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# Children's Comprehension and Local-to-Global Recall of Narrative and Expository Texts

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We examined underlying mechanisms for comprehension differences across expository and narrative text while controlling for factors confounded in the extant literature. Fourth grade students (*n*=32) read both an expository and a narrative text, and completed both a local comprehension assessment, and a global retelling assessment for each text. Children recalled more information from narrative than expository texts in the global processing task, but there was no difference in the local processing task. Our findings are consistent with psycholinguistic studies on the formation of mental models from text, and suggest that narrative structure may facilitate memory for global information even when local comprehension of exposition and narrative is equivalent.

The relative importance of narrative and expository text in elementary reading curricula is a matter of considerable concern for both educators and researchers. Robust findings show that children tend to exhibit better reading comprehension for narrative than expository texts in formal assessments (Duke, 1999; Michigan Educational Assessment Program, 2002; National Center for Education Statistics, 2001). In a survey of 35 countries, NCES (2001) reported that in no country did students score significantly higher on expository items.

These findings raise concern for a number of reasons. Students may be poorly prepared for secondary and postsecondary education, in which expository text plays a much larger role; interpreting results becomes problematic if assessments differ on the proportion of expository and narrative items, and on the ways in which exposition and narrative are defined. Finally, and perhaps most importantly, until we know why this disparity exists, it will be difficult to remediate it.

One promising explanation is that exposure drives the difference (Duke, 1999). Bruner (1990) argued that readers use their preconceptions and expectations about a text to help them comprehend what they are reading. Literacy instruction during elementary school emphasizes the fictional narratives at the expense of informational texts, (Campbell, Kapinus, & Beatty, 1995; Hoffman, Roser, & Battle, 1993). If narrative and exposition require different sorts of schema, exposure to one would not lead to expertise in the other.

**Narrative and Expository Schemata**

Indeed, a large body of research shows that narrative and exposition do invoke different schemata. Traditional stories start by describing relations among settings, characters, and plots; they contain clear markers between episodes (e.g., beginnings and endings, setting and goal attainment); and conclude with a global ending (Mandler, 1984). Socio-linguistic models likewise find a well-defined structure in narrative discourse composed of six elements: abstract, orientation, complication, evaluation, result, and coda (Labov & Waletsky, 1967). The narrative structure of text has been shown to affect information reduction, organization, storage, and retrieval of textual information (Mandler & Johnson, 1977).

In contrast, expository discourse is organized into statements that allow readers to follow text flow through logic and causality, exposition relies primarily on declarative statements, logic, and reason, and it is evaluated in terms of its accuracy and strength of argument (Bruner, 1986, 1990). Expository text is generally analyzed in terms of propositional structure (e.g., Meyer & Rice, 1984; Otero & Kintsch, 1992). A well-written expository text uses a macroproposition early in the paragraph to organize subsequent propositions and connect them to the larger goals of the author.

Still, knowing how schemata differ does not tell us how these differences affect comprehension. This is not only dissatisfying from a research perspective, it creates practical limitations as well. There are many differences to be found between exposition and narrative, and therefore likely to be many sources of differences in processing. We focus on one that, based upon prior work in psycholinguistics, we believe to be of particular importance: That narrative and expository text tend to differ in the scope of processing they receive.

**Processing of Text and Scope**

Scope is defined along a local-to-global continuum, as in the Construction-Integration model of text comprehension (Kintsch, 1988). Local processing is at the level of phrases and sentences. For example, in order to correctly interpret the sentence "The man ran to the bank to save the drowning child," the reader must wait until the end of the sentence before choosing one of the many meanings of "bank." Deciding from the outset that a "bank" is a building where one goes to deposit and withdraw money would cause a lot of confusion. Local processing maintains local coherence. It does not, however, ensure that there will be consistency and coherence from sentence to sentence, much less across the whole text. Solving a murder mystery, for example, usually requires a very high degree of global processing, as one must corroborate alibis and map suspects' movements over the course of the story. In expository text, arguments and extended reasoning also require broad scope to evaluate whether various points are compatible, or whether aspects of the topic remain unaddressed.

