

Would a madman have been so wise as this?” The effects of source credibility and message credibility on validation

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Abstract Readers rapidly check new information against prior knowledge during validation, but research is inconsistent as to whether source credibility affects validation. We argue that readers are likely to accept highly plausible assertions regardless of source, but that high source credibility may boost acceptance of claims that are less plausible based on general world knowledge. In Experiment 1, participants read narratives with assertions for which the plausibility varied depending on the source. For high credibility sources, we found that readers were faster to read information confirming these assertions relative to contradictory information. We found the opposite patterns for low credibility characters. In Experiment 2, readers read claims from the same high or low credibility sources, but the claims were always plausible based on general world knowledge. Readers consistently took longer to read contradictory information, regardless of source. In Experiment 3, participants read modified versions of “The Tell-Tale Heart,” which was narrated entirely by an unreliable source. We manipulated the plausibility of a target event, as well as whether high credibility characters within the story provided confirmatory or contradictory information about the narrator’s description of the target event. Though readers rated the narrator as being insane, they were more likely to believe the narrator’s assertions about the target event when it was plausible and corroborated by other characters. We argue that sourcing research would benefit from focusing on the

relationship between source credibility, message credibility, and multiple sources within a text.

Keywords Sourcing · Credibility · Validation · Comprehension

In Edgar Allen Poe’s (2011) masterpiece “The Tell-Tale Heart,” the narrator, insisting that he is wise and not mad, recounts how he murdered an old man and hid his body beneath the floorboards. Shortly after the murder, the police come to the narrator’s home to investigate a reported disturbance. While talking to the officers, the narrator hears a noise growing louder and louder, which drives him to confess his crime:

“Villains!” I shrieked, “dissemble no more! I admit the deed!—tear up the planks! Here, here!—It is the beating of his hideous heart!” (p. 287)

In this passage, the narrator claims to hear his victim’s heart beating. The impact of the narrative relies on readers’ understanding that the narrator is providing inaccurate information, and that the corpse’s heart is not really beating, allowing them to infer that the narrator’s report is indicative of his own fear or guilt. Indeed, narrators often provide inaccurate information about the events of the story world (Booth, 1983; Phelan, 2007). As such, narrators may lack credibility, which includes having expertise and being trustworthy (Pornpitakpan, 2004). One notable aspect of this passage is that the narrator’s claim, that a dead man’s heart is beating audibly, is very implausible based on readers’ general world knowledge and is likely to be doubted by the reader. This implausible claim is unlikely to be bolstered by the narrator’s questionable sanity. Throughout the story, the narrator frequently asserts his own sanity while making claims that readers are likely to doubt based on

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general world knowledge, such as that he has enhanced senses. These dubious claims signal that the narrator is unreliable, and that not all of his claims can be trusted. However, the narrator also asserts other more plausible claims that readers are more likely to accept, such as the arrival of the police. These claims are more plausible because they align with general world knowledge (e.g., that police investigate crimes). As these examples illustrate, readers are unlikely to distrust everything from the narrator, even though the narrator is unreliable, and are instead likely to doubt specific claims made by the narrator. Here, we draw on the distinction in social psychology between message credibility, which is the credibility of a particular assertion, and source credibility, which is the credibility of the source of the claim (Pompitakpan, 2004; Self, 2009). Prior research in social psychology indicates that message credibility and source credibility interact (e.g., Self, 2009; Sternthal, Dholakia, & Leavitt, 1978). In this article, we will explore the role of general world knowledge in assessing source and message credibility and provide evidence that these factors interact to affect comprehension.

Recent research indicates readers routinely evaluate incoming information against both general world knowledge and discourse knowledge, a process referred to as *validation* (Cook & O'Brien, 2014; Richter, 2015; Singer, 2013). The RI-Val framework provides a description of the process of validation, drawing upon memory-based processing approaches to comprehension (Cook & O'Brien, 2014). According to this framework, information from a text passively activates the contents of long-term memory through resonance. During the process of integration, connections form between information nodes when they reach a sufficient level of activation. Readers engage in validation processes when these connections are checked against prior knowledge, which includes general world knowledge and knowledge about the discourse. As suggested by this framework, validation occurs automatically when readers have prior knowledge (e.g., Hagoort, Hald, Bastiaansen, & Petersson, 2004; Isberner & Richter, 2013; Matsuki et al., 2011; Richter, Schroeder, & Wöhrmann, 2009). Moreover, readers check incoming information against prior knowledge even for tasks that do not require comprehending meaning, such as having people judge the spelling of a word embedded in a plausible or implausible assertion (Richter et al., 2009). However, there are conditions in which readers may not use prior knowledge to validate incoming information, such as when prior knowledge is not accessible (Kendeou, Smith, & O'Brien, 2013) or if readers do not engage in a task that encourages global processing (Albrecht, O'Brien, Mason, & Myers, 1995; Egidi & Gerrig, 2006; Foy & Gerrig, 2014; Sparks & Rapp, 2011). Thus, when readers have general knowledge about a particular topic, research suggests that they routinely use this knowledge to evaluate the credibility of specific claims (i.e., message

credibility). We argue that readers also use general knowledge to evaluate source credibility and that source credibility and message credibility interact to affect the process of validation.

Research on whether source credibility affects validation has yielded mixed results. For example, Henkel and Mattson (2011) found that readers rated statements as more credible when they read them multiple times relative to reading them one time, and found no effects of source credibility. Much of the research on source credibility has been conducted using educational materials within the context of multiple documents comprehension. In a foundational study, Wineburg (1991) found that only expert historians commented on the credibility of different historical sources, while novices did not distinguish between high and low credibility sources. Similarly, Britt and Aglinskas (2002) found that students did not attend to source credibility when reading multiple documents about a historical event unless they received training. Stadler and Bromme (2007) found that students' use of sources in an essay often did not take into account source credibility, even when experimenters instructed students to monitor and evaluate sources.

These findings are bolstered by Sparks and Rapp (2011), who found that reading times were unaffected by the credibility of different sources within the same short, narrative text. Across several studies, participants read transcripts of interviews about life in a small town. The first part of each transcript was narrated by one interviewee, and the experimenters told participants that this interviewee was either trustworthy or untrustworthy. The interviewee described a character in a way that would lead readers to infer a character trait (e.g., that the character was messy). For this article, we will call the sentence in which a high or low credibility character makes a claim *the assertion sentence*. The second part of the narrative was told by a different interviewee, and described the character acting in a way that was either trait consistent (e.g., leaving a newspaper behind on a bus) or trait inconsistent (e.g., holding onto a newspaper until it is convenient to throw away). For the duration of this article, we will use the term *target sentence* to refer to the sentence within a discourse that confirms or contradicts information from the assertion sentence, which in Sparks and Rapp (2011) was the character trait. Prior research has shown that readers are generally slower to read inconsistent information within a text (e.g., Albrecht & O'Brien, 1993; Guéraud, Harmon, & Peracchi, 2005; Kendeou et al., 2013; O'Brien, Cook, & Guéraud, 2010; O'Brien, Rizzella, Albrecht, & Halleran, 1998), and that general world knowledge plays an important role in this effect (Cook & Guéraud, 2005). Consistent with past research, Sparks and Rapp (2011) found in three studies that readers were slower to read trait-inconsistent target sentences than trait-consistent target sentences, regardless of whether the trait assertion sentence was made by a high or low credibility source. The inconsistency effect persisted even when participants were instructed

to pay attention to source credibility. Participants only took source credibility into account when asked to make offline judgments about the characters' actions, leading Sparks and Rapp (2011) to conclude that source credibility did not affect readers' online evaluations of events.

