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Meaning Making With Picturebooks: Young Children’s Use of Semiotic Resources

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ABSTRACT
As part of a year-long, classroom-based research study examining literacy instruction and development, the research team observed emerging decoders draw from a range of semiotic resources while reading picturebooks. Utilizing a case study approach, the researchers selected eight first graders to act as a representative case, and examined their interactions with multimodal picturebooks. Analysis of students’ interactions led to the development of a typology of semiotic resources that students used to make meaning with picturebooks including typographical features, paralinguistic features, design features, illustrations, and background knowledge. Analysis also revealed that students articulated meaning in three distinct ways: explicitly, inferentially, and performatively. Findings suggest that traditional ways of assessing emerging decoders may not fully represent their meaning making practices.

KEYWORDS
Early literacy; meaning making; multimodality; picturebooks; social semiotics

Introduction
The contemporary literacy landscape is one that is increasingly multimodal. However, literacy instruction remains focused on traditional, logocentric texts (Serafini, 2011, 2012). This is evident in the early grades, where leveling systems (i.e., Lexile, Fountas and Pinnell, Benchmark, Rigby, etc.) are often used to guide student text selection. However, scholars attest that readers need to acquire the skills necessary for transacting with multimodal texts (Kress, 2003; Serafini, 2012). Within text leveling systems, the following items are suggested to create more challenges for readers: bolded print, variation in font, variation in font size, variation in image/text layout (no longer just having a representative picture above the sentence), integration of “bubbles, strip or print, and other print/picture combinations” (Fountas & Pinnell, 2001, p. 297). We believe many of these textual considerations/characteristics, when introduced and supported through instruction, actually make available additional semiotic resources to young readers, not create challenges that should be reserved for more “proficient” readers.

In this study, we examine ways in which a diverse group of first graders make meaning with multimodal picturebooks by drawing on various semiotic resources. This study is part of a larger, yearlong study examining literacy instruction and development in a Title I, workshop-based first grade. The classroom teacher provided instruction and time for discussion related to semiotic resources found in picturebooks (e.g., typography, image,
design features, etc.). The lead researcher observed multiple emerging decoders draw on these semiotic resources to figure out a word or miscue while retaining meaning when reading Mo Willems’s books.

These observations led to the following research question: What semiotic resources do first graders utilize when making meaning with contemporary picturebooks? The Mo Willems texts were specifically selected for two purposes:

1. The systems of representation in his books offer a large variety of visual and textual resources for constructing and expressing meanings. These resources, such as speech bubbles, are considered challenges for beginning first grade readers based on the Fountas and Pinnell (2001) leveling system, which places these features on at a Level L (the equivalent of a mid to end-of-year, proficient second grade reader).

2. The books are extremely popular, appearing on the New York Times best seller list repeatedly, and winning several awards including the Geisel Award and the Caldecott Honor Award.

**Theoretical framework**

As literacy researchers continue to investigate how young children make sense of picturebooks and other multimodal ensembles, attention has expanded beyond the role of written text to the role that visual images and design features play during the act of reading. By expanding the range of theories used to understand how children construct meaning in transaction with picturebooks, researchers are better positioned to support pedagogical approaches beyond instruction that focuses on decoding written text.

The texts readers encounter in and out of school are usually accompanied by visual images and design elements in addition to written language. Readers interact with print-based texts that contain multimodal elements, for example picturebooks, informational texts, magazines and newspapers, as well as digitally based texts that contain hyperlinks, video images, music, sound effects and graphic designs. Paul Duncum (2004) states, “…there is no avoiding the multimodal nature of dominant and emerging cultural sites” (p. 259). Visual images, design elements, and written language are being combined in unique ways, and readers in the new millennium will need new skills and strategies for constructing meaning in transaction with these multimodal texts as they are encountered both in and out of school settings.

