [that this would happen next]") by pressing *J* or *K* on the keyboard. After registering their judgment, participants proceeded to the comprehension question. They were not asked to think of titles.

Results and Discussion

Table 7 presents mean agreement rates and mean judgment latencies for Experiment 4. We eliminated response times faster than 700 ms and those falling more than 2.5 *SD*s above the mean for each participant, with a resultant loss of 2.86% of the data. All latency data were analyzed with the residual transformation procedure.

We first analyzed agreement rates to the narrative outcomes. A main effect of outcome sentence was obtained, $F_1(1, 31) = 65.80$, $MSE = 0.46$, $p < .001$, $\eta_p^2 = .68$; $F_2(1, 23) = 72.69$, $MSE = 0.32$, $p < .001$, $\eta_p^2 = .76$, indicating that overall, participants were more likely to agree with trait-consistent than trait-inconsistent outcomes. But this main effect was qualified by a significant interaction between credibility and outcome, $F_1(1, 31) = 14.63$, $MSE = 0.52$, $p < .001$, $\eta_p^2 = .32$; $F_2(1, 23) = 47.83$, $MSE = 0.14$,

Table 7
Mean Agreement Rates (% Yes Responses) and Judgment Latencies (for Yes Responses, in Milliseconds), With Standard Deviations, in Experiment 4

	Credible source		Noncredible source		
Outcome	% yes	*SD*	% yes	*SD*	*Mean*
Mean agreement rates					
Trait-consistent	80.73	18.95	63.54	31.08	72.14
Trait-inconsistent	15.73	15.82	42.03	30.78	28.88
M	48.23		52.79		
Judgment latencies					
Trait-consistent	3,300.47	1,273.37	3,991.30	1,739.33	3,645.88
Trait-inconsistent	4,391.24	2,094.81	4,322.04	1,825.64	4,356.64
M	3,845.85		4,156.67		

$p < .001$, $\eta_p^2 = .68$, with no main effect of source credibility (Fs < 3.0). Planned comparisons revealed that participants were more likely to agree with trait-consistent than trait-inconsistent outcomes after reading descriptions provided by credible sources, $F_1(1, 31) = 159.16$, $MSE = 0.43$, $p < .001$, $\eta_p^2 = .84$; $F_2(1, 23) = 131.23$, $MSE = 0.42$, $p < .001$, $\eta_p^2 = .85$, and by noncredible sources, marginal by subjects after Bonferroni correction, $F_1(1, 31) = 4.87$, $MSE = 1.53$, $p = .035$, $\eta_p^2 = .14$; $F_2(1, 23) = 10.49$, $MSE = 0.50$, $p < .01$, $\eta_p^2 = .31$. The difference in agreement rates between trait-consistent and trait-inconsistent outcomes was larger when information was provided by a credible source (a 65.00 percentage point difference) than by a noncredible source (a 21.51 percentage point difference), $F_1(1, 31) = 14.54$, $MSE = 1.05$, $p < .001$, $\eta_p^2 = .32$; $F_2(1, 23) = 47.09$, $MSE = 0.26$, $p < .001$, $\eta_p^2 = .67$. In addition, participants were more likely to agree with trait-consistent outcomes after reading information provided by credible sources ($M = 80.73\%$) than by noncredible sources ($M = 63.54\%$), $F_1(1, 31) = 6.80$, $MSE = 0.69$, $p < .025$, $\eta_p^2 = .18$; $F_2(1, 23) = 19.97$, $MSE = 0.21$, $p < .001$, $\eta_p^2 = .47$. For trait-inconsistent outcomes, this agreement pattern reversed: Participants were more likely to agree with trait-inconsistent outcomes following information from noncredible sources ($M = 42.03\%$) than from credible sources ($M = 15.73\%$), $F_1(1, 31) = 17.21$, $MSE = 0.65$, $p < .001$, $\eta_p^2 = .36$; $F_2(1, 23) = 36.65$, $MSE = 0.25$, $p < .001$, $\eta_p^2 = .61$. These patterns align directly with those predicted by the credibility evaluation hypothesis.