Other research suggests that readers can be sensitive to source credibility. People self-report that they consider some sources to be more credible than others (e.g., Abdullah, Garrison, Salwen, Driscoll, & Casey 2002; Metzger, Flanagin, & Zwarun 2003). In a simulated eyewitness testimony task, participants' testimonies changed based on whether they received feedback after making judgments on a lineup from a high or low credibility source (Skagerberg & Wright, 2009). Strømsø, Bråten, Britt, and Ferguson (2013) reported that many of undergraduate readers spontaneously mentioned sources when reading multiple documents about the relationship between cancer and sunscreen usage, providing evidence that readers may attend to source credibility online, while reading. Within the research on persuasion, high source credibility can often boost the persuasiveness of a message (Pornpitakpan, 2004). Taken together, these mixed results raise the possibility that readers may notice information about source credibility, but may not always use this information.

As we discussed earlier, stories often use source credibility and message credibility to signal whether a claim should be believed. In this article, we argue that the credibility of a message and the credibility of a source, which are both assessed using general world knowledge, interact to affect whether readers consider a claim to be plausible. We will anchor our discussion of plausibility on Connell and Keane's (2006) model of plausibility judgments. In their model, plausibility reflects the extent to which new information fits with general world knowledge and the context of the discourse. Specifically, information is plausible to the degree that there are many potential situations in which a claim could be true, the claim requires little additional explanation to be coherent, and there is corroborating evidence. Connell and Keane (2006) illustrate their model by discussing an assertion in which a pack of dogs sees a fox and starts growling. Readers' general world knowledge allows them to know that dogs travel in packs and growl, and plausibility is further increased because there are many scenarios in which a dog might growl (e.g., seeing a fox, seeing another animal, feeling pain). A highly plausible claim is more likely to be incorporated into the situation model than low-plausibility claims (Schroeder, Richter, & Hoever, 2008). Readers are also more likely to incorporate misinformation from a fictional story into their general world knowledge when it is plausible relative to when it is implausible (Hinze, Slaten, Horton, Jenkins, & Rapp, 2014), suggesting that readers are more likely to believe plausible information relative to implausible information.

Within Connell and Keane's (2006) model, information about source credibility could be considered to provide

corroborative evidence regarding a claim, boosting the plausibility and believability of an assertion. Lombardi, Sinatra, and Nussbaum (2013) theorized that both general world knowledge and source credibility interact to affect plausibility judgments during comprehension. Consistent with this claim, source credibility was a significant predictor of plausibility judgments of claims from texts about climate change (Lombardi, Seyranian, & Sinatra, 2014). Additionally, readers are more likely to incorporate misinformation into their general world knowledge from realistic stories relative to fantastic stories (Rapp, Hinze, Slaten, & Horton, 2014), possibly because fantastic stories are less credible sources of information about the real world. Taken together, these findings suggest that source credibility and message credibility may interact to affect validation.

In this article, we describe three experiments in which we explore how the interaction between source credibility and message credibility affects readers' evaluation of information. We hypothesized that readers would be more likely to accept an assertion that is plausible based on general world knowledge (i.e., a high-credibility message), regardless of source credibility. We also hypothesized that high source credibility would boost the plausibility of an assertion that is implausible based on general world knowledge, increasing the likelihood that it will be accepted. In the first two experiments, we explored whether source credibility affected reading times for short, experimental narratives. In Experiment 3, we had readers make explicit judgments regarding the believability of assertions within "The Tell-Tale Heart."

Experiment 1

According to the RI-Val framework, validation occurs after resonance has activated information in memory, and connections form between the contents in memory that have reached a sufficient level of activation (Cook & O'Brien, 2014). Validation processes check these connections against prior knowledge. To explore how source credibility and prior knowledge might interact to affect online reading processes, we had participants read stories in which high and low credibility sources asserted low plausibility claims. In our experiments, sources were low in credibility when the text provided information signaling to readers that a source was untrustworthy (e.g., a character is hallucinating or is known to be a scam artist). Consider the following story from Experiment 1:

Josh decided that it was time to leave the party and wanted to say goodbye to Rodney. He asked around the cabin for Rodney, but everybody said that they hadn't seen him for over an hour. Josh ventured upstairs and saw the light on in Rodney's bedroom. He walked in and saw Rodney staring intently out the window into his

backyard. He saw bath salts on the bed, and knew that Rodney had taken some.

In this story, readers are likely to use their general world knowledge to evaluate that Rodney is a low credibility source because he just took bath salts, a potent hallucinogen. In contrast, consider a different version of the story:

Josh was feeling tired and decided to leave the cabin party around midnight. Josh was the designated driver and only drank water at the party. He knew that Rodney needed a ride home, so he looked around for him. He found Rodney in a bedroom upstairs, staring intently out the window into the backyard. He didn't see any empty bottles in the room and knew that Rodney had sobered up.

In this version of the story, there is no reason based on general world knowledge for readers to doubt Rodney's credibility as a source. The next sentence for both versions of the story is the assertion sentence:

Rodney looked at him and said, "There are wolves in the backyard."

How readers process this claim is likely to be affected by the message credibility and the source credibility. Based on people's general world knowledge about parties and wolves, the plausibility of this claim is likely to be low, as this is an uncommon situation and would require additional conjecture to explain. When this message is uttered by a low credibility source, such as a character who is likely to be hallucinating, readers are likely to doubt this claim. However, when this message is uttered by a high credibility source, readers are more likely to accept the claim and incorporate it into their situation model because the credibility of the source provides corroboration for the claim. If this prediction is true, we should see a difference in reading times for the assertion sentence as a function of source credibility. Since the process of validation can occur as people continue reading (Cook & O'Brien, 2014), we also looked for spillover effects on the following sentence.

If readers use information about source credibility during comprehension, they should show differences in reading times when they encounter information later in the text that is either consistent or inconsistent with the assertion. After a brief continuation, the story had one of two endings:

Consistent: Josh saw a pack of wolves walking around the yard.

Inconsistent: Josh spotted a few friends hanging out in the yard.

We predicted that readers would respond differently to the consistent and inconsistent endings based on whether the

assertion was made by a high or low credibility source. For high credibility sources, readers should be faster to read the consistent sentence relative to the inconsistent sentence because the consistent sentence should fit with the information in their situation model. Conversely, for the low credibility source, readers should be faster to read the inconsistent sentence relative to the consistent sentence because the consistent information should contradict their situation model.