The research study draws on current research in multimodality to reveal the way images and texts work individually and in concert with one another (Kress, 2010). Picturebook theories are drawn on to address some of the ways picturebooks work to address how the cohesive nature of this particular format offers meaning potential for young readers (Nikolajeva & Scott, 2000). Visual literacy (Arizpe & Styles, 2003; Kress & van Leeuwen, 1996) calls researchers’ attention to the fact that systems of meaning are not only linguistic in nature but also draw on visual systems of meaning. The focus on the way the visual, design, and narrative aspects of multimodal texts communicate potential meanings is an attempt to make the point that an interest in representational modes other than written language is essential and is central to actual forms of communication.
everywhere, not simply some kind of tangential or marginal concern that could be taken up or not (Kress, 2003, 2010). Representation through written language or visual images is always partial, in effect limiting the reader to the perspectives presented. This partiality of representation of meanings creates an interpretive space where the reader-viewer is positioned to fill in gaps (Iser, 1978), and construct meaning in transaction with the written language, design elements, and visual images created by the author, artist and publisher (Lewis, 2001; Rosenblatt, 1978).

Discussions concerning which literacy skills will be required of students in the 21st century have appeared in numerous educational publications recently and have been greeted with mixed reactions (Bellanca & Brandt, 2010; Trilling & Fadel, 2009). It has been proposed that the skills necessary to be a literate citizen in the new millennium have expanded from simply being able to read and write printed text to being able to consume and produce a variety of texts across traditional and new technologies and working in digital and mobile environments (Kress, 2010; Lankshear & Knobel, 2006; Luke, 1995). As literacy educators, we need to consider the challenges associated with the multimodal aspects of the texts readers encounter. As these texts grow in complexity, shifting from monomodal structures to multimodal ones, and are distributed in digital forms in addition to traditional print-based texts, the requisite skills readers will draw upon needs to expand to handle the demands of these new texts.

**Literature review**

An important aspect of multimodal texts that has not received the attention it deserves is how the design features, for example the typography of contemporary picturebooks, affect the meaning potential of and the ways readers interact with these texts (Bandré & Button, 2011; Serafini & Clausen, 2012). Van Leeuwen (2006) asserts the concepts and methods for analyzing multimodal texts, in particular the typographical and design features, and the meaning potential of these semiotic resources lag behind the analytical techniques developed for analyzing written discourse.

Traditionally, the visual images and design features, including typography, have been considered distractions to be avoided rather than multimodal elements that offer meaningful additions to the written narrative. Studies have analyzed the linguistic elements of a text as markers used to increase a reader’s fluency and prosody, rather than seeing them as resources for building meaning (Schwanenflugel, Westmoreland, & Benjamin, 2015). Recently, research on print referencing has found that encouraging children to attend to illustrations and characteristics of font such as color, size, and weight can aid in emergent literacy development and print knowledge (Justice & Ezell, 2004; Zucker, Ward, & Justice, 2009). More recently, studies focusing on the responses children have in transaction with contemporary picturebooks have asserted that children attend to various semiotic resources, including images and visual design features, to make sense of the books they experience (Arizpe & Styles, 2003; Serafini, 2015; Sipe, 1998).

Picturebook scholars have offered analytical frameworks for understanding the role of specific design features in contemporary picturebooks, including peritextual elements (Martinez, Stier, & Falcon, 2016), page breaks (Jacobs, 2016), typographical elements (Pantaleo, 2014; Unsworth, Meneses, Gonzales, & Castillo, 2014), and endpapers (Duran & Bosch, 2011; Sipe & McGuire, 2006). These design features associated with
contemporary picturebooks need to be conceptualized as semiotic resources used by authors, illustrators, publishers, book designers, and readers to realize the meaning potential of these multimodal texts.

The aim of the work done within the field of multimodality is to develop a systematic analytical methodology and descriptive apparatus that accommodates the interplay of different semiotic modes and recognizes the multimodal complexity of meaning making, in particular readers’ transactions with picturebooks (Kress, 2010; Serafini, 2014). From a multimodal perspective, Norgaard (2009) paid particular attention to the concepts of distinctive features, indices, icons, and discursive import in the typographical design of traditional and experimental texts from a multimodal perspective. Norgaard (2009) further suggests multimodal theory, with its interest in the multisemiotic nature of all meaning making in context, would seem a promising approach to dealing with literary meaning beyond that of word meaning. His detailed analysis of the various typographical features used by designers to represent particular meaning potentials that are made available to readers during the act of reading is an example of the types of research and analysis that is needed in contemporary literacy research to understand how readers use these features to make sense of texts.

