ABSTRACT

Title of Document: PICTUREBOOKS AS VISUAL LITERACY:
                                THE INFLUENCE OF ILLUSTRATIONS ON
                                SECOND-GRADERS' COMPREHENSION OF
                                NARRATIVE TEXT

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        This study poses the following research question: "How does change in text type as text contains more illustrations and fewer words influence second-graders' comprehension of narrative text?" Eleven second-graders read three texts each and completed a series of oral reading comprehension tasks. The three text types varied in terms of the proportion of words to illustrations available in the text: *written-only* text, *combination of written and illustrated* text, and *illustration-only* text.   The researcher interviewed each participant three times, once for each text type. Participant scores from the retelling and comprehension questions portion of the interview were analyzed in addition to participant's responses to the retrospective think aloud portion of the interview. Quantitative results from the retellings and comprehension questions suggest an overall trend indicating that illustrations have a positive effect on second grader's comprehension. Qualitative data for individual participants from their retrospective think alouds confirm this trend.

PICTUREBOOKS AS VISUAL LITERACY: THE INFLUENCE OF
ILLUSTRATIONS ON SECOND-GRADERS' COMPREHENSION OF
NARRATIVE TEXT

By

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Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Master of Arts
2008

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Dedication

I would like to dedicate this thesis to a few of the most important people in my life. First of all, to my parents who have always believed in me, encouraged me to do my best, and been there for me no matter what. I would not be where I am today without your love and support. To Peter, the most wonderful fiancé (and one day soon, husband) I could have imagined, who has been such an amazing encouragement to me throughout this whole process. I now have a greater understanding, appreciation, and respect for what you went through when you wrote your master's thesis. And finally, I would like to dedicate this to God, without whom I am certain that I would not have been able to complete this thesis, but through whom I know that all things are possible.

Acknowledgements

I would like to thank my committee, Dr. Peter Afflerbach, Dr. Jennifer Turner, and Dr. John O'Flahavan for taking the time to advise and question me in the writing of this thesis. Your expert input has been most helpful and very much appreciated. I would like to thank the 11 children who participated in this study for taking the time to read these picturebooks with me and share your insights into how you understood each of these texts. You and all other children like you are the reason I did this research. I hope that in some small way it will make a difference, if not for you, then for other children like you. I would also like to thank the coordinator of the after-school program who helped me a great deal by facilitating the work I did with these students. Thanks also to the reading specialist at the school where this research took place, for providing the after-school program coordinator with reading data on these children so that I could select the appropriate children for this study.

And finally, I would like to offer my sincerest thanks to my advisor, John O'Flahavan, without whom I would not have been able to write this thesis, much less make it each step of the way in this long yet worthwhile process. Your advice has been invaluable. Your questioning of my thoughts and goals for this project along the way has been most beneficial and helpful in making me think about this topic in various ways and how I might go about researching it. I did not anticipate when I began my master's degree that I would be where I am now, and you have certainly been instrumental in helping me reach this goal. Thank you.

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Chapter 1: Review of the Literature

Over the course of many years, reading instruction has been defined and practiced in a variety of ways. The definition of literacy has expanded over the latter half of the 20th Century to account for the growing variety of texts that our students encounter inside and outside of school. This trend reflects a societal shift towards creating and utilizing a greater number and variety of written, visual and oral texts to meet an expanding set of purposes. In order to meet the increasing demands of this diversity of texts that students encounter during their formal school years, our reading and language arts curricula must begin to recognize this reality and take steps towards equipping students with the skills necessary to interact successfully with the many forms of reading that exist today.

An increasing number of the texts that today's students encounter incorporate graphical representations of information and intricate images and illustrations, all of which help to carry the informational load alongside written text (Kress & van Leeuwen, 1996). These texts place a greater demand on students to be visually literate. In addition, students encounter visual images in a growing variety of settings besides traditional books, such as web pages on the Internet, video games, advertisements, and newspapers and magazines that contain an increasing proportion of visual to written text. All of these contexts in which literacy, both textual and visual, exits place greater cognitive demand upon students than previously required to decipher visual images in isolation or with accompanying written text. We know little about the influence of these increasingly visual texts on the comprehension of

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students, especially primary-aged students. The study reported here addresses this gap in the research by investigating the following related questions: in general, *How do children's responses to and interpretations of images influence their comprehension of text?* and more specifically, *How does change in text type as text contains more illustrations and fewer words influence second-graders' comprehension of narrative text?*

Why "Visual" Literacy?

Current literacy researchers advocate for the increasingly important role of visual literacy in reading instruction (e.g. Fleckenstein, Calendrillo & Worley, 2002; Giorgis, et al., 1999; Williams, 2007). This advocacy for teaching visual texts does not always relate well to the current educational climate, summed up very aptly by Williams (2007): "Considering the shift toward more visual texts, it is unfortunate that the classroom literacy curriculum, as well as standardized testing, remains overly concerned with the printed text" (p. 636). The need to convince policy-makers, educators, parents and other stakeholders of the value (to instruction as well as other equally important areas, such as students' personal enjoyment) of visual literacy appears pressing. Only when these influential sectors of society become convinced of the importance of visual literacy will we begin to see changes on a larger, more effective scale in the curriculum, instruction, and assessment of reading taking place in classrooms today.

Literacy research suggests that there is "an assumption that the ability to read and create visual texts is part and parcel of what it means to be literate in the 21st century" (Harste, et al., 2007, p. 254). Yet looking at current literacy instruction in

this country one wonders if "the inclusion of viewing and representing to join reading and writing, listening and speaking to make six *language arts*" (Begoray, 2002, p. 117) is really taking place. The *Standards for the English Language Arts* (1996), produced jointly by the International Reading Association (IRA) and the National Council of Teachers of English (NCTE), offer a relatively clear and concrete place to begin to define this concept of visual literacy in the hopes of eventually successfully integrating visual texts into classrooms today.

Beginning with a general reference to the "emerging conceptions of literacy…at the turn of the century in the United States of America" (IRA/NCTE, 1996, p. vi, v), the *Standards* take a view of language arts that recognizes the multiplicity of texts in various forms that exist in society today, with an acknowledgment that, "our standards must remain provisional enough to leave room for future developments in the field" (IRA/NCTE, 1996, p. 18) and that the "standards are needed to prepare students for the literacy requirements of the future as well as the present" (IRA/NCTE, 1996, p. 46). The authors concretely define their content area (i.e. English language arts) to include the following six, rather than the more traditional four, language arts: "reading, writing, listening, speaking, *viewing*, and *visual representing*" (IRA/NCTE, 1996, p. 1, emphasis added).

The authors of the *Standards* make a conscious decision to broaden the concepts of language and literacy with the following terms: "we use the term *text* broadly to refer not only to printed texts, but also to spoken language, graphics, and technological communications. *Language* as it is used here encompasses visual communication in addition to spoken and written forms of expression. *Reading* refers

to listening and viewing in addition to print-oriented reading" (IRA/NCTE, 1996, p. 2). While IRA and NCTE put forth a broader definition of literacy, the federal government, specifically in the form of the No Child Left Behind Act (NCLB) of 2001 and the Report of the National Reading Panel (2000), consistently offers a narrow conception of reading as "strictly making meaning from print," (Williams, 2007, p. 636).

In contrast to the narrow definition of reading found in many classrooms today as defined and supported by NCLB, a number of leading literacy researchers have called for an expanded definition of literacy. As far back as 1994, in his Presidential Address at the annual meeting of the National Reading Conference, just prior to the publication of the IRA/NCTE *Standards*, James Flood recognized that, "visual media permeate almost every aspect of contemporary students' lives," and called for a broadened definition of literacy with a "special emphasis on the visual arts" (Flood & Lapp, 1995, pp. 1 & 3). More recently, Au and Raphael (2000) have stated rather strongly that, "while traditional reading instruction may have focused on reading the word on the printed page, in today's society—with its plethora of media and technologies—such an approach is limiting, at best, and detrimental, at worst" (p. 179).

This emphasis on an expanding definition of reading to include visual texts stems in large part from the realization that, "graphic and visual messages influence contemporary society powerfully, and students need to learn how the elements of visual language communicate ideas and shape thought and action" (IRA/NCTE, 1996, p. 20). Thus, in order to begin to successfully equip students to encounter these

images—quickly becoming the "dominant text" in our society (Williams, 2007, p. 642)—drawing upon their own background knowledge and everyday experiences as a concrete and meaningful way to help them understand what it means to be visually literate is a good first step. Teachers need to tap this resource within each student and use it as a means to motivate students to want to learn more about how to navigate the visual stimuli that bombard them on a daily basis.

There are many ways to begin to apply what is already known about good verbal and written literacy practices to potentially good visual literacy practice. For example, Albers (1997) suggests that just as good literacy teachers provide print-rich environments for their students by making many printed materials available to their students, teachers should also provide a wealth of visual texts for their students to encounter on a daily basis. Albers goes on to suggest that teachers should use multiple texts in a variety of media to teach concepts, offering students multiple ways to engage with different subject matter and encouraging students to enter into dialogues around key concepts, thus fostering the critical thinking skills necessary to be visually literate.

Kiefer (1995) outlines four commonalities between verbal and visual art in her discussion of how to help students respond aesthetically to the art in picture books. First, both forms of language art have a set of elements that authors and artists alike can use to communicate meaning to their readers. Second, visual and verbal art both have syntactic and semantic properties. Third, both authors and artists can compose their particular form of language based on certain principles. And finally, the intentional and unintentional choices regarding these elements and principles can be

summed up as the author or artist's particular style. By making these connections between the verbal and visual language arts it becomes evident that beginning to incorporate visual literacy into the curriculum is perhaps not quite as daunting a task as it might seem at first. If teachers understand these connections then they can draw upon their experiences with teaching the verbal language arts and can begin to apply those same types of practices to their more conscious teaching of visual literacy. As the authors of the *Standards* state, "Our shared purpose is to ensure that all students are knowledgeable and proficient users of language so that they may succeed in school, participate in our democracy as informed citizens, find challenging and rewarding work, appreciate and contribute to our culture, and pursue their own goals and interests as independent learners throughout their lives" (IRA/NCTE, 1996, p. v). Integrating visual literacy into the language arts curriculum is about finding the best way to equip students today to be the most competent, fulfilled, and successful citizens of tomorrow. One way that teachers already incorporate visuals into their instruction, perhaps without really realizing it, is through picturebooks.

While some researchers prefer not to use the term *visual literacy*, (e.g. Doonan, 1993) the vast majority of literacy researchers embrace the term, advocating for its implementation in both theory and practice (e.g. Arizpe & Styles, 2003; Au and Raphael, 2000; Evans, 1998; Hancock, 2007; Kress & van Leeuwen, 1996). To be visually literate one must be able to make sense of visual images (Giorgis, et al., 1999). Even given this definition there are still aspects of the concept of visual literacy that need to be deciphered and distilled. Throughout this review of the literature on the visual aspects of literacy, with a particular focus on picturebooks as a

text familiar to younger students and thus a meaningful and pertinent text with which to teach children to read images as well as text, it will become evident that determining what it means to be literate in a visual sense requires a close look at a variety of related factors. As Albers (1997), who fully acknowledges the complexity of this task, so aptly points out, "Drawing upon what we have learned about supporting students' literacy in print-based texts is a good starting point" (p. 348). In addition, it is helpful to look at the students themselves and how they describe the process of reading images in order to fit together yet another piece of this puzzle. Furthermore, it is important to recognize that traditional definitions of reading and reading comprehension may not be adequate or nuanced enough to address the intricacies and idiosyncrasies unique to the process of interacting with a variety of visual texts.

Attempts must be made to define what it means to be visually literate, at least to the extent that what it means to be literate can be defined, for in today's society students are already encountering numerous visual texts on a daily basis. Just as reading can no longer be seen as simply the act of decoding and comprehending words on a page, "text can no longer be seen as print only amid a much more visual culture with the increased use of images in information and communication technologies;" indeed, "in these new times, teachers and students will benefit from concentrating on both the visual and print text" (Anstey & Bull, 2006, p. 82-83).

This review of the literature will examine the relevancy of visual literacy today and how this type of literacy pertains to the present study, define the picturebook as particular type of visual text, take a closer look at what children do

when they read visual texts, re-examine and re-define reading comprehension to encompass visual as well as written aspects of text, and explore a sample of studies that provide relevant background and situate the need for the particular purpose of the present study.

Picture Book or Picturebook: What's the Difference?

While some researchers use *picturebook* as one word to describe the type of text used in this study (e.g. Arizpe & Styles, 2003; Nikolajeva & Scott, 2000 and 2006; Sipe, 2008; Wolfenbarger & Sipe, 2007), others prefer the two-word form, *picture book* (Doonan, 1993; Nodelman, 1988). The difference is subtle. The two-word phrase *picture book* suggests that the word *picture* defines the type of book referred to, namely a book with pictures in it, in much the same way that the phrase *illustrated book* functions to define the illustration of a pre-existing text (Lewis, 2001, p. 68).

On the other hand, the term *picturebook* implies a more "intimate interaction" (Arizpe & Styles, 2003, p. 22) between the pictures and the words in which one relies on the other in an equal partnership so that the reader must put the two together to come up with the most complete understanding of the text possible. The illustrations in *picturebooks* then are an integral and equal part of the text as a whole, moving away "from the mimetic to the symbolic," demonstrated in picturebooks that contain images that enhance the meaning of the text rather than simply restate the written words (Arizpe & Styles, 2003, p. 22). This transformation of the role of illustrations in picturebooks reflects a new type of text, different from the illustrated books for children of decades ago, as Lewis states, "there is certainly a difference between the

illustration of a pre-existent text…and the creation of a picturebook where words and images are envisaged as roughly equal textual partners" (2001, p. 68). Using the term *picturebook* "recognizes the union of text and art that results in something beyond what each form separately contributes" (Wolfenbarger & Sipe, 2007, p. 273). According to Wyile, combining the two words *picture* and *book* into *picturebook*, changes their meaning:

> [T]he single word *picturebook* refers to those particular books in which the pictures are an integral part of the overall text….[it] signals symbiotic variations or the synergetic integration of pictures and words in the book, whereas the space between the two words—picture book—signals the division, or degrees of separation, between the pictorial and the verbal within their host, the book.
> (2006, p. 193, emphasis in original)

Making this distinction between *picture book* and *picturebook* is not to say that all literacy researchers and practitioners who utilize one or the other share exactly the same understanding of the distinctions outlined here. That being said, in the present study the word *picturebook* carries with it the connotations described in detail above. I have chosen to use the word *picturebook* based on the premise that pictures play an integral, crucial and undeniable role in children's reading comprehension. In short, these books that require children to be visually literate are not simply books with pictures, as *picture book* would seem to suggest, but books in which the words and pictures are inextricably linked.

What Are Children Really Doing When They Read Pictures?

Some researchers (e.g. Arizpe & Styles, 2003) have carefully documented what children actually do while they read picturebooks, especially the pictures in

picturebooks. Drawing upon the work of Arizpe and Styles, who claim that, "As far as we are aware, nobody has ever before collected such intensive data on how children from 4 to 11 actually read pictures" (2003, p. 223) we can begin to piece together what in fact children do when they read pictures, processes that are both similar and different to the processes that good readers use when reading words. Much of what children do as they read picturebooks involves an interaction between the words and the pictures (Sipe, 1998). Researchers (e.g. Arizpe & Styles, 2003; Sipe, 2008) also underscore the importance of allowing children ample time and space to talk about the experience of reading picturebooks; for many children talking, as opposed to writing, can be an easier means of communication for putting into words what they do when they read pictures. Reading pictures and talking about reading pictures also requires children to go deeper, strongly encouraging them to think metacognitively in order to step back and objectify themselves as readers. All of these processes together serve to illustrate the immense complexity involved in reading pictures, an integral part of reading a whole picturebook, and a foundation for which must be established before the influence of illustrations on children's comprehension of narrative text can be determined.

The dynamic relationship between words and pictures that is unique to picturebooks—referring here to picturebooks with words, not wordless picturebooks that have a different dynamic—requires children who read picturebooks to engage in a unique set of processes some of which involve direct interaction between the words and pictures. Arizpe and Styles (2003) found that children vary in their ability to distinguish between textual and pictorial narratives and to understand the connections

between the two, affecting their overall comprehension of the text to varying degrees. This variation is due in large part to differences in age; younger children find it difficult to differentiate between the story told in the pictures and the one told by the words. In addition, children also tend to use a combination of imagination and common sense when figuring out how to put the word and pictures together while reading and comprehending picturebooks (Arizpe & Styles, 2003).

The process of simultaneously reading the words and pictures requires children to constantly refer back and forth between the words and pictures and between different parts of each picture, actively making connections and seeking explanations for questions that arise as they read. In his attempt to describe, "what goes on in our heads as we relate words and pictures," Sipe utilizes the word *synergy* to describe the "complicated and subtle" relationship between words and pictures in a picturebook (1998, p. 97). The word *synergy* embodies the essence of the idea that verbal and visual texts together have a greater effect than the mere combination of the effect they each have separately (Sipe, 1998, p. 98). Essentially then, it would seem logical to suggest that children who read words and pictures together would need to engage in a more complex thought process that would in turn ideally produce a more thoughtful response. The present study intends to shed light on this assumption.

So what is it exactly that happens when a reader encounters both words and pictures simultaneously? In other words, "what happens in our heads: [what is] the process we engage in when we relate the verbal and visual texts of the picture book to each other" (Sipe, 1998, p. 99)? Drawing upon a variety of related theories including reader response criticism, aesthetic criticism, linguistics and semiotics, and theories

of literacy, Sipe arrives at a theory of transmediation, namely "the translation of content from one sign system into another" (Suhor, 1984, p.250), thus offering a plausible explanation for, "how we construct the conversation between words and pictures" (1998, p. 101). Sipe suggests that "we must oscillate…from the sign system of the verbal text to the sign system of the illustrations; and also in the opposite direction from the illustration sign system to the verbal sign system," (1998, p. 102).

Arizpe and Styles (2003) found that as children read picturebooks their eyes go back and forth between these various points of reference, often very quickly. One boy in Arizpe and Style's study explained that, "First I look at the pictures just for a short while, then I read the text, then I take a longer look at the picture and see what's happening in it and see if there's anything going on," (2003, p. 191) demonstrating that his eyes go back and forth between the words and the pictures several times, a form of oscillation that Sipe (1998) describes with the theory of transmediation. This form of alternating between sign systems that successful readers of picturebooks must engage in hopefully in turn produces higher levels of engagement due to higher levels of cognitive activity required to complete such a task.

