‘It Doesn’t Say’: Exploring Students’ Understandings of Asyndetic Constructions in History Textbooks

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Despite the benefits of historical thinking pedagogy, many teachers continue to require students to read textbooks. Contained within textbook narratives are particular types of implied causation, asyndetic constructions, which may limit students’ abilities to fully comprehend certain textbook passages. This study examines how asyndetic constructions influence students’ comprehension of causal events. Twelve middle school readers were asked to read a US History textbook passage and answer questions related to the asyndetic construction. They also were asked to reason about their answers. Findings suggest that good middle school readers do not identify asyndetic constructions as problematic to their comprehension even though they often incorrectly answer questions related to these constructions. Findings also indicate that, when middle school readers recognize the asyndetic sentences as causally related, they often disregard and/or overlook the mental processes in the text that provide clues for explaining that relationship. Based on these findings, teachers need to recognize the complexity of textbook language and structure when assigning such readings, taking special care with poor readers who have fewer linguistic resources for making meaning of asyndetic constructions than good readers.

Key Words: textbooks, history education, asyndetic constructions, causation, reading, text processing

Introduction

Textbooks have been repeatedly criticized for only presenting a single, unified, nation-state narrative (Apple, 2000; FitzGerald, 1979; Loewen, 1995/2007; Lowenthal, 1998; VanSledright, 1998), and not even a very well written one at that (Beck, McKeown, & Gromoll, 1989). The typical meta-narrative students are to learn from these texts is that America is great (Moreau, 2004; VanSledright, 1998) and is progressing as a nation toward A More Perfect Union (Armento, et al., 1999), to borrow from one textbook title. To some degree, students learn the facts that comprise this narrative, trusting that what they comprehend is what happened (Epstein, 1994; Wineburg, 2001). The complexities of doing history (Levstik & Barton, 2001) are obscured by a focus on pieces of historical information such as names and dates (Loewen, 1995/2007).

Although history textbooks often emphasize factual information, the connections between informational pieces are sometimes less clear. Textbook authors, for example, may not provide explicit causes for events in US history (Achugar & Schleppegrell, 2005; Beck, et al., 1989; Fitzgerald, 2011). Rather, some authors quite frequently hedge their conclusions, choosing to use implied causal constructions to explain historically related events. Since causal relationships are a key factor in comprehending narratives (Trabasso & Sperry, 1985), students’ comprehension of these implied causal relationships is important to their overall historical understanding. This study examines a type of implied causal construction commonly found in
history textbooks, asyndetic constructions (Fitzgerald, 2011), and how their use influences students’ comprehension of history textbook passages.

**Theoretical Framework**

Over the past few decades, the notion that students enrolled in Kindergarten-12 history classes should be taught to think historically has been reintroduced into the social studies education literature (Levstik & Barton, 2001; Seixas, 1996; VanSledright, 2009; Wineburg, 2001). Historical thinking involves students in learning to read history texts for more than basic comprehension of one source. Rather, multiple texts are used as artifacts in this process where sub-processes such as sourcing, corroboration, and contextualization shed meaning on what authors wrote and how that information fits into the historical record (Leinhardt, Stainston, Virji, & Odoroff, 1994; Nokes, 2010b; Wineburg, 1998). Teaching students to engage in historical thinking requires teachers to have deep knowledge of history as well as the ability to guide students through multiple texts related to a given topic.

Despite students’ cognitive abilities to think historically—and decades worth of research suggesting that such critical inquiry is the most productive way to teach history—many teachers do not engage their students in this process. These teachers continue to teach history in much the same way as they have for the past century, by using the textbook as the primary instructional source (Bednarz, 2004; FitzGerald, 1979; Nokes, 2010a). Textbooks allow teachers to meet “what they see as their two primary tasks: controlling students’ behavior and covering content” (Barton & Levstik, 2003, p. 2). As such, textbooks have become the literature of the history classroom, transmitting the heritage of the nation-state rather than the skills students need to think historically (VanSledright, 1998).

Whereas historical thinking pedagogy is predicated on the critical analysis of historical sources, teaching with the textbook rarely yields such thoughtful reading. There is something about textbooks that enables and maybe even encourages students to think uncritically about the history presented. In a study involving an advanced placement student, Derek, for example, the textbook was considered to be “the most trustworthy of the eight documents he reviewed” on the Battle at Lexington, even when primary source documents contradicted the textbook passage (Wineburg, 2001, p. 68). Derek’s perception of textbook accuracy is not unique among students. In a study of 17 high school students, Terrie L. Epstein (1994) found many students viewed the textbooks as “just reporting the facts” rather than as a biased construction of history. Students, then, might be using the good reading strategies they learn in reading and English classes to comprehend history textbook content, but not the disciplinary reading strategies historians use to critically evaluate the narrative (Nokes, 2010b).

Comprehending history textbook content is not a simple process; indeed, it can be a very complex task. Although textbooks offer a unified heritage story (Lowenthal, 1998), the language employed to meet publishing standards of content, length, and readability often make their narratives difficult to read. In Isabel L. Beck, Margaret G. McKeown, and Erika W. Gromoll’s (1989) seminal review of four fourth- through seventh-grade history textbooks, the language often was deemed inconsiderate of readers’ needs for explanatory assistance and historical background knowledge. No matter how uncritical students’ approach to textbook reading may be, many of them may not comprehend the content in the first place, due to the language and structural flaws of the text.
Of major interest in determining whether or not a reader develops a coherent representation of a textbook passage is his or her ability to identify cause-effect relationships within the story (Trabasso, Secco, & Broek, 1984) because causation serves both explanatory and ordering functions in texts (Noordman & Blijzer, 2000). Readers’ abilities to identify cause-effect relationships depend upon the structure of the passage as well as its linguistic features. Structurally, readers need to comprehend a text’s network chain, the most important causally related events in the story and their logical sequence (Trabasso & Sperry, 1985). Readers comprehend a story that is linearly structured with events following one after another more easily than a story that is factorially structured with multiple events contributing to an outcome (Trabasso & Broek, 1985). By identifying the network chain, readers are able to make meaning of both simple (linear) and complex (factorial) causal relationships, organizing the story’s logical sequence of events within their prior knowledge.