There are two alternative possibilities to consider with respect to the reading times. One possibility is that the target sentence will activate both the assertion sentence and information about source credibility. Under such conditions, readers may fail to show any difference in reading consistent and inconsistent sentences for low credibility characters because information about source credibility and the assertion will compete in memory. In past research in which the inconsistency effect has been manipulated, it has disappeared rather than reversed (Guéraud et al., 2005; Kendeou et al. 2013). However, we predicted a reversal because the inconsistency effect is mediated by people's general world knowledge and situation models (Cook & Guéraud, 2005; Cook & O'Brien, 2014). We predicted that readers would validate the assertion immediately, before the target sentence. For the low credibility version, we predicted that people would be likely to doubt the claim. In the case of the example story, we predicted that readers would doubt that there really are wolves in the backyard. Thus, the consistent target sentence for the low credibility character would actually be inconsistent within readers' situation models, causing a disruption to reading times.

Another possibility is that source credibility will not affect reading times. Within the persuasion literature, source credibility is often considered a peripheral cue, whereas message credibility is a central cue (Petty & Cacioppo, 1986). The credibility of a message may override the credibility of a source. Additionally, readers may fail to encode information about peripheral cues, such as source credibility, into their situation model. This result would be consistent with the findings of Sparks and Rapp (2011). Also, information about source credibility was more distant from the target sentence than the assertion sentence. Several studies have found that local information may override global information when looking at reading times (Magliano & Radvansky, 2001; Egidi & Gerrig, 2006; Foy & Gerrig, 2014). For example, Egidi and Gerrig (2006) had participants read stories in which characters had urgent goals (e.g., escaping to Mexico to evade the police) that were more distant in the text, and less urgent goals (e.g., feeling tired) that were more local within the text. Readers were faster to read characters taking action to complete the more local, less urgent goal (e.g., taking a nap), but during offline judgments they rated actions to be more likely when they fit with the distant, urgent goal. In our stories, information about source credibility came before the assertion sentence, and was therefore more distant. Even if source

credibility is encoded into the situation model, it may be overridden by relatively local information about the assertion, thus failing to have an effect on reading times.

Method

Participants

Sixty-eight undergraduate participants received course credit for completing this study. All participants were native English speakers.

Materials

Norming To develop stories that contained plausible events, we created questionnaires that described different fictional characters making claims. We generated a set of 31 assertions (e.g., that a check would arrive within a month). For each assertion, we created a high credibility source (e.g., a close friend) and a low credibility source (e.g., a mechanic with a reputation for swindling customers). There are various reasons why a person may be considered low credibility, such as their profession (e.g., a con artist), a history of making untrustworthy claims (e.g., a person who bluffs frequently), trait (e.g., having a delusional disorder, such as paranoid schizophrenia), or temporary circumstances (e.g., taking drugs, causing one to hallucinate). Our materials reflected this variability and focused on factors that affected trust. We created two versions of the survey, and counterbalanced the presentation of source credibility across the surveys. Thus, each participant rated each claim from only one of the sources. Fifteen participants completed each survey by rating the claims on plausibility (1 = *very implausible*, 7 = *very plausible*). We recruited participants by walking around campus with questionnaires. In exchange for completing the questionnaire, participants received a snack. Based on these ratings, we chose 20 assertions to serve as the basis for our experimental stimuli. These assertions were rated as much higher in plausibility when coming from a highly credible source ($M = 5.44$) than a source that was low in credibility ($M = 2.39$), $t(20) = 27.81$, $p < .05$.

Stories We used the assertions from norming to write 20 experimental stories (see Table 1 for a sample story). There were four versions of each story. The first five sentences set up the assertion and provided information about source credibility for one of the characters. For the low credibility sources, the first five sentences provided information that the character was untrustworthy (e.g., by presenting the character having a bad reputation or having made dubious claims). The sixth sentence was the assertion sentence, in which the character made a claim about an implausible event. The seventh and eighth sentences contained exposition leading to the ninth

Table 1 Sample experimental story for Experiments 1 and 2

Reliable:

Sophie's best friend Bob is a mechanic.

She has always gone to him whenever her car needed a repair, and she felt like he was always reliable.

One day, Sophie's fan belt broke while she was driving and she had to call for roadside assistance.

She felt relieved when she learned that her car was being towed to Bob's shop.

She smiled when Bob came in to talk with her about fixing her car.

Unreliable:

Bob the mechanic has a reputation for swindling customers and making shoddy repairs.

Sophie's friend had been cheated by Bob several times, and warned her to stay away from Bob's shop.

One day, Sophie's fan belt broke while she was driving and she had to call for roadside assistance.

She was unhappy when she learned that her car was being towed to Bob's shop.

When Bob came to talk to her about fixing her car, she thought that he looked very sleazy.

Claim sentence for Experiment 1:

He told her that her brakes were shot and needed to be replaced.

Continuation for Experiment 1:

Sophie worried that she wouldn't have enough money to get her brakes fixed.

She decided to get a second opinion and went to a different mechanic.

Target sentences for Experiment 1:

Consistent: The other mechanic told her that her brakes were worn out.

Inconsistent: The other mechanic said that her brakes were in good shape.

Claim sentence for Experiment 2:

He fixed her fan belt and told her that the traffic would be really bad on the way home.

Continuation for Experiment 2:

Sophie paid for her repairs using her credit card.

She turned on her radio and pulled out of the parking lot.

Target sentences for Experiment 2:

Consistent: She encountered heavy traffic on her way home.

Inconsistent: She got home fast without hitting any traffic.

sentence, the target sentence, which was either consistent or inconsistent with the information from the assertion sentence. To control for length, both versions of the target sentence had an equal number of words and syllables. We also wrote 20 filler stories and two practice stories of equal length about ordinary events, such as going to the grocery store. For each story, we wrote a yes–no comprehension question. The answer to half of the questions was yes. Though we predicted a crossover interaction, with different reading times on the same target sentence, we wanted to rule out the possibility that the target sentence may vary in semantic relatedness across different versions of the story. We tested semantic relatedness using Latent Semantic Analysis (LSA @ CSU Boulder,

February 2016, lsa.colorado.edu). First, we tested the semantic relatedness between both versions of the target sentence and the assertion sentence. We found no difference in cosines across both versions of the target sentence (high credibility $M = .49$, $SD = .24$, low credibility $M = .45$, $SD = .25$), $t(19) < 1$, $p > .05$. Next, we tested the semantic relatedness of both versions of the target sentence with the story leading up to the assertion sentence, as this passage also varied across conditions. We used *R* statistical software, with the “lme4” and “lmerTest” packages, to conduct multilevel models with credibility (high vs. low) and consistency (consistent versus inconsistent) as fixed effects, and story as a random effects. For all random effects in this article, we included them as random slopes in the multilevel model. None of the main effects or interactions were significant (High Credibility, Consistent $M = .81$, $SD = .09$, High Credibility, Inconsistent $M = .82$, $SD = .08$; Low Credibility, Consistent $M = .82$, $SD = .08$; Low Credibility, Inconsistent $M = .83$, $SD = .08$; all t s < 1 , all p s $> .05$). Thus, differences in reading times are unlikely to be attributable to differences in the semantic relation between the target sentence and the rest of the story.

Design

We had a 2 (high vs. low credibility) \times 2 (consistent versus inconsistent) factorial design, and employed a Latin-square design to create four conditions to counterbalance the presentation of stimuli across participants. Each participant read one version of each story, with an equal number of all story types. The presentation software randomized the order of presentation for the filler and experimental stories for each participant.