While good readers know they must pay attention to both the words and the pictures, children generally find the pictures more interesting and valuable than the words (Arizpe & Styles, 2003). The basic process of reading pictures begins by noticing the ordinary and expected and then noticing the extraordinary and unexpected. As with reading words, reading pictures also involves asking questions, making deductions, and proposing hypotheses while also constantly working to confirm or deny these hypotheses before moving on to something else. All of this

involves careful and intricate interplay within the child's mind between the words and the pictures. In a wordless picturebook, this dynamic is obviously altered due to the absence of words. The goal of the present study is to find out if children's responses to pictures alone are more complex than their responses to words alone and/or a combination of words and pictures.

Providing children with an opportunity to talk about what they are doing as they read the pictures in picturebooks can be crucial. By discussing the pictures in picturebooks in a group of other children or with an adult children often reach conclusions that they may not have come to on their own and deepen their understanding in a way that is not possible without the opportunity to talk through their questions and ideas with others. Despite having difficulty with literacy in general, especially when it comes to reading words, some children talk rather articulately demonstrating an "alert and sensitive" (Arizpe & Styles, 2003, p. 94) awareness of what it takes to read the pictures in picturebooks. In fact, Arizpe and Styles (2003) found that some so-called struggling readers, "turned out to be some of the more experienced and articulate interpreters of the visual" (2003, p. 71). Thus, it becomes apparent that, "[r]eading illustrations…[is] a complex and dynamic process, mediated through conversation" (Watson & Styles, 1996, p. 151), where talking out their interpretations of pictures often serves children better than writing their responses. Given this evidence that children can provide more complex responses to picturebooks verbally rather than in writing, the present study utilizes verbal communication alone in the hopes of collecting from second-graders the most thorough and in-depth responses to the texts that they read.

There is an element of reading pictures that requires children to go deeper in their understanding and stretch their ability to express these deeper places of meaning that pictures invite them to explore. Similar to the ways in which written text often requires the reader to understand and utilize certain literary devices—such as irony, symbolism, motif, and metaphor—many picturebook illustrations draw upon the reader's prior knowledge of these devices in order to read and interpret the pictures in picturebooks. The inclusion of such literary devices in picturebooks counters the more commonly accepted notion that picturebooks are for children, and young children at that, and are therefore easy to read and interpret. Many of the picturebooks that have been produced in the last 30 years or so, exemplified by the texts used in this study, no longer fit this stereotype (Arizpe & Styles, 2003).

Having used the term *reader* to describe the child who encounters a picturebook, it is also worth mentioning that given the unique qualities of picturebooks, defining the relationship of the reader to the text when it comes to picturebooks can at times be a difficult task and a somewhat contentious issue in this area of literacy research. Choosing to define the person that consumes the text as a reader—as Nikolajeva & Scott (2000), among others, choose to do—is in and of itself debatable. Doonan (1993) explains that, "I use 'beholder' because there is no established term to describe someone with formal understanding of visual images that are not free-standing works of art…but sequences of scenes…illustrations in books. To call such a person a reader, and the skill visual literacy, would be convenient but fails to acknowledge the difference between the ways we receive written words and pictorial images" (Doonan, 1993, p. 9). In her earlier work Doonan uses the term

reader-viewer (1986, p. 171); in the intervening time, Doonan (1993) has redefined this concept into the more abstract notion of *beholder*. Settling the issue of what to call the person in the act of reading or viewing a picturebook is not easy, for as Doonan explains, "…comprehending a picture is not the same process as reading a text…" (Doonan, 1986, p. 159).

When reading certain postmodern picturebooks, children "have to be able to interpret irony and read moral ideas into pictures" (Arizpe & Styles, 2003, p. 79). Despite the fact that children often have difficulty picking up on and understanding irony (Kümmerling-Meibauer, 1999), this kind of knowledge is often prerequisite to reading the pictures in certain picturebooks in order for children to be able to fully pick up on it in certain picture-text relationships (Arizpe & Styles, 2003). As Kümmerling-Meibauer explains, "irony is a linguistic and literary phenomenon that represents a complex and discursive strategy presupposing a certain previous knowledge" (1999, p. 156). Kümmerling-Meibauer goes on to argue that the "relationship between pictures and text in ironic picture books makes the perception and understanding of irony easier for children who have not yet fully acquired the metalinguistic skills to…distinguish between reality and expectation—saying one thing and meaning another" (1999, p. 160), even though irony in literature is, for the most part, developmentally beyond most children. As a result, it seems that children are more likely to be successful when interpreting irony within the context of the picturebook, than they would be if they encountered irony in written text alone. Kümmerling-Meibauer defines irony itself as simply "to say the opposite of what one means" (1999, p. 160) and irony in picturebooks as "produced either by contradiction

within the text itself, by contradiction within the picture itself, or by contradiction between picture and text" (1999, p. 161).

Certain other literary devices common to written text take on a slightly different form when applied to visual text and require a specific approach to understanding and using them in order to fully comprehend pictures. For example, color often carries with it a certain symbolism that may be universal or unique to a particular text (Arizpe & Styles, 2003; Doonan, 1993). Children reading pictures may or may not have the requisite knowledge to fully grasp the intended meaning of a particular illustration that draws on such symbolism. Visual metaphor may or not be used and interpreted similarly to metaphor in a written text, yet to comprehend certain pictures children should be able to pick up on and apply an illustrator's use of metaphor in visual text (Arizpe & Styles, 2003). In the same way some individual pictures and even entire picturebooks contain visual motifs that are often key to reading and interpreting the narrative contained in those pages. Although it may seem that children would have difficulty dealing with these complex literary and visual devices, in fact, many children demonstrate an "extraordinary analytical ability" (Arizpe & Styles, 2003, p. 83) when reading the pictures in picturebooks. Although children may not know the terms associated with all that they are capable of doing when they read pictures, the fact that they are able to recognize emotions portrayed in illustrations and feel empathy for characters or situations, for example, demonstrates their extraordinary ability to tackle difficult texts, including a variety of postmodern picturebooks that adults often pass off as juvenile and thus easy to read and understand.

The knowledge about how children read pictures has been made available in large part due to incredible metacognitive ability of children to "explain the process by which one trie[s] to make sense of the pictures" (Arizpe & Styles, 2003, p. 193). Picturebooks are an ideal medium for exploring this ability in children; their familiarity with the medium and the wide variety of complex picturebooks available serve to elicit remarkably self-aware and elaborate responses from children. Even the most insightful children realize that ultimately, "you just need to look really hard" (Arizpe & Styles, 2003, p. 195). Asking children to look and think in these introspective ways fosters higher order thinking skills that can cross over into other types of reading and thinking across the curriculum. Fostering these metalinguistic skills and metacognition, in the process of finding out what children do when they read pictures underscores, "how important it is to continually consider the role of critical thinking and visual images in learning" (Lapp, Flood, & Fisher, 1999, p. 778). Inherent in the concepts of both critical literacy and visual literacy—as one could argue that visual literacy is a type of critical literacy—is the idea that, "looking closely matters in learning" (Heath & Wolf, 2005, p. 44).

As Arizpe and Styles (2003) demonstrate through their careful research with children reading pictures, many aspects of reading pictures are similar to reading written text, which is not surprising given the complex nature of picturebooks in which words and pictures interact. For example, children often rely on both the words and pictures to make predictions when they read picturebooks. Many children also notice certain themes and issues raised by the author, once again employing what they see in the pictures as well as what they read in the words, to identify these

themes. In addition to themes, children also pick up on the general tone, feeling and atmosphere of a picturebook from both the words and pictures. Furthermore, both the words and pictures in picturebooks many times contain specific details that draw children's attention. Both the words and pictures in picturebooks help children to understand the point of view(s) and perspective(s) portrayed by the author-illustrator. Furthermore, children use the words and pictures to hypothesize explanations as they read through a picturebook. Just as children learn to make connections within the text, across texts, and to themselves and the larger world around them in written texts, pictures also elicit this same kind of intertextual connection-making. The words and the pictures work together in picturebooks to aid children in their construction of a "schema for interpretation…as the children s[ee] more intertextual references, they refine this mental schema, actively extending their…understanding of the story" (Arizpe & Styles, 2003, p. 103).

In addition to those aspects of reading words and pictures that are similar, there are of course certain aspects of reading pictures that are different from reading words. With pictures, children can notice the gaze of characters for example, that cannot be portrayed through words alone, which in turn can lead to a deeper understanding of characters motivations and intentions. Arizpe and Styles (2003) found that children also pay close attention to artistic features, including the more concrete aspects of pictures (e.g. colors, borders, book covers, and endpapers) and those that are less concrete (e.g. visual metaphors and visual jokes); children arguably notice more detail than adults do (Arizpe & Styles, 2003; Kiefer, 1993), making the picturebook an ideal medium for children given its complexities in both word and

image. Because they notice these details, children also pick up on pictorial clues in these details that help them when performing tasks such as making predictions and drawing conclusions. Certain details that children pick up on can be seen as "textual markers" (Arizpe & Styles, 2003, p. 85) that guide them through their reading and support them as they put together the pieces of the puzzle, one way in which many children describe the process of figuring out the whole picturebook; these textual markers include switches in artistic style, color imagery, changes in point of view, body language, and posture. Paying attention to all of these visual details and yet maintaining a sense of the big picture requires children to be incredibly "visually alert reader[s]" (Arizpe & Styles, 2003, p. 98) which those in Arizpe and Styles' study consistently proved to be by "how carefully [they] examined each picture" (2003, p. 107).

Re-Defining Reading Comprehension

Reading comprehension can be measured in several ways, but in order to measure reading comprehension one must first establish a working definition of reading comprehension itself. Coming to a conclusive and decisive definition of reading comprehension is far from the simple task it may seem to be at first. Difficulty aside, the need to define reading comprehension within the context of this study and in the larger context of literacy research and practice is unquestionable (RAND Reading Study Group 2002). As the RAND Reading Study Group (2002) points out, reading comprehension can be defined in different ways depending on the audience for the definition and the one offering the definition. Writing for a research and policy on education oriented audience—the Office of Educational Research and

Improvement (OERI) of the United States Department of Education (USDE)—the RAND Reading Study Group (RRSG) defines reading comprehension as, "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (RRSG, 2002, p. 11).

As a literacy researcher with an intended audience for this study of other literacy researchers and practitioners (e.g. teachers and school administrators), I recognize the value of such a succinct definition of reading comprehension, appreciating as well the ways in which the RRSG expands upon this basic definition throughout their report for the OERI. For example, the RRSG (2002) goes on to emphasize three key elements in their definition of reading comprehension, namely the *reader* (i.e. the one in the act of comprehending), the *text* (i.e. the thing being comprehended), and the *activity* (i.e. the social context in which the comprehension takes place).

In her transactional theory of reader response, Rosenblatt (1978, 1994) takes a similar stance to reading comprehension, laying out the three components of a reading act very similarly to the RRSG, namely the *reader*, the *text*, and the *poem*. Rosenblatt characterizes the *reader* as one who plays an integral role in the act of reading and comprehending by actively engaging with the physical *text* through the act of the *poem*. Rosenblatt brings the key player of the reader into proper proportion with the two other important facets of the act of reading. The next two facets that Rosenblatt uses to describe the reading process are often confused and thus incorrectly used interchangeably. Rosenblatt defines *text* as, "a set or series of signs interpretable as linguistic symbols…the printed signs in their capacity to serve as

symbols" (1994, p. 12) and uses the term *poem* "to refer to the whole category of aesthetic transactions between readers and texts…[it] must be thought of as an event in time…[that] happens during a coming-together…of a reader and a text" (1994, p. 12). The *poem* comprises the whole reading event itself during which comprehension takes place and includes many aspects, such as the reader's prior knowledge and experiences and the social context in which the reading act takes place.

While Rosenblatt does not specifically include the visual in her definition of text, others have extended her definition to include visual, as well as written and spoken, texts (e.g. Arizpe & Styles, 2003; Sipe, 2008). For example, as an illustration of the aspect of Rosenblatt's theory that addresses the stance of the *reader* towards the *text* during the act of the *poem*, reading picturebooks involves a combination of aesthetic, or more creative and unique, and efferent, or more factual and straightforward, responses. Space must be given in a contemporary definition of reading comprehension for this emphasis on the visual, in addition to the written, aspects of text.

Furthermore, IRA and NCTE (1996) define *comprehension* as, "The construction of the meaning of a written, spoken, or visual communication through a reciprocal interchange of ideas between the receiver and the composer; comprehension occurs within and is influenced by the immediate context" (IRA/NCTE, 1996, p. 48). The *Standards* then go on to define *context* in the following two ways: "The sounds, words, or phrases adjacent to a spoken or written language unit; linguistic environment [and] [t]he social or cultural situation in which a spoken or written message occurs" (IRA/NCTE, 1996, p. 48). Although the visual

is left out of this clarification of the term *context*, it does remain a prominent part of the *Standards'* definition of *comprehension*. By recognizing the concept of *context* in its definition of comprehension the *Standards* demonstrate an awareness of Rosenblatt's (1978, 1994) concept of *poem*, what the RRSG calls the *activity*, namely the fact that reading and the resulting comprehension that the reader engages in occurs within some kind of context, rather than in a vacuum.

Given these definitions and considering the purpose of the present study, I am defining reading comprehension in the following way: *the process of extracting and constructing meaning by interacting and being involved with written and/or visual texts in a reciprocal interchange of ideas between the receiver and composer* (RRSG, 2002, p. 11; IRA/NCTE, 1996, p. 48). Many researchers (e.g. Au & Raphael, 2000; Flood & Lapp, 1995) have argued that the definition of literacy must change and expand to include visual literacy and that visual literacy must be integrated cohesively into our English Language Arts curriculum (Cowan & Albers, 2006). This definition of reading comprehension that I have offered, which includes both written and visual texts, attempts to do just that.

A Review of Related Studies

There are two types of studies that form the basis for the present study. The first category of studies addresses *children's responses to picturebooks*. These studies primarily demonstrate that elementary school children have tremendous capacity to respond to literature, specifically to the pictures in picturebooks, in very creative and insightful ways. However, these studies do not address the more concrete instructional and assessment implications of children's responses to

picturebooks. The second category of studies investigates students' *comprehension of written text alone versus written text with pictures*. While these studies do discuss the effect of pictures on students' comprehension, they do not address the interplay of text and pictures within the specific context of picturebooks or students' responses to and interpretations of the pictures in picturebooks. These studies utilize a variety of other texts in which pictures are present or absent.

The goal of the present study is to bring together these two elements, combining the comprehension of text with pictures in the comprehension of words alone versus words with pictures studies with an emphasis on how the pictures influence students' comprehension by examining their interpretations of and responses to the illustrations in picturebooks, based upon the children's responses to picturebooks studies. As Sipe points out, "It is puzzling that the visual aspects of picture books have not been the object of more empirical research, given their potential for meaning making. In this regard, children's learning of illustration codes and conventions deserves more attention from researchers" (2000, p. 273). The present study begins to answer Sipe's question about the potential of investigating the importance of the visual aspects of picturebooks.

Children's responses to picturebooks.

The studies that deal with children's responses to picturebooks draw from a variety of related theoretical frameworks that pertain to the present study. Reader-response theory, the most common theory employed by these researchers (Madura, 1998; Sipe 1998; and Sipe, 2000), asserts that the reader brings to the act of reading a certain level of background knowledge and prior experiences, actively creating

meaning from the text as they read rather than finding meaning solely in the text itself (Beach, 1993; Iser, 1978; Rosenblatt, 1978 and 1994). These researchers also draw upon other similar and related theoretical frameworks, such as aesthetics (Madura, 1998), semiotics (Sipe, 2000), and visual aesthetic theory (Sipe, 2000), all of which essentially pertain to visual text and how the reader relates to visual text as well as written text.

These studies address similar yet varied questions and purposes. For example, Kiefer (1983) set out with a more exploratory and open-ended purpose in mind, to begin to develop a descriptive framework for children's responses to picturebooks by recording a variety of responses to a wide range of books (in a natural setting, not pictures isolated from text) over a period of weeks. Madura (1998) on the other hand, while still dealing with children's responses to picturebooks, wanted to find out how student inquiry into the creative process of authors and illustrators enhances literacy development. In addition, she was interested in learning about the possible patterns of written and oral responses that might emerge from four transitional readers and writers studying the picturebooks of Patricia Polacco and Gerald McDermott within an integrated language arts/visual art production-instructional approach.

In a similar way, Sipe (1998) set out "to determine whether first- or second-grade children have individual literary response styles and how these styles could be described through an analysis of the children's talk about books;" he also wanted to describe *literary competence* for this group of children and their teacher (p. 77). In a later study Sipe (2000) investigated the nature of the literary understanding of a class of first and second-graders, as indicated by their verbal responses during storybook

read-alouds. While the present study certainly involves children's responses to picturebooks in a similar way to these studies, the focus here is on how children's interaction with picturebooks in a variety of formats directly effects their comprehension of those texts.

The ages of the students in the present study are more closely aligned with the ages of the participants in this set of studies than with the participants in the studies dealing with comprehension of text alone versus text with illustrations. Given the focus on picturebooks in these studies, the participants were all elementary school students of various ages, as opposed to older students reading a different, more age appropriate, type of text. For example, Kiefer (1983) studied 19 second-graders and four first-graders in a combination class from an alternative school in an upper middle class suburb of Columbus, Ohio. Madura (1998) situated her study in her own urban multiage classroom of 24 first-, second-, and third-graders. These students were transitional readers, meaning that they were reading by phonics and context clues to identify unknown words, increasingly more fluent in their processing of print, and attempting to spell by visual pattern (not just sound). Madura focused on 4 students with similar reading and writing development, who were willing to talk at length about their reading and writing experiences. Sipe (1998) worked with 27 students from a combination first and second grade class in an elementary school located near large Midwest city with a lower SES population. In a later study, Sipe (2000) again worked with 27 students (18 first-graders and 9 second-graders) in a combination class. The present study, similar to these studies in both number and age of participants, involves 11 second-grade students.