McKoon & Ratcliff (1992) have found that the most likely level of processing is that required to produce "minimal coherence." That is, readers tend to make only those connections that are readily available from the information at hand, that can be made automatically, and that are necessary to maintain an acceptable degree of coherence according to the monitoring processes being used. Thus, unless a global model is required by the situation, readers will not construct it.

Bringing together the psycholinguistics literature and the work on schemata, we hypothesis that since schemata strongly influence inferencing and metacognition, different schemata will also differ in what information is available, the automaticity of inferences, and the monitoring strategies used. In particular, text based on different schemata could support different scopes of processing. If narrative promotes global processing and thus a broader processing scope than exposition, readers will extract different information from texts, construct broader, more well-integrated mental representations of the text, and will be able to answer different sorts of questions on a standardized test.

In support of our account, there is evidence to suggest that texts using narrative structural elements support a broader scope of processing than exposition. Reading curricula often capitalize on this global nature, teaching students to create story maps or concept maps, using a preset structure defined by story grammars of the sort described by Mandler (1977), as well as temporal organization and dramatic arc (Brewer, 1980). Story mapping instructional applications have reported success in promoting reading comprehension (Baumann, Bergeron, & Bette, 1993; Davis & McPherson, 1989; Palincsar & Brown, 1984). In addition, readers are more likely to remember a text when it has a familiar structure (Bartlett, 1932; Mandler & Johnson, 1977; Stein & Nezworski, 1978; Yussen, Huang, Mathews, & Evans, 1988). Some argue that story mapping is still not encompassing enough to account for global responses that link personal experience to reading comprehension of stories (Foley, 2000).

Likewise supporting our account, expository texts tend to be processed locally, in terms of individual propositions rather than the overall structure (Einstein, McDaniel, Bowers, & Stevens, 1984; McDaniel, Einstein, Dunay, & Cobb, 1986). Manipulations to increase the level of processing and

integration have a greater effect when participants read expository text than when they read narrative text (Narvaez, van den Broek, & Ruiz, 1999), suggesting that the processing of expository text receives less global processing unless prompting occurs. They may be organized in terms of local relationships between antecedents and consequents, rhetorical strength (Bailenson & Rips, 1996), or a need to establish certain claims before making others. This results in texts that require either a local model for comprehension, or an uneven, idiosyncratic global model. Researchers have argued that the narrative-expository differential may be accounted for in part by the fact that narratives are generally more similar in structure to one another than are expository texts; this could allow emerging readers to more readily identify and use the structure of narrative text (e.g., Mandler & Johnson, 1977; Rumelhart, 1977; Stein & Trabasso, 1982).

### Testing the Scope of Processing Account

Isolating features of narrative and expository text is a difficult task. Comparisons of text genres have often confounded structural differences and semantic differences. Narrative is often equated with fiction, while exposition is primarily associated with the canonical style of writing evident in textbooks. Thus, even though informational narratives are quite possible, and may even be prevalent in subjects such as history (e.g., Sadosky, Goetz, & Rodriguez, 2000), the characteristics of fiction and textbooks may become conflated with the concepts of narrative and exposition, respectively. In addition, some texts combine narrative and expository elements (e.g., newspaper articles, autobiographies), and determining the individual contributions of each genre is difficult. Finally, the tasks used to assess student outcomes vary widely from study to study, so that it becomes difficult to determine whether results are driven by genre or task demands.

The purpose of this study is to compare children's reading of narrative and expository texts by eliminating many common confounding factors by comparing students' performance in a within-subjects design and equivalent texts and using tasks that specifically address the issue of global versus local processing. We argue that if the presence of a narrative structure improves students' ability to construct an global representation of the text, then narratives should show an advantage over expository texts in tasks requiring global processing. However, since local representations are required for minimal comprehension, there should be little difference between expository and narrative texts on tasks requiring only local representations. This would have implications for education in that it would help us predict what types of assessments and items are likely to produce a narrative-expository differential, as well as guiding the development of activities to support the development of reading skills across both genres.