We were interested in whether participants' self-reported awareness and reliance on credibility in making judgments might have accounted for some of the variance in the agreement rates. We conducted an ANCOVA with participants' self-reported credibility awareness scores as a covariate, revealing a significant Awareness/Reliance × Credibility × Outcome interaction, $F_1(1, 30) = 39.42$, $MSE = 0.23$, $p < .001$, $\eta_p^2 = .57$. Thus, the effect of credibility on outcome agreements appeared to be moderated by participants' reported awareness and reliance on source credibility. Participants who scored low on the composite measure (indicating little reported awareness and reliance on credibility) showed higher agreement rates to trait-consistent than trait-inconsistent outcomes regardless of credibility. As scores on this measure increased (indicating a greater degree of awareness and reliance on credibility), participants showed the same pattern only when sources were credible; for noncredible sources, the agreement rate difference between trait-consistent and trait-inconsistent outcomes decreased. Additionally, for particularly high composite scores, the pattern reversed, suggesting greater agreement with trait-inconsistent than trait-consistent outcomes. Overall, this ANCOVA suggests that readers' self-reported awareness and reliance on differentially credible sources may reflect the degree to which credibility affects explicit judgments for narrative outcomes.

Next, we examined the speed with which participants made their judgments of outcomes. Mean judgment latencies for "yes" responses appear in Table 7. Longer latencies to produce "yes" responses to outcome sentences might indicate greater difficulty in making a decision about the appropriateness of an outcome. Participants took, on average, 711 ms longer to agree with trait-inconsistent ($M = 4{,}357$ ms) than trait-consistent outcomes ($M = 3{,}646$ ms), $F_1(1, 31) = 6.49$, $MSE = 2{,}200{,}321$, $p < .05$, $\eta_p^2 = .17$; $F_2(1, 23) = 11.10$, $MSE = 1{,}419{,}485$, $p < .01$, $\eta_p^2 = .33$. In addition, there was a main effect of credibility, $F_1(1, 31) = 5.26$, $MSE = 2{,}200{,}321$, $p < .05$, $\eta_p^2 = .15$; $F_2(1, 23) = 4.36$, $MSE = 1{,}247{,}760$, $p < .05$, $\eta_p^2 = .16$, such that participants took, on average, 311 ms longer to agree with outcome sentences that followed information provided by a noncredible source ($M = 4{,}157$ ms) than a credible source ($M = 3{,}846$ ms). We obtained no interaction (both Fs < 2.0). Additional planned contrasts revealed that after reading descriptions from credible sources, participants took 1,090 ms longer to agree with trait-inconsistent outcomes ($M = 4{,}391$ ms) than trait-consistent outcomes ($M = 3{,}301$ ms), $F_1(1, 31) = 8.14$, $MSE = 3{,}555{,}566$, $p < .01$, $\eta_p^2 = .21$; marginal by items after Bonferroni correction, $F_2(1, 23) = 5.58$, $MSE = 2{,}054{,}649$, $p = .027$, $\eta_p^2 = .20$. Following noncredible descriptions, the 331-ms difference between inconsistent outcomes ($M = 4{,}322$ ms) and consistent outcomes ($M = 3{,}991$ ms) was marginal by items only, following Bonferroni correction, $F_1(1, 31) = 1.37$, $MSE = 3{,}453{,}875$, $p = .25$, $\eta_p^2 = .04$; $F_2(1, 23) = 4.71$, $MSE = 4{,}400{,}458$, $p = .041$, $\eta_p^2 = .17$. Participants also took 690 ms longer to agree with trait-consistent outcomes following descriptions from noncredible sources ($M = 3{,}991$ ms) than from credible sources ($M = 3{,}301$ ms), $F_1(1, 31) = 7.49$, $MSE = 2{,}223{,}474$, $p < .025$, $\eta_p^2 = .20$; $F_2(1, 23) = 5.89$, $MSE = 520{,}308$, $p < .025$, $\eta_p^2 = .20$. Inconsistent outcomes did not differ as a function of credibility (both Fs < 1.6). These patterns provide evidence for the influence of credibility on the time to produce outcome judgments.