In all of these studies the researcher took on the role of participant-observer. In some cases (Madura, 1998) the researcher was the classroom teacher in the setting where the research took place. In other cases (Kiefer, 1983) the researcher worked directly with the classroom teacher and students. In addition, in some of the studies (Sipe, 1998 and 2000) the researcher actually read some of the picturebooks to and with the student participants. Each of these studies included data collected in the form of anecdotal and descriptive notes and records as well as audio recordings. Kiefer (1983) also collected written work from the student participants and took photographs of child-created products. In addition to whole-group read-alouds, Sipe (1998 and 2000) conducted small group interviews of ten students (a representative sample from the class of 27) in two groups of five students each, as well as one-on-one read-alouds with each of those ten students. Madura (1998) employed a specific method of selecting the picturebook author-illustrators used in her study, which I describe in greater detail later on when I address my methods for choosing particular picturebooks to include in the present study.

Each of these researchers analyzed and organized his/her data in different ways for similar purposes. Kiefer (1983) organized the data in her study into the following categories: variations among children (e.g. how children choose picture books, how children look at picture books, how children talk about picture books, what children see in picture books, what behaviors and products grow out of their contacts with picture books), changes over time, and the context in which responses occurred. Madura (1998) used the constant comparative method in addition to categorizing the children's responses according to a variety of categorical methods

(Cox & Many, 1992 interpretation of Rosenblatt, 1978; Kiefer, 1995 adaptation of Halliday, 1973). Sipe (1998) triangulated the data from the read-alouds with his data from observational field notes in order to come up with certain types of literary response. In a later study, Sipe (2000) used a variety of methods to analyze and categorize the data, including open coding, axial coding and selective coding (Strauss & Corbin, 1990).

These studies reveal a variety of conclusions, some more open-ended than others. Kiefer (1983) concluded that children look at books in different ways; children talk about books in many ways; children respond in a variety of ways; individual responses often change with individual books; the setting in which responses occurred seems to be the key to the richness and depth of the responses (e.g. time, materials, adult to guide them). Madura's (1998) research revealed three types of responses: descriptive (28% of students' responses), interpretive (55% of students' responses), and identification of thematic trends (17% of students' responses).

Sipe's (1998) initial analysis revealed five types of literary responses, each accounting for the indicated percentage of conversational turns: *analytical*, 73% (analysis of texts and illustrations); *intertextual* responses, 10% (relating the text to other cultural texts and products); *personalizing* responses, 10% (connecting the text to their own lives); *transparent* responses, 2% (entering the narrative world of the story); and *performative* responses, 5% (entering the world of the text to manipulate for their own purposes). Sipe then created the following conceptual categories, each one assigned to one of the four children that were the focus of his study: logical

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reasoning and close analysis/analytical, largely performative/stance of predictor, imaginative/creative/wondering, and broad perspective/awareness of themes/ thoughtful generalizations. Overall Sipe concluded that the children demonstrated discernable differences and unique perspectives. In a later study, Sipe (2000) came up with the same five categories or types of literary understanding as in his earlier study (1998). In addition, Sipe also developed a grounded theory of literary understanding, including the following facets of response: *stance* (i.e. how children situate themselves in relation to the text), *action* (i.e. what children do with the text), and *function* (i.e. various ways in which texts can be used). Taking together these facets and the five types of literary understanding Sipe then synthesized the data to elucidate three basic literary impulses: *hermeneutic*, *personalizing*, and *aesthetic*.

Comprehension of written text alone versus written text with illustrations.

The researchers in this group of studies carried out these experiments in order to determine the effect, if any, that illustrations have on comprehension of text. While these studies, a representative sample of which is described in greater detail below, vary in regards to aspects such as number of and age of participants, the overall purposes of each of these studies are indeed quite similar. Miller (1938) conducted his research in order to determine whether children who read a primary basal reader with illustrations comprehended the material better than children who read the same basal readers without illustrations. Purnell and Solman (1991) investigated the usefulness of illustrations in the comprehension of technical material. In their research Mayer and Anderson (1992) compared the problem-solving and verbal retention performance of students who received a simultaneous versus

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succeeding presentation of animations and narrations of how a bicycle pump works (experiment 1) and how a car's breaking system works (experiment 2). Gambrell and Jawitz (1993) focused their research on the effects of instructions to focus on text illustrations and to stimulate mental imagery on fourth grade students' comprehension and recall of narrative text. Butcher (2006) conducted her research with a similar purpose in mind, namely to investigate the effect that different text types (e.g. essentially text with and without illustrations of varying degrees of complexity) have on learning outcomes and comprehension processes.

While these studies draw from a number of theoretical backgrounds, the most prevalent and pervasive theory across the majority of these studies (Gambrell & Jawitz, 1993; Mayer & Anderson, 1992; Purnell & Solman, 1991) is the dual-coding theory (Paivio, 1971, 1986, & 1991). Dual-coding theory essentially states that the process of decoding verbal text versus visual text are separate yet related, and require a unique set of skills in order to process the two simultaneously. When both the verbal and visual are present subjects have two ways in which to comprehend the text that they are interacting with. When comprehending text, one can either activate both the verbal and visual coding systems simultaneously or chose to utilize only one coding system at a time, with varying degrees of effectiveness (Purnell & Solman, 1991, p. 280; Gambrell & Jawitz, 1993, p. 266).

In addition to dual-coding theory, each of these studies also employed a variety of theories more specific to their particular purpose. Butcher (2006) based her research on some or all of the following theoretical frameworks: cognitive psychology, multimedia comprehension, *the multimedia effect* (Mayer, 2001 and

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2003), multimedia principles, and the coherence effect. Gambrell and Jawitz (1993) utilized the imagery-illustration interaction theory as well as Rosenblatt's (1978) transactional theory in their research. Mayer and Anderson (1992) employed the contiguity principle as it pertains to multimedia learning, stating that, "Students learn best when the words and pictures of an explanation are presented contiguously in time or space" (p. 450). Purnell and Solman (1991) suggest that in addition to situating text and illustrations together to promote dual-coding, this context also allows for greater depth of processing (Craik & Lockhart, 1972), asserting that, "Both a greater depth and greater breadth of processing in memory leads to better comprehension and recall" (p. 281). The present study takes into account all of the above theoretical frameworks to varying degrees in a similar vein as this group of studies, yet differs slightly in its particular focus on the juxtaposition of written and visual text in the specific context of picturebooks.

The number of subjects and their corresponding grade and school levels for each of these studies varies considerably. Almost all of the participants in these various studies were older than in the present study, ranging from elementary school students (Gambrell & Jawitz, 1993; Miller, 1938) to high school students (Purnell & Solman, 1991) to undergraduates (Butcher, 2006; Mayer & Anderson, 1992). About one hundred children in each of the first three grades from three elementary schools in Illinois participated in Miller's (1938) study. The research of Gambrell and Jawitz (1993) involved 120 average fourth-graders reading on-grade-level from three public elementary schools in Florida. Purnell and Solman (1991) drew their participants, separated into three groups of 25 students, from Australian high schools; they

repeated their study four more times with various designs involving 204 additional students. The first experiment in Butcher's (2006) study, which involved 74 undergraduates from the University of Colorado at Boulder, more closely resembles the present study and relates more closely to this area of research. Butcher's second experiment in this study involved some methods that were dissimilar enough from the present study so as not to warrant a closer look at that part of her research. 136 undergraduates from the University of California, Santa Barbara participated in Mayer and Anderson's (1992) research; they repeated their experiment a second time with 144 students from the same pool of participants.

Each of these studies utilizes a slightly different type of text in order to carry out these various investigations into the influence of illustrations on comprehension of text. Butcher's (2006) study involved three conditions of informational text (as opposed to narrative text): text only, text with simplified diagrams designed to highlight important structural relations, and text with more specific diagrams reflecting a more accurate representation. Gambrell and Jawitz's (1993) study employed two text versions, illustrated and non-illustrated, in four treatment conditions: instructions to induce mental imagery, instructions to attend to text illustrations, instructions to induce mental imagery and attend to text illustrations, and general memory instructions. The text itself was an intact story that met criteria for imager-evoking qualities of text and text-relevant illustrations, according to Schallert's (1980) criteria for identifying characteristics of text-relevant illustrations.

In their study, Mayer and Anderson (1992) used a narration of an instructional text on the operation of a bicycle tire pump (experiment 1) or an automobile braking

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system (experiment 2) in the following compositions in time with an accompanying animation: concurrent (i.e. animation and narration presented at the same time), successive presentation of narration and animation in various combinations, animation-only, narration-only, and no instruction (i.e. no animation or narration). Purnell and Solman's (1991) choice of text involved an illustrated text with minimal labels, written-only text that included additional text describing the illustration (i.e. written text in place of the illustration), and both text and illustration. Miller's (1938) investigation employed a widely used series of primary basal readers. He divided his subjects into two groups: a *picture group* in which the participants read the books as they came from the publisher with pictures intact and a *non-picture group* that read the books with pictures covered up by paper. The method of choice and use of text in the present study draws upon all of the above-mentioned studies. In particular, Purnell and Solman's (1991) attention to word length of various text types closely relates to similar decisions in the present study. In general, the decision to differentiate written text based on the presence or absence of accompanying illustrations cuts across these studies and pertains to the present study.

Each of these studies measured comprehension in order to draw conclusions based on their original questions about the effects of text with or without illustrations on comprehension. In Butcher's (2006) study participants drew a picture of what they knew about the subject of the text before reading the text and a picture of what they knew about the subject of the text after they read the text. Participants were also given the opportunity to verbally explain their drawings, which were then categorized according to a rating system ranging from least to most advanced. In addition,

participants answered a series of questions about the text after they read the text, including general knowledge questions, which were the same as questions asked before reading the text, as well as both simple recall and inference questions that were asked only after the participants read the text. Gambrell and Jawitz's (1993) fourth grade participants silently read a narrative story, after which they gave a free recall and responded to 16 cued recall questions. Mayer and Anderson (1992) administered a subject questionnaire in order to glean the subject's background knowledge, four problem-solving test sheets with one question each, and a recall test sheet used to evaluate basic retention of information.

Miller (1938) created a test for each of three stories from the basal reader that included several parts: word and phrase identification and recall and sequencing of events; this test was used in a pre- and post-test model in order to measure growth in the participants' comprehension. Miller also used longer tests covering all the material for the entire semester as an additional measure of comprehension, which were also used in a pre- and post-test model. Purnell and Solman (1991) gave a post-test consisting of 20 multiple-choice questions divided into 10 questions that tested comprehension of facts presented in text and 10 questions that tested comprehension of the illustrations that the participants had read in either the visual form or as they had been presented in the form of a written description of the illustration, as in the case of the written-only text treatment. Drawing upon the methods of these studies, the present study measures comprehension in a similar way, including the following components: a free recall, a set of basic comprehension questions relating to story

elements, and a series of more in-depth questions in a retrospective-think-aloud format.

These studies reached similar, yet somewhat varied conclusions. Butcher (2006) found that the participants who read the text with the simplified diagrams improved the most from the pre-test to the post-test. Taking into account considerable prior knowledge effect, the participants who read the text with simplified diagrams performed better on the fact recall questions, thus concluding that, "simplified diagrams best supported participants' learning of factual information" (p. 189) and that diagrams are helpful, but most helpful when they are simplified. Butcher also found that scores on the inference questions were generally low and did not reflect a significant difference between participants reading the three different text types. Gambrell and Jawitz (1993) found that mental images and illustrations independently enhanced reading performance and when combined significantly increased comprehension and recall of stories. In contract to Butcher's findings, Mayer and Anderson (1992) found the concurrent group performed better on the problem-solving tasks than the other groups, but there was no significant difference in the performance of the different groups on the retention measures (i.e. recall questions). Miller (1938) found no statistical difference in the scores of the two groups in his study, concluding that, "the absence of pictures did not cause the children to read the material with less comprehension" (p. 682). Miller did note, however, that the tests might have been too easy, suggested by high scores on the pre-test.

Due to the complexity of their study (i.e. they conducted five variations on the same experiment) Purnell and Solman (1991) reached a number of different conclusions. First of all, in experiment one, they concluded that the group that read text with additional content presented as text and illustrations performed better than other two groups. In addition, group three (text plus content of illustration as text and as illustration) out performed group one (text plus illustration) and group two (text plus content of illustration as text). Further experiments showed that content presented in the form of both text and illustration yielded higher comprehension scores than simply repeating either the text or the illustration, and in addition, students who read the content presented as illustration-only comprehended better than students who read the content presented in written-only text format. In the end, Purnell and Solman reached the following three conclusions:

> "comprehension of a text is not improved by the presence of a technical illustration with content related to but not overlapping that of the text…presentation of the same conceptual and spatial content in both an illustration and text results in better comprehension than simple repetition in either text or illustration…[and] when it was possible to present essentially the same content either in an illustration or as text, comprehension was superior for the illustration" (p. 293)

Comprehending Text With or Without Illustrations: Is There a Difference?

Visual literacy should not be separate from status quo written text literacy; instead, the two should be integrated into one definition and one practice of teaching children to read and write both written text and visual images. Returning to the relatively simple definition of visual literacy offered by Giorgis, et al. (1999), the present state of text in today's society (i.e. the combination of the variety of forms in which text is presented and the number of texts available) demands that teachers must

instruct students in how to create meaning from a visual image. Although visual images are sometimes presented in isolation from written text, more often than not the two are presented simultaneously. There is no need to throw out what is known about teaching children to read written text; however, there is a need to teach students to read images in addition to words. Reading can and does apply to both written and visual text; for that reason, to call the person in the act of comprehending (see Glossary) some combination of written and visual text a *reader* is both adequate and accurate. Visual text is no longer supplemental or simply secondary to written text. I set out to explore the practical side of these definitions and assertions by determining the effect of illustrations on second-graders comprehension of narrative text.

The present study.

In the present study I have posed the following primary research question:

- How does a change in text type as text contains more illustrations and fewer words influence second-graders' comprehension of narrative text?

This question addresses the key components of this study. First, defining text type in terms of proportion of words to illustrations highlights the key issue of the role that illustrations play in understanding a text. In addition, by having children read one of each type of text and then assessing their comprehension clear comparisons can be made between how well the children perform in relation to the different types of text. Second, using comprehension as a measure of whether or not and to what extent illustrations affect the reading of a text enables clear analysis of results once data has been collected.

In addition to my primary research question the following sub-questions address various aspects of the data from this study:

1) Does text type influence the accuracy of students' comprehension of narrative text?

2) Is text type a factor in the length of students' retellings?

3) Does text type influence the accuracy of a student's retelling?

4) Does text type effect how efficiently students are able to retell a story?

In all of these questions text type is a key variable, since this is the way in which I am measuring the different effects that words, words in combination with pictures, and pictures, have on children's comprehension. Accuracy of comprehension is reported as a percentage correct out of total possible correct score. Reporting comprehension in this way allows for comparison between text types, since each text does not have exactly the same total raw score, as well as across the entire sample of students. Breaking down the retelling data into accuracy percentages, length, and efficiency scores allows for analysis of the retellings from different angles in order to create the most complete picture possible of what the data from these student's retellings reveals. Accuracy of retelling is again reported as a percentage correct out of a total possible correct score, as a way to demonstrate how well the children retold the stories they read, which is one way to measure comprehension. Length of retelling simply states how much each participant had to say when retelling the text, which is one way to quantify comprehension, but certainly not the only way. The efficiency score combines the accuracy and length components into one unit of measure to qualify how well these children can retell these stories, regardless of how long or short their retellings are. Each of these sub-questions addresses the two key components of the main research questions, namely text type and comprehension. The purpose of the sub-questions is simply to further elaborate on how

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comprehension is measured in relation to the effect that each different text type has on those different measures of comprehension.

I modeled my procedures and methods after similar ones found in the literature. This study involves elementary school students, as did the research of Gambrell and Jawitz (1993), Kiefer (1983), Madura (1998), Miller (1938), and Sipe (1998 and 2000). Although some of the studies in the literature use large groups of students to conduct their research, some use smaller groups of one or two classes or even a few students (e.g. Kiefer, 1983; Madura 1998; Sipe 1999 and 2000), similar to my sample size of 11 students. I chose picturebooks that could be categorized along comparable lines to those used in most of the comprehension of text alone versus text with illustrations studies (e.g. Butcher, 2006; Gambrell & Jawitz, 1993; Miller, 1938). The categories in this study are as follows: *written-only* text, *combination of written and illustrated* text, and *illustration-only* text.

The picturebooks in the present study that fall into the *combination of written and visual text* category are the type of books described earlier as *picturebooks* rather than simply *picture books*. These books are not just words and pictures side by side, but rather books that contain a more complex interaction between text and pictures. The *written-only* and *illustration-only* categories of texts, given the absence of pictures and words, respectively, do not quite fall into the category of *picturebooks* described earlier in this review of the literature, but are nevertheless derived from the same idea. The *written-only* texts are simply the words in isolation from the pictures in what would be proper *picturebooks* if the text had not been separated from the pictures for the purposes of this study. The *illustration-only* texts are wordless

picturebooks, which, if they had words, would presumably also fall into the category of *picturebooks* described earlier.

The definition of reading comprehension that I offer relates directly to this study, because of its inclusion of the visual. Since measuring reading comprehension is a key element of this study I wanted to be sure to establish a definition of reading comprehension and conception of reading in general that takes notice of visual as well as written and verbal texts. In addition to this expanded definition of reading comprehension that includes both the visual and the written, it must also be acknowledged that the process of reading pictures in picturebooks in many ways looks similar to the process of reading written text, although there are some considerable differences, as discussed in looking at what Arizpe and Styles (2003) discovered that children do when they read pictures. Establishing this sense of what goes on when children read written and illustrated text has helped to lay the groundwork for this study by discussing what goes on when children read pictures so that the later analysis of the effect of illustrations on comprehension might make more sense.

This study involves a select group of elementary school students reading three picturebooks each and answering oral comprehension questions in response to each text. This combination of a focus on younger students reading picturebooks and measuring each student's comprehension in very specific ways brings together the two types of studies from the literature that I am drawing upon. By concentrating on younger students as subjects and picturebooks as a particular type of visual literacy and choosing to measure their comprehension in specific ways I hope to bring

together these somewhat related fields of study and make more clear the important role that illustrations play in children's comprehension, which thus far in the literature has not been as clear as it needs to be.