## Method

### Participants

The participants were 32 middle-class, Anglo-American fourth grade students at a public school in a small Midwestern city. There were equal numbers of male and female participants. All had at least a fourth grade level of reading comprehension proficiency, based on their teacher's assessment of their previous class performance, and performance on standardized reading tests. Students were nominated by their teachers for participation. None of the participants had been identified as having learning disabilities, and all were monolingual English speakers. This study took place at the end of the school year.

### Materials

Four texts were created. They were presented as bound books, each five pages in length. These texts operationalize Genre as having two levels: Narrative and Expository. The two Narrative texts contained key narrative elements that have been identified in previous research (e.g., Mandler, 1984). The narrative elements were: (a) establishing of a main character and setting, (b) goal-directed actions on the part of the main character, (c) the encountering of a problem or conflict, and (d) resolution of the problem or conflict. Two commonly cited narrative other elements, a formal beginning (e.g., "Once upon a time") and a formal ending device (e.g., "They lived happily ever after") were not used, both because many modern-day children's books do not use these conventions and because they are not as clearly structural as the plot arc, and could simply function as isolated cues. For the purposes of examining the structural differences between narrative and expository, the absence of these items strengthens the test. We operationalized Expository as the absence of narrative story elements. Although this may not fully capture the nature of expository text, the result is a text that is very similar to that of many expository children's books, organized in terms of macropropositions (or topic sentences), and allows us to isolate key structural elements so that distinguish exposition from narrative structure (Appendices A and B).

Because Genre is manipulated within-participant, we used two similar content areas to avoid novelty and practice effects, while controlling for subject matter interest. All four texts involved non-fictional events, featured animals prominently, and had an environmental theme focusing on people protecting wildlife from the effects of human

intrusions upon their habitat. We created a narrative text and an expository text about protecting endangered mountain gorillas, and a narrative text and an expository text about rescuing ocean birds after oil spills. In selecting these content areas, we consulted the participants' teachers regarding whether or not these topics were covered in the curriculum, and whether they were aware of any major individual differences in content expertise among the participants. We also asked students about their prior knowledge and experience with this content at the beginning of the two tasks.

The four texts contained approximately the same number of words, ranging from 449 to 468 words, with an average of 462 words. All four were designed to have a Flesch-Kincaid Grade Level score of 6.6 in order to control for difficulty while avoiding ceiling effects in children's performance.

Participants completed two tasks, one tapping their ability to comprehend the story at a local level, the other their ability to comprehend at a global level. Local-level comprehension was assessed with a "think-along" passage (TAP) designed by Paris (1991) that required children to answer two questions immediately after reading each page of the book, for a total of ten questions. These items assessed their ability to recall basic information about events detailed on that page of the book, and are similar to items found on standardized tests. They were coded as 0 for incorrect and 1 for correct. Two independent raters scored all data with an inter-rater reliability of 95%; i.e. their judgments coincided in 95% of cases. In the remaining 16 of 320 cases, the two raters discussed their reasoning, and chose a score jointly based upon this discussion.

We assessed participants' ability to construct global models of the text through Retelling. After they had read the entire book, participants were told "Pretend that I'm your friend from class. I haven't read the book and want to know about it. Can you retell the book as you remember it, trying to include as many details as possible?" Retellings demonstrate how readers focus and elaborate elements of text structure (Gambrell, Koskinen & Kapinus, 1991; Gambrell, Pfeiffer, & Wilson, 1985; Irwin, & Mitchell, 1983; Stein & Glenn, 1979). Retelling was measured with narrative and expository retelling rubrics adapted from the Michigan Literacy Progress Profile (MEAP, 2001). The rubrics assessed the same six elements of retelling in both genres; gist/main idea, details/story elements, organization, linguistic spillover (i.e., use of language conventions), rehearsed and unrehearsed information, and elicited feelings. The Retelling elements assess global processing because, unlike the TAP, which requires holding details in memory only for the length of a page, the Retelling requires them to be held in memory until the end of the story, and integrated so that the reader can extract the main idea and overall organization, order and the details and story elements, and extract the emotional impact of the story.