Procedure

After completing informed consent, participants started reading stories on the computer screen. Participants pressed the spacebar to begin each story and then again to advance the sentence. Each sentence appeared in 14-point Times New Roman font in white letters against a black background. We measured the time between button presses as an indicator of reading times. After each story, the prompt “Yes or no?” appeared at the top of the screen, with a statement about the story in the middle of the screen. Participants pressed “/” to indicate yes, the statement about the story was correct or “Z” to indicate that the information was incorrect. Participants started by reading two practice stories and then continued through the rest of the stories at their own pace.

Results and discussion

We eliminated data from four participants because they scored lower than 80 % on the comprehension questions, leaving 64

participants for analysis. We pruned reading times that were 3 standard deviations greater than the cell mean or less than 300 milliseconds, resulting in a loss of 2.1 % of the data. To test our hypotheses, we used multilevel modeling to analyze the reading times for three sentences: the assertion sentence, the spillover sentence, and the target sentence, with subjects and items as random slopes (Richter, 2006). To analyze assertion and spillover sentences, which was a pairwise comparison between high and low credibility sources, we coded high credibility as zero and low credibility as one. Reading times for the assertion and spillover sentences are displayed in Fig. 1. Looking at the assertion sentences, readers took longer in the low credibility condition relative to the high credibility condition, though the effect was not significant, ($b = 73.47$), $t(1,100) = 1.57$, $p = .12$. However, readers took significantly longer to read the spillover sentence in the low credibility stories ($b = 165.37$), $t(1,230) = 4.28$, $p < .05$.

Descriptive statistics for the target sentences are displayed in Fig. 2. To run the full 2 \times 2 analysis, we used contrast coding to test effects against the grand mean. We coded high credibility as 1 and low credibility as -1; for consistency, we coded consistent sentences as 1 and inconsistent sentence as -1. There was no significant main effect of source credibility ($b = 9.39$), $t(1,154.5) = .062$, $p > .05$, or consistency ($b = 3.89$), $t(1,154.5) = .26$, $p > .05$. Importantly, there was a significant interaction ($b = -72.58$), $t(1,154.5) = -4.78$, $p < .05$. We broke down the analyses by looking at the consistency effect by source credibility using dummy coding for each planned comparison. For the high credibility characters, participants were slower to read inconsistent sentences ($b = 126.38$), $t(1,233.40) = 2.95$, $p < .05$. For low credibility characters, we found that participants were faster to read inconsistent sentences ($b = -152.94$), $t(1,180.80) = -3.56$, $p < .05$.

We had predicted that readers would immediately validate the assertions. Consistent with these predictions, readers took longer to read the assertion and spillover sentences in the low credibility conditions, though the difference was only significant for the spillover sentences. Also consistent with our predictions, for the high credibility stories participants took longer to read inconsistent target sentences relative to the

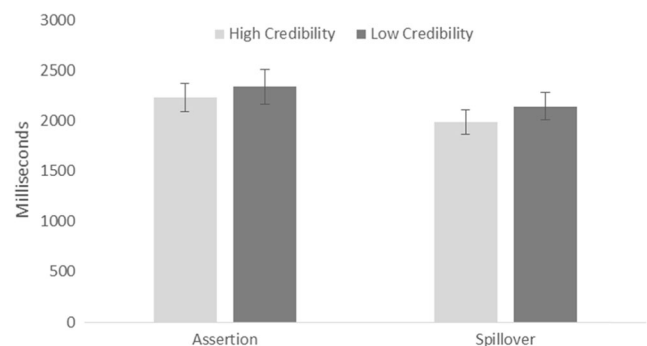


Fig. 1 Experiment mean 1 reading times (with standard error bars) on the assertion and spillover sentences in milliseconds

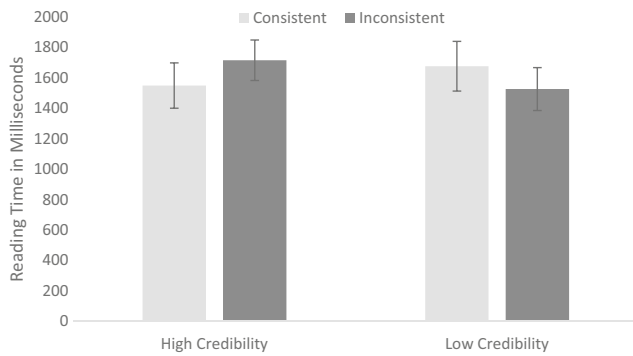


Fig. 2 Experiment 1 mean reading times (with standard error bars) on the target sentence in milliseconds

consistent target sentences; however, this pattern was reversed for the low credibility stories. These findings demonstrate that source credibility can impact reading times.

Experiment 2

In Experiment 2, participants read stories in which the high and low credibility characters asserted an event that could be considered plausible. We used the same stories from Experiment 1, but modified them to increase the message credibility. For example, in the story about Rodney and Josh, the assertion sentence was changed to read “Rodney looked at him and said, “It’s raining outside.” Within Connell and Keane’s (2006) model, a statement’s plausibility is affected by the amount of corroborative evidence, the number of scenarios in which it be true, and the extent to which it requires conjecture. Rain is a commonplace occurrence and requires little conjecture to make sense. On this account, Rodney’s assertion about the weather is plausible. We have argued that source credibility may bolster plausibility by providing corroborative evidence. However, for the stories in Experiment 2, the claims fit with readers’ general world knowledge and required little conjecture. Thus, these claims are already highly plausible, and we predicted that they would be unaffected by source credibility. Based on this reasoning, we predicted that source credibility would not influence reading times in Experiment 2. Instead, we predicted that readers would always take longer to read inconsistent information.

An alternative possibility is that readers doubt all claims made by low credibility sources. As such, they may be skeptical that it is raining outside, even if it is a highly plausible statement. If this is indeed the case, we would expect to see the same crossover interaction as we found in Experiment 1, with participants being faster to read consistent information for high credibility characters and the opposite pattern for low credibility characters. Such a finding would suggest that credibility is all or nothing, that readers trust or distrust everything from a source based on their credibility.

Method

Participants

We recruited 56 participants from the subject pool at two small undergraduate universities. Participants received course credit for completing the study.

Materials, design, apparatus, and procedure

As in Experiment 1, the characters were either high or low in credibility, and the story provided information about the characters’ claim that was either consistent or inconsistent (see Table 1 for a sample story). We created eight lists (four at each university) to counterbalance the presentation of the stimuli across participants. One of the experimenters collected data using DirectRT software, and the other experimenter used E-Prime software. The procedure was identical to Experiment 1.

Because we were predicting a main effect, it was important to ensure that the target sentences across conditions did not vary in their semantic relatedness to the prior text. Latent semantic analyses revealed no differences in the cosines between the target sentences and assertion sentences (Consistent $M = .83$, $SD = .13$, Inconsistent $M = .83$, $SD = .13$), $t(19) = < 1$, $p > .05$. Additionally, using multilevel modeling, we found no differences across conditions in semantic relatedness between the target sentences and text prior to the assertion sentence (High Credibility, Consistent $M = .82$, $SD = .10$, High Credibility, Inconsistent $M = .82$, $SD = .11$, Low Credibility, Consistent $M = .83$, $SD = .10$, Low Credibility, Inconsistent $M = .82$, $SD = .11$, $ts < 1$, $p > .05$).