Chapter 2: Research Design and Methodology

Research Site, Participants, and Materials

The research site for this study consisted of an after-school program located at a public elementary school in the Washington D.C. Metropolitan area. The coordinator of the after-school program provided a list of all of the second-graders enrolled in the after-school program to the reading specialist of the elementary school. The reading specialist then identified all of the second-graders who were reading on grade level. The coordinator of the after-school program then sent home parental consent forms to all of the second-graders enrolled in the after-school program who were also reading on grade level. All of the children who brought back signed parental consent forms, a total of 11 students, participated in the study.

I conducted interviews with each participant in a quiet room approximately the size of a school conference room in the school where the children were enrolled in the after-school program. Each student participant and I sat in a chair across a table from each other during the interviews. Before reading the first text I explained to each participant what they would be doing (i.e. reading a picturebook and answering some questions orally about the book after they read it). In addition to taking anecdotal notes during each interview, I recorded the interview with a digital voice recorder.

Student participants.

The selection of participants for the present study was based upon precedent from the literature as well as my own knowledge and experience with elementary school children and the constraints of the time allotted to conduct the research for this study. The majority of subjects used in the children's responses to picturebooks studies were whole classrooms of children; although, a few studies looked specifically at a small set of individual students. Kiefer (1983) chose to work with 19 second-graders and four first-graders in her exploration into the development of a descriptive framework for children's responses to picturebooks. In his investigation of the nature of the literary understanding, Sipe's (2000) subjects consisted of 18 first-graders and nine second-graders from a combination class. In his investigation into individual literary response styles, Sipe (1998) drew from a sample of 27 first- and second-grade students. In addition to researching whole-class read-alouds, he conducted small group interviews with two groups of five children each as well as one-on-one read-alouds with each of these ten children. Sipe's methodology in this study (1998) represents a combination of whole-class and individual student (i.e. single subject or case study) research. Madura (1998) sampled four students with similar reading and writing ability from her own combination class of first-, second-, and third-graders in her exploration into the effect on literacy development of student inquiry into the creative process of authors and illustrators.

All of the comprehension of written text alone versus written text with pictures studies focused on whole classes or whole groups of subjects split into different experimental groups based on different text conditions rather than focusing

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on individual students. In addition, given the larger scope of these studies in comparison to the small scope of the present study the number of participants in this group of studies greatly exceeds the number of participants in the present study. For example, Miller's (1938) study included one hundred children in each of the first three grades from three elementary schools in Illinois. These students more closely resemble the ages of the students involved in the present study given the use of primary basal readers and the desire to investigate the usefulness of pictures in books for primary school children. Gambrell and Jawitz's (1993) research involve 120 fourth graders from three public elementary schools in Florida that were average, on-grade-level readers. While these students were slightly older than those in the present study, both studies chose to include only average readers so as to attempt to eliminate reading level as a variable.

In the present study, I chose to conduct my research with individual students due to time and resource constraints. I also wanted to be able to measure any trends in comprehension across the group of 11 participants as well as variations in each individual participant's comprehension from text to text. I purposely decided not to read the texts to the students, but instead to have the students read the texts to themselves. As Sipe (2008) describes, when a teacher reads to a child (or group of children), the child's reaction to the text is framed by that particular reading of the text. If, on the other hand, the child is free to read the text for himself/herself then his/her reaction to the text and subsequent comprehension is a direct result of that child's perspective on the text alone. In the case of whole group read-alouds teachers may want a group of children to interpret a text a certain way, as Sipe (2008)

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describes, "[The teacher's] own expressive reading constituted an interpretation of the story, so it was really the teacher's performance of the story (rather than the story itself) that the children were experiencing and to which they were responding" (p. 205). Nevertheless, in the case of this study, I wanted the participants to simply read the text and comprehend it in a straightforward manner, which is why I decided to have each student read the texts to himself/herself rather than reading the text to individual students or a group of students.

Given that this study involves reading comprehension of picturebooks, I selected second-graders as participants because this population is, generally speaking, in a transitional phase of reading between relying on pictures and reading text without pictures that is suited to the purposes of this study. In order to eliminate the effect of reading level on comprehension I attempted to control reading level by selecting only average, on grade level readers (as opposed to above or below grade level readers) to participate in this study. While I did not have exact reading level data for these participants, each one was reading on grade level, according to the reading specialist at the school that these students attended where I conducted this research. Those students who fit the criteria for this study (i.e. second-graders reading on grade level) and who returned affirmative, signed parental consent forms were included in the study. As described above, this resulted in 11 students participating in this study.

I chose to work with individual students rather than whole classes or small groups for a few key reasons (McCormick, 1995). First of all, given the somewhat limited nature of this study in terms of time and resources, studying individual students in place of a number of large groups of students can be an effective way to

begin to draw conclusions without the extra cost involved in studying large groups of students. Secondly, single-subject research, especially of the exploratory nature that I am pursuing in this study, can be useful in laying the groundwork for a more formal, large-scale group study in the future by formulating hypotheses that can be proved or disproved in a later study. Lastly, in this study I want to find out *how* illustrations may or may not influence second-graders' comprehension of narrative text, which is a more open-ended question than simply *do* illustrations influence second-grader's comprehension of narrative text. The combination of quantitative and qualitative data involved in single-subject research has helped me to begin to draw conclusions about the relationship between written text and pictures when students read and comprehend narrative text and the value of teaching elementary school children to read and comprehend images as well as written text (McCormick, 1995).

Materials.

I selected the texts used in this study based upon precedent in the literature and my own exploration and use of picturebooks by the author-illustrators ultimately chosen for this study. While most of the children's responses to picturebooks studies (e.g. Kiefer, 1983; Sipe 1998 and 2000) do not utilize a particular text set—choosing instead to study children's responses to a variety of picturebooks, focusing on the types of responses without an attempt to control for author-illustrator style—some researchers carefully chose specific texts to suite the purposes of their studies. For example, Madura (1998) selected two particular picturebook author-illustrators, Patricia Polacco and Gerald McDermott, including a desire to choose author-illustrators with a distinct artistic style which were also representative of a particular

genre or distinctive style of writing; in addition each of the author-illustrators also published at least ten books each and received at least one award (e.g. Caldecott Award). In addition, Madura's students showed an interest in studying these particular author-illustrators. Bromley (2001) chose to investigate children's responses to one particular picturebook, *Lily Takes a Walk* by Satoshi Kitamura, for a specific purpose, namely, because, like Pat Hutchins' *Rosie's Walk* and Eileen Browne's *Handa's Surprise*, "the words alone are not enough to tell the story, the pictures are essential" (p. 62). Arizpe and Styles (2003), in their extended investigation into children reading the images in picturebooks, chose three specific picturebooks by two contemporary author-illustrators: *The Tunnel* and *Zoo* by Anthony Browne and *Lily Takes a Walk* by Satoshi Kitamura. Given the longitudinal and extensive nature of their study, Arizpe and Styles were able to take the time to test out a number of current picture books on students, seeking to arrive at a set of a few picturebooks containing multiple layers of meaning that would appeal to children of a fairly wide range of ages (i.e. children aged 4 to 11). Arizpe and Styles (2003) also questioned each subject in order to determine previous exposure to these particular author-illustrators, although having done so they discovered that this had little to no effect on the children's responses to the picturebooks.

Taking into account the various methods of selecting picturebooks found in the literature, I used a specific set of criteria when selecting the texts to use in this study. To begin with I chose author-illustrators whose works are mentioned frequently in the literature as exemplary contemporary and postmodern picturebooks (e.g. Lewis, 2001; Evans, 1998; Watson and Styles, 1996), selecting only

picturebooks for which the same person wrote the words and created the illustrations. This factor is useful to take into account for a few reasons. First of all, by focusing only on picturebooks created by one person who writes and illustrates the text this helps to control for variation in text type and author's purpose, since it is hard to determine whether or not an author and an illustrator working on the same text have the same goals and purposes for that particular text. Secondly, choosing picturebooks by one author-illustrator simply narrows down the vast list of possible picturebooks to include in such a study. After compiling a list of these exemplary author-illustrators I refined the list by eliminating those author-illustrators (or specific picturebooks by certain author-illustrators) that I did not have access to, either in my own personal collection or from both the university and local libraries. From the list of picturebooks that I had access to by these particular author-illustrators I chose those picturebooks that I thought most children would not have been exposed to, even if they may have been exposed to the author-illustrator of that particular picturebook, basing these decisions largely upon my own experience with children this age as well as my previous exposure to these author-illustrators.

In my final decisions as to which texts to include in this study I considered three variables that would contribute to insuring that the texts chosen for this study would be as equal as possible, namely word count, estimated number of events, and reading level/grade level. After typing out the text of each picturebook in a Microsoft Word document I then used the word count tool in order to determine the number of words in each picturebook. I estimated the number of events for each text by separating the text that I had typed out for the word count purposes into a numbered

list of separate events with a summary statement of each event (see Appendix A). I established the reading level of each text (excluding the two wordless picturebooks from the *illustration-only* text condition that do not have a reading level since they do not contain words) by referencing a few key websites that provide pre-determined reading levels for a large selection of picturebooks, as well as the Flesch-Kincaid grade level designation tool in Microsoft Word. Accessing the Flesch-Kincaid grade level information for a particular text requires taking the following simple steps: in the "spelling and grammar" window I selected "options" and checked the box next to "show readability statistics;" after running the spelling and grammar check on a selection of text (e.g. the text of one of the picturebooks used in this study) Word displays a dialogue box that contains a variety of readability statistics, including the Flesch-Kincaid grade level designation. In this way I determined the grade level designation for the two *written-only* picturebooks used in this study since these two texts were not among the over one thousand leveled picturebooks in the Portland Public Schools (2006) leveled picturebook online database that I used to determine the reading and grade level of the two *combination of written and illustrated* text picturebooks.

Using the tools and procedures described above I was able to determine the word count, number of events, and reading level/grade level for each of the texts selected for this study. The two texts chosen for the *written-only* text condition, Anthony Browne's *Zoo* and Eric Carle's *Pancakes, Pancakes!* contain 650 and 712 words respectively (see Appendix B). *Zoo* is a 2.0 grade level text with 19 events, while *Pancakes, Pancakes!* is a 2.0 grade level text with 21 events. The two texts

chosen for the *combination of written and illustrated* text condition, John Burningham's *Mr. Gumpy's Outing* and Ezra Jack Keats' *Peter's Chair*, contain 283 and 292 words respectively, roughly half of the words in the *written-only* texts. This decision to choose *written-only* texts with word counts roughly twice as long as the *combination* texts reflects Purnell and Solman's (1991) similar choice of texts, specifically their written-only text ondition that included additional text describing the illustration (i.e. written text in place of the illustration), which would make that written text twice as long as the text with illustrations. With 17 events, *Mr. Gumpy's Outing* is a 2.4 grade level text at Reading Recovery level 21 (Portland Public Schools, 2006) and Fountas and Pinnell Guided Reading level M (Readinga-z.com, n.d.). With 18 events *Peter's Chair* is a 2.1 grade level text at Reading Recovery level 18 (Portland Public Schools, 2006) and Guided Reading level K (Readinga-z.com, n.d.). Because the two texts chosen for the *illustration-only* condition, Emily Arnold McCully's *Picnic* and Tomie DePaola's *Pancakes for Breakfast*, are wordless picture books they do not have a designated grade level or reading level. Each of these two texts contains 20 events.

With as little variation as possible across number of events and reading and grade levels, I decided to use these six texts, separated into two sets of three texts each with one of each type of text (i.e. *written-only* text, *combination of written and illustrated* text, and *illustration-only* text) in each of the two text sets. The first text set included *Zoo*, *Mr. Gumpy's Outing,* and *Pancakes for Breakfast*; the second text set included *Pancakes, Pancakes!*, *Peter's Chair*, and *Picnic*. Once I ascertained that I would have 11 participants, I made sure that I assigned texts to each participant in a

counterbalanced way so as to eliminate text effect. Using a *trials* (the order in which the participants would read the texts) by *texts* matrix I started with one participant and filled in the order in which they would read each text and continued until each participant had been assigned a text order. Figure 1 shows how the participants (numbers one through 11) were assigned the order in which s/he would read the texts in each of the two sets. For example, Participant 1 read *Pancakes for Breakfast* first (position a), *Mr. Gumpy's Outing* second (position b), and *Zoo* third (position c).

Table 1

Counterbalanced Sequence

	Text Sets	Position A	Position B	Position C
1	*Pancakes for Breakfast*	1, 7	3, 9	2, 8
	Mr. Gumpy's Outing	2, 8	1, 7	3, 9
	Zoo	3, 9	2, 8	1, 7
2	*Picnic*	4, 10	6	5, 11
	Peter's Chair	5, 11	4, 10	6
	Pancakes, Pancakes!	6	5, 11	4, 10

Data Collection

Once the student participants were selected and agreed to participate in the study I could begin working with each one individually. The students began each session by independently reading one of the three texts assigned to them. Following the reading of this first text, I assessed the students' comprehension of that text. The

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students' comprehension of each text was measured in two ways. First, the student retold the narrative of the story that s/he had just read, beginning with an unprompted free recall, followed by a series of prompted recall questions specific to each text that dealt with basic story elements (e.g. setting, characters, problem/solution, etc.). For the free recall, the students responded to the following prompt, "Imagine a friend heard that you read this book and s/he wanted to know what happens in this story. Without looking back at the story, what would you say to them?" The participants then responded to a series of prompted recall questions, such as the following, "Where did this story take place? Was it in one place or more than one place?" and "Who were the main characters in this story?"

After the unprompted and prompted recall, the students responded to more open-ended questions in a retrospective think aloud format, which were intended to get them to reflect on what they were thinking as they read the text and to allow for more in-depth responses to the text. For example, when reflecting upon reading Anthony Browne's *Zoo,* students responded to questions, such as, "How do you think the older boy was feeling before the family went to the zoo? While the family was at the zoo? After the family went to the zoo? How do you know?" and "What is happening to the animals in the story? What is happening to the humans? What is the author trying to tell us about the differences between humans and animals? How do you know?" The students gave their responses to these two comprehension measures orally, all of which was recorded by a digital voice recorder. The students followed the same interview protocol (see Appendix C) for the remaining two texts.

Data Analysis

The digital voice recording from each interview was transcribed in order to score and analyze the students' comprehension of and responses to each text. After transcribing the contents of each interview I separated the spoken units into questions according to the interview protocols for each text (see Appendix D for a sample transcript). In order to accurately score the retelling portion of each transcript (i.e. the unprompted recall) I coded these portions of each interview into T-units. One T-unit includes a main clause and all of its modifiers, including any embedded or attached clauses in order to break down a passage of speech into the smallest units possible (Hallen & Shakespear, 2002; Hunt, 1965). In this way I was able to analyze each student's retelling for each text more closely and consistently.

In order to score the unprompted and prompted recall sections of the interviews I created a scoring guide (see Appendix E) for each of the six texts, which was based upon a composite of three experts' responses to the same type, of questions each student answered in the interview. To create the composite retelling, three graduate students read one text set and three graduate students read the other text set, each one answering the same types of questions posed to the student participants. The phrasing of the questions for the expert composite varied slightly from the phrasing of the questions posed to the participants in order to encourage the experts to include all possible answers in their responses; in this way the composites for each text could be used to create comprehensive scoring guides with which to score each participant's responses to the texts with the most accuracy.

The most detailed aspect of the expert composite responses, and subsequently the scoring guides, was the retelling portion. Comparing the participants' retellings (the portion of each transcript broken into T-units) to the detailed and accurate composite retellings allowed for precise scoring of each retelling. Student retellings (item four in the interview protocol) were then evaluated using the scoring guides created from the composite responses of the expert readers in order to determine how well the students comprehended the text. The students' answers to the prompted recall questions (items 5 through 11) were also scored to determine how well the students comprehended the text. Scores for items 4 through 11 were recorded on data collection sheets that I created for each text (see Appendix F). In order to establish reliability in scoring, two raters scored a randomly drawn sample of 36% of the interviews (two interviews from each of the six texts). In order to establish a reasonably high reliability both raters scored an additional six interviews (for a total of 18 interviews or 55% of all of the interviews), reaching a two-rater agreement of 88% overall. Table 2 displays the reliability for each item per text, as well as an average reliability (overall for all items) per text.

Table 2

Reliability

Item #	*Mr. Gumpy's Outing*	*Pancakes for Breakfast*	*Pancakes, Pancakes!*	*Peter's Chair*	*Picnic*	*Zoo*
4	0.79	0.83	0.79	0.87	1.00	0.83
5a	1.00	1.00	1.00	0.67	1.00	1.00
5b	1.00	1.00	0.67	1.00	1.00	0.67
6a	0.33	1.00	1.00	1.00	1.00	1.00
6b	1.00	1.00	1.00	0.67	1.00	1.00
7a	1.00	0.67	0.67	1.00	1.00	1.00
7b	1.00	0.67	0.33	0.67	1.00	1.00
7c	1.00	—	—	0.33	—	1.00
7d	—	—	—		—	0.67
8(a)	0.33	1.00	1.00	1.00	1.00	1.00
8b	—	—	—	1.00	0.67	—
8c	—	—	—	—	1.00	—
9a	1.00	0.67	1.00	1.00	1.00	1.00
9b	0.33	1.00	1.00	1.00	0.67	1.00
9c	—	—	—	0.67	—	—
10	1.00	0.67	1.00	1.00	1.00	1.00
11	1.00	1.00	1.00	0.67	1.00	1.00
Average:	0.83	0.88	0.87	0.84	0.95	0.94
					Overall:	**0.88**

The students' responses to the retrospective-think-aloud portion of the interview were used to further explore the influence of illustrations on the complexity of thought and response with which each student comprehended the texts. Specific measures of comprehension are (almost to a fault) highly valued in the teaching and assessing of reading today; nevertheless, more in-depth, subjective, personal responses that children often offer are also valuable. Sipe (2008) calls these types of questions *probes*, which is when a teacher asks a student to clarify a response or to prove his/her answer by referencing the text. As Nystrand (1997) explains, "This request for an elaboration is not an attempt to push the student toward the 'right' answer, but an attempt to encourage the student to explore her own 'interpretive horizons'" (p. 83). The responses that the students offered to the open-ended questions were used to verify and expand upon the objective results from the unprompted and prompted recall comprehension measures.

Chapter 3: Findings

In this chapter, I outline the key findings from my analysis of the data I collected, as described above. I begin by looking at the data from the least cognitively demanding and most objective task, namely the basic comprehension questions (items 5-11 on the interview protocol). Next I summarize the findings from the more cognitively challenging task of retelling a story (item four on the interview protocol). In order to tie all of the data together, I end by closely examining the most cognitively demanding and most subjective task, that is the retrospective think aloud portion of the interview protocol (items 12-18).