In order to identify a text’s network chain, readers use its linguistic features to identify cause-effect relationships. Sometimes, the process is fairly simple. Readers may identify causal connectives such as because and so that explicitly cue them to recognize cause-effect relationships (McNamara, Graesser, & Louwerse, 2012). Once a reader identifies one of these causal connectors, he or she can immediately determine two events are causally related, as well as which event caused the other to occur. Such knowledge allows the reader to piece together the story event by event, comprehending the sequence and relationship between happenings.

Textbook authors, however, are not limited to using such explicit causal connectors (Achugar & Schleppegrell, 2005). Authors often implicitly express causation by two means: implicit cohesion structures and asyndetic constructions (Fitzgerald, 2011). The first, implicit cohesion structures, relates to Beck, et al.’s (1989) critique of history textbooks. By using a chronological format, events that causally influence later historical events are not presented next to each other in the narrative. The causal relationship between the Tea Act and the Boston Tea Party, for example, is important for understanding why the latter occurred. Chronologically oriented textbooks may never make this causal connection. One textbook in particular “… never mentions the Tea Act. Rather, unrest is attributed to the tax on tea, which remained after the other taxes had been repealed” (Beck, et al., 1989, p. 144). In this case, the topic of a tea tax connects the two events, but readers are left to make the causal connection themselves by remembering events related to the tea tax from much earlier in the text. The causal connection here is implicit, separated by other events in the historical chronology.

Less frequently discussed in the literature is the use of asyndetic constructions to imply causation (Gohl, 2000). In written texts, asyndetic constructions occur when two sentences, situated next to each other, connote a causal relationship without the use of lexical markers, such as because and so (Fitzgerald, 2011). One textbook, for example, reads, “[Benedict] Arnold’s act of treachery and his raids on towns in Connecticut and Virginia enraged the Patriots. Thomas Jefferson, governor of Virginia, offered a sizable reward in gold for his capture” (Davidson & Castillo, 2000, p. 180). Although there are no causal connectors between these two sentences, the authors imply that there is a causal connection between them; the rage the Patriots feel enables Jefferson to act. In order for readers to make this connection, they must understand the relationship between the mental state of the Patriots and Jefferson’s political responsibilities. Making that connection, readers can recognize that the sentences are causally connected.
Asyndetic constructions come in a number of forms, unlike the implicit cohesion structures mentioned by Beck et al. (1989). The previous example is just one of four types of asyndetic constructions, categorized by the type of information readers must access to make the causal connection. As Table 1 illustrates, there are four main categories of asyndetic constructions as well as a number of sub-types. Using a variety of processes (e.g., mental, relational, and verbal) and expressions of uncertainty (e.g., modality), authors are able to form implicit causal relationships between events without using explicit connectives (e.g., because or so). These four categories of asyndetic constructions allow textbook authors to simultaneously (a) vary the structure of their sentences, (b) hedge historical connections in order to better make their case for the progress of the nation, and (c) reduce the text’s word count, all while (d) including causal connections that hold the narrative together (Fitzgerald, 2011). Textbook authors use asyndetic constructions as frequently as explicit causal connectives, making them an important linguistic resource for readers to recognize and comprehend (Author, in revision).

Table 1

Types of Asyndetic Constructions

<table>
<thead>
<tr>
<th>Types and Sub-types of Asyndetic Constructions</th>
<th>Some Processes and Expressions of Uncertainty that Signal Asyndetic Constructions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cognition</td>
<td>“thought” “felt” “wants” “saw,” “understood”</td>
<td>“In each region of the colonies, roughly half as many white women as men were literate. Most colonists thought schooling was more important for males” (Garcia, et al., 2005, p. 122).</td>
</tr>
<tr>
<td>• Emotion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Desideration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Perception</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relational Process</td>
<td>“is,” “represents,” “means”</td>
<td>“The Civil War tore apart American society, but it was also an international event. Union naval blockades disrupted the South’s trade with the rest of the world” (Ayers, Schulzinger, Teja, &amp; White, 2009, p. 128).</td>
</tr>
<tr>
<td>Verbal Process</td>
<td>“says,” “called”</td>
<td>“Colonial leaders called the attack the Boston Massacre. They said it was a deliberate British attack on innocent civilians” (Ayers, et al., 2009, p. 31).</td>
</tr>
</tbody>
</table>
| Modality                                       |                                                                                | “The plan also called for the
When teachers explain historical events from the textbook, they often modify the textbook’s implicit causal connections, making them explicit within their instructional explanations (Leinhardt, 1997). Teachers, however, do not always explain textbook readings. Students are asked to read textbooks on their own without explanation, requiring them to make connections for themselves. For some students, the opportunity to make these connections on their own aids comprehension. In a study of 56 middle and early high school students, Danielle S. McNamara, Eileen Kintsch, Nancy Butler Songer, and Walter Kintsch (1996) demonstrated that students who are knowledgeable, good readers benefit from texts that are less coherent on a local (within and between sentences) and a macro (at the paragraph level and higher) scale because the texts encourage them to infer from information they already have. While the authors examined coherence factors other than asyndetic constructions, their data may be extrapolated to include asyndetic constructions, as they are a form of text incoherence. In contrast, they also found struggling readers and those having little background knowledge on the topic benefit the most from very coherent texts, where causal relationships are made explicit.

Researchers, to my knowledge, have not studied the specific influence of asyndetic constructions on good, highly knowledgeable readers’ comprehension. As a form of implicit causal connection that relies on linguistic cues rather than macro-text structures, asyndetic constructions require readers to access different reading strategies to infer causal relationships. Like all causal structures, once their causal relationship is understood, asyndetic constructions can facilitate readers’ recall and comprehension of the narrative. Using a qualitative methodology, this study explored how students process texts containing asyndetic constructions by answering three questions: (1) Do good middle school readers identify asyndetic constructions as problematic to their comprehension of the text? (2) When presented with an asyndetic construction, what do good middle school readers identify as the relationship between the sentences? and (3) How do they explain their choice? Following a description of the methods used in this study, the study’s findings will be explored and their implications for Kindergarten-12 history instruction will be discussed.