Results and discussion

We predicted that readers would take longer to read inconsistent sentences than consistent sentences, regardless of source credibility. We used the same pruning procedure as in Experiment 1. As with Experiment 1, we ran a mixed-effects model with subjects and items as random slopes. We drew from participants at two universities for Experiment 2. Visual inspection of the data indicated consistent patterns of reading times, but participants at one university read faster than participants at the other university. To account for this variability, we included university as a random slope. Looking at reading times for the assertion sentences, which are displayed in Fig. 3, we found that readers took longer to read the low credibility characters relative to the high credibility characters ($b = 208.58$), $t(834) = 2.89$, $p < .05$. In contrast to Experiment 1, there were no significant differences in reading times for the spillover sentence ($b = -31.13$), $t(995) < 1$, $p > .05$.

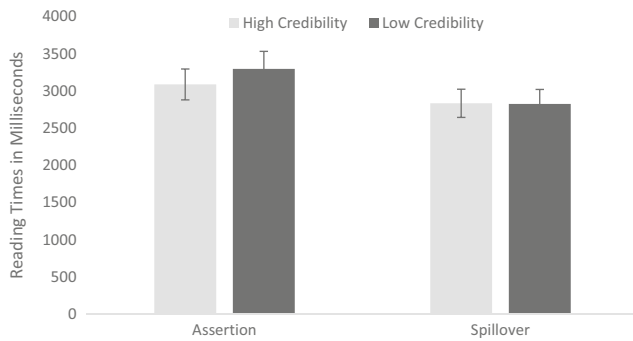


Fig. 3 Experiment 2 mean reading times (with standard error bars) in milliseconds on the assertion and spillover sentences

We also predicted that participants would be slower to read inconsistent sentences regardless of source credibility. Reading times for the target sentence can be found in Fig. 4. Consistent with our predictions for the target sentence, we found no effect of source credibility ($b = -10.13$, $t(1,048.70) = -.45$, $p > .65$). Additionally, we found that participants were significantly slower to read sentences containing inconsistent information ($b = -81.89$, $t(1,048.80) = -3.63$, $p = .0003$). Unlike Experiment 1, the interaction between source credibility and consistency was not significant ($b = 1.42$, $t(1,048.7) = .063$, $p = .95$). These findings support the idea that participants do not use information about source credibility when they encounter high plausibility information.

We found that participants were slower to read the assertion sentence when it was stated by a low credibility character. This difference suggests that readers are sensitive to information about source credibility. On the spillover sentence, we found no effect of source credibility. These findings stand in contrast to Experiment 1, in which people took longer to read the spillover in stories with low credibility sources. The key difference across experiments is the plausibility of the assertion within the context of the source. In Experiment 1, the assertion was plausible only when asserted by the high credibility source, whereas in Experiment 2 the assertion was

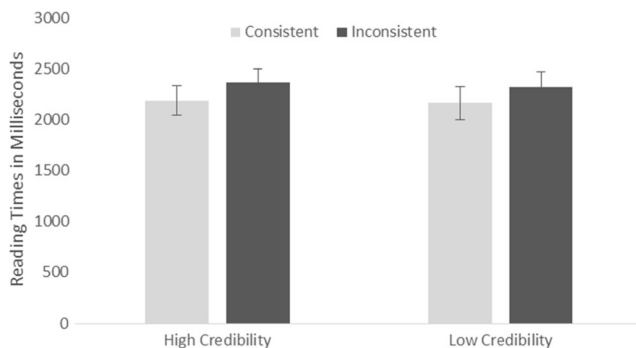


Fig. 4 Experiment 2 mean reading times (with standard error bars) in milliseconds on the target sentence

plausible regardless of source. Prior research has shown that plausible information is processed more quickly (e.g., Matsuki et al., 2011) and is more likely to be incorporated into the situation model (Schroeder et al. 2008). Thus our interpretation is that this difference across experiments reflects differences in validation for the assertion sentences. Because the assertions in Experiment 2 were plausible within the context of the story, the process of validation may have been completed more rapidly than in Experiment 1.

Experiment 3

The goal of Experiment 3 was to provide converging evidence that message credibility and source credibility interact to affect validation. In Experiments 1 and 2, we indirectly tested readers' evaluation of information using reading times. Because many factors can affect reading times, we cannot be sure that they reflect readers' acceptance of information within the narratives. In Experiment 3, we had participants directly validate information by having them rate the believability of different assertions within a genuine text, "The Tell-Tale Heart." Thus, Experiment 3 provides evidence that the reading time measures in Experiments 1 and 2 reflect readers' evaluations, and extend our findings to a naturalistic context. To test our claims, we manipulated the text in two ways. First, we manipulated the plausibility of the ending, which we will refer to as the *target event*, as a way of manipulating message credibility. For the implausible condition, participants read the original story ending, with the highly implausible event of a dead man's heart beating loudly from underneath floorboards. Within the context of Connell and Keane's (2006) model, there are very few circumstances in which such an event would occur, and this event only makes sense with conjecture (e.g., the victim is not really dead or this is a ghost story). Thus, this event should be considered implausible based on readers' general world knowledge. For the plausible condition, we rewrote the ending so that the narrator described a bloodstain growing above the place where he buried the body. There are many circumstances in which a bloodstain would result from a murder, such as if there was a struggle during the crime or if the body was cut up to be buried. Additionally, readers' general world knowledge about murder scenes is likely to specify that they often have bloodstains, so this event requires little conjecture. By comparing believability ratings for the plausible and implausible version of the target event, we could explore how varying the message credibility

for the same story affected readers' evaluation of information from the same low credibility narrator.

Second, we manipulated whether credible characters in the text seemed to provide corroborative evidence for the narrators' assertions regarding the target event, allowing us to manipulate information from credible sources within the text. We have argued that source credibility can provide corroborative evidence to boost the plausibility of a claim. In the original version of "The Tell-Tale Heart," the narrator claims to hear his victim's heart beating beneath the floorboards; however, the police do not seem to notice any unusual sounds. The behavior of the police provides further evidence to the reader that the victim's heart is not really beating and that the sound is in the narrator's head. This story points out an important feature of messages, which is that they may contain multiple sources. Within a story, there are different characters who may be considered sources of information, even if this information is presented through the lens of the narrator. We manipulated the story so that in some of the stories, the police provided ambiguous evidence that was consistent the narrator's claim (i.e., they either saw or heard something strange). Though the narrator makes dubious claims throughout the story that render his reports questionable, the story provides no reason for readers to distrust the police, who the reader will likely consider to be credible sources. As such, they may provide corroboration for the narrator's claim, which should increase the plausibility of the claim (Connell & Keane, 2006). We note that because all information within a story is provided by the narrator, readers may doubt information from other characters because it is provided through the lens of the narrator, and thus may not be accurate. However, we believe that this would require a deeper level of processing, one in which readers recognize the relationship between narrators and characters within a story, and that our readers would be unlikely to engage the story in this depth. Without prior expertise, novice readers like the ones in our experiment often do not engage a literary story deeply unless instructed to do so (McCarthy & Goldman, 2015).