Each retelling element was scored along a four-point continuum from minimal and inaccurate (i.e., beginning level) to clear and elaborate (i.e., mature level). The rubric was used by two independent raters with an inter-rater reliability of 90%. Disagreements were resolved through discussion.

In addition to these two measures, we included additional questions to assess the effectiveness of our controls, and to solicit feedback regarding students' perceptions of the two genres. To assess our control measures, we asked participants two questions targeting prior knowledge before they began each text. The prior knowledge questions were coded on a 3-point scale. Scores of 0 were given if students failed to answer or gave an irrelevant answer. Incomplete answers were scored as 1, and a full answer was scored as 2 points, as determined through the use of a rubric.

After they had completed the books, we asked participants to compare the two books using five cognitive and five affective items. For each, participants were asked to choose between the narrative and the expository texts, or to indicate no preference for either genre. The five cognitive comparisons addressed: question difficulty, need for background knowledge, ease of understanding ideas, clarity of order of events, and ease of remembering. The five affective items asked participants: which book they liked more, which book was more interesting, which book they would recommend to a friend, which book required greater effort, and which book elicited more feelings. Each of the cognitive and affective items was scored on a three point scale, with -1 for expository choice, 0 for no preference (i.e., same), and +1 for narrative choice. This was for classification purposes only, and values were assigned arbitrarily.

**Procedure**

The study employs a within-participant manipulation of Genre (Expository vs. Narrative), with Content (Gorilla vs. Bird) and Order (Narrative-First vs. Expository-First) included for control purposes. Each student read the two books and completed all tasks during a single one-on-one session. The sessions were conducted at the participants' school in a quiet room. The directions were:

> "I'd like you to read these two short texts. As you finish reading every page, we'll stop,

> I'll cover your book with a piece of paper, and I'll ask you a couple of questions. I printed a star next to the page number to remind you to stop and listen to my questions. Please keep the texts on top of the table so that I can follow as you read. If you want to stop and return to your classroom at any time, it's fine, just let me know. All right? Do you have any questions?"

Participants were randomly assigned to read two text pairings of content and genre (i.e., Expository-Bird, Narrative-Bird, Expository-Gorilla, and Narrative-Gorilla). Across participants, the pairings and the order of presentation were fully counterbalanced. Participants completed the prior knowledge check prior to reading a text, answered two TAP questions at the end of each page, completed the Retelling task at the end of each book. They completed the Preference Survey after reading both books.

## Results

In all statistical analyses, we used 0.05 as our alpha level. We might have chosen to use 0.10, given that our hypothesis—that Narrative will outperform Exposition on the Retelling task—is one-sided. However, using 0.05 is both more conservative, and more appropriate for the TAP task, in which we did not make a directional prediction.

### Prior Knowledge Assessment

The first two items in the TAP task were developed to control for instances when students may have extremely low or high Prior Knowledge regarding the content areas of the books. No student reported greater Prior Knowledge for the topic of one book over another, and there were no overall differences in Prior Knowledge across conditions (all *F*s <1).

### Preference Survey

Many students showed no Preferences; of those who did show Preferences, 49% favored the Narrative text, and 51% favored the Expository text. We used a binomial test to determine if Preference frequency differed significantly from chance for each item, deleting cases where no Preference was indicated. We found no evidence for Preference on any of the items (See Table 1 for frequencies and results for the binomial test). This argues against difficulty, interest or enjoyment as confounds; if students had found one type of text easier or more pleasurable to read, this could drive any differences between Narrative and Exposition. This does not appear to be the case.

Table 1

Frequency of response for each of the five cognitive and five affective preference items. Binomial tests were run only for those cases where students indicated a preference; no preference responses were deleted.