Methodology

In order to examine the influence of asyndetic constructions on students’ comprehension, textbook passages were chosen for this study. It is typically beneficial for researchers to use texts with which participants are familiar, adding a level of ecological validity to the study (Brewer, 2000). Research in authentic environments, especially classrooms, however, does not always afford such opportunities. Although the authors of the students’ assigned classroom textbook included asyndetic constructions throughout the book, very few were contained within the sections they were about to read as part of their curriculum. It was decided that it was better for the chosen passages to mirror the curriculum, limiting the disruption to normal instruction, than to select passages from the students’ assigned textbook containing off-topic asyndetic
constructions. Two passages, therefore, were selected from the Civil War unit of a popular middle school history textbook (Appendix A).

**Passage Selection**

Two passages were selected, each containing one asyndetic construction, based on four criteria: (1) text length, (2) historical content, (3) type of asyndetic construction, and (4) structure of the passage’s network chain. First, the passages’ lengths were considered so as not to overload the student participants. Middle school social studies teachers typically assign short passages that supplement their instruction. The passages in this study were selected to represent such instructional decision-making. One passage was 208 words long; the other 184 words long.

Second, the historical content was considered in the selection of these texts. Since asyndetic constructions require readers to search their prior knowledge in order to make sense of the causal relationship, study participants needed to have some knowledge of the passages’ historical content. Too much knowledge of the content, however, could skew the study’s findings. Readers might have understood asyndetic constructions due to a large amount of prior knowledge, although without such knowledge they might have been problematic. To mediate these concerns, this investigation occurred while the participants were beginning to study the Civil War but prior to specific instruction on the Civil War content discussed in the passages.

Third, the type of asyndetic construction present in both passages was considered. Of the four main types of asyndetic constructions (i.e., mental process, relational, verbal process, and modal), mental process asyndetic constructions accounted for more than half (58%) of those identified across four widely-used secondary American History textbooks (Author, in revision). Middle and high school students are twice as likely to encounter a mental process asyndetic construction as they are to the second most common type, relational asyndetic constructions (Fitzgerald, 2011). Thus, two passages were selected that included mental process asyndetic constructions.

Within the mental process category, there are four sub-types: (1) cognition, (2) emotion, (3) desideration, and (4) perception. Of these four sub-types, the two found most frequently in middle school history textbooks were cognition and emotion (Author, in revision). Thus, for the purposes of this study, two passages were selected, each containing one of these two sub-types of asyndetic constructions as account for the two most frequent types of asyndetic constructions middle school students encounter in their textbook reading.

Fourth, the network chains of the passages were considered. Prior research indicates that events along a passage’s network chain are remembered with higher frequency than those that are not (Trabasso & Sperry, 1985). Yet, information structured linearly is easier to remember than information structured factorially (Trabasso & Broek, 1985). Thus, examining how participants’ reason about an asyndetic construction when the network chain is either factorial or linear allowed for the text structure to be accounted for. One selected passage had a factorial network chain (see Appendix B) and the other had a linear network chain (see Appendix C). Both chains are described in more detail below.

**Participant Selection**

Following the text selection process, students identified as good readers were chosen for this study from a suburban middle school in western Pennsylvania. Supported by previous research which suggests that good readers benefit from less-coherent texts (e.g., Graesser,
McNamara, & Louwerse, 2003; McNamara, et al., 1996), such middle school students were sought. For this study, a good reader was identified as one who scored between the seventh and ninth stanines on the Gates-MacGinitie test of reading comprehension. Eight participants scored in the eighth stanine, two participants scored in the seventh stanine, and three scored in the ninth. These readers would be investigated as a source of information about whether asyndetic constructions were problematic to their comprehension.

Ordinarily, a second pre-screening procedure would be used participant selection, namely, a measure of prior-knowledge. Due to the time constraints of the school schedule, however, such a measure could not be implemented. None of the good readers who were selected for the study had been taught about the specific Civil War topics selected for the study. The topics selected were not typically discussed in casual conversation about the Civil War (e.g., the development of a standing, Union army and riots in the South). Because of these to factors it could be assumed that the 12 readers’ prior knowledge of the specific events related in the selected passages was rather low. More importantly, it was assumed that the participants’ would know little about the mental states of the historical actors described in the text because they probably knew little of these specific events. Since the asyndetic constructions selected for this study rely on identification of these mental processes, limited direct exposure to instruction and discussion about them was appropriate. Given these assumptions, students’ answers were considered to be fairly free of contextual knowledge that might skew their explanations of the passages.

After identifying students who were good readers, eight female students and four male students were selected through a randomized process from across five sections of United States History in one school. Only 12 students were selected so that qualitative comparisons could easily be made across the participants. All students were enrolled in seventh grade US History and had attended classes throughout the entirety of the school year. Eleven of the 12 participants were Caucasian; one participant (Abby) was of Indian descent. Although no specific academic information was obtained other than the Gates-MacGinitie Reading Test-4 (GMRT-4) scores, the classroom teacher confirmed that all 12 students held ‘A’ averages throughout the year in their social studies class.

**Procedures**

Following the pre-screening test of reading comprehension, each participant was randomly assigned a passage to read. During the interview, participants met one-on-one with a trained researcher and silently read one of the two selected passages about the Civil War (Appendix A). After reading the passage, an audiotaped, hierarchical interview protocol was employed, investigating the participants’ understanding of the relationship within the asyndetic construction. Questions were posed based on the participants’ responses.

Participants first were asked whether anything in the text was confusing or unclear. If something was confusing or unclear, participants were asked to explain what it was. Next, participants were asked a causal question related to the asyndetic construction. These causal questions alternated between “forward causation” and “backward causation” in order to determine any effect on reasoning. Examples are provided below. Participants next were asked to justify their reasoning about their responses to the causal question. If they had difficulty doing so from memory, participants were encouraged to use the text as reference. Since each
participant only read the passage once, and this study intended to examine participants’ reasoning about asyndetic constructions, the procedure allowed for the greatest opportunity to collect data on these readers’ thought processes.