To measure validation, we gave participants a judgment task in which they rated the believability of the target event, along with other assertions within the story. A separate set of participants rated the plausibility of the same assertions outside the context of the story. We predicted that readers would rate the plausible target event as more believable than the implausible target event, and that this difference would be larger when the police provided cues that were consistent with the narrator's claim. We also predicted that decontextualized plausibility ratings would strongly correlate with believability ratings for events within the story, suggesting that plausibility plays a strong role in readers' evaluation of information from low credibility sources.

Method

Participants

Seventy-two undergraduates participated in the study for course credit. All participants came from the department of psychology subject pool.

Materials

Stories We created modified versions of "The Tell-Tale Heart." To increase readability, we substituted easy vocabulary words for some low frequency words. For example, we substituted *pretend* for *dissemble*. We created four versions of the story using a factorial design. Only the last four paragraphs of the story differed between conditions. To manipulate plausibility, we rewrote the ending to describe either a dead man's heart beating loudly (implausible version) or a bloodstain growing (plausible version). We took care to make the changes minimal and in keeping with the original style of the text. For example, where the original text reads: "But the beating grew louder, louder," we modified the passage to read: "It grew larger—larger—larger!" in the bloodstain version. We also modified the story so that the police seemed to notice the target event (e.g., "And the officers told me to stop talking! They were trying to hear something!") or provided no evidence of noticing the target event (e.g., "And still the men chatted pleasantly, and smiled. Was it possible they did not hear?"). The modified sections are displayed in the [Appendix](#). Each story contained two written prompts in which we instructed participants not to summarize, but to write their interpretations of the events. Despite our instructions, participants mostly summarized the events without evaluating them. We therefore will not report these findings and will focus on the survey data.

Questionnaires Participants rated how much they believed 11 of the narrator's claims on a 7-point Likert scale (1 = *very unbelievable*, 7 = *very believable*). A separate set of participants rated the same claims, but decontextualized from the story (e.g., "A person who is crazy would have sharpened senses."¹). At the end of the questionnaire, participants indicated if they had already read the study and if they noticed anything unusual about the story. Though some participants indicated having read the study, none mentioned the manipulation, suggesting that they did not notice the modification.

¹ Though this question presumes that the narrator is crazy, we collected ratings on the story before collecting these decontextualized ratings. Median rating for the statement "The narrator was not mad" was 1 in believability, meaning the statement was very unbelievable.

Comprehension questions To ensure that people understood the story, we wrote a series of eight true–false questions (e.g., “The narrator murdered the old man by suffocating him”), half of which were true.

Procedure

We randomly assigned participants to read a particular version of the story. Participants read a printed copy of the story at their own pace, stopping twice to write about their interpretation of the events. Upon completing the story, participants rated the believability of the claims and then completed the comprehension questions. For participants who rated the decontextualized claims, they filled out the questionnaire at the end of an unrelated study without having read the story.

Results and discussion

We eliminated the data from four participants who failed to comply with instructions (e.g., left questions blank) or missed more than two questions on the comprehension test, leaving 68 participants for analysis. Because the ratings for claims were not normal, we used nonparametric tests to look for effects of our manipulation and will report the medians for each condition. First, as a manipulation check, we looked at decontextualized ratings for the plausible and implausible target event. We used a Wilcoxon signed-rank test because the scores were from paired samples. Participants rated the bloodstain as more plausible ($Mdn = 5$) than the beating heart ($Mdn = 1$, $Z = -2.80$, $p < .05$). We also analyzed the believability ratings for the target event from participants who completed the study. Because this was a between-subjects manipulation, we used a Mann–Whitney U test. Participants who read the story rated the plausible target event ($Mdn = 5$) as more believable than the implausible target event ($Mdn = 1$), $U(68) = 5.03$, $p < .05$. Looking at ratings for the implausible target event within the story context, we found that there was no difference for the target event condition in believability when the police provided confirmatory cues ($Mdn = 1$) or did not provide confirming cues ($Mdn = 1$), $U(34) < 1$, $p > .05$. However, for the plausible target event, the plausible target event condition was rated as more believable when the police provided confirmatory cues ($Mdn = 5$) relative to when they did not ($Mdn = 3$), $U(34) = 2.02$, $p < .05$.

To determine if decontextualized plausibility correlated with the believability of events within the story context, we correlated the median believability ratings for the claims within and outside of the story context. We note that there was sufficient variability across claims to warrant using a parametric analysis for the correlation. Additionally, each participant who read the story rated 11 claims, because they saw either the plausible or implausible version of target event. To get ratings

for events within the story, we collapsed plausibility ratings across the confirmatory and contradictory conditions, leading to a total of 12 claims once both version of the events were included. Consistent with the idea that plausibility plays an important role in validation, there was a strong correlation between the plausibility of events outside of the story context and the believability of events within the story, $r(10) = .80$, $p < .05$.

Within the story context, and despite the low credibility for the source (who received a median rating of 1 for sanity), participants rated the target event as more believable when it was plausible and when a credible source, the police, provided confirmatory evidence. These findings suggest that plausibility affects the validation of information from low credibility sources and that source credibility is a form of corroboration that boosts plausibility. Ratings ranged from 1 (*very unbelievable*) to 7 (*very believable*), suggesting that readers did not doubt all claims from the low credibility narrator. Rather, they readily accepted claims that were plausible based on general world knowledge, such as the occurrence of the murder and the presence of the police, as indicated by the strong correlation between decontextualized ratings plausibility and believability of events within the story. These findings are consistent with the pattern of reading times in Experiments 1 and 2, which indicate that readers rejected implausible assertions from low credibility sources and accepted plausible assertions. Thus, Experiment 3 provides evidence that readers' evaluations of textual assertions is guided by both source credibility and message credibility.

General discussion

We have provided evidence that readers use general world knowledge to assess message credibility and source credibility, and that these two types of credibility interact to affect validation. In Experiment 1, participants read stories in which the assertions had low message credibility, but the message was given by a high or low credibility source. Participants took longer to read sentences that were inconsistent with information from high credibility sources, but were faster to read sentences that were inconsistent with information from low credibility sources. In Experiment 2, participants read assertions that were plausible based on their general world knowledge and were consistently slower to read sentences contradicting these assertions, regardless of source. In Experiment 3, participants' rated events as more believable when they were plausible based on general knowledge, even when they were asserted by a low credibility source. Additionally, ratings for the plausible target event increased when the narrator's assertions were supported by the behavior of the police officers, a relatively credible source within the story, relative to when

they police officers' behavior contradicted the narrator's assertions.