Table 1.
*Frequencies and binomial test of genre preference*

| | | No. responses | | | |
|---|---|---|---|---|---|
| | | No preference | Preference | | |
| | | | Expository | Narrative | *p* |
| Cognitive | Difficulty Answering Items | 11 | 12 | 9 | .66 |
| | Need for Prior Knowledge | 20 | 9 | 3 | .15 |
| | Flow of Ideas | 12 | 11 | 9 | .82 |
| | Book Organization | 12 | 9 | 11 | .82 |
| | Difficulty of Recall | 13 | 9 | 10 | 1.00 |
| | | 68 | 50 | 42 | |
| Affective | Enjoyment | 6 | 9 | 17 | .17 |
| | Interest | 14 | 9 | 9 | 1.00 |
| | Endorsement | 10 | 10 | 12 | .83 |
| | Effort Motivation | 17 | 11 | 4 | .11 |
| | Perceived Feelings | 19 | 6 | 7 | 1.00 |
| | | 66 | 45 | 49 | |
| | Total | 134 | 95 | 91 | |

### Local-Level Comprehension

Table 2 presents the mean TAP scores for each of the four conditions and for each of the 10 questions. A repeated measures ANOVA revealed that students performed marginally better on the Gorilla texts ($F(1, 9) = 3.60$, $p = 0.09$). There were no significant interactions involving Content (all *F*s < 1). Given that the advantage for the Gorilla theme is only marginally significant, that both levels of Content were seen equally often in all levels of the Genre and Order conditions, and that there are no hypotheses involving Content, we simplify the remaining analyses by collapsing across Content.

Table 2

Think-Along Passage (TAP) group means per item for each of the four conditions.

Table 2.
*Think-Along Passage (TAP) group means per item*

| | Birds Narrative | Birds Expository | Gorilla Narrative | Gorilla Expository |
|---|---|---|---|---|
| Prediction Making | .94 | .88 | .88 | .94 |
| Beyond Text Inference | 1.00 | .94 | .88 | 1.00 |
| Summary | .81 | .81 | .81 | .81 |
| Vocabulary | .88 | .63 | .88 | .63 |
| Monitoring the Meaning | .63 | .69 | .69 | .63 |
| Explicit Facts | .56 | .44 | .63 | .44 |
| Within Text Inference | .56 | .75 | .69 | .94 |
| Beyond Text Inference | .94 | .94 | .88 | 1.00 |
| Vocabulary | .19 | .25 | .50 | .44 |
| Explicit Facts | .31 | .50 | .63 | .63 |
| *M* | .68 | .68 | .75 | .75 |

We conducted a repeated measures 2 X 2 ANOVA with Genre (Narrative vs. Expository) and Order (Narrative-First vs. Expository-First) and found no main effects. There was a significant interaction between Genre and Order ($F(1, 9) = 17.19$, $p < 0.01$), with exposition receiving higher scores in the first position and narrative receiving higher scores in the second. One possible explanation is that there is an effect of position, with Exposition somehow benefiting from being seen first, and/or Narrative benefiting from being seen second. A second, and more plausible, explanation is that, despite random assignment, stronger readers were unintentionally assigned to receive the Expository text first and the Narrative text second. Since these participants would contribute both the Exposition scores in the first position and the Narrative scores in the second position, if they were stronger readers, there would be an apparent interaction, when in fact it merely reflects consistently higher levels of performance for one particular group. This latter possibility is the more parsimonious of the two scenarios, and there is no research to support a position effect. We further explored the possibility of reader ability by using participants' Exposition score as a covariate in the analysis of their Narrative scores, and vice versa. If reading ability, as measured by their scores in the alternate Genre, is driving this interaction, the effects of Order will disappear when reading ability is used as a covariate.

Narrative proved a significant covariate, $F(1, 29) = 5.62$, $p = .025$, accounting for 16% of the variance in the Order effect. However, when Expository scores are used as a covariate, Order remains marginally significant $F(1,29) = 3.55$, $p = .070$, accounting for 10% of the variance. In conclusion, Order seems to play a relatively small role in comparison to reader ability.