Analyses of readers' reliance on credibility at encoding were also conducted. Although no effect of credibility was observed for reading times to Sentence 9 (both Fs < 1.0; see Table 5), effects emerged at Sentence 10 (see Table 6). Participants took 199 ms longer to read Sentence 10 when it was provided by a noncredible source ($M = 3{,}342$ ms) than a credible source ($M = 3{,}143$ ms), $F_1(1, 31) = 4.40$, $MSE = 292{,}766$, $p < .05$, $\eta_p^2 = .12$; $F_2(1, 23) = 9.60$, $MSE = 115{,}408$, $p < .01$, $\eta_p^2 = .29$. We also submitted reading time data for these sentences to an ANCOVA. For Sentence 9, this analysis revealed a marginally significant Credibility × Awareness/Reliance Score interaction, $F_1(1, 30) = 3.60$, $MSE = 280{,}273$, $p = .067$, $\eta_p^2 = .11$, which indicates that the impact of credibility information on time to read Sentence 9 varied as a function of participants' self-reported use of this information during the task. Participants who reported low awareness of and reliance on credibility during the task took longer to read Sentence 9 when it was provided by a credible rather than a noncredible source. In contrast, participants who reported high awareness and use of credibility were slower to read Sentence 9 when it was provided by a noncredible rather than a credible source; overall, high-awareness participants seemed to take longer than low-awareness participants to read this sentence. There were no significant covariate effects at Sentence 10.

Overall, these findings indicate that readers' explicit applications of trait-based inferences to expectations for outcomes are influenced by considerations of the credibility of information sources. Participants agreed more so with outcomes that were consistent with their expectations for characters' behaviors in contrast to those that were inconsistent with them. But this pattern was attenuated when statements that informed those expectations were provided by a noncredible relative to a credible source. Credibility also influenced the speed with which participants registered their judgments, with participants taking longer to agree with outcomes following descriptions from noncredible rather than credible sources. In addition, the degree to which participants'

explicit judgments were influenced by the credibility of sources appears to have been mediated by self-reported awareness and reliance on credibility throughout the task. Finally, analyses of sentence reading times further supported the notion that credibility can exert an influence at encoding. Thus, readers' expectations about characters' likely future behaviors can be guided not just by behavioral evidence in the texts but also by readers' knowledge about the sources of such evidence.

General Discussion

The current project was designed to investigate the influence of source credibility on text comprehension. Previous approaches to this issue have investigated reader memory for information as provided by credible or noncredible sources, as well as explicit endorsement of and decisions about the views provided by those sources. In contrast, the current project investigated how readers' moment-by-moment processing might be influenced by source credibility, as well as tasks encouraging attention to and consideration of source information. In Experiment 1, participants read texts in which behavioral evidence for a particular trait inference was provided about a character by a credible or noncredible source. Readers' expectations about future character behaviors indicated little influence of source credibility on moment-by-moment processing, although effects of credibility did appear at encoding. In Experiment 2, participants were provided with prereading instructions calling attention to source credibility and with reminders of the credibility of the source of character information. Despite these additions, readers showed little impact of credibility during reading, although effects again appeared at encoding. In Experiment 3, prereading instructions were paired with a delay during which participants were asked to think carefully about the source, the source's credibility, and the target of the source's comments. With these additions, participants began showing effects of credibility, although the effects did not emerge until sentences subsequent to story outcomes and, as before, at encoding. In Experiment 4, participants judged the likelihood of future character behaviors. The explicit evaluation required in this task finally led to readers' successful application of source credibility.