Our studies show that participants may be aware of source credibility, but may not always use this information. In Experiment 3, participants accepted many of the narrator's claims, even while they rated his claims to sanity as being very unbelievable. In Experiment 2, reading times for the assertion sentence were slower for low credibility characters relative to high credibility characters. These findings are consistent with those of other studies showing that participants demonstrated some level of awareness of source (Bråten, Strømsø, & Salmerón, 2011; Sparks & Rapp, 2011; Strømsø et al., 2013). Bråten and colleagues (2011) found that even low knowledge participants, when reading about climate change, rated textbooks and a text from the National Pollution Control Authority as more trustworthy than a text by an oil company, though they did not differentiate between a newspaper and an oil company. Stadler and Bromme (2007) found that participants who were prompted to monitor information about sources performed better on a test measuring source knowledge relative to participants who were unprompted, though these groups showed no differences in how they used sources in written essays. We suggest that readers' lack of use of source credibility may not always be indicative of a failure to attend to source information. Rather, we have suggested that source credibility plays a key role when readers encounter information that is inconsistent with general world knowledge.

The possibility that readers may not always use information about source credibility makes sense when considered in light of Connell and Keane's (2006) model of plausibility. If source credibility provides corroborative evidence, it is only one of several factors that affect plausibility. When a message fits well with general world knowledge, plausibility may be at ceiling and thus may be unaffected by additional corroboration from source credibility. This possibility is consistent with the results from Experiment 2, in which participants took longer to read sentences that were inconsistent with implausible assertions, regardless of source credibility. However, when a message is inconsistent with general world knowledge, source credibility may provide corroboration that boosts plausibility. This possibility is consistent with the findings in Experiment 1, in which people showed the standard inconsistency effect for implausible claims made by high credibility sources, and the opposite pattern for low credibility characters. Additionally, Connell and Keane's (2006) model helps make sense of the failure of source credibility to boost believability ratings for the implausible target event in Experiment 3. Because the event is strongly inconsistent with readers' general world knowledge and requires conjecture, corroboration by a high credibility source may not be sufficient to boost the event's plausibility enough to increase its believability.

Our findings suggest that readers' trust of sources is not all or nothing. Readers are likely to accept claims for low credibility sources when they are consistent with general world knowledge, as indicated by the pattern of reading times in Experiment 2 and judgments in Experiment 3. In contrast, readers are less likely to accept claims from low credibility sources when they are inconsistent with general world knowledge, as indicated by the pattern of reading times in Experiment 1 and judgments in Experiment 3. Thus, readers use source credibility as one factor to evaluate incoming information rather than accepting or rejecting all claims made by a source based simply on credibility.

Source credibility is a complex and multidimensional construct that has been investigated across diverse disciplines (Self, 2009). Although proposed dimensions of source credibility have been numerous and varied (see Pornpitakpan, 2004, for discussion; also, Self, 2009), almost all agree that trustworthiness and expertise are core dimensions. Our stories manipulated trust, without exploring the contributions of other factors like expertise. Thus, our studies do not provide insight into other dimensions that affect source credibility.

However, for any dimension of source credibility, we may consider the kinds of information used during assessment. It seems clear that readers may assess the behavior of characters, stated or perceived motives, descriptions of their traits, and even their affiliations against their general world knowledge to assess credibility. For instance, across our narratives there was considerable variability in the reasons why characters were untrustworthy. Rodney was untrustworthy because he took a hallucinogen (e.g., behavior). In contrast, the sample story in Table 1 features a disreputable mechanic named Bob. Rodney is not lying intentionally, and his low trustworthiness is related to his temporary state of being high on bath salts. Bob, on the other hand, may be intentionally lying to make money. He is an auto mechanic, an affiliation that many are inclined to distrust, and his intentional deception is likely a consistent part of his interaction with customers (e.g., trait). It may be that readers assess these kinds of information differently.

A related question concerns the general world knowledge readers may draw upon to complete this assessment. The world knowledge used to evaluate source credibility could take many forms, including general assumptions based on scripts (e.g., the script for getting a car fixed) and features of category members (e.g., auto mechanics), true or false about the world, received opinions from sources of varying credibility, and specific prior life episodes. It seems reasonable to suggest that the world knowledge used to support credibility assessment will depend on the relevant information available in the discourse. For example, texts that provide causal explanations for why a source is low credibility may exert more powerful effects than texts that simply state that a character is low credibility without providing any reasons (Kendeou et al.,

2013; Rapp & Kendeou, 2007). Additionally, even if a text provides information regarding source credibility, if that information is insufficiently elaborated upon or is distant in a text, it may not be accessed and therefore may not affect validation. It should also be pointed out that this general world knowledge can differ not only in type but also in strength and familiarity. For instance, source credibility assessment would most likely differ when relevant world knowledge includes content the reader feels strongly about (e.g., Petty & Cacioppo, 1986) or has a lot of experience with (e.g., Wineburg, 1991). Further research should clarify how these different factors influence readers' assessment of source.

The results from Experiment 3 suggest that readers are sensitive to multiple layers of sources within a text. In fictional texts, there are several layers of sources, including the author, narrator(s), and characters within the text (Bal, 2009; Booth, 1983). We recognize that the relationship between fictional sources is complicated, but, for our purposes, we will consider the relationship between narrators and characters within a text. All information within a narrative is presented through the narrator; nonetheless, our studies suggest that there are some circumstances in which readers may treat characters within a text as separate sources. In Experiment 3, participants read a text in which a low credibility narrator's claims were either supported or not supported by other characters within the text. Interestingly, when the claim was highly implausible, character support did not increase believability. It is possible that readers in the implausible condition recognized that information from the characters was always presented by the narrator, and thus low in credibility. In contrast, when the claim was relatively plausible, character support increased believability, suggesting that they treated the characters as a separate source of information. This interpretation is highly speculative; nonetheless, these findings indicate that researchers should consider sources at multiple levels. Indeed, many nonnarrative texts have layered sources as well (Self, 2009). Authors may use multiple sources, such as scholarly and nonscholarly articles as well as images, maps, and other sources, to provide evidence for their claims. Further research is needed to understand how these different levels of sources affect comprehension.

Our research focused primarily on the effects of source credibility within short fictional narratives. Much of the research on sourcing within comprehension has occurred within educational contexts, with the use of multiple sources and expository texts. There are reasons to be cautious in generalizing our findings to educational contexts. People read the same text differently depending on whether they are told it is a fictional narrative or a newspaper article (Zwaan, 1994). Additionally, keeping track of content and source information across multiple texts may increase memory demands. Because accessibility in memory is a requirement for validation (Cook & O'Brien, 2014), it may be more difficult for readers to keep

track of and use information about source credibility when they encounter multiple sources or read longer texts. Nonetheless, we believe that our results may shed some light on prior research. The importance of plausibility also helps clarify one reason why prior knowledge about a topic enhances use of source credibility (e.g., Stadtler & Bromme, 2007; Strømsø et al., 2010; Wineburg, 1991). Without adequate prior knowledge, people may be unable to judge the credibility of a source or the plausibility of incoming information. Studies have also found that contradictions across multiple sources may encourage people to attend more closely to sources (Braasch, Rouet, Vibert, & Britt, 2012; Stadtler, Scharrer, Brummernhennrich, & Bromme 2013; Strømsø, Bråten, & Salmerón, 2010). For readers who lack prior knowledge about a particular topic, these contradictions may cue readers that some of the claims are implausible, prompting them to examine the texts more closely. Our research suggests that message credibility and source credibility should interact to affect sourcing within educational contexts.