**Global Comprehension**

Table 3 shows the mean retelling scores by condition and text elements. Finding no main effect for Content ($F(1, 30) = 1.99$, $p = .169$), nor any interactions with Content (all $F$s < 1), we collapsed over Content. As predicted, a 2 (Order) x 2 (Genre) repeated measures ANOVA showed a significant main effect for Genre $F(1, 30) = 17.143$, $p < 0.001$. We again found an effect of Order, $F(1, 30) = 4.89$, $p < .05$, again most likely explained by the disproportionate assignment of students with higher ability to the exposition first condition. There were no other significant effects ($F$s < 1).

Table 3

Retelling group means per item for each of the four conditions

Table 3.
*Retelling group means per item*

| | Birds Narrative | Birds Expository | Gorilla Narrative | Gorilla Expository |
|---|---|---|---|---|
| Central Purpose | 3.69 | 3.44 | 3.63 | 3.56 |
| Restatement Elements | 3.25 | 2.81 | 3.44 | 2.81 |
| Organization | 3.38 | 3.06 | 3.25 | 2.81 |
| Linguistic Spillover | 3.50 | 3.38 | 3.63 | 3.50 |
| Rehearsed/Unrehearsed Information | 3.13 | 2.63 | 3.13 | 2.63 |
| Elicited Feelings | 3.25 | 2.81 | 3.38 | 2.94 |
| *M* | 3.36 | 3.02 | 3.41 | 3.04 |

**Discussion**

The results of this study suggest that structural differences may contribute to differences in students' performance in reading narrative and expository texts. We compared children's reading of texts that included elements of narrative structure versus text with an expository structure that lacks these elements, controlling for content and difficulty. Children did not exhibit differential comprehension as assessed by answering questions interspersed while reading, a task which requires only local comprehension processing. However, when children were asked to retell the text, narratives were better recalled than expository. Thus, while students performed similarly on both genres when the task required local coherence, their performance with narrative text was stronger when the task required a global representation.

This explanation is consistent with existing psycholinguistic research suggesting that expository text tends to be processed locally, while narrative text receives both local and global processing (Einstein, McDaniel, Bowers, & Stevens, 1984; McDaniel, Einstein, Dunay, & Cobb, 1986). What remains to be seen is whether the advantages narrative enjoys are due solely to students' greater exposure to narrative, or whether that narrative discourse has inherent advantages because of the overarching structure of a story with a beginning, middle, and end.

Although we may be able to help students improve their performance simply by exposing them to and teaching them about narrative and expository text, this may not be as effective as pinpointing the key elements of difference, and, for that matter, similarity. Similarities could be used to promote transfer, and differences to forewarn students of problems that may befall them if they approach narrative and expository text in the same way. In addition, there are better and worse examples of narrative and exposition, especially exposition. Beck & McKeown (1991) found that most social studies texts for the middle grades were rather poor examples

of exposition, and McNamara and her colleagues (1996) showed that poor exposition creates problems for poor readers to a much greater extent than good readers (who presumably have more strategies for repairing the text).

It is also worth noting that we found no evidence that students' prefer narrative text over expository. Pappas (1993) reported that kindergartner students have the ability to understand text content and structure, reenact texts, and enjoy both narrative and expository types of genre equally well. Our results are consistent with these findings and suggest that the problems students face in expository text may not stem from a lack of comprehension, interest, or engagement, but rather from the less evident and useful structure of the text. We suggest that students' differential performance across genres in formal and informal measures ought to be considered separately from other factors such as text characteristics (e.g., fictional characteristics, use of imagery), and motivation factors (e.g., interest, expectancy). In the past, explicit instruction teaching students the underlying structure of text has focused primarily on narrative (i.e., story grammar instruction), comparable explicit instruction can be taught in relation to exposition. This may be particularly important if students experience difficulty identifying and using the structure of expository texts to facilitate recall.

Regarding the implications of this study, it is interesting that the task that is most similar in appearance to a standardized test, the TAP, did not produce differential performance. It is important not to presume that short answer comprehension questions necessarily do not require global processing; standardized test items requiring students to make inferences, choose appropriate titles for a passage, and the like, may well require global representations.