Although my primary research question, *How does change in text type as text becomes more illustrated and less written influence second-graders' comprehension of narrative text?* remains important, there are some other key sub-questions that should be asked which address specific components of the data. These questions each help to break down this overarching question in order to address the specific components of the data. In relation to the basic comprehension questions it is appropriate to ask, "Does text type influence the accuracy of students' comprehension of narrative text?" Regarding the length of a student's retelling it is appropriate to ask, "Is text type a factor in the length of students' retellings?" because the length of a student's retelling is one measure of comprehension. It is also suitable to ask, "Does text type influence the accuracy of a student's retelling?" since how accurate a student's retelling is can be one way of measuring accuracy and level of comprehension overall. Finally, asking, "Does text type effect how efficiently

students are able to retell a story?" puts together the accuracy and length data for each retelling to see how well each participant retold these stories, which is yet another way of looking at and measuring comprehension. These questions do not stray from or raise additional issues aside from those raised in the initial research question; they are used to zone in on certain aspects of the data. Taken together all of these questions still address the fundamental issues of change in text type and how that affects comprehension.

Background Knowledge

At the beginning of each interview I asked two questions of each participant in order to attempt to establish the participants' overall degree of previous exposure to the texts in the study. In item one I asked, "Have you read this story before?" In 64% of cases (21 out of 33 interviews) participants said that they had not read the story before. In 27% of cases (9 out of 33) participants said that they had read the story before. In nine percent of cases participants were unsure of whether or not they had read the story before. Although it seems like a somewhat considerable portion of participants had read the texts in this study before, anecdotal notes do not show any evidence that these texts were in any way too easy or too familiar to the participants. Arizpe and Styles (2003) also found that previous exposure to particular author-illustrators had little to no effect on the children's responses to the picturebooks. With the exception of one student's reading of a written-only text, each participant took the time to read each text carefully. In the case of that one student he decided to skim the text quickly, most likely because he was tired or bored, not because he had

read the text before and was simply re-reading it; in fact, this student said he was not sure if he had read the text before.

In Item two I asked, "Have you read any other stories by this author before?" In 55% of cases (18 out of 33 interviews) participants said that they had read other stories by the same author before. In 45% of cases (15 out of 33) participants said that they had not read any stories by the same author before. Although it may seem as though a large percentage of participants had read books by the same author before, this is not surprising given the authors included in this study, for example, Eric Carle, Ezra Jack Keats, and Tomie dePaola. On the other hand, some authors were probably not as well known to the students, for example, John Burningham, Emily Arnold McCully, and Anthony Browne, two of which are British authors whose work does not seem to be quite as prevalent in this country as it is in the UK. Even though more students recognized other texts by some of these authors, the texts that were chosen for the study were chosen because they are hopefully some of the lesser well-known picturebooks associated with those authors. Simply because a participant recognized other books by the same author does not mean that s/he had read the specific book at hand.

Comprehension Questions

Items 5 through 11 in the interview protocol consisted of a series of prompted recall questions specific to each text and dealing in general with basic story elements (e.g. setting, characters, problem/solution, theme, etc.), which were intended to assess each participants basic comprehension of each narrative (see Appendix C for an example of an interview protocol containing specific comprehension questions).

These questions required relatively simple, straightforward answers. The section of each scoring guide devoted to these questions demonstrates that most answers to these questions are short and succinct, with the minor exception of the responses to item 11 dealing with the theme(s) present in the text.
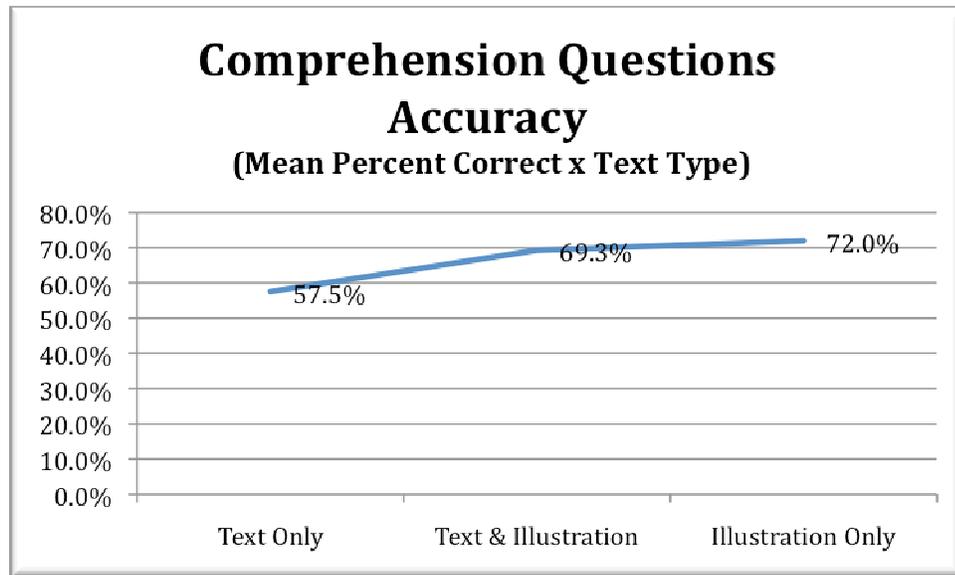
Figure 1. Average percent of correct comprehension questions per text type.

This graph addresses the question, "Does text type influence the accuracy of students' comprehension of narrative text?" Students' answers to oral comprehension measures for each type of text were scored by comparing their responses to a scoring guide created from a composite of expert responses. An accuracy percentage was created for each text type by averaging each individual student's percent of accurate responses to the prompted recall comprehension measures for each text. Comparing the mean percent of correct responses for each text type shows that although the differences in comprehension accuracy for each text type do not reflect a great deal of

variation, they do suggest a trend towards greater accuracy in comprehension as the proportion of written text to illustrated text shifts across text types. Responses to the comprehension measures for the written-only texts were the least accurate at an average of 57.5%, while responses to the comprehension measures for the illustration-only texts were the most accurate at 72%, with the combination texts' comprehension accuracy falling only slightly lower to 69.3%. This graph suggests that as illustrations represent a larger proportion of the narrative information in a text (i.e. as the proportion of written text to illustrated text shifts across text types) students' comprehension becomes more accurate.

Retelling

Item four, the portion of the interview in which I asked the participant to retell the story they had just read, proved to the richest piece of quantitative data. One reason for the richness of this part of the data could be that in a retelling a child is not as constrained by specific questions. The participant can retell as much or as little as s/he likes. Some retellings were quite long while others were short and to the point.

I examined three measures of these retellings in order to determine if there were any differences in the students' comprehension across text types. First, I looked at the how long (measured in T-units) each retelling was by simply delineating the T-units in each retelling and then counting the T-units. Second, I examined how accurate the retellings were. Accuracy was measured as a percent of a whole using the expert retelling in the scoring guide for each text to see how accurate each retelling was. Third, I determined how efficient the retellings were by calculating a retelling efficiency score for each of the three texts that each participant read. The

efficiency score is calculated as a ratio out of two by dividing the total score on item four (i.e. the retelling or unprompted, free recall) by the number of T-units that child produced in retelling the narrative. In this way, I could compare the quality of retellings that varied in length a great deal. In other words, a short retelling is not necessarily a poor retelling and a long retelling is not necessarily a good retelling.

Retelling Length
(Mean Number of T-Units x Text Type)

12.0	
10.0	10.9 11.3
8.0	
6.0	6.7
4.0	
2.0	
0.0	

Text Only   Text & Illustration   Illustration Only
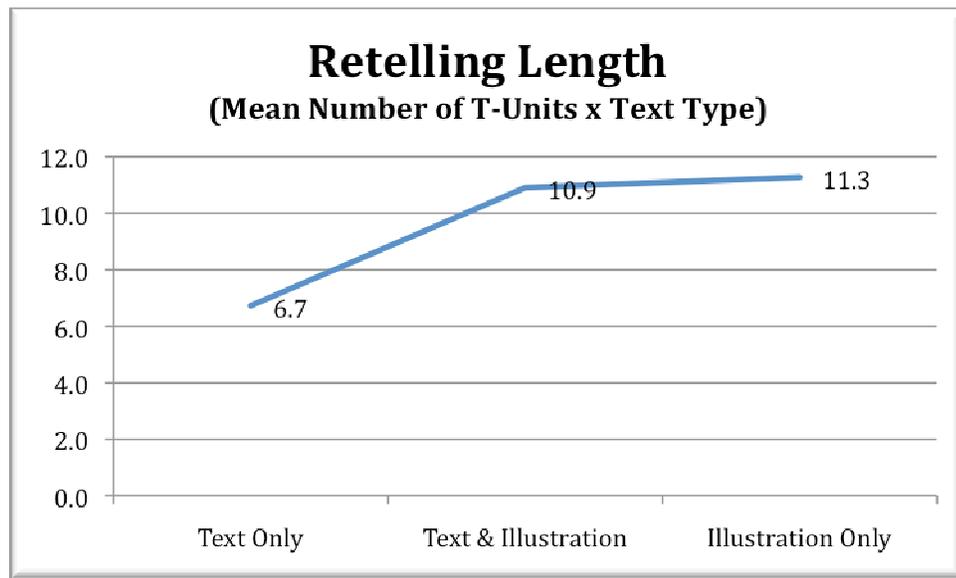
Figure 2. Average number of T-units in retellings per text type.

This graph addresses the question, "Is text type a factor in the length of students' retellings?" The T-unit was used as a way to break down each student's retelling into its smallest identifiable parts in order to score the retelling based on the composite expert retelling template for each text. This graph shows the average retelling length (demonstrated by the mean number of T-units as shown in the Y-axis.) for each text type (as shown in the X-axis). This graph suggests that students' retellings increased in length as they shifted from written-only texts to combination

texts to illustration-only texts. Again, the difference between the combination of written and illustrated text versus illustration-only text is not substantial, although there was some increase in length of retelling from the combination text to the illustration-only text. Having said that, the difference between the retelling length of the written-only text and both texts that contain illustrations is more considerable and worth noting. This finding suggests that as more of the narrative of a story is told through illustrations children's retellings increase in length.

Retelling Accuracy
(Mean Percent Correct x Text Type)
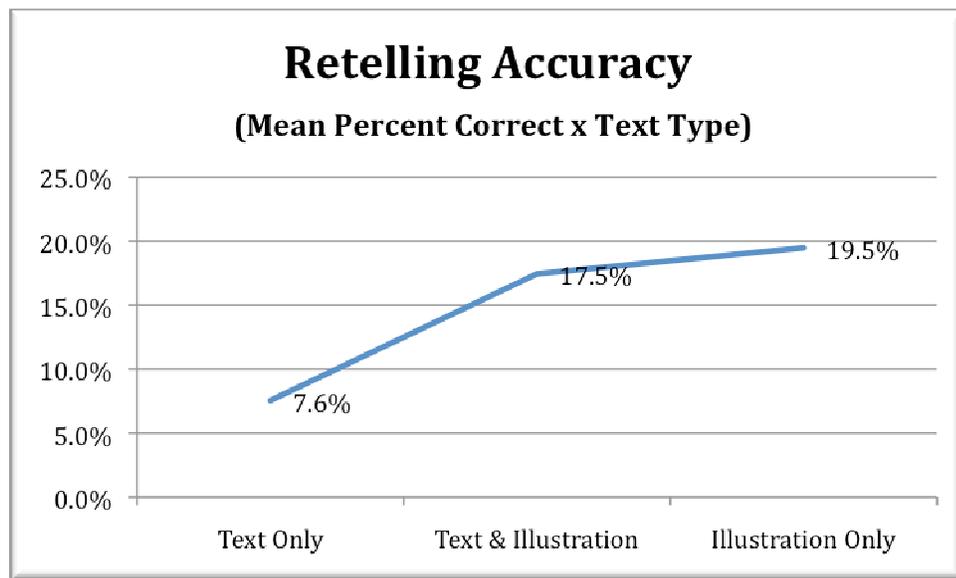
Figure 3. Average retelling percent correct per text type.

This graph addresses the question, "Does text type influence the accuracy of a student's retelling?" Student retellings were analyzed to see how closely their retellings matched the expert template. Overall, on average, the students' retellings reflected less than 20% of the content incorporated in the expert template. However, the retellings of the written *text only* stories were substantially less accurate than the

retellings of the *combination of written and illustrated text* stories and the *illustration-only* stories. The *illustration-only* retellings were slightly more accurate than the *combination of written and illustrated text* retellings.

This finding suggests that as text type shifts from written words only to combination of words and illustrations to illustrations only the students' retellings become more accurate. While there is a difference between accuracy of retelling for the combination of written and illustrated text and illustration-only text the difference is minimal. There is, however, a considerable difference in the accuracy of retelling between written-only texts and texts that contain illustrations, whether alone or in combination with words. This data sample suggests that the presence of illustrations in text has a positive effect on the accuracy of children's retellings of narrative text.
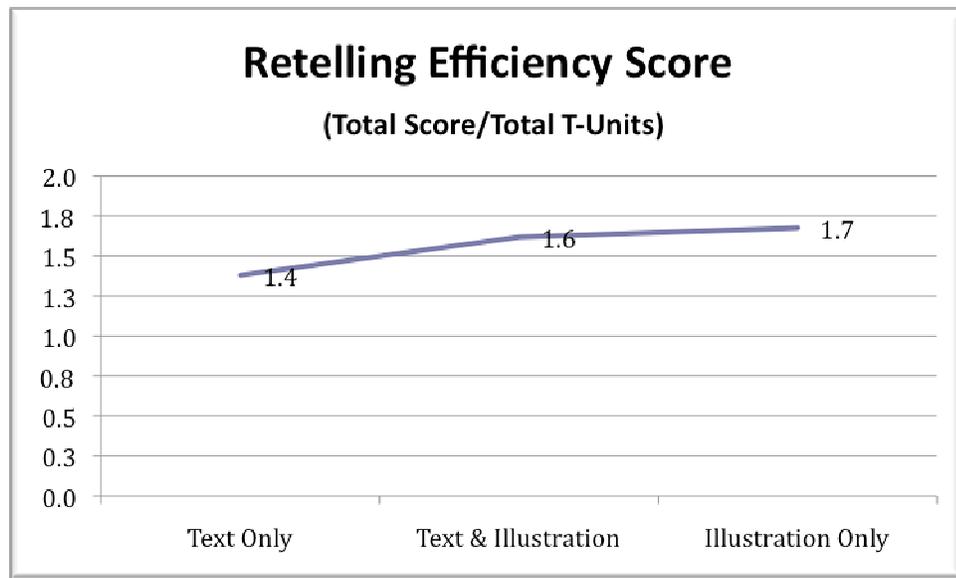
Figure 4. Average retelling efficiency score per text type.

This graph addresses the question, "Does text type effect how efficiently students are able to retell a story?" The retelling efficiency score was determined by dividing a student's total score for the retelling portion of the oral comprehension measures by his/her total number of T-units. An efficient retelling score means that whether or not a student's retelling was long or short each T-unit yielded a higher score (i.e. 2 out of 2). In this way a low T-unit count would not necessarily mean that a student did not give a good retelling. For example, if one student retold a text very succinctly resulting in only two T-units, but both T-units received a score of two, then that student's retelling efficiency score would be a 2, or the highest retelling efficiency score possible. On the other hand, a lower retelling efficiency score means that either a student gave a long retelling, but not all of his/her T-units yielded a high score (e.g. 1 out of 2) or a student gave a short retelling and his/her T-units yielded a low score (e.g. 0 or 1 out of 2). For example, a child may have given a longer retelling with 50 T-units, but received a score for that retelling of only 40, which would result in a considerably low retelling efficiency score of only 0.8. In this graph the x-axis represents the text type while the y-axis represents the range of retelling efficiency scores (as a ratio between 0 and 2). Although there is not a great discrepancy between the retelling efficiency scores across text type this graph does still seems to support the general trend of the other data, which is that as text contains more pictures and fewer words comprehension increases.

Retrospective Think Aloud

Based upon the data taken from the sample in this study, the quantitative findings above suggest that text with illustrations—as opposed to written-only text

without illustrations—help students to retell and comprehend more accurately as well as create longer retellings. While this data demonstrates a definite trend, taking a closer look at the profiles of individual students paints a slightly different and somewhat more complicated picture (see Appendix G, Table G1). Examining the individual data, rather than simply the means of the whole group for each category of analysis, shows that while some students followed the trend of the overall data the majority of the time, some students did not follow the trend at all or followed it very little. By breaking down the data into the four categories illustrated in the graphs above and asking the question, "How many participants fit the trend and how many do not?", the following conclusions can be reached:

- Comprehension questions accuracy: 45% of participants fit the trend

- Retelling accuracy: 27% of participants fit the trend

- Retelling length: 18% of participants fit the trend

- Retelling efficiency: 36% of participants fit the trend

Overall across all of these categories of analysis, 32% of participants fit the quantitative trends and 68% did not. Taking a look at individual participant's data reveals that 2 out of 11 participants fit the trend for each of the four categories of analysis almost completely, or in three out of four cases. The majority of participants (i.e. 8 out of 11) fit the trend for each of the four categories of analysis only slightly, or in one out of four cases. One participant did not fit the trend in any of the four categories of analysis.

Although as a group the results of the comprehension measures from each of these 11 participants present definite trends, breaking down the data according to

participant shows a somewhat more complicated picture. Analyzing the retrospective

think-alouds of these participants can help to elucidate some of these discrepancies.

Whereas the earlier quantitative data analysis answers the question, "*Do* illustrations

effect second-graders comprehension of narrative text?" the qualitative data obtained

from the retrospective think aloud goes further to answer the question, "*How* do

illustrations effect second-graders comprehension of narrative text?" In addition to

answering that particular pertinent question, the retrospective think alouds can also

help to shed some light on why individual participants may or may not have fit the

overall trend demonstrated in the quantitative data.

In the retrospective think aloud, I asked the participants more in-depth and

open-ended questions that were intended to get them to think more deeply and

interpretively about the text. For example, in relation to the combination of written

and illustrated text *Mr. Gumpy's Outing*, by John Burningham, I asked the following

questions: "How do you think Mr. Gumpy felt about his decision to let the children

and animals ride with him in his boat? How do you know?" and "How do you think

the children and animals felt about their decision to want to ride with Mr. Gumpy in

his boat? How do you know?" In addition to these in-depth questions I asked this

simple follow-up question throughout the retrospective think aloud, items 12 through

18, "How do you know?" This question prompted the participants to tell me where

they were getting their information from and helped me to see if they were able to

articulate that source of information. This is where the retrospective aspect to these

questions comes in, since by asking this question the students had to think back to

when they read the story and reflect on how they were gaining and processing information as they read the story.