In conclusion, we have provided evidence that message credibility and source credibility interact to affect validation. We found that readers were consistently more likely to be skeptical of untrustworthy sources when they asserted implausible information relative to plausible information. We believe that future research could further clarify the factors that affect readers' evaluation of source credibility, factors that affect the use of source credibility, as well as explore the relationship between multiple sources within a text. Our findings demonstrated that readers may, under certain circumstances, trust information that it is told to them by a crazy murderer.

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Appendix

Revised passages from the ending of “The Telltale Heart”

Implausible, contradictory cues (original passage from Poe)

The officers were satisfied. My manner had convinced them. I was singularly at ease. They sat, and while I answered cheerily, they chatted of familiar things. But, before long, I felt myself getting pale and wished them gone. My head ached, and I heard a ringing in my ears: but still they sat and still chatted. The ringing became more distinct:—It continued and

became more distinct: I talked more freely to get rid of the feeling: but it continued and became clearer—until, at length, I found that the noise was not within my ears.

No doubt I now grew very pale;—but I talked more fluently, and with a heightened voice. Yet the sound increased—and what could I do? It was a low, dull, quick sound—much such a sound as a watch makes when enveloped in cotton. I gasped for breath—and yet the officers heard it not. I talked more quickly—more vehemently; but the noise steadily increased. I arose and argued about trifles, in a high key and with violent gestures; but the noise steadily increased. Why would they not be gone? I paced the floor to and fro with heavy strides, as if excited to fury by the observations of the men—but the noise steadily increased. Oh God! what could I do? I foamed—I raved—I swore! I swung the chair upon which I had been sitting, and grated it upon the boards, but the noise arose over all and continually increased. It grew louder—louder—louder! And still the men chatted pleasantly, and smiled. Was it possible they did not hear? Almighty God!—no, no! They heard!—they suspected!—they knew!—they were making a mockery of my horror!—this I thought, and this I think. But anything was better than this agony! Anything was more tolerable than this derision! I could bear those hypocritical smiles no longer! I felt that I must scream or die! and now—again!—louder! louder! louder! louder!

“Villains!” I shrieked, “I admit the deed!—tear up the planks! here, here!—It is the beating of his hideous heart!”

Implausible, confirmatory cues

The officers were satisfied. My manner had convinced them. I was singularly at ease. They sat, and while I answered cheerily, they chatted of familiar things. But, before long, I felt myself getting pale and wished them gone. My head ached, and I heard a ringing in my ears: but still they sat and still chatted. The ringing became more distinct:—It continued and became more distinct: I talked more freely to get rid of the feeling: but it continued and became clearer—until, at length, I found that the noise was not within my ears. I saw one of the officers close his eyes and tilt his head, as if listening closely for some faint noise.

No doubt I now grew very pale;—but I talked more fluently, and with a heightened voice. Yet the sound increased—and what could I do? It was a low, dull, quick sound—much such a sound as a watch makes when enveloped in cotton. I gasped for breath—and the suspicious officer turned to the other and asked if he heard something strange. I talked more quickly—more vehemently, trying to draw their attention; but the noise steadily increased. I arose and argued about trifles, in a high key and with violent gestures; but the noise steadily increased. Why would they not be gone? I paced the floor to and fro with

heavy strides, as if excited to fury by the observations of the men—but the noise steadily increased. Oh God! what could I do? I foamed—I raved—I swore! I swung the chair upon which I had been sitting, and grated it upon the boards, but the noise arose over all and continually increased. It grew louder—louder—louder! And the officers told me to stop talking! They were trying to hear something! What was that strange noise, they cried out! Almighty God!—no, no! They heard!—they suspected!—they knew—this I thought, and this I think. But anything was better than this agony! Anything was more tolerable than this noise! I could bear the anguish no longer! I felt that I must scream or die! and now—again!—louder! louder! louder! louder!

“Villains!” I shrieked, “I admit the deed!—tear up the planks! here, here!—It is the beating of his hideous heart!”

Plausible, contradictory cues

The officers were satisfied. My manner had convinced them. I was singularly at ease. They sat, and while I answered cheerily, they chatted of familiar things. But, before long, I felt myself getting pale and wished them gone. My head ached, I looked toward the floor and I saw a small red stain before my eyes: but still they sat and still chatted. The stain became more vivid:—It continued and became more vivid: I talked more freely to get rid of the feeling: but it continued and became clearer—until, at length, I found that the stain was not within my eyes.

No doubt I now grew very pale;—but I talked more fluently, and with a heightened voice. Yet the stain increased—and what could I do? It was a small, dull, creeping red color—. I gasped for breath—and yet the officers saw it not. I talked more quickly—more vehemently; but the stain steadily increased. I arose and argued about trifles, in a high key and with violent gestures; but the stain steadily increased. Why would they not be gone? I paced the floor to and fro with heavy strides, as if excited to fury by the observations of the men—but the stain steadily increased. Oh God! what could I do? I foamed—I raved—I swore! I swung the chair upon which I had been sitting, and grated it upon the boards, but the stain arose over all and continually increased. It grew larger—larger—larger! And still the men chatted pleasantly, and smiled. Was it possible they did not see? Almighty God!—no, no! They saw!—they suspected!—they knew!—they were making a mockery of my horror!—this I thought, and this I think. But anything was better than this agony! Anything was more tolerable than this derision! I could bear those hypocritical smiles no longer! I felt that I must scream or die! and now—again!—larger! more vivid! more distinct!

“Villains!” I shrieked, “pretend no more! I admit the deed!—tear up the planks! here, here!—It is the bleeding of his hideous heart!”

Plausible, confirmatory cues

The officers were satisfied. My manner had convinced them. I was singularly at ease. They sat, and while I answered cheerily, they chatted of familiar things. But, before long, I felt myself getting pale and wished them gone. My head ached, I looked toward the floor and I saw a small red stain before my eyes: but still they sat and still chatted. The stain became more vivid:—It continued and became more vivid: I talked more freely to get rid of the feeling; but it continued and became clearer—until, at length, I found that the stain was not within my eyes. One of the officers saw me staring intently and followed my gaze.

No doubt I now grew very pale;—but I talked more fluently, and with a heightened voice. Yet the stain increased—and what could I do? It was a small, dull, creeping red color—. I gasped for breath—a look of shock slowly spread out over the officer's face. I talked more quickly—more vehemently to draw their attention; but the stain steadily increased. I arose and argued about trifles, in a high key and with violent gestures; but the stain steadily increased. Why would they not be gone? I paced the floor to and fro with heavy strides, as if excited to fury by the observations of the men—but the stain steadily increased. Oh God! what could I do? I foamed—I raved—I swore! I swung the chair upon which I had been sitting, and grated it upon the boards, but the stain arose over all and continually increased. It grew larger—larger—larger! And one of the men fixed me with a menacing glare while the other pointed at the ever-growing stain. Almighty God!—no, no! They saw!—they suspected!—they knew!—I thought, and this I think. But anything was better than this agony! Anything was more tolerable than their suspicion! I could bear those accusing eyes no longer! I felt that I must scream or die!

“Villains!” I shrieked, “I admit the deed!—tear up the planks! here, here!—It is the beating of his hideous heart!”

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