Issues to address in follow-up studies include determining whether the localized TAP task creates unusual demands upon students. The TAP required students to stop at the end of every page. Interruptions in the flow of reading have been shown to have little effect on comprehension and processing time (Ericsson & Kintsch, 1995), but the effects are somewhat more pronounced when the material is unfamiliar. Given the argument that expository structures may be more variable and less familiar, we would expect, if anything, for this task to disadvantage expository text. We see no evidence of such a disadvantage, but it is possible that exposition would have actually outperformed narrative had there been no interruptions. Such a finding would be unusual and unexpected, given the large body of research showing an advantage for narrative across many tasks, content domains, and languages.

Because of the differences between researchers' definitions of narrative, it is also possible that the same pattern would not be found using different definitions of narrative and expository. While the elements we chose to vary across the two genres are commonly held as important, there may be others of equal or greater importance in one theory or another. We would argue that the advantages conferred by being able to systematically vary a set number of elements outweighs concerns about which model of narrative is being used. Nevertheless, additional studies invoking different aspects of narrative and expository text are needed.

Finally, we note that the sample in this study was relatively homogeneous, with similar ethnic background, educational experience, and socioeconomic status. Although this is necessary for the study, since the argument is that similarity of exposure (or lack thereof) to narrative and exposition, our explanation would also predict that students with different levels of exposure to narrative and exposition will perform differently on these tasks. Therefore, additional test of our theory would be provided by examining whether the pattern changes as the experiences of the sample change.

In conclusion, we believe that an examination of the structural properties of texts and the requirements of assessment tasks may serve to explain and predict student performance on measures of reading performance, and to better understand what skills and knowledge an assessment is tapping. Such an analysis may also be valuable in the development of activities that target skills relating to specific aspects of a student's performance.

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Appendix A

*Appendix A.* **Sample texts about protecting endangered mountain gorillas**

| | Expository | Narrative |
|---|---|---|
| Gorillas | Mountain gorillas are exceedingly rare. They are in danger of becoming extinct. They live in the forest of three countries of Africa named Uganda, Rwanda and Congo. There are two populations of roughly equal size in this area of the world. The group that lives in the Virunga Mountains is composed of 324 gorillas. This area is called the Virunga National Park. These animals face many types of dangers. For this reason, park rangers protect the mountain gorillas. Some of the rangers have lived in the area since they were children. | Norbert Mushenzi is the director of the Virunga National Park. This park is located in the country of Congo, Africa. He works with many park rangers to protect the mountain gorillas. These gorillas are extremely rare. They are in danger of becoming extinct. Mushenzi if forty-eight years old, and was raised just outside the north end of the park. He was attracted to his job since he was a little child. Mushenzi and his rangers protect the mountain gorillas from many dangers. |

Appendix B

*Appendix B.* **Sample text about rescuing oiled seabirds after oil spills**

| | Expository | Narrative |
|---|---|---|
| Birds | Large cargo ships transport fuel oil. They pose a constant threat to seabirds. These ships spill large amounts of oil when accidents occur. The result is a type of pollution that damages the marine habitat. Oil companies have tried to take responsibility. They support the rescue and rehabilitation of seabirds. These types of accidents occur all over the world including the United States. In 1999, a cargo ship spilled 5,000 gallons of fuel oil. Dozens of volunteers felt compelled to help oiled seabirds. The spill took place near their homes in Humboldt Bay. This area is located in the north coast of California. | My name is Sharon and I live in the Humboldt Bay area in the north of California. Like many other people, I work to help oiled seabirds. I decided to volunteer after I watched the news on television one night. They showed how a cargo ship had spilled oil accidentally in the bay near my home. I felt very sad when I saw seabirds completely covered with oil. The news reporter announced that volunteers where needed to help rehabilitate the birds. At that moment I knew I had to do something. |

*Note.* These text examples correspond to the first page of each book. All books were five pages long.

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**Note from the 2015 Executive Editor, Constantin Schreiber**
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