After they explained their thinking about the causal question, each participant was provided two “sentence cards,” each with one of the sentences comprising the asyndetic construction they read. Cards with conjunctions that could possibly make the relationship between the sentences more explicit also were provided, as described by Pulver (1986). These cards included both causal (because, so), temporal (then, and), and contradiction (yet) conjunctions. Once the participants selected which conjunction would make the relationship between the sentences explicit, they were asked to explain their reasoning. Participants further were asked if any of the other conjunctions also might have made sense and, if so, to explain their reasoning.

All participant interviews were transcribed and analyzed using pseudonyms; pseudonyms have been used throughout this paper. First, these transcriptions were used to identify whether or not readers self-reported comprehension issues related to asyndetic constructions. Second, the events each identified related to his or her causal question answer were compared to the network chain relevant for the passage read. Finally, participants’ justifications for their answers also were coded in order to identify the common reasoning moves employed throughout the interview. An open coding system was used for this final analysis.

Findings

In order to specify whether or not good middle school readers identify asyndetic constructions as problematic to their comprehension of the text, two sub-questions were asked: (1) Do readers self-report that asyndetic constructions posed a problem during their reading of the text? and (2) If readers do not self-report any problems, are they correct in the inferences they made during reading? The first question is the most obvious. If an asyndetic construction confuses readers, then the asyndetic construction is problematic to their comprehension. The second question, however, is probably more relevant to good readers. As noted above, good readers benefit from making inferences during reading and integrate those inferences into their comprehension of the text more readily than struggling readers (McNamara, et al., 1996). Inferences, however, can be made incorrectly, skewing comprehension and leading to misinformation. Thus, even though good readers may benefit from the opportunity to make inferences, they may make incorrect inferences in the process.

Self-Reported Problems with Asyndetic Constructions

As might be expected from good readers, none of the 12 identified the asyndetic construction in their passage as problematic. One participant, Joy, rather nonchalantly stated that the text was “… usually what we read… it [her typical textbook] goes into more detail about things and this [the passage she read] is just kinda right to the point… like, just what you need to know, pretty much.” When pressed about the detail that her typical textbook provided, she commented about more specific factual elements, not the relationship between those informational pieces. She viewed both her textbook and the study passage as a presentation of the facts, nothing more.
Only one participant, Faith, noted that she had difficulty with the text but it was not the asyndetic construction that gave her problems. When asked what she found confusing or unclear about the passage, she replied, “Um, like reading through it…. all the numbers and dates.” Instead of the asyndetic construction impeding her comprehension, she was concerned about the facts present in the text. She later admitted that the “numbers and dates” concerned her because she has trouble remembering such information. Rather than focusing on the relationship between the historical events, she was preoccupied with remembering the facts. Although Faith found the text “confusing or unclear,” her response indicates that it was not the asyndetic construction that was problematic.

Correct Causal Inferences

Since none of the participants indicated that the asyndetic constructions present in the texts were problematic to their comprehension, all were asked a question related to the antecedent (what caused X) or consequent (what was the result of Y) of the asyndetic construction they had read. For example, participants who read, “In the spring of 1863, riots like the one in Richmond broke out in a number of Southern towns. Southerners were growing weary of the war and the constant sacrifices it demanded” were asked either “What was the result of the Southerners growing weary of the war?” or “What caused riots to break out in Southern towns?” Responses to these two questions exposed participants’ comprehension of the causal relationship formed by the construction. Participants’ answers revealed whether they had made correct inferences regarding the asyndetic construction. Similar questions were constructed for the second textbook passage. Half of the participants who read each passage (three participants each) were asked to answer the results form of the question, also known as a forward causal question. The other half was asked to reply to the cause form of the question, as illustrated in the second question above. The majority of the participants were able to answer the causal question posed without reference to the text. Two students, however, needed to refer to the text; Faith, who read the Riots passage, and Kristen, who read the Bull Run passage. As discussed below, these participants’ need to look back at the text calls into question some, but certainly not all, of their data.

As expected from Trabasso and his colleagues’ studies (Trabasso & Broek, 1985; Trabasso, et al., 1984; Trabasso & Wiley, 2005), participants’ answers to the causal questions often matched events located on the passages’ network chains (Appendices B and C). The answers participants gave were related to the most important events in the passages’ storylines. The events selected by participants in answering the causal questions varied. As explained below, the distance of the participants’ answers from the asyndetic +constructions illustrated some comprehension issues regarding the implied causal construction.

The Riots passage

The network chain of the Riots text (Appendix B) does not have a very direct causal chain of reasoning but a factorial structure. The initial event, which happens to be the asyndetic construction, is followed by a discussion of other manifestations of weariness – the struggles Confederate soldiers had to face during the war and the difficulties the Confederate states faced during the war. The topic then shifts to difficulties the Union, specifically Lincoln, faced during the war. These topics are not drawn together with strong cohesive ties and the network chain
shifts with the introduction of each new topic. Thus, there is an unclear thread of relationships throughout this passage, including the asyndetic construction at the beginning of the text.

After stating that they did not have problems comprehending the passage, each participant was asked either “What was the result of the Southerners growing weary of the war?” or “What caused riots to break out in Southern towns?” If readers comprehended the causal relationship between the first two sentences of the passage, they should have answered either riots or weariness, respectively. Four of the six participants who read this passage were able to identify the cause/result from their initial reading of the passage. Only Faith referenced the asyndetic construction; yet this reference is qualified because she had to look back at the text. The other participants identified other portions of the passage unrelated to the asyndetic construction to answer the question they were posed while not reviewing the text.