These experiments reveal conditions under which readers rely on source credibility in the service of comprehension. Consistent with the no evaluation hypothesis, readers do not appear to apply their knowledge of credibility during moment-by-moment reading tasks. Whether those tasks included instructions encouraging careful consideration of credibility during reading or reminders to think about who provided information and whether that source was reliable, readers seemed only minimally influenced by credibility. In fact, readers appeared more sensitive to the overall trait consistency of characters than to the degree to which consistency might be mediated by the credibility of a source. This latter point indicates that readers were not simply reading with little regard for the coherence of the texts. Rather, readers generated expectations about character behaviors based on the descriptions that were provided. Unfortunately, those previous descriptions were not always provided by the most reliable of sources, and using source credibility information required readers to apply knowledge outside of the text to guide their processing of text content. We note that in all four of the current experiments, information regarding source credibility was provided before participants were presented with the texts in which those sources provided information. In this way, we consider this source information as external to the text, rather than as part of the actual stories (analogous to information that might be provided about authors or contributors on book dust jackets or newspaper bylines). It is also worth noting that despite the brief time interval between the presentation of source descriptions and the opportunity to apply them, participants required explicit instructions to decide upon the validity of outcomes in order to encourage application of any knowledge about credibility.

The inclusion of an overwhelmingly obvious reminder proved useful at encouraging readers' application of credibility information during the task. However, these effects emerged subsequent to statements for which the application of credibility might be particularly useful. This type of spillover effect might indicate that readers can apply knowledge of credibility as they consider text content but that this application is likely to occur only after the information has been understood to some degree. The spillover effect provided initial evidence for the credibility application hypothesis. More substantial evidence was obtained when readers were explicitly required to make judgments about story events, with knowledge about the credibility of sources influencing decisions about what readers deemed likely to occur. Readers were more likely to use information about source credibility when asked to complete tasks that provided stronger encouragement and a more explicit requirement to rely on credibility.

The general failure to detect an effect of credibility during online processing suggests that readers' representations may not explicitly specify the reliability or validity of previously encoded information to which incoming information is relevant (Albrecht & O'Brien, 1993; Cook et al., 1998; O'Brien et al., 1998). Perhaps readers do not consider the credibility of a source until after they have both (a) comprehended that information and (b) evaluated its consistency with the active contents of memory. By this logic, moment-by-moment reading measures may not be sensitive enough to reflect readers' credibility assessments. That is, recruitment of credibility information may be more likely to occur during offline, evaluative processing, as in our judgment task, or during other downstream processing activities. Previous research on readers' considerations of the validity of text information (e.g., Gilbert, Krull, & Malone, 1990; Gilbert, Tafarodi, & Malone, 1993) suggests individuals resist distinguishing between valid and invalid information online and reject invalid information only after reading is completed. The current results support the notion that considerations of the validity of text information, even as a function of obvious source distinctions, may occur specifically during offline deliberation.

This conclusion, of course, might be mediated by other, unexplored characteristics of reading experiences. For example, some types of texts might be more likely to encourage reliance on credibility, such as stories in which crimes have been committed or texts describing topics that are personally relevant to the reader. In addition, the descriptions of our informants did not directly specify that the credible source (a helpful community leader) would always be truthful and the noncredible source (an unsavory politician) would always be dishonest; more explicit descriptions of source behaviors and intentions might encourage differential reliance on credibility. Although future projects might vary the contents and expectations associated with text sources, the current findings nevertheless provide a preliminary analysis of cases in

which readers, despite considerable prompting, neglect to usefully consider the credibility of an informant during reading.

Readers' Representations of Credibility

One question that emerges from the above considerations, then, is what readers might actually represent, and therefore rely on, during moment-by-moment reading. One possibility is that readers might encode a trait inference without regard to credibility. However, given that readers appeared to notice credibility as measured with reading times to informants' behavioral descriptions, this seems unlikely. The underlying representations that emerge as a function of this noticing, then, could take several forms, all of which potentially inform accounts of text processing. Readers' certainty as to whether characters possess traits could be directly mediated (i.e., increased or decreased) by the credibility of sources. For example, readers might tag information in memory with respect to credibility, thus modulating the availability or accessibility of that information as texts unfold. Alternatively, readers might fail to evaluate or tag information unless it is provided exclusively by noncredible sources, which is consistent with previous findings about readers' encoding of patently false information (Gilbert, 1991; Gilbert et al., 1990; 1993; Marsh, Meade, & Roediger, 2003; Rapp, 2008).