**Methodology**

We utilized a case study approach to examine our research questions. Smith (1978) notes that case studies are descriptions of a single unit or bounded system. We examined the eight first graders’ interactions with the multimodal picturebooks as a bounded case representative of young readers in this classroom setting. Within the bounded case, we also examined single units, within case analyses, with individual students possessing a wide range of language and literacy proficiency backgrounds. Utilizing an interpretive case study model, this study contains rich, thick, descriptive data in order to “develop conceptual categories . . . to illustrate, support, or challenge theoretical assumptions help prior to the data gathering” (Merriam, 1998, p. 38). Merriam describes the work of researchers using interpretive case studies to include analysis, interpretation, and theorization. She explains, “Rather than just describing what was observed or what students reported in interviews, the investigator might take all the data and develop a typology, a continuum, or categories that conceptualize different approaches to the task” (p. 38). We collected data from a diverse group of first graders in order to conceptualize how young readers interacted with multimodal texts.

**Participants and selection**

This study was part of a larger yearlong study that took place in a first grade classroom at a Title I elementary school in the Southwest United States. The first grade teacher was a 9-year veteran in the final year of her MA in Literacy Education. She utilized a student-centered and literature-based approach to reading and writing instruction. The teacher introduced design features while reading three Mo Willems picturebooks and conducted one mini lesson on the topic. While design features were often represented in picturebooks and discussed in read-alouds, they were not always talked about explicitly.
The first grade classroom consisted of 28 students with a wide range of cultural, linguistic, literacy, and socioeconomic backgrounds. The classroom contained 13 boys and 15 girls; 7 were of Latino/a heritage, 14 were Caucasian (including two students of recent Russian immigrant background), 5 were African-American, 1 was of Asian or Pacific Islander descent, and 1 was of Middle Eastern descent. Home languages in the classroom included English, Spanish, Russian, and Arabic; there were eight students with a first language other than English. The overall free and reduced lunch rate (a common measure of low-income) at the school in the year of the study was 67%. The students’ literacy levels ranged from a year below grade level to nearly a year ahead as measured by assessments in place at the school (Diagnostic Reading Assessment [DRA] 2; student scores ranged from 0 to 16 at the beginning of the school year). All 28 students gave assent and families provided consent for their children to participate in a study about effective literacy instruction for young children.

From the larger body of 28 students, we used purposive sampling to select eight case studies. The selection criteria included first language and literacy proficiency level (as documented by the DRA scores). We first selected the English learners with the highest and lowest male and female scores on the DRA. We then selected monolingual English speakers with the closest scores and gender to match the English learners. The data on the selected case studies can be seen in Table 1.

Data collection

The research team selected a total of eight Mo Willems books that included multiple typographical and design features (four from the Elephant and Piggie series and four from the Pigeon series). In her classroom library, the teacher had all of the books except We Are in a Book. As such, students were all familiar with the author. To our surprise, all the students selected We Are in a Book because they had not previously read it. We placed 14 blank Post-Its throughout the book as a cue to prompt students to share what they noticed on that page spread. Seven Post-Its were placed on page spreads with no distinct typographical or design features, and seven page spreads where the typographical and design features influence meaning. The purpose of this design was to try to minimize skewing students’ responses by the sticky and prompting.

<table>
<thead>
<tr>
<th>Case study selection assessment scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRA score</td>
</tr>
<tr>
<td>*Maria</td>
</tr>
<tr>
<td>Amelia</td>
</tr>
<tr>
<td>Adriana</td>
</tr>
<tr>
<td>*Aliya</td>
</tr>
<tr>
<td>Brandon</td>
</tr>
<tr>
<td>*Alex</td>
</tr>
<tr>
<td>*Mateo</td>
</tr>
<tr>
<td>Carter</td>
</tr>
</tbody>
</table>