Table 2
Riots passage readers’ identification of the causal relationship

<table>
<thead>
<tr>
<th>Participant</th>
<th>Forward or Backward Causation</th>
<th>Answer</th>
<th>Proposition Activated (Appendix B)</th>
<th>On Network Chain?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abby</td>
<td>Forward (“result”)</td>
<td>“disagreements” “Copperheads”</td>
<td>12 17</td>
<td>Yes</td>
</tr>
<tr>
<td>Brady</td>
<td>Backward (“caused”)</td>
<td>“conflicting rights”</td>
<td>13</td>
<td>Yes</td>
</tr>
<tr>
<td>Clarissa</td>
<td>Backward (“caused”)</td>
<td>“national vs. states rights”</td>
<td>13</td>
<td>Yes</td>
</tr>
<tr>
<td>Daniel</td>
<td>Forward (“result”)</td>
<td>“leaving army” “fell into disagreement”</td>
<td>19 12/13</td>
<td>No  Yes</td>
</tr>
<tr>
<td>Eric</td>
<td>Forward (“result”)</td>
<td>“deserters”</td>
<td>10</td>
<td>No</td>
</tr>
<tr>
<td>Faith</td>
<td>Backward (“caused”)</td>
<td>“weary”</td>
<td>2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

As Table 2 illustrates, four of the participants understood a causal relationship existed between either the riots in Southern towns or the weariness that Southerners felt to the disagreements between Southern states. Abby, Brady, Clarissa, and Daniel all made mention to these disagreements when they responded to their question. Eric, on the other hand, (mis)understood that the riots resulted in many Southern deserters who, in his words, “didn’t want to fight anymore.” Daniel had a similar misunderstanding, adding that desertion led to the disagreements between Southern states.

In contrast to the other participants, Faith identified the cause of the riots as Southern weariness after taking time to look back over the passage following the question. When she was asked how she arrived at that answer, she indicated she had used the question as a context clue and identified the Southerners’ weariness in close proximity to the riots. While identifying historical events in close proximity to key words in the question is an excellent strategy for
identifying cause, it cannot be said that this student made this causal connection in her initial reading. She admittedly activated reading strategies that helped her to produce the result.

**The Bull Run passage**

In contrast to the Riots passage, the authors structured the Bull Run passage by using a clear, linear network chain (Appendix C). With only a few minor detours, the narrative explains how the Confederates won the battle of Bull Run and shocked the North. At the end of the passage, it relates how the shock of the Union loss led Lincoln to call for a permanent army to fight the Confederates. Using a cognitive mental process, asyndetic construction, the authors write, “The North realized it had underestimated its opponent. Lincoln sent the 90-day militias home and called for a real army of 500,000 volunteers for three years.” Participants who were asked, “What caused Lincoln to send the 90-day militias home?” were expected to respond that, “The North realized it had underestimated its opponents.” Students who were asked, “What was the result of the North underestimating the South?” were expected to respond, “Lincoln sent the 90-day militia home and called for a real army.”

**Table 3**

*Bull Run passage readers’ identification of the causal relationship*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Forward or Backward Causation</th>
<th>Answer</th>
<th>Proposition Activated (Appendix C)</th>
<th>On Network Chain?</th>
</tr>
</thead>
<tbody>
<tr>
<td>George</td>
<td>Forward (“result”)</td>
<td>“rallied behind strong leadership to shock the North”</td>
<td>10 24</td>
<td>Yes Yes</td>
</tr>
<tr>
<td>Hope</td>
<td>Backward (“caused”)</td>
<td>“volunteer army wasn’t doing its job”</td>
<td>22?</td>
<td>Yes</td>
</tr>
<tr>
<td>Isabella</td>
<td>Forward (“result”)</td>
<td>“South won the battle”</td>
<td>23 and 24</td>
<td>Yes</td>
</tr>
<tr>
<td>Joy</td>
<td>Forward (“result”)</td>
<td>“South kinda gained stuff”</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Kristin</td>
<td>Backward (“caused”)</td>
<td>“confederate victory” “confederates better than expected”</td>
<td>23 26?</td>
<td>Yes Yes</td>
</tr>
<tr>
<td>Leah</td>
<td>Backward (“caused”)</td>
<td>“realized South was going to be a tougher opponent”</td>
<td>26</td>
<td>Yes</td>
</tr>
</tbody>
</table>

As Table 3 illustrates, all of the participants except Joy answered their question using information gained from the passage’s network chain. Although only one of the six participants answered the question as expected, almost all used information found near the site of the
asyndetic construction, Propositions 26 and 27. Although Kristin looked back through the text after the question was asked, unlike Faith with the Riots passage, Kristin was not the only participant in her group to answer the question by using information found near the asyndetic construction. While other participants provided information close to the expected answer, George was the only one to add additional information from the text away from Propositions 26 and 27. He indicated that the result of the North underestimating the Southern troops was that the Confederates were able to rally and win the battle. Although he did not provide the intended response at first, George touched upon a broader theme in the passage, located on the network chain, to provide a more global answer to the question.

One of the most interesting findings from this portion of the interview was Joy’s response to the question, “What was the result of the North underestimating the South?”

Joy: “The North underestimated the South; the South kinda gained stuff from that because they surprised the North with what they actually could do.”

Author: “What specifically in the passage told you that? Can you point it out to me?”

Joy: “No, I don’t think it was in the passage. It just says, the Confederate victory in the first battle of Bull Run thrilled the South and it shocked the North and it just talks about how the South thought the war was won and the North underestimated its opponents.”

Two findings emerge from Joy’s response. First, although her initial answer was not drawn directly from information in the passage, Joy indicated understanding of the events that took place during the Battle of Bull Run, according to the textbook passage. As the second finding here indicates, Joy’s initial response came from a re-formulation of the material in her own words, most likely integrated with her prior knowledge of history and war. When asked to do so, Joy was unable to point to a specific part of the passage to support her answer, yet it would make sense that an underestimated army would gain either a material or psychological advantage over its opponent. Joy’s initial response represented an inference, even though it was not the intended answer.

Isolating the Asyndetic Construction

Many of the participants answered the causal questioning by identifying an antecedent or consequent along the network chain that was not directly related to the asyndetic construction. These responses may be indicative of the lack of lexical markers that express causation, a possibility accounted for in the next portion of this study’s design. After responding to the above causal questions, participants’ answer options were limited in the second part of the study, exploring how they made sense of the asyndetic sentences in isolation from their texts. Participants were asked to connect the sentences using either causal (because or so), temporal (then or and), or contradiction (yet) constructions and explain which was the best connector and why.