Individual analyses.

Analyzing individual participant's retrospective think alouds answers some lingering questions. The participant's answers to the "how do you know" questions are particularly informative and help to answer the question of where these children are getting their answers from. Is it from the written text? The pictures? Their own background knowledge? Some combination of these? Looking at how the retrospective think alouds of Brie and Caitlin (all names are pseudonyms), two participants whose individual data very closely fit the trends of the data overall, sheds light on why their responses to the retelling and comprehension questions may have followed the overall trends in the data. Next, examining the retrospective think alouds of Seth and Kevin, two students whose individual data did not fit the overall trend, helps to explain why their responses to the retelling and comprehension questions do not follow the overall trend of the data. Table 3 recaps the individual comprehension questions and retelling data for each of these four students.

Table 3

Sampling of Individual Participant Profiles

		Zoo	*Mr. Gumpy's Outing*	*Pancakes for Breakfast*	*Pancakes, Pancakes!*	*Peter's Chair*	*Picnic*
Brie (P1)	Comprehension Questions Accuracy	38%	58%	73%			
	Retelling Length	3	10	13			
	Retelling Accuracy	3%	20%	30%			
	Retelling Efficiency	1.33	1.9	1.77			
Caitlin (P2)	Comprehension Questions Accuracy	62%	75%	77%			
	Retelling Length	6	9	46			
	Retelling Accuracy	7%	18%	68%			
	Retelling Efficiency	1.5	1.89	1.13			
Seth (P5)	Comprehension Questions Accuracy				77%	75%	73%
	Retelling Length				2	8	2
	Retelling Accuracy				4%	28%	2.8%
	Retelling Efficiency				2	1.75	1.5
Kevin (P6)	Comprehension Questions Accuracy				82%	79%	73%
	Retelling Length				5	2	16
	Retelling Accuracy				5%	8%	28%
	Retelling Efficiency				1	2	1.81

Brie

Brie's responses to the retrospective think aloud portion of each of her interviews illustrates that her language reflects an engagement with and awareness of the pictures as a means of comprehending the stories she reads. Brie read Anthony Browne's *Zoo* for her written-only text. Her responses show that she relies somewhat on the written word to understand and respond to questions about the story. For

example, in response to the "how do you know" questions, Brie sights the text specifically a few times in the following ways: "because they kept on *saying*…" and "it *says*…they were whining."

Brie's responses to the combination of written and illustrated text that she read, John's Burningham's *Mr. Gumpy's Outing*, demonstrate that although both words and pictures are present in this text, she increasingly relies upon the illustrations to understand the text. For example, in response to the "how do you know" questions Brie answered in the following way: "Because it *showed* it. It said it and the pictures *looked like* they were swimming back to shore;" even though she refers to the written text here, the predominant source of information for her seems to be the pictures. Brie shows further reliance on the pictures as her source of understanding through responses such as, "The picture of his house is right here and it *looks like* it's brick," and "because in this picture it *looks like* he wants to go on the boat." Additionally, Brie comments on the character's facial expressions when she says, "because they all had smiles on their faces when they were in the boat," demonstrating an awareness of and reliance on the pictures to comprehend the text.

In Brie's responses to questions for the illustration-only text that she read, *Pancakes for Breakfast* by Tomie dePaola, there is even more indication that she is relying on the pictures for her source of understanding, and as is evidenced by her higher scores for this text, paying attention to the pictures seems to have paid off. Brie's responses to several "how do you know" follow up questions include the following references to using the pictures to understand the story: "because in the picture it *showed*," "it kept on *showing* her" "because this picture *shows* it," "because

it *shows* it right like there in the beginning," "because she was like, right here it *shows* like where she's in bed and then she's thinking of pancakes so she wants to make them," and "because it *shows* it in one of the pictures." Brie again references facial expressions, a key textual marker, to help her understand the story: "because she was sitting down in her chair and smiling because she got to eat her pancakes." In addition to these numerous comments that show Brie relying successfully on the pictures to comprehend the story, she also made an insightful comment about picturebooks in general, demonstrating a certain level of metacognition that children this age do not always exhibit. When asked, "What do you think the author wants to make the people who read this story think about?" Brie responded, "So they can, so when they look at other people's pictures they know what's going on in it." I followed this response up with "How do you know?" to which Brie responded, "Because this is a picture with, like just a picturebook with no words and if you can know what's going on in it a little bit then you should know what's going on in other people's pictures too"

Caitlin

Caitlin's responses to the retrospective think aloud portion of the interviews for each text demonstrate a trend that coincides with the trend of the data overall. Her scores for the comprehension questions and retelling portions as well as her responses to the "how do you know" questions for *Zoo*, the written-only text that she read, illustrate that this text was more difficult for her to comprehend, very likely due to the absence of pictures. Although Caitlin made specific references to the written text when answering some questions (e.g. "on the second line it *says*," "in it, it *says*," "because some of the parts that she *said*, like she *said*") she also explained more than

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once that she did not know the answer, as evidenced by the following sample of her responses: "because like in the car where it said they had a little fight…I don't really remember, I can't remember…," "I don't know," and "because I think that…I don't really know."

There seems to be evidence that when words are present Caitlin relies more on the words in the text and her background knowledge and experiences. For example, when responding to questions for *Mr. Gumpy's Outing* she made comments like, "on one of the pages it *said* that because it *said* then they all…," "It was in one of the pages. It *said* that," "on one of the pages it *said*," and "in the book it *said*." In addition, when prompted by a graphical description of the QAR strategy (Raphael, Highfield, & Au, 2006) to explain where she got her information she said, "I got the answer from — I think my parents and my friends and my sisters and other books and stuff." Nevertheless, given that Caitlin's scores do fit the overall trend of the data, her tendency to rely on words and background knowledge does not seem to work as well for her as relying on illustrations to comprehend a story. Even though Caitlin still seems to rely on the very few words that appear as part of one of the illustrations in the illustration-only text *Pancakes for Breakfast* (e.g. "because in the story she *says* she's well, she doesn't *say*…in the ingredients book it *says*") she does show an increasing reliance on and use of the pictures to comprehend the story (e.g. "because on the first page it's all snowy and it *looks like* a small house…," and "Well, I don't know because it doesn't have words and I just think that because it has a — because she has, like, bubbles, like thinking bubbles *in the pictures*"). Like Brie, Caitlin also picks up on the facial expressions of the characters in the story as a key way to

understand what is going on: "*in this picture* she's all happy…but she, *in this picture*…she has a frown," "she has a smile on her face," "in the picture it shows you that…," and "because *in this picture* their mouths are like, 'what is she doing?'").

Seth

Taking a look at the retrospective think alouds of Seth, the only participant who did not fit the overall trend of the data at all, will help to elucidate why his individual data did not fit the general trends of the data. In general, Seth's highest comprehension scores were for the combination of written and illustrated text, for which he read Ezra Jack Keats' *Peter's Chair*. It is important to note that Seth's responses for all three texts were similar, but his responses for the written-only text (Eric Carle's *Pancakes Pancakes!*) and illustration-only text (Emily Arnold McCully's *Picnic*) scored at slightly lower levels than his responses for *Peter's Chair*. Although Seth sights the written text a few times (e.g. "because she *said* that she was busy…" and "because he *asks* his mom to make the pancake for him") in his responses to the retrospective think aloud portion of the interview for *Pancakes Pancakes!*, overall these responses do not demonstrate that he was using the text very much or recalling using the text to comprehend the story. At the end of the written-only text interview Seth drew the following insightful conclusion: "you don't learn anything by just *looking* at the words how to make a pancake" (emphasis added). By using the word *looking* instead of *reading* Seth is, perhaps inadvertently, emphasizing the visual over the verbal, even in a text that does not contain pictures.

Despite the fact that Seth's scores for the illustration-only text were across the board lower than his scores for the other two texts (although only slightly), he did demonstrate an awareness of the importance of using pictures to comprehend a story.

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In response to the many times I asked him, "how do you know?" Seth made the following comments: "because it *showed* it in the pictures," "because in the pictures it *shows* the mouse crying," "because it *looks like* the father is calling out for her," "because it *shows* in the picture…," "because the picture *showed* it," and "because this picture *shows* her a little scared." The number of times Seth references the pictures when responding to the illustration-only text outweighs the number of times he directly refers to the words when responding to questions pertaining to the written-only text. It seems that even though Seth's accuracy percentages and retelling data do not quite follow the trend of the overall data set, the types of responses and the emphasis he places on the pictures as his source of information as opposed to written text, demonstrates after all that pictures play an important part in his comprehension of these texts, as the overall trend of the data for the group would suggest.

Kevin

Although Kevin's accuracy percentages and retelling data do not follow the general trend of the overall data set, his responses to the retrospective think aloud portions of his interviews do seem to follow the overall trend at least in the degree to which he is cognizant of or able to express the sources of his understanding for each text. In other words, while Kevin makes no specific references to the written word in his responses in the retrospective think aloud portion of the interview for *Pancakes Pancakes!*, the written-only text that he read, he does make some references to using the illustrations to help him comprehend *Peter's Chair*, the combination text that he read, and many more references to illustrations helping him comprehend *Picnic*, the illustration-only text that he read. Kevin's answers to the "how do you know" questions for *Pancakes Pancakes!* seem to have no basis in the text, or at least he

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does not seem to be aware of their direct connection to his comprehending a specific part of the text. On the other hand, his responses to the "how do you know" questions for *Peter's Chair* demonstrate some awareness that the pictures can help him comprehend text (e.g. "I can *see* because it takes up the whole page," "because he had a frown on his face," and "I can *see* he has a smile on his face"). Here Kevin is even picking up on facial expressions, a skill that worked well for Brie and Caitlin, whose data did fit the overall trend.

Finally, Kevin's responses pertaining to *Picnic* demonstrate an even greater awareness of certain aspects of the text, namely the illustrations, aiding him in comprehending the story, as demonstrated by the following excerpts: "I can *see* they're picking flowers and playing…," "I can *see* everyone's like looking in places," "I can see she's hugging it…," "I can *see* the picture of them hugging and cheering," "I can *see* the picture where she's like…," and "I *saw* them all, like, playing." In addition to these responses that state directly how he saw various things in the pictures, Kevin also gave some nice descriptions of what is going on the pictures: "I can tell by the — the little puffs and — and it's red" and "I can tell she is counting them," demonstrating his ability to make sense of the images.

Thus, the apparent conflict between Kevin's accuracy percentages and retelling data and the overall trends of this data across the sample of 11 participants can be explained by further examining his responses to the retrospective think aloud portion of the interviews for each text. Although Kevin's quantitative data does not quite demonstrate that illustrations have a positive effect on his comprehension, his qualitative data, in the form of responses to the retrospective think aloud questions,

demonstrate Kevin's increasing awareness of the role that text, whether written words or illustrations, can play in comprehension. Examining Kevin's responses to each of the three text types, reveal that he increasingly references the text, whether written or illustrated, in his responses to the retrospective think aloud questions as the proportion of illustrated text to written text increases, demonstrating that the illustrations do in fact do have a positive effect on his comprehension.

Summary.

Closely examining a sampling of participants whose data both did and did not fit the overall trend of the qualitative data reveals that in one way or another the retrospective think alouds of these participants confirm the general trend, even if the quantitative data for these participants does not all fit the general trend of the data. In the case of Brie and Caitlin, their responses to the retrospective think aloud portion of the interviews for each text simply confirm their quantitative scores, which demonstrate that as they shifted from written-only text to combination of words and illustrations to illustration-only text their comprehension increased. In the case of Seth and Kevin, even though their quantitative scores did not necessarily fit the overall trend of the data, their responses to the retrospective think aloud portion of the interviews for each text told a slightly different story. Both Kevin and Seth demonstrated an increasing awareness of the text as source of information when comprehending a story. Even though their scores for the illustration-only texts were not their highest, their retrospective think alouds show that they were still using pictures more than words to accurately comprehend text.

This trend towards increasingly using the text effectively to comprehend the story as the text type changes from written-only to combination to illustration-only continues with the other participants, even those whose quantitative data do not necessarily fit the overall trend. For the most part, this sample of 11 students utilized the text more effectively to comprehend the stories as the text type changed from written-only to combination to illustration-only, because these students were increasingly able to articulate their use of the text as the text contained more illustrations, thereby also demonstrating their higher levels of metacognitive thinking as the text contained more illustrations.

Chapter 4: Discussion

With the purpose of exploring the role of illustrations in the process of comprehending text, I set out to conduct a study involving elementary school students reading picturebooks. Participants read one of each of three different types of text: *written-only* text (i.e. the words removed from a picturebook), *combination of written and illustrated text* (i.e. words and pictures presented together in a traditional picturebook), and *illustration-only* text (i.e. a wordless picturebook). I assessed each participant's comprehension using three different measures: basic comprehension questions, a retelling of the story, and a retrospective think aloud series of questions. I tabulated and analyzed the data for each of these three components of comprehension and came up with some interesting and promising results.

The results of the quantitative analyses suggest that children comprehend narrative text presented as illustrations alone somewhat more accurately and efficiently than they comprehend narrative text presented as a combination of words and illustrations, which they comprehend better than text presented as words alone. Although the overall data demonstrates a clear trend, a closer look at the data at the individual level tells a more varied story. Nevertheless, examining the more subjective and qualitative data found in the retrospective think alouds shows that even though there is individual variation in the overall trend, these students were in fact using the illustrations more than the words to comprehend these texts. Taken together the quantitative data (i.e. the comprehension questions and retellings) and the qualitative data (i.e. the retrospective think alouds) gleaned from this study shows that

children do comprehend the text more accurately and retell the story more accurately and efficiently when reading illustrations than when they read words.

These results align with some of the findings in the literature. Throughout the literature on children responding to picturebooks the researchers do not attempt to measure children's comprehension precisely. Their aim instead is to demonstrate that children are quite adept at reading and comprehending picturebooks (e.g. Kiefer, 1983; Madura 1998, Sipe 1998 and 2000). The results from the present study also suggest that children can read and comprehend images, and that they comprehend more accurately and retell the story more accurately and efficiently when illustrations are present then whey they are not, as is demonstrated throughout this literature. For example, Arizpe & Styles (2003) found that children, even and especially young children, are quite capable of expressing an understanding of what occurs in picturebooks when illustrations are present. Sipe (1998, 2000, and 2008) also found that when given the opportunity to express themselves, particularly orally whether in whole or small group or individual settings, children respond to picturebooks in many fascinating ways.

The findings from the literature involving studies that examined comprehension of written text alone versus written text with pictures represent somewhat more complicated and varied results. To begin with and in contrast to my findings, Miller (1938) found that both groups of students, those who read words alone and those you read both words and pictures, scored the same on comprehension tests. Miller did admit that the tests might have been too easy, which could account for the discrepancy between his findings and mine. Similar to the present findings,

Butcher (2006) found that those participants who read words accompanied by simple diagrams achieved the highest scores on the recall questions, in much the same way that the students in this study had the most accurate scores on comprehension questions for the illustration-only texts, followed closely by the combination texts. The present findings also align closely with Gambrell and Jawitz's (1993) conclusion that illustrations enhance reading performance. Reaching similar yet somewhat different conclusions from this study, Mayer and Anderson (1992) found that there was no significant difference between each group's scores on the recall questions, while the group that concurrently experienced words and images executed the higher-order problem-solving tasks better than the other groups. Purnell and Solman (1991) state that, "illustrations may present information in their own right rather than serving merely as adjuncts to aid comprehension of text" (p. 277), finding in general that illustrations had an increasingly positive effect on comprehension as the amount of illustrated text increased while the amount of written text decreased, confirming the results of the present study.

More specifically, the comprehension questions accuracy data suggests that as illustrations represent a larger proportion of the narrative information in a text students' comprehension becomes more accurate. This finding seems to support the literature that suggests that students' comprehension improves when illustrations are present (Butcher, 2006; Gambrell and Jawitz, 1993; Purnell and Solman, 1991). In each of these studies the subjects' comprehension was assessed after reading different text types, similar to those used in this study. In each case, the researchers concluded that illustrations are a valuable tool in increasing comprehension, as evidenced by

higher scores on comprehension measures given to subjects after they read a text with illustrations than comprehension measures given to subjects after they read a text without illustrations.

The retelling length data suggests that children's retellings increase in length as more of the narrative of a story is told through illustrations. This finding would seem to support the emphasis in the literature on teaching children to read visual as well as written text (e.g. Au & Raphael, 2000; Flood & Lapp, 1995; IRA/NCTE, 1996; Williams, 2007). These researchers and many others continue to push for an expansion of the definition of literacy to include the visual. If it can be proven that children are able to retell more accurately after reading a text with images than a text with just words then this push may be justified. The goal is that visual literacy will be taught in schools more widely. This retelling length finding is also supported by the literature that describes children's extensive responses to text with illustrations (e.g. Arizpe & Styles, 2003; Sipe, 2008). In this literature children's responses are described as rich and expressive, illustrated in part by the length of the retellings of the students in this study.

The data related to the accuracy of the participant's retellings suggests that the presence of illustrations in text has a positive effect on the accuracy of children's retellings of narrative text. The literature in which researchers studied the comparisons in comprehension between written text only and written text with illustrations suggests similar findings with some variations. For example, Butcher (2006) found that diagrams in an informational text—that are similar to, yet not quite the same as illustrations in a narrative text—are helpful, but most helpful when they

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are simplified.   Working with fourth-graders, Gambrell and Jawitz (1993) found that illustrations enhanced reading performance and substantially increased comprehension and recall of stories when combined with mental imaging.

Limitations of the Present Study

As with any study, there are several noteworthy limitations to the present study. With a sample size of 11 participants I can begin to draw some introductory conclusions about how illustrations affect second-grader's comprehension, but I cannot state unequivocally that the results of this study are completely reliable and would remain the same if replicated.   Additional studies following the same procedures that I have outlined with a larger sample size would go a long way to continuing to prove, or perhaps disprove, as the case may be, the results shown here. Children are unique in their perspectives, abilities, and interests. I attempted to rule out reading level as a factor by including only on grade level readers, yet even more precision could be used in this area by selecting students reading at one particular reading level, rather than simply falling under the broader category of *on-grade-level*.