Note. *An asterisk indicates the students who speak a language other than English at home.
The lead researcher spent one day a week in the first grade classroom interviewing, team-teaching, running small groups, and conferring with students for the larger study (Moses & Kelly, 2016). In April, she called the individual case studies to a table in the hall where the eight selected texts were placed. The video camera was placed so it captured the entire book and the student’s face, hands, and upper body. The following protocol script was used with each student:

Hi! I am interested in watching and learning about how you read these books. This isn’t a test, and if you come to a word you don’t know, use the strategies you would in partner reading. I am going to have you pick two books and read the books out loud. I want you to read it to me just like you would your partner during partner reading. I will be asking you to talk to me about a book throughout, but you can talk to me about what you are thinking anytime. Do you have any questions?

Let’s get started … do you want to read an Elephant and Piggie book or a Pigeon book first? You will get to choose one of each.

(Allow the student to begin reading. If they get stuck on a word, prompt “Give it your best try.” Do not correct miscues. If student pauses longer than 7 seconds or asks multiple times, give a clue or give the word.)

When student comes to a page with a Post-It, say the following:

Tell me what you notice or what you are thinking.

If the student seems confused or needs more prompting, say the following:

Tell me what is happening on this page.

After the students finished their first book, the researcher asked them to select their next book and repeated the protocol. All eight students selected to read We Are in a Book (Willems, 2010). This study includes an analysis of the eight students’ transactions with that text.

Data analysis

Data analysis began with viewing and transcribing videos of each student reading a single picturebook, We Are in a Book (Willems, 2010). Multimodal transcripts were created for each video. These transcripts included the following data: (a) an image of the picturebook spread; (b) the time stamp; (c) the speaker(s); (d) the written text that appeared on the spread; (e) a transcript of what the student said using detailed transcription conventions to accommodate for detailed speech documentation, inflection, body movement, and so on (see Table 2 for transcription conventions); and (f) the transcribers’ notes. See Table 3 for a sample transcript (the picture of the page spread is removed for copyright purposes).

Even with including this information in the transcript, we found that a great deal of transduction occurred (Bezemer & Mavers, 2011). Because different modes have different affordances and offer different possibilities for representation, something is inevitably lost in the conversion from video to transcript (Bezemer & Mavers, 2011) and leads to dilemmas of data representation (Flewitt, 2011). For instance, the multimodal transcript was unable to capture the nuances of body language and movement that students used to express their meaning making that we were able to see in the video. This made it necessary
for us to watch the videos and read the transcripts in concert in order to develop our codes.

Each opening of the picturebook was considered a separate space for potential interaction, as were the front and back covers, the endpapers, and title page of the

Table 2. Transcription conventions from Moses (2012).

<table>
<thead>
<tr>
<th>What to mark</th>
<th>How to mark</th>
<th>Why</th>
</tr>
</thead>
</table>
| Pause length                 | /placed before and after utterance to signify pause. Multiple //placed before or after utterance to signify elongated pause. | a. may define utterance boundary  
b. may partly define turn  
c. may signal end of topic or propositional sequence  
d. may signal eliciting clarification or feedback from next speaker  
e. may signal distress (cognitive, linguistic, or disagreement) |
| Overlap                      | [placed at the beginning of overlap,] placed at end of overlapped utterances. Overlapped utterances go on the same line but are separated by speaker. | a. may signal and partly define turn  
b. may signal power/control  
c. may signal cultural and linguistic socialization differences |
| Self-interruption            | - Placed at the point of interruption                                       | a. may reflect spots of difficulty for the speaker (e.g., cognitive, linguistic, sociological)  
b. may indicate speaker’s ability to self-correct, paraphrase, and/or clarify |
| Intonation prosodic quality  | . placed at the end of an utterance marks a stopping fall in tone, but not necessarily the end of a sentence.  
? placed at the end of an utterance indicates a question without rising intonation  
↑ placed at the end of an utterance indicates rising intonation  
↓ placed at the end of an utterance indicates an animated tone  
* placed at the beginning and end of word (s) indicates boundaries of a voice, pitch or style change  
: placed in between letters indicates an extension of the sound or syllable it follows  
(( )) marks other voice qualities, e.g., ((laughter)), ((whisper)) | a. may signal alteration of meaning depending on the intonation prosodic quality (e.g., sarcasm, question vs. statement, excitement vs. sadness)  
b. may signal utterance boundary |
| Nonverbal behavior,         | () placed at the beginning and end of the utterance where the nonverbal behavior or transcriber clarification takes place. Text is italicized. | a. may aide in the understanding of context  
b. may provide valuable data not found in focal point of data collection  
May provide valuable data not understood in students’ native language |