The Riots passage

When asked to read, “In the spring of 1863, riots like the one in Richmond broke out in a number of Southern towns. Southerners were growing weary of the war and the constant sacrifices it demanded,” all of the participants identified the asyndetic construction as causal. Causal was the correct answer. The appropriate link between these two sentences is “because,” since the Southerners growing weary was the impetus for the riots.
Table 4
Riots Passage Participants’ Selection of Connectors

<table>
<thead>
<tr>
<th>Participant</th>
<th>Connector</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abby</td>
<td>because</td>
<td>“It explains why the riots broke out.”</td>
</tr>
<tr>
<td>Brady</td>
<td>and</td>
<td>“combination of the two [sentences]”</td>
</tr>
<tr>
<td></td>
<td>because</td>
<td>“second sentence could also be the “why””</td>
</tr>
<tr>
<td>Clarissa</td>
<td>because</td>
<td>“this [sentence 1] happened because of that [sentence 2],” “they are next to each other”</td>
</tr>
<tr>
<td>Daniel</td>
<td>so</td>
<td>“if you put “because,” it would mean that Southerners were growing weary and riots were breaking out but the riots were breaking out and then the Southerners were growing weary”</td>
</tr>
<tr>
<td>Eric</td>
<td>because</td>
<td>“explaining why the riots broke out”</td>
</tr>
<tr>
<td>Faith</td>
<td>because</td>
<td>“Because riots were breaking out and [the Southerners growing weary] would be the cause.”</td>
</tr>
</tbody>
</table>

As Table 4 illustrates the backwards-causal construction (those linked by because) led one participant to misidentify the correct causal conjunction. Daniel claimed that “so” was the appropriate conjunction to link the asyndetic construction. At first glance, his response may seem accurate; riots would make people weary. The entirety of the second sentence indicates, however, that Southerners’ weariness preceded the riots. The riots of 1863 protested the Civil War and the sacrifices it demanded. Comprehending these two sentences as expressing forward causation, as Daniel did, alters the meaning of the construction by misappropriating the importance of the riots to the cause of Southerners’ weariness.

When asked how they knew it was causal, three of the participants clearly explained their thinking beyond sentence order. Clarissa recognized the causal relationship because of the proximity of the sentences. She noted that the asyndetic construction encompassed the only two sentences in the first paragraph. Based on this information, she was “guessing they wouldn’t be too far apart from the topic.” Time and procedures limited interrogating this line of reasoning further with her and asking whether all sentences that are proximinal represent causal relationships. Brady provided an explanation similar to Clarissa’s. Faith explained a clearer causal relationship between the two sentences, noting that the word “weary” in the second sentence indicated that the relationship was causal. She explained that Southerners’ feeling weary and their willingness to riot against the war were not separate events but that the feelings led to the action. For her, “weary” meant something more along the lines of “fed-up” than “fatigued.” She saw weary as a call to Southern action and the cause of the riots. Although her answer to the causal question may have been inaccurate, her reasoning about the sentences in isolation was nuanced.

The Bull Run passage

Like the participants who read the Riots passage, the Bull Run participants were asked to read only the two asyndetic sentences in this passage (“The North realized it had underestimated its opponents. Lincoln sent the 90-day militias home and called for a real army of 500,000 volunteers for three years”) and indicate the link between them. All of the participants identified
the asyndetic construction as causal. Unlike the Riots passage, however, the appropriate causal connector between these sentences is “so,” since it was only after realizing that the North had underestimated its opponents that Lincoln took action, calling for a “real army.”

Table 5

<table>
<thead>
<tr>
<th>Participant</th>
<th>Connector</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>George</td>
<td>so</td>
<td>“Well, when you read something like that, you think, “That’s the reason why he did it.””</td>
</tr>
<tr>
<td>Hope</td>
<td>so</td>
<td>“Because if it were in a different order, it would be saying that because the North realized…”</td>
</tr>
<tr>
<td>Isabella</td>
<td>so</td>
<td>“It shows what they did after they realized.”</td>
</tr>
<tr>
<td>Joy</td>
<td>so</td>
<td>“It [the other connectors] just doesn’t really explain what you need to know.” “You need to know that because one thing happened another thing happened.”</td>
</tr>
<tr>
<td>Kristin</td>
<td>so</td>
<td>“I guess the second sentence is like caused by the first sentence.”</td>
</tr>
<tr>
<td>Leah</td>
<td>so</td>
<td>“‘Cause it’s like a cause and effect kinda thing.”</td>
</tr>
</tbody>
</table>

As Table 5 indicates, many participants had difficulty explaining why the two sentences were linked causally. Like the readers of the Riots passage, most Bull Run readers did not identify the construction’s mental process, “realized,” as the causal determinant. George and Kristin were exceptions, indicating that “realized” led to Lincoln’s call for a permanent army after further questioning. Without this realization, Lincoln may not have taken such action. George noted, “When Lincoln understood that the Northern generals had underestimated the South, he sent the 90-day militias home and called for a real army.” Put another way, Kristin explained, “The North realized that it had underestimated its opponent meaning that they needed more of an army to defeat the South.” Both of these participants explained that it was Lincoln’s realization and, as Kristin noted, what that realization meant in a practical sense that causally connected the two sentences. The other participants did not explain the relationship in those terms, often claiming that they guessed or that it just sounded right. Leah’s response was an interesting exception. She realized that there were no lexical markers that indicated causation and looked to her prior knowledge to justify the causal connection. She further explained:

if they had a real army, maybe they had, what 10,000 people there or something?... and they, the South, had brought about 10,000, if they had thought of the South as a real opponent, um, and brought a real army, they could have ended the war right there. But because they thought it was just the South and “they can’t beat us,” they underestimated them and didn’t bring enough ammo… it could have been over by then.

Nowhere in the passage do the authors mention numbers of troops, ammunition, or the North’s premeditated decision to disregard the Southern army as an opponent. Leah drew upon her prior knowledge, some possibly accurate and some inaccurate, to reason about the asyndetic relationship. Her search for bridging information took her beyond the relationship between the sentences to the larger topic of military tactics and the Civil War.
Discussion

Asyndetic constructions occur when two sentences, situated next to each other in the text, connote a causal relationship without the use of lexical markers, such as because and so (Author, in revision). Since the causal connection between such sentences is not explicit, readers must infer the connection in order to fully comprehend the text’s meaning. While this study’s small sample size limits any generalizability, it does provide some insight into how students think about implied causation. Although none of the participants noted that the asyndetic constructions inhibited their comprehension of the passages, they often were not able to accurately answer a causal question related to the asyndetic construction after an initial reading. The passage structured using a linear network chain enabled participants to accurately explain the relationship between asyndetic causal relationships more frequently than the passage structured using a factorial network chain. When the participants were unable to immediately recognize the causal relationship between the asyndetic sentences, they often searched for relevant information along the texts’ network chains, as other authors reported in previous studies (Trabasso & Broek, 1985; Trabasso, et al., 1984; Trabasso & Sperry, 1985).