It is certainly possible that tags denoting the credibility of particular text information (whether applied to descriptions from each source or specifically to noncredible information) could be constructed during moment-by-moment reading without any noticeable decrement in processing. This possibility is consistent with the current results and would provide an explanation for the discrepancy across the four experiments in terms of readers' reliance on source credibility. That is, the failure to obtain effects of credibility during moment-by-moment reading does not necessarily indicate that credibility is not considered online (as consistent with the encoding results) but rather that it is more easily observed during offline judgment tasks. Even with this possibility, the results indicate that the compulsion to encode and rely on a trait inference seems particularly strong regardless of whether information is tagged with respect to its credibility.

An additional possibility is that, for noncredible information, readers might actually encode the opposite of any trait inference as implied in the text, which would reflect the belief that information contradicting a source's claim is valid. And of course, readers might delay constructing any particular belief about characters until additional information is provided in the text. Our intuition, based on previous work (e.g., Rapp et al., 2001) as well as the current project, is that readers could do all of these things depending upon their investments in characters, the materials that they are reading, and the information that particular tasks prompt readers to consider (Rapp & van den Broek, 2005). Again, regardless of whether readers construct tags for credibility as they read or withhold their judgment of characters' likely behaviors until more information is provided, the results of the current project suggest that the effects of credibility on readers' expectations for text events are most evident downstream, during processing that occurs after individuals have read and comprehended relevant text information. Questions regarding the impact of credibility on readers' representations of narrative events can be more fully investigated in future work by employing offline recall tasks and assessing whether readers might recall narrative events differently as a function of the credibility of text descriptions.

Online vs. Offline Processing

Related discussions about what readers might represent when engaged in online and offline tasks have been of recent interest in the literature. In general, the two categories of tasks have been classified as using different methodologies that encourage reliance on different aspects of text information and prior knowledge. Online processing requires a variety of basic-level and higher order activities on the part of the reader, including decoding, concept activation, meaning derivation, inference construction, and so on (Kintsch, 1998; Rapp & van den Broek, 2005; van den Broek, Rapp, & Kendeou, 2005; van Dijk & Kintsch, 1983). These activities might utilize resources necessary for conducting careful evaluations across broader segments of text or with respect to readers' prior knowledge (Linderholm & van den Broek, 2002; Mensink & Rapp, 2010; Rapp, 2008). In contrast, researchers have argued that offline tasks promote more critical evaluation of text stimuli with respect to information in memory (Egidi & Gerrig, 2006; Rapp & Kendeou, 2007). Online tasks may encourage attention to decoding and the maintenance of local coherence and basic bridging inferences, and offline tasks may encourage focus on global coherence, elaborative inference processing, and evaluation. Based on this distinction, it is perhaps no surprise that readers might rely on credibility less with online reading tasks and more with tasks that include delays, reminders, and explicit judgments.

But the claims and emerging evidence with respect to the differences in online and offline processing have, to date, focused largely on retrieval effects. If the findings of the current project are any indication, readers may take note of whether information is provided by a credible or noncredible source, regardless of whether the task asks them to explicitly act on that information. Across all four experiments, participants exhibited reading time patterns that suggested they indeed noticed the source's credibility: In Experiments 1 and 4, participants slowed when responding to information from noncredible sources, but in Experiments 2 and 3, participants were slower to read information from credible sources. The differences in such noticing might be a function of the task instructions (e.g., explicit reminders in Experiments 2 and 3 may have focused readers on what was credible rather than what was noncredible; the lack of explicit reminders in Experiments 1 and 4 may have led readers to notice information provided by noncredible sources or focus less on information from credible ones). Previous studies have attempted to disentangle when readers notice discrepancies and when they act on that information to revise prior knowledge or construct explanatory inferences (e.g., Johnson & Seifert, 1994, 1998; Otero & Kintsch, 1992; Rapp & Kendeou, 2009; Seifert, 2002; van Oostendorp & Bonebakker, 1999). The latencies observed in the current project suggest that readers noticed credibility, though noticing did not exert direct effects on subsequent processing.