While I did select the texts in this study with care and attention to details such as reading level, presumed previous knowledge, and word count, there are other factors that could be considered if this study were replicated. As Arizpe & Styles (2003) chose to do in their much more extensive study of children's responses to picturebooks, if this study were replicated, the student participants involved could be surveyed prior to selecting the texts in order to more accurately ascertain information about interests and prior knowledge of certain texts, both of which might influence a child's comprehension of a certain text.

The decision to measure comprehension in the specific ways outlined in this study was deliberate. Other previous studies in the literature have undertaken a slightly less strict assessment of children after they read picturebooks (e.g. Arizpe & Styles, 2003; Sipe 2008). These studies in general are looking for more qualitative data on the nature of children's responses rather than quantitative data on how those responses might reflect upon children's comprehension of these texts. In this study my purpose was to take the wonderful things that previous researchers have found about how children produce varied and interesting responses to picturebooks and begin to attempt to quantify those responses in a way that might prove the instructional worth of teaching children to read and comprehend images.

In the vein of postmodernism today, some researchers might look at the insistence in this study on asking specific comprehension questions as too limiting to children's interpretive abilities. Sipe (2008) argues that, "in the case of picture storybooks there are multiple interpretations, and that there is not necessarily one 'best' interpretation that the teacher must scaffold 'for' or 'toward'…this is [his] reason for preferring the term 'interpretation' rather than 'comprehension'…." In response to this statement I would say that the present study contains a combination of straightforward comprehension questions as well as open-ended interpretation questions, rather than simply all basic comprehension questions that can limit children's thinking, but still have their place. For example, item number 11 on the interview protocol asked participants what the theme of the story was; as evidenced by the multiple possible correct answers on the scoring guide, this question did not simply have one answer. While this question did prove quite difficult for the

students, I think it was worthwhile to include such a challenging question with more varied possibilities for response. The purpose of asking basic comprehension questions was so that I would have a more concrete way of measuring how illustrations possibly affect second-graders when they read.

Implications for Practice and Further Research

The findings from this study can be seen as a jumping off point for both how to continue looking at teaching reading to children and how to continue researching the ways that children read. Certainly the implication that illustrations likely have a positive effect on reading comprehension should be considered. Perhaps the majority of teachers already know that illustrations help students read. I would hope this is the case; nevertheless, proving this through well thought out and carefully carried out research is an important step in solidifying this idea in the minds of literacy researchers, practitioners, and policy-makers alike. If we can continue to describe the worth of attending to illustrations in reading instruction perhaps we can expand this to other types of less traditional but still important visual texts. The world is a changing place and today's students must be equipped to understand all kinds of texts that they come into contact with.

The hope is that this study has helped in some way to ensure that visual text can and will find as prominent a place in reading instruction as written text. Just as Purnell and Solman (1991) suggest that, "[a]uthors should take at least as much care in the drawing of illustrations as they take in the writing of the text" (p. 277), perhaps teachers and literacy curriculum developers should also take at least as much care in instructing children how to read images as they do in teaching children how to read

words. That being said, likely the most effective way to do this is to teach the two together, since there is some overlap in these skill sets, as Arizpe and Styles (2003) discovered. Children may even be benefit learning to read in this way.

As Mayer and Anderson (1992) suggest, "contiguity of words and pictures during instruction encourages learners to build connections between their verbal and visual representations of incoming information, which in turn support problem-solving transfer" (p. 450). If teaching children to read and interpret images as well as written text can be proven a successful strategy for helping students become not only better readers but better life-long learners then this must be our goal. This study has begun in a small way to look at the practical implications of why children need to be exposed to visual as well as written text and the fact that children need to be taught how to make the best use out of the images that they encounter. Hopefully, the research and practice based on children and visual texts illustrated in this study will only continue to grow.

Appendices

Appendix A

Sample list of events: *Picnic*, Emily Arnold McCully

1. The mice get ready to go on a picnic.

2. The drive to their picnic spot.

3. One mouse falls off the back of the truck.

4. The rest of the mice keep driving and do not notice that she has fallen off.

5. The mice arrive at their picnic spot.

6. They set up their picnic things.

7. The mice have a good time playing and relaxing.

8. The mouse that fell off the truck cries by herself.

9. She looks around at her surroundings.

10. The other mice gather to eat their picnic.

11. The mouse that fell off the truck decides to eat some berries.

12. The other mice realize that one mouse is missing.

13. They look all around their picnic spot for the missing mouse.

14. They pack up their things to go look for the missing mouse.

15. The missing mouse is very full from eating the berries.

16. The other mice drive back and look for the missing mouse.

17. The missing mouse hears them coming.

18. They find each other on the road where she fell off the truck.

19. The missing mouse almost forgets her stuffed animal mouse.

20. They all go back to their picnic spot and enjoy the picnic.

Appendix B

Written-only texts: *Pancakes Pancakes!* and *Zoo*

Pancakes, Pancakes!
Eric Carle

Kee-ke-ri-kee
crowed the rooster.
Jack woke up, looked out
the window and thought,
"I'd like to have a
big pancake for breakfast."

Jack's mother was already up and busy.
"Mother," said Jack, "I'd like to have a big pancake for breakfast."
"I am busy and you will have to help me," she said.
"How can I help you?" asked Jack.
"We'll need some flour," she replied.

"Take a sickle and cut as much wheat as the donkey can carry.
Then take it to the mill. The miller will grind it into flour."

When Jack had cut enough wheat,
he put it on the donkey's back and took it to the miller.

"Can you grind this wheat for me?" he asked.
"I need it for a big pancake."
"First we must separate the grain from the chaff," said the miller.

He gave Jack a flail and spread the wheat onto the ground.
The miller took another flail and began to beat the wheat with it.
Jack helped with the threshing,
and soon there was a big pile of straw and chaff—
and a small pile of grain.

The miller poured the grain on a large flat stone.
On top of it was a round millstone
connected to the water wheel on the outside.
The water wheel turned round and round,
turning the millstone round and round, too,

to grind the grain into flour.
At last the miller handed Jack a bag of flour.

"Here's the flour," shouted Jack. "Let's make a pancake."
But his mother said, "Now we need an egg."
Jack went to the black hen and fed her some grain that had slipped
into his pocket while he had been threshing.
"Cluck, cluck," said the black hen and went inside the hen house.
Then she said, "Cluck, cluck," once more and laid an egg.

"Here's an egg," shouted Jack. "Let's make a pancake."
But his mother said, "Now we need some milk."
Jack went to the spotted cow and began to milk her.
"Moo, moo," said the spotted cow as the milk squirted into the pail.

"Here's the milk," shouted Jack. "Let's make a pancake."
But his mother said, "We need some butter."
Jack got the butter churn and held it between his knees.
His mother scooped the cream from the top of the milk
and put it into the butter churn.
Jack pushed the churn handle up and down, up and down.
Finally, the cream turned into butter.

"Here's the butter," shouted Jack. "Let's make a pancake."
But his mother said, "We need to build a fire,"
Jack went to the woodshed and brought some firewood.

"Here's some firewood," shouted Jack. "Let's make a pancake."
But his mother said,
"Wouldn't you like to have something sweet on your pancake?"
So jack went down to the cool cellar
and pulled a jar of strawberry jam from one of the shelves.

"Here's the strawberry jam," shouted Jack.
"Let's make a pancake."
In the kitchen, Jack's mother had filled the table with
the flour,
the egg,
the milk,

the butter.

There was also
a mixing bowl,
a cup,
a wooden spoon,
a ladle,
a frying pan,
a plate,
a knife, fork, and spoon.
And a jar of strawberry jam.

And his mother said, "Put a cupful of flour into the bowl…

"Break an egg into the flour and stir…

"Pour a cupful of milk over the flour and eggs and stir again
until the batter is smooth and without lumps."

Jack's mother heated the frying pan over the fire,
and added a piece of butter. The butter melted fast.

Then she said to Jack,
"Now pour a ladleful of batter into the hot pan."

After a minute or two she looked at the underside of the pancake.
It was golden brown.
"Now watch," she said, "I'll turn the pancake over. Ready?"

"Ready!" shouted Jack.
"Flip," said his mother.
Up and over went the pancake high into the air
and landed right in the pan. In another minute or two
the pancake was crisp on the underside as well.

Then she slipped the pancake from the frying pan onto the plate
and spread some strawberry jam on it.
"And now, Jack," his mother started to say,
but Jack said…

"Oh, Mama, I know what to do now!"

Zoo

Anthony Browne

Last Sunday we all went to the zoo.
Me and my brother were really excited.

But there were masses of cars on the road,
and it took ages to get there. After a while Harry
and I got really bored. So we had a fight. Harry
started crying and Dad told me off. It's not fair,
he never tells Harry off. It's always *my* fault.
"What kind of jam do you get stuck in?" asked
Dad.
"Don't know," said Harry.
"A traffic jam!" roared Dad.
Everyone laughed except Mom and Harry
and me.

When we finally got there Dad *had* to
have a quarrel with the man in the ticket
booth. He tried to say that Harry was only
four and should get in half-price. (He's
five and half, actually).
"Highway robbery!" Dad snarled.
Sometimes he can be really embarrassing.

We hadn't gotten a map of the zoo, so we just
wandered around. Me and my brother wanted to
see the gorillas and monkeys, but we had to see
all these boring animals first. We went to the
elephant house, which was really smelly. The
elephant just stood in a corner stuffing its face.

Mom had brought some chocolate, and
Harry and I were hungry.
"Can we have it now?" I asked.
"No, not yet," said Dad.
"Why not?" whined Harry.
"Because," said Dad.
"Because why?" I asked.
"Because I said so," said Dad. It seemed he
was in one of those moods.

Then we saw the tigers. One of them was
just walking along the wall of the cage, then
turning around and walking all the way back.
Then it would start again.

"Poor thing," said Mom.

"You wouldn't say that if it was chasing after you," snorted Dad. "Look at those nasty teeth!"

Harry and I were starving.

"Can't we have lunch now?" I asked.

"But we just got here," said Mom.

It seemed like we'd been there for hours. My brother thumped me, so I kicked him, and we wrestled for a bit, then Dad told me off.

We looked at the penguins next. I usually find penguins funny when I see them on TV, but all I could think of was food.

"What animals can you eat at the zoo?" asked Dad.

"Don't know," I groaned.

"A hot dog!" howled Dad. He was holding his stomach and laughing so much that tears were rolling down his face.

"Come on, boys," said Mom. "Let's get something to eat."

The café was great. I had a burger and fries and baked beans and loads of ketchup, and chocolate ice cream with raspberry sauce. It was great.

After that we went into the gift shop to spend our pocket money. We each bought a funny monkey hat. "Which one is the monkey?" jeered you-know-who.

Then we had to go and see the polar bear. It looked really stupid, just walking up and down, up and down.

Next we saw the baboons, and they were a bit more interesting. Two of them had a fight.

"They remind me of someone," said Mom. "I can't think who."

The orangutan crouched in a corner and didn't move. We tried shouting at it and banging on the glass, but it just ignored us. Miserable thing.

Finally we found the gorillas. They were quite good. Of course Dad had to do this King Kong impersonation,

but luckily we were the only ones there.

Then it was time to go home. In the car Mom asked us what was the best part of the day. I said the burger and fries and beans, and Harry said the monkey hats.

Dad said the best part was going home, and asked her what was for dinner.

"I don't think the zoo is really for animals," said Mom. "I think it's for people."

That night I had a very strange dream.

Do you think animals have dreams?

Appendix C

Sample Interview Protocol

Title: *Zoo*   Participant #_____
Author: Anthony Browne   Order in Sequence _____

Interview Components	Questions
Introduction	Today you are going to read a story. After you read the story, you will tell me what happened in the story. Then I will ask you some questions about the story. After we talk about the story I am going to ask you about what you were thinking when you read the story. Does this make sense to you? Are you ready to begin?
	1. Have you read this story before [*Zoo,* by Anthony Browne]? Yes / No (*circle one*) This is a story with just words and no pictures. I have taken the words out of this regular picturebook [*show book to participant*] so that all you will read are the words.
	2. Have you read any other stories by this author before? *Show participant a selection of other books by the same author, or at least pictures of those book covers, to see if s/he recognizes any of them.* Yes / No (*circle one*) *List any books that the participant mentions*:
	3. Are you ready to begin reading?
	Participant reads the text silently (or out loud) to himself or herself.
Unprompted Retelling	4. Imagine a friend heard that you read this book and s/he wanted to know what happens in this story. Without looking back at the story, what would you say to them?
	Participant gives an unprompted retelling (i.e. a free recall) of the narrative of the text.
Prompted Retelling	Now I am going to ask you some questions about the story. Without looking back at the story, do your best to remember what you read from the story when you answer the questions. Can we begin?

	5.	a. Where did this story take place? b. Was it in one place or more than one place?
	6.	a. Who were the main characters in this story? b. Was there one or more of the characters that seemed more important to the story? c. Who was (were) that (those) character(s)?
	7.	a. What can you tell me about the dad in this story? b. What can you tell me about the mom? c. What can you tell me about the older brother? d. What can you tell me about the younger brother?
	8.	What was the family in this story doing?
	9.	a. What kinds of animals did the boys want to see? b. What kinds of animals did the parents want to see?
	10.	Think about who told the story. Was it one of the characters (like the mom, the dad, the younger brother, or the younger brother) or someone else?
	11.	Think about other stories that you have read before. Some of them are about love, some of them are about courage, some of them are about making choices. Some stories are about one thing and other stories are about more than one thing. What do you think this story is about? [*If a participant gives a quick, one-word answer to this question, follow up with…*] Tell me more about that.
Retrospective Think-aloud		Now I am going to ask you some more questions about the story and what you were thinking when you read the story. For this part, you can look back at the story to answer any of these questions. Can we begin?
	12.	[*Sequence of events*]
	13.	[*Setting*]

	14.	a.	How do you think the older brother was feeling before the family went to the zoo? How do you know?
		b.	How do you think the older brother was feeling while the family was at the zoo? How do you know?
		c.	How do you think the older brother was feeling after the family went to the zoo? How do you know?
	15.	a.	Did the dad seem happy to be at the zoo? How do you know?
		b.	How do you think the mom feels about zoos? How do you know?
	16.	Think about the relationship between the brothers…	
		a.	How did they act towards each other? How do you know?
		b.	Why do you think they acted that way? How do you know?
		c.	What did their mom think about the way they were acting? How do you know?
	17.	a.	What do you think the author wants the reader to feel about the family visiting the zoo? How do you know?
		b.	What do you think the author wants the reader to feel about the animals in the zoo? How do you know?
		c.	What do you think the author thinks of cages? How do you know?
	18.	a.	What is happening to the animals in the story?
		b.	What is happening to the humans?
		c.	What is the author trying to tell us about the differences between humans and animals? How do you know?
		d.	What do you think the author wants to make the people who read this story think about? How do you know?

Appendix D

Sample Transcript

Text: *Mr. Gumpy's Outing*
EG = researcher (Emily Gerrard); P3 = Participant 3 (Julia)

EG: Have you read this story before?

P3:   Mm-mm [*no*].

EG: Have you read any other stories by this author?

P3:   [*shakes head 'no'*]

EG: Okay.

P3:   Wait, is this John Brett—Jan Brett?

EG: You're close. You're close. His name is John Burningham. The first initials
        are the same but it's a different author.

P3:   I would say they're like brothers and sister.

EG: Maybe.

P3:   Because they both have the same starting.

EG: You're right, they do have the same starting initial.

EG: Are you ready to start reading?

P3:   Yeah.

EG: You can read out loud of quietly to yourself, whichever is easier for you.

[*Participant reads the story out loud.*]

EG: Imagine that a friend heard that you read this book and she wanted to know
        what happens in this story. Without looking back at the story, what would
        you say to her?

P3:   Okay. I would say that there was a man who lived by a river and he had a
        boat, and then he was riding his boat and then two children asked him, "Can
        we come?" and then he said, "But don't babble." No, it was babble.

EG: Squabble.

P3:   Squabble. And then the rabbit asked if she or he could come on, and then Mr. Gumpy –

EG: Mm hmm.

P3:   Mr. Gumpy said but if you don't hop, and then the – then what happened next? The rabbit and then the cat – then the cat asked if it could come and then Mr. Gumpy said "yes, yes, but if you don't chase the cat". And then the dog came on and then the dog asked if he could come on, and then he said, "Yes, but if you don't shake the cat." Then after cow, cow asked if it could come on and then he – then Mr. Gumpy said but if you don't – that's a big word. No kicking? Hopping with the chickens? Don't, don't kick? No.

EG: If you don't remember just keep going.

P3:   Okay. Then he said – the kid – the goat said, "Can I come on?" and then the goat was – then he said, "If you don't kick." Then the chickens came on and then he said, "Yes, but don't flap." And then the, the sheep came on? No, then the sheep – he said that the sheep can come on but don't [bleat], and then the, then the pig. Then Mr. Gumpy said, "But don't eat too, eat about." It was like eating. Can I say eating?

EG: Sure.

P3:   And the cow, the cow was – the cow don't – and the – and he said to the cow, and the cow asked Mr. Gumpy and then he said, "Yes, but don't, but don't, but don't kick?" No.

EG: If you don't remember you can keep going.

P3:   Okay. I think I remembered. "But don't…" I'll just keep going.

EG: Okay, any more, or is that the end?

P3:   There's one more but I'll do it later because I can't remember it.

EG: Okay, anything else about the story?

P3:   The story was about Mr. Gumpy and all the farm animals. There were two kids and they're having lots of fun.

EG: Okay. All right. Now I'm gonna ask you some questions about the story. Without looking back at the story, do your best to remember what you read from the story when you answer the questions. Can we begin?

P3:   Mm hmm.

EG: Where does this story take place?

P3:   The story takes place in the fields.

EG: Okay. Was it in one place or more than one place?

P3:   More than one place.

EG: Okay. Who are the main characters in the story?

P3:   The little girl, the man, the little boy, and all the farm animals.

EG: Was there one or more of the characters that seemed more important to the story?

P3:   More characters that were important to the story

EG: Who were those characters?

P3:   It was Mr. Gumpy, the two children, and all the farm animals.

EG: Okay. What can you tell me about Mr. Gumpy?