In this study, the structure of the passage seemed to influence participants’ access to network chain information. Participants who read the factorial Riots passage were more likely than the Bull Run participants to use information unrelated to the network chain. These data indicate that, when required to infer information, students reading non-linearly structured texts have more difficulty identifying the most salient information for their needs than students who read linear accounts. This finding is supported by Leo G. M. Noordman and Femke de Blijzer’s (2000) work, suggesting that factorial relations are more cognitively demanding than linear relationships. Asyndetic constructions may further complicate these findings since this particular type of implied causation lacks the lexical markers readers often rely upon to make inferences (McNamara, et al., 2012). Future studies are needed to confirm this conclusion.

Even when participants did not make the implied asyndetic relationship explicit in their reading, and therefore looked elsewhere in the text for information linking the cause to the effect, all recognized the two sentences were causally related when those sentences were isolated from the text. This is not surprising as all 12 participants scored well above their age group on the pre-test reading assessment and had some knowledge of the Civil War prior to the study. Given these circumstances, one could assume these readers would be able to correctly infer the relationship between these sentences, as good readers were able to do in previous studies (Graesser, et al., 2003; McNamara, Graesser, & Louwerse, in press; McNamara, et al., 1996). These relationships were inferred even when participants were unable to explain why they thought the sentences were causally related. Participants often disregarded and/or overlooked the mental processes included in the texts that provided clues to the causal connections.

From these data, two questions arise. First, why were the participants often unable to provide the other of the two sentences in the asyndetic construction as a response to the causal question asked when all of them recognized the sentences as causally related in isolation? Three reasons can be provided to account for this difference. First, it is possible that these students have been taught to look for more global answers to the causal questions. The participants may have looked for answers linking the entire passage rather than the minor causal connections this research design was to examine. Evidence for this explanation can be found in the participants’
responses to the Bull Run passage. Three of the six participants who read this passage suggested that the real army was formed because of the Union loss, not because of Lincoln’s realization. Not only was this answer more global in context, meaning that the mechanisms for change were in the loss and not in Lincoln’s decision-making, but the answer references the topic sentence of the paragraph, where big ideas often are noted (Beck, et al., 1989). Thus, students may have focused on the bigger picture rather than Lincoln’s decision, which was only implied in the passage.

A related second explanation might come from the position of the asyndetic constructions in the passages. One asyndetic construction was located at the beginning of the passage whereas the other was located at the end, possibly suggesting to readers that the answer was to be found in the middle of the paragraph. If the participants were under the impression that paragraphs in the history textbook mirrored the five paragraph essays pervasive in English and reading classes (Miller, 2010), such thinking might account for these findings. Participants may have thought that paragraphs began with a global intro, provide an explanation, and conclude by recapping the argument. Their tendency would be to search for connecting information in the middle of the paragraph. Evidence for this explanation is most obvious in the responses of the Riots readers. Although the asyndetic construction was at the very beginning of that passage, participants’ responses were focused on the middle of the narrative (see Table 2). Instead of looking nearby the first sentence, the participants may have been looking towards the middle for their answers, based on their understanding of text structure.

Third, the difference between their responses to the causal question and to the specific connectors presented in isolation could be attributed to the poor design of some of the study questions. Participants answering the forward causal question to the Bull Run passage were asked, “What was the result of the North underestimating the South?” rather than the more precise question, “What was the result of the North realizing it had underestimated the South?” In an effort to avoid giving participants clues to the expected answer to the causal question, the mental process was removed from the question, leaving a vague question open to multiple answers. For participants who answered this question, reliability of the data gathered may be questionable. The other questions do not contain this characteristic, so resulting data can be considered to have greater validity.

The second question that arises from these data is, “How did participants judge the asyndetic sentences to be causally related when they could not explain why they made that connection?” Two explanations can be offered. First, students may lack an understanding of how historians and textbook authors use mental processes to construct causal relationships. Only three of the twelve participants mentioned “growing weary” or “realized” as clues to understanding the causal relationships. Adult historians use language in a way that is confusing to many adolescents (Beck, et al., 1989). The authors, for example, used “weary” as an emotive mental process that enabled riots to occur. It is possible these readers would have been more inclined to personally connect to the implied relationship between emotion and action if a word such as “frustrated” had been put in its stead.

A second explanation as to why students were unable to explain the causal connection might relate to the instruction students often are given in English class as opposed to social studies. If the participants had been taught to read the history textbook by looking for facts
(Epstein, 1994), as Joy claimed, it is possible that they are not equipped to read history texts for links between human emotion and action. Historical empathy may not be as strongly emphasized in social studies (Ashby & Lee, 1987) as it is in English class.

Implications for Teachers

This study’s findings have implications for teachers’ awareness of the complexity of history textbooks’ language and structure. Implications also exist for teachers’ awareness of the limitations of their students’ reading skills. Just as Wineburg (2001) declared that “doing history” from primary sources is an unnatural act, constructing a mental representation of history from a textbook is not a simple process of “just reading.” While teachers who use primary sources to teach history are aware of the complexity of reading various genres, teachers also need to recognize that textbook narratives are not always structured in the same way, not even within the same textbook (Coffin, 2006). This study’s findings illustrate that causation can be expressed in a variety of ways, complicating both the textbook narrative and the assessment of students’ comprehension. While textbooks may be viewed as a source for conveying historical fact (Epstein, 1994; Loewen, 1995/2007), the language and structure of their passages can obscure connections between these facts, making comprehension difficult even for good readers. This last point is possibly more important than the first. Throughout this study, good readers had difficulty recognizing implied causation via asyndetic construction. They also had difficulty explaining why asyndetic sentences were causally related. Although this study uses an admittedly small sample, it raises questions about the difficulties poor readers may face when reading the same types of passages. Teachers should recognize not only the complexity of causal language in textbooks but also the reading skills of their students prior to assigning textbook reading assignments. Since the structure and language of textbook passages may impede the comprehension of some good readers, then extra care in instructional planning may be even more necessary for poor readers, if the textbook is to be used at all.