Theoretical Implications and Future Directions

The current findings have theoretical implications for several existing literatures. To begin, models of credibility as pertaining to

persuasion articulate its role as a peripheral cue (e.g., Chaiken et al., 1989; Petty & Cacioppo, 1986). According to these models, credibility exerts an impact only when readers pay less attention to content. The current findings align with this view to some degree: When readers were not instructed to pay attention to credibility, they tended to focus on the content of the text (as indicated by their ease with processing trait-consistent compared to trait-inconsistent outcomes). But when readers were given instructions, reminders, and time to consider credibility, credibility was of more central import. Models of persuasion, then, need to determine how peripheral cues might be brought into focus as a function of instructions or task goals. Overall, though the findings are consistent with existing models in suggesting that credibility does not always exert the influence that might be most useful, they also suggest that this influence may be malleable based on understudied reader, task, and instructional variables.

A second implication for the findings involves the need to include effects of credibility in existing accounts of text comprehension. Recall these accounts often rely on appeals to situation models as evidence of successful comprehension. To date, analyses of the kinds of information that readers encode into situation models have focused largely on text content (i.e., the dimensions of texts that are tracked during reading). And yet, knowledge about the quality of a source providing that content also seems like particularly useful information to encode during reading. Contemporary accounts of situation models and the interactions between prior knowledge and unfolding texts have recently benefited from considering factors beyond the pure content of a text. For example, genre expectations (e.g., Wolfe, 2005; Zwaan, 1994) and individuals' reading goals (e.g., Linderholm & van den Broek, 2002) influence the processes that are applied during and the memory representations that result from reading activity. Because researchers have argued that credibility impacts learning experiences (e.g., Harris, 2008; Ratneshwar & Chaiken, 1991; Rieh & Danielson, 2007), it is worth understanding how and when situation models encode credibility information with respect to any general tracking tendencies.

The current findings also have implications for considering credibility from an individual differences perspective. The degree to which notions of credibility influenced readers' explicit judgments about future text events and encoding of information from sources was associated with how much readers reported relying on source information during the task. Variability in such considerations and the impact of that reliance on credibility will prove useful for understanding how people process information depending on the quality of a source, as well as for the design and presentation of information intended to encourage critical evaluation (or perhaps, as with some types of advertising, to potentially discourage such critical evaluation).

An important next step will involve understanding how credibility impacts long-term memory for text. Research on source monitoring suggests that people exhibit difficulty recalling sources of information (Johnson, Hashtroudi, & Lindsay, 1993). Features of the encoding context, including the identity of the communicator and when the information was provided, fade considerably over time, leading to misattribution of information (e.g., Gordon, Franklin, & Beck, 2005; Kumkale & Albarracín, 2004). The current experiment indicates that source credibility was relied upon only when readers were explicitly confronted with situations in which that information was required for completing a task. Perhaps in future studies, attempts to enhance memory for source credibility over extended periods of time (e.g., Kelman & Hovland, 1953) might benefit from similar encouragements. It remains unclear whether conditions that enhance reliance on source credibility foster memory for that credibility over time.

Conclusion

Our everyday experiences involve the acquisition of knowledge from many sources, and these sources are usually imbued with expectations as to their informational value. People appear to have strong convictions regarding which sources are more or less reliable. However, the current findings indicate that whether individuals rely on that information depends not just on expectations or convictions but also on the conditions that encourage reliance on credibility. Although such reliance may not be applied spontaneously during reading, processing after reading is completed can, under the right circumstances, be brought to bear in ways that allow for the influence of source credibility on comprehension.

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