P3:   Mr. Gumpy was a nice guy and he, he would let a lot of people on his boat.

EG: What can you tell me about the children?

P3:   The children. They were nice like him and they – and they're – and they just – and they're very, they're very good like him and they're very nice but they didn't really listen to Mr. Gumpy.

EG: Okay. What can you tell me about the animals?

P3:   Okay, the animals, they, they all – the animals, they – the animals, well, they always, like, three chased each other which they – I mean, two would chase each other.

EG: Mm hmm.

P3:   And one – well, the rabbit – well, the rabbit is very kind and it's funny in the story because when it's in the water it's very funny.

EG: Okay.

P3:   And all the farm animals, they're like the same but they have different things about them, and they all get in – they all do different things. They don't listen to Mr. Gumpy and then, then they – then they get in the water so they're a little bit – so they don't really listen to Mr. Gumpy.

EG: Okay. How did Mr. Gumpy and the children and the animals all end up in the boat together?

P3:   Well, everyone kept on asking him for one time and he said yes to every single one of them, but don't do anything to tip over the boat.

EG: What happened when the children and the animals started bothering each other?

P3:   They, they all were tipping and then the boat fell down in the water.

EG: What did they do after they fell into the water?

P3:   They climbed on a hill to, to get dry in the warm sun.

EG: Think about who told this story. Was it one of the characters, like Mr. Gumpy, the children, or one of the animals, or someone else?

P3:   Someone else.

EG: Think about other stories that you've read before. Some of them are about love, some of them are about courage, some of them are about making choices. Some stories are about one thing; some stories are about more than one thing. What do you think this story's about?

P3:   I think it's about making choices because there's a lot of animals and he has to make a lot of choices.

EG: Okay. Now, I'm gonna ask you some questions about the story and what you were thinking when you read the story. For this part you can look back at the story. Okay, you ready to begin?

P3:   Mm hmm.

EG: Why did the boat tip over?

P3:   Because the animal, because the animals weren't listening to Mr. Gumpy.

EG: How do you know that's why it tipped over?

P3:   Because they were all bothering each other and it – and they were moving a lot and it tipped over and in this book I actually – and it really sounded like it really actually tipped over.

EG: Can you tell me more about that?

P3:   Umm.

EG: What do you mean by it sounded like it tipped over?

P3:   Everyone was mad at each other and there was a lot of people, and then Mr. Gumpy, he told him not – he told them not to go tipping and then they all were doing lots of stuff and then it tipped.

EG: Okay. What did Mr. Gumpy and the children and the animals do after the boat tipped over?

P3:   They came – they swam over and then they got onto a very big hill and got dry by the warm hot sun.

EG: How do you know that's what they did?

P3:   Because in one of the pages the boat tips over and then I read and I, I heard that they swam over and they got on the big hill and then they dried off in the warm hot sun, and then I think that's what they did to get dry.

EG: Can you show me that page in the story?

P3:   [*turns to page*]

EG: Okay, great. Well, what do you think about what they did after the boat tipped over?

P3:   I think – well, they swam over to a big hill and then they got dried off and then they put all their clothes back on and then they gone in the meadow and went to his house and have a nice cool drink.

EG: Okay. Where do you think Mr. Gumpy lives?

P3:   I think he lives in a brick house that's very pretty.

EG: How do you know that's where he lives?

P3:   Because I'm looking at the picture and it really looks like a nice house. It's a brick house and it has very pretty leaves on it like, you know, you see those trees on top.

EG: Hm, okay. Why do you think Mr. Gumpy wanted to go out in his boat at the beginning of the story?

P3: I think that he wanted to go on his boat because he didn't go on it for a long time.

EG: How do you know that's why he wanted to go on it?

P3: Because he was going on the boat and it, and it, and it, and it really looks like it. No, wait, I think he just wants to go for a ride and see the whole place and see how different it is.

EG: Okay. How do you think Mr. Gumpy felt about his decision to let the children and the animals ride with him in his boat?

P3: He felt a little happy for a few people to get on his boat.

EG: How do you know he was happy?

P3: Because I think he didn't have a lot of people on his boat for a long time.

EG: Okay. How do you think Mr. Gumpy feels about going out on his boat again some other time?

P3: With somebody another time? I think he'll be pretty excited because they could see everything and they could take pictures.

EG: How do you know he'd be excited about going in his boat again?

P3: Because, because you could do lots of things in your boat. You could go fishing and you could take pictures, like a tour, and you could go there for nice long ride.

EG: Mm hmm. Okay. Why do you think the children and the animals wanted to ride with Mr. Gumpy in his boat?

P3: Because I think it would be fun.

EG: How do you know?

P3: Because all the animals – well, it looks like in one of the pages that they're having lots and lots of fun.

EG: Can you show me that picture?

P3:   [*points to picture*]

EG: Okay. Thank you. How do you think – let's see – how do you think the children and the animals felt about their decision to want to ride with Mr. Gumpy in his boat?

P3:   They felt excited.

EG: How do you know they were excited?

P3:   Because maybe they, because maybe they would be excited to have lots of fun. They could spend time with a new person.

EG: Okay. Why do you think Mr. Gumpy gave the children and the animals warnings of what not to do when they got in the boat?

P3:   Because he was warning them because, because if they did that stuff then the, then the boat would tip and he doesn't want anybody to get hurt.

EG: How do you know that's why he gave them those warnings?

P3:   Because he doesn't want to break his boat. He doesn't want to be, doesn't want to be in trouble for his grown-up – the grown-ups to be mad at him and he doesn't want to get in trouble or anything.

EG: Why do you think Mr. Gumpy let the children and the animals get in his boat with him?

P3:   Because he would think it's a lot of fun with a few kids.

EG: How do you know that's what he was thinking?

P3:   Because maybe he just wanted to have a little bit of fun for a while.

EG: Okay. Do you think Mr. Gumpy and the children and the animals had a good time?

P3:   Mm hmm.

EG: How do you know they had a good time?

P3:   Because in one of these, in one of the pages – in all the pages – actually, in this page, they really look like they're having lots of fun.

EG: Okay. What do you think the author wants the reader to think about Mr. Gumpy?

P3:   Well, they want him to be like nice guy, like happy one.

EG: How do you know that the author wants us to think Mr. Gumpy is nice?

P3:   Because a lot of people in this book is really nice.

EG: Okay. What do you think the author wants to make people who read this story think about?

P3:   About fun stuff.

EG: Can you tell me a little more about that?

P3:   And he, he wants to make people be excited and they – and lots of kids could imagine that they are on that boat and do everything in here.

EG: How do you know that's what the author wants us to think about?

P3:   Because maybe the author really wants us to think about that in our imagination.

EG: Okay.

Sample Scoring Guide

Text: <u>Peter's Chair</u>

Instructions:

- Score question 4 based on T-units (Hallen & Shakespear, 2002; Hunt, 1965). Each T-unit receives a score on a 0-1-2 scale (0 = no answer/wrong answer, 1 = partial answer, 2 = complete answer) determined by how well the participant's answer corresponds to the answers below.
- Score the entirety of each of the remaining questions, 5-11, on a 0-1-2 scale (0 = no answer/wrong answer, 1 = partial answer, 2 = complete answer). If a question has more than one part (e.g. parts 'a' and 'b') score each part on a 0-1-2 scale.

Question #	Prompt	Answer
4.	(Retelling) Imagine a friend heard that you read this book and s/he wanted to know what happens in this story. Without looking back at the story, what would you say to them?	Should include the following… a. Peter was building a tower/ b. and he stretched to put something on top of the tower/ c. and knocked it over./ d. His mom said he was going to need to play more quietly./ e. Then he went in to see his mom fussing over his baby sister Susie./ f. He said that it used to be his cradle./ g. Then he saw his dad was painting the high chair pink./ h. They painted his crib pink./ i. Then he saw his old chair/ j. and realized that they hadn't painted it yet./ k. So he took the chair/ l. and ran out of room with his dog Willie/ m. and got some dog biscuits and cookies/ n. and a picture of him when he was a baby/ o. and ran away./ p. Then they went and sat outside the house with all those things./ q. Then he realized that he didn't fit in his chair anymore./ r. Then his mom looked out the window/ s. and said, "Peter won't you come back to us, we're having something special for lunch."/ t. He came back in/ u. and pretended that he was hiding behind the curtain,/ v. but he fooled her./ w. Then he said, "Let's paint my chair for Susie."/ x. And they did./ y. Then the dog walked in the paint and left little pink footprints./

5 a.	Where did this story take place?	Inside and outside Peter's house
b.	Was it in one place or more than one place?	one place *or* more than one place (either one is correct)
6 a.	Who were the main characters in this story?	Peter, his mother, his father
b.	Was there one or more of the characters that seemed more important to the story? Who was (were) that (those) character(s)?	Yes; Peter
7 a.	What can you tell me about Peter?	(a little) jealous (at first) of his sister; a typical boy playing with his blocks
b.	What can you tell me about Peter's mother?	sensitive, patient, and understanding towards Peter, nurturing to Susie
c.	What can you tell me about Peter's father?	helpful around the house
8 a.	What was Peter's mother doing at the beginning of the story?	taking care of (fussing over) his baby sister
b.	What was Peter's father doing at the beginning of the story?	painting Peter's old furniture pink
9 a.	Where did Peter go when he 'ran away from home'?	outside his house/apartment
b.	What did Peter do when he came home?	Hid from/surprised his mother; ate lunch with his parents and told them that he wanted paint his chair pink for his sister
c.	What happened at the end of the story?	Peter and his father painted the chair pink
10.	Think about who told the story. Was it one of the characters (like Mr. Gumpy, the children, or one of the animals) or someone else?	Someone else
11.	Think about other stories that you have read before. Some of them are about love, some of them are about courage, some of them are about making choices. Some stories are about one thing and other stories are about more than one thing. What do you think this story is about?	Family (bonds/dynamics/love/concern for each other); jealousy (sibling rivalry); changes/transitions; making choices (Peter decided to paint the chair pink)

Appendix F

Sample Data Collection Sheet

Text: <u>Pancakes for Breakfast</u>   Rater: _____   Student ID: _____

Question #	T-unit	Reference to Scoring Guide	Score (0-1-2)
4.			
5 a.	—	—	
b.	—	—	
6 a.	—	—	
b.	—	—	
7 a.	—	—	
b.	—	—	
8.	—	—	
9 a.	—	—	
b.	—	—	
10.	—	—	
11.	—	—	
		Total	

Appendix G

Table G1   *Individual Participant Profiles*

		Zoo	Pancakes, Pancakes!	Mr. Gumpy's Outing	Peter's Chair	Pancakes for Breakfast	Picnic
P1	Retelling Accuracy	3%		20%		30%	
	Comprehension Questions Accuracy	38%		58%		73%	
	Retelling Length	3		10		13	
	Retelling Efficiency	1.33		1.9		1.77	
P2	Retelling Accuracy	7%		18%		68%	
	Comprehension Questions Accuracy	62%		75%		77%	
	Retelling Length	6		9		46	
	Retelling Efficiency	1.5		1.89		1.13	
P3	Retelling Accuracy	20%		41%		37%	
	Comprehension Questions Accuracy	65%		79%		82%	
	Retelling Length	21		51		23	
	Retelling Efficiency	1.14		0.76		1.22	
P4	Retelling Accuracy		11%		4%		10%
	Comprehension Questions Accuracy		68%		86%		81%
	Retelling Length		6		11		5
	Retelling Efficiency		1.83		1.82		2
P5	Retelling Accuracy		4%		28%		2.8%
	Comprehension Questions Accuracy		77%		75%		73%
	Retelling Length		2		8		2
	Retelling Efficiency		2		1.75		1.5
P6	Retelling Accuracy		5%		8%		28%
	Comprehension Questions Accuracy		82%		79%		73%
	Retelling Length		5		2		16
	Retelling Efficiency		1		2		1.81
P7	Retelling Accuracy	2.5%		2%		8%	
	Comprehension Questions Accuracy	46%		58%		50%	
	Retelling Length	3		2		4	
	Retelling Efficiency	1		1		1.5	
P8	Retelling Accuracy	5%		19%		16%	
	Comprehension Questions Accuracy	35%		63%		77%	
	Retelling Length	3		9		8	
	Retelling Efficiency	2		2		1.5	
P9	Retelling Accuracy	5%		2%		3%	
	Comprehension Questions Accuracy	46%		54%		68%	
	Retelling Length	3		1		1	
	Retelling Efficiency	2		2		2	
P10	Retelling Accuracy		18%		36%		5.8%
	Comprehension Questions Accuracy		82%		71%		92%
	Retelling Length		13		10		3
	Retelling Efficiency		1.38		1.8		2
P11	Retelling Accuracy		0%		14%		5.8%
	Comprehension Questions Accuracy		32%		64%		46%
	Retelling Length		9		7		3
	Retelling Efficiency		0		0.88		2

Table H1

Means

	Written-only			Combination			Illustration-only		
	Zoo	*Pancakes, Pancakes!*	*Both*	*Mr. Gumpy's Outing*	*Peter's Chair*	*Both*	*Pancakes for Breakfast*	*Picnic*	*Both*
Item 4	8.67	7.60	8.18	16.17	12.60	14.55	20.50	10.80	16.09
Item 5	2.00	3.20	2.55	1.83	3.00	2.36	3.33	2.00	2.73
Item 5a	1.00	1.40	1.18	0.83	1.40	1.09	1.33	1.00	1.18
Item 5b	1.00	1.80	1.36	1.00	1.60	1.27	2.00	1.00	1.55
Item 6	2.00	2.40	2.18	1.50	2.60	2.00	2.83	2.60	2.73
Item 6a	1.67	1.60	1.64	1.17	1.20	1.18	1.67	1.40	1.55
Item 6b	0.33	0.80	0.55	0.33	1.40	0.82	1.17	1.20	1.18
Item 7	4.50	2.20	3.45	4.50	5.00	4.73	1.83	2.40	2.09
Item 7a	1.00	1.00	1.00	1.83	2.00	1.91	1.00	1.00	1.00
Item 7b	0.67	1.20	0.91	1.00	1.80	1.36	0.83	1.40	1.09
Item 7c	1.67	—	1.67	1.67	1.20	1.45	—	—	—
Item 7d	1.17	—	1.17	—	—	—	—	—	—
Item 8	2.00	2.00	2.00	1.50	3.20	2.27	2.00	5.40	3.55
Item 8a	—	—	—	—	2.00	2.00	—	1.60	1.60
Item 8b	—	—	—	—	1.20	1.20	—	1.80	1.80
Item 8c	—	—	—	—	—	—	—	2.00	2.00
Item 9	1.83	3.20	2.45	3.33	5.20	4.18	3.67	3.60	3.64
Item 9a	1.17	1.50	1.30	2.00	1.60	1.82	1.67	2.00	1.82
Item 9b	0.67	2.00	1.27	1.33	2.00	1.64	2.00	1.60	1.82
Item 9c	—	—	—	—	1.60	1.60	—	—	—
Item 10	0.33	1.60	0.91	2.00	0.80	1.45	1.67	1.60	1.64
Item 11	0.00	0.40	0.18	0.83	1.20	1.00	0.33	1.40	0.82
Items 5-11*	1.35	1.76	1.52	1.67	2.11	1.88	1.82	2.11	1.88

* All comprehension questions combined

Appendix I

Table I1

Standard Deviations

	Written-only			Combination			Illustration-only		
	Zoo	*Pancakes, Pancakes!*	*Both*	*Mr. Gumpy's Outing*	*Peter's Chair*	*Both*	*Pancakes for Breakfast*	*Picnic*	*Both*
Item 4	7.79	7.02	7.10	13.67	6.91	10.77	18.33	10.47	15.41
Item 5	1.10	1.30	1.29	0.98	1.22	1.21	0.52	1.58	1.27
Item 5a	0.00	0.89	0.60	0.41	0.55	0.54	0.52	0.71	0.60
Item 5b	1.10	0.45	0.92	1.10	0.89	1.01	0.00	1.00	0.82
Item 6	0.63	1.52	1.08	0.84	1.14	1.10	0.75	1.95	1.35
Item 6a	0.52	0.89	0.67	0.41	0.45	0.40	0.52	0.89	0.69
Item 6b	0.82	0.84	0.82	0.82	0.89	0.98	0.98	1.10	0.98
Item 7	2.43	1.48	2.30	1.76	0.71	1.35	1.33	1.67	1.45
Item 7a	0.89	1.00	0.89	0.41	0.00	0.30	0.89	1.00	0.89
Item 7b	0.82	1.10	0.94	1.10	0.45	0.92	0.75	0.89	0.83
Item 7c	0.82	—	0.82	0.82	0.84	0.82	—	—	—
Item 7d	0.98	—	0.98	—	—	—	—	—	—
Item 8	0.00	0.00	0.00	0.84	0.84	1.19	0.00	0.89	1.86
Item 8a	—	—	—	—	0.00	0.00	—	0.89	0.89
Item 8b	—	—	—	—	0.84	0.84	—	0.45	0.45
Item 8c	—	—	—	—	—	—	—	0.00	0.00
Item 9	0.75	0.84	1.04	0.52	1.10	1.25	0.82	0.89	0.81
Item 9a	0.75	0.58	0.67	0.00	0.89	0.60	0.82	0.00	0.60
Item 9b	0.52	0.00	0.79	0.52	0.00	0.50	0.00	0.89	0.60
Item 9c	—	—	—	—	0.89	0.89	—	—	—
Item 10	0.82	0.89	1.04	0.00	1.10	0.93	0.82	0.89	0.81
Item 11	0.00	0.89	0.60	0.98	0.84	0.89	0.82	0.89	0.98
Items 5-11*	1.32	1.16	1.26	1.25	1.40	1.34	1.11	1.40	1.27

* All comprehension questions combined

Glossary

Combination of written and illustrated text: a book containing both words and pictures (i.e. a picturebook)

Comprehension: the process of extracting and constructing meaning by interacting and being involved with written and/or visual texts in a reciprocal interchange of ideas between the receiver and composer

Illustration-only text: a book that contains only illustrations and no words (i.e. a wordless picturebook)

Picturebook: a book that contains both words and pictures, in which the words and pictures play an equal role in creating meaning in the text and interact with each other rather than simply appearing side by side

Visual literacy: the ability to make sense out of and create visual images

Written-only text: a book that contains only words and no pictures (i.e. the words taken from a regular picturebook and placed in a separate context so that they appear in isolation from the pictures)

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