Conclusion

History textbook passages sometimes impede students’ abilities to identify and explain implied causation, such as asyndetic constructions. All 12 good readers who participated in this study correctly recognized the causal relationship between the two study sentences in isolation. Few were able to identify that connection just by reading the text. Few were able to explain why the sentences were causally related even after they recognized the causal relationship. It is possible that the way students are taught to read from history textbooks and their awareness of the role mental processes play in historical explanations contributed to these findings. The small sample size of this exploratory study requires further study to confirm these suggestions. These finding suggest a need for further study to determine how important it is for social studies teachers to take care during instructional planning when assigning textbook passage, especially to poor readers, due to the difficulties asyndetic constructions can create for good readers’ comprehension.
References


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Appendix A
Textbook Passages

The Bull Run Passage

On July 21, 1861, Union forces commanded by General Irvin McDowell clashed with Confederate forces headed by General Pierre Beauregard near a little creek called Bull Run north of Manassas. In the North, this battle came to be known as the First Battle of Bull Run.

At one point in the battle, a Confederate officer rallied his troops by pointing his sword toward Southern General Thomas J. Jackson. The officer cried, “There is Jackson standing like a stone wall! Rally behind the Virginians!” From this incident, Jackson won the nickname “Stonewall” Jackson. His men held fast against the Union assault.

As fresh troops arrived, the Confederates equaled the Union forces in number and launched a countercharge. Attacking the Union line, they let out a blood-curdling scream. This scream, later called the “rebel yell,” caused the Union troops to panic. They broke ranks and scattered.

The Confederate victory in the First Battle of Bull Run thrilled the South and shocked the North. Many in the South thought the war was won. The North realized it had underestimated its opponent. Lincoln sent the 90-day militias home and called for a real army of 500,000 volunteers for three years. In the next section, you will learn what army life was like.

(Garcia, Ogle, Risinger, & Stevos, 2005, p. 469)

The Riots Passage

In the spring of 1863, riots like the one in Richmond broke out in a number of Southern towns. Southerners were growing weary of the war and the constant sacrifices it demanded.

Confederate soldiers began to leave the army in increasing numbers. By the end of the year, the Confederate army had lost nearly 40 percent of its men. Some of these men were on leave, but many other were deserters.

Faced with the difficulties of waging war, the Confederate states fell into disagreement. The same principle of states’ rights that led them to break from the Union kept them from coordinating their war effort. As one Southern governor put it, “I am still a rebel . . . no matter who may be in power.”

Disagreements over the conduct of the war also arose in the North. Lincoln’s main opponents were the Copperheads, Northern Democrats who favored peace with the South. (A copperhead is a poisonous snake that strikes without warning.) Lincoln had protesters arrested. He also suspended the writ of habeas corpus, which prevents the government from holding citizens without a trial.

(Garcia, et al., 2005, p. 491)
Appendix B
The Riots Passage Network Chain

```
1 n 2 n 3 9

↑  
down  
4 ← 5 → 6 → 8 n 7

↑

n
11 10
↓
13 → 14 → 12 ← 15

n 16 – 17 – 18 – 19
↓↓
20 n 21 – 22
```

Key:
# = causally significant
→ = direction of cause
n = temporal connection
-- = related/explanatory statement

Narrative Units:
1. In the spring of 1863
2. riots…broke out in a number of Southern towns.
3. … like the one in Richmond…
4. Southerners were growing weary of the war
5. and the constant sacrifices it demanded.
6. Confederate soldiers began to leave the army in increasing numbers.
7. By the end of the year,
8. the Confederate army had lost nearly 40 percent of its men.
9. Some of these men were on leave
10. but many others were deserters.
11. Faced with the difficulties of waging war
12. the Confederate states fell into disagreement.
13. The same principle of states’ rights that led them to break from the Union
14. kept them from coordinating their war effort.
15. As one Southern governor put it, “I am still a rebel… no matter who may be in power.”
16. Disagreements over the conduct of the war also arose in the North.
17. Lincoln’s main opponents were the Copperheads.
18. Northern Democrats who favored peace with the South.
19. (A copperhead is a poisonous snake that strikes without warning.)
20. Lincoln had protesters arrested.
21. He also suspended the write of habeas corpus
22. which prevents the government from holding citizens without a trial.
Appendix C

The Bull Run Passage Network Chain

```
6  3  
|    |
1 n 2 – 4
|    |
n n
9  5 ← 8 – 7
↓
13 ← 12 n 11 → 10
↓
14 n 15
↓
16 → 17 n 18 → 19 → 20 → 22
↓
23 – 24
↓
25  26
↓
27 – 28
```

Key:
# = causally significant
→ = direction of causation
n = temporal connection
-- = related/explanatory statement

Narrative Units:
1. On July 21, 1861
2. Union forces… clashed with Confederate forces
3. …commanded by General Irvin McDowell…
4. … headed by General Pierre Beauregard…
5. near a little creek called Bull Run
6. north of Manassas.
7. In the North,
8. this battle came to be known as the First Battle of Bull Run.
9. At one point in the battle,
10. a Confederate officer rallied his troops by pointing his sword toward Southern General Thomas J. Jackson.
11. The officer cried, “There is Jackson standing like a stone wall! Rally behind the Virginians!”
12. From this incident,
13. Jackson won the nickname “Stonewall” Jackson.
14. His men held fast against the Union assault.
15. As fresh troops arrived
16. the confederates equaled the Union forces in number
17. and launched a countercharge.
18. Attacking the Union line
19. they let out a blood-curdling scream.
20. This scream… caused the Union troops to panic.
21. …later called the “rebel yell”…
22. They broke ranks and scattered.
23. The Confederate victory in the First Battle of Bull Run thrilled the South
24. and shocked the North.
25. Many in the South thought the war was won.
26. The North realized it had underestimated its opponents.
27. Lincoln sent the 90-day militias home
28. and called for a real army of 500,000 volunteers for three years.

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