Note. Transcription conventions adapted from Ochs (2008), Atkinson and Heritage (2008), and Bloome et al. (2005) with additions and alterations in how to mark made by Moses (2012).

Table 3. Sample multimodal transcript.

<table>
<thead>
<tr>
<th>Time</th>
<th>Child</th>
<th>Transcription</th>
<th>Printed text</th>
<th>Researcher</th>
<th>Transcriber notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:02</td>
<td>Child</td>
<td>Someone is ↑ looking at ↑ uh::—</td>
<td>Someone is looking at us!</td>
<td>Places emphasis on “looking” rather than “is”</td>
<td></td>
</tr>
<tr>
<td>2:09</td>
<td>Child</td>
<td>Who is looking at us? (turns page)</td>
<td>Who is looking at us?</td>
<td>Reads with tremor in voice as if to give Elephant emotion.</td>
<td></td>
</tr>
</tbody>
</table>
picturebook, for a total of 33 unique opportunities for each child to interact with the
text. Of these 33 opportunities, the researchers marked 14 spreads with sticky notes.
The researcher prompted students to share their thinking on these marked pages, but
the readers were free to share their thinking or make comments at all 33 opportunities.
Because all 33 of these were opportunities for students to interact with and make
meaning with the picturebook, each opportunity was coded regardless of the presence
of a sticky note.

We utilized a constant comparative analysis of the data being collected (Strauss &
Corbin, 1998). The three-step process of open coding, axial coding and selected coding as
described by Strauss and Corbin (1998) was conducted to construct assertions and under-
stand the relationships among sets of data. We started with open coding, reflecting upon
what we noticed during each child's reading of the picturebook (e.g., children imitating
the characters' facial expression, children laughing in response to the text, child using a
particular semiotic resource) During this stage, theoretical memos (Erickson, 1986) were
written and used as a resource throughout the analysis process.

As we continued analysis, we negotiated our codes and drew connections between our
open codes to narrow our focus to a series of axial codes that related to the semiotic
resources that the children were using to make meaning (e.g., punctuation, speech
bubbles, character's facial expression). In reviewing our axial codes, we developed
five categories of semiotic resources that children used to make meaning with the picturebook.
The five meaning making categories were:

- Typographical features: characteristics of the typography such as the type of font
  used, the font size, the weight of the font, and the usage of typographical emphasis
  (e.g., italics, bold, underlined)
- Paralinguistic features: features related to the text, but were not linguistic in nature
  such as punctuation (e.g., exclamation points and question marks) and capitalization
- Design features: aspects of a picturebook spread that were external to the illustration
  (e.g., word bubbles, page numbers, motion lines, and sound effect words)
- Illustrations: the images drawn on the spread or a characteristic of the of the image
  such as the characters' facial expression or body positioning
- Background knowledge: Previous knowledge that the child has about another text,
  another form of media, social behavior/practice, content knowledge, or other
  information

We viewed the videos again to selectively code students' interactions with each spread
according to these five categories of semiotic resources. During this process, we identified
three ways in which students appeared to articulate their meaning making: explicit,
referential, and performance. In the cases where children were explicit in their meaning
making, they identified the semiotic resource they were using and explained why they used
it to perform the reading in a particular manner (i.e., a student explained that they read
the text more loudly because an exclamation mark was used). In other instances, students
made statements that referred to a particular semiotic resource, but did not name the
resource explicitly (i.e., the child pointed to the semiotic resource or referred to the
resource as this or it). Finally, students often changed their reading or performed their
reading in particular way, but did not explain their choices (i.e., a student read the text
more loudly when an exclamation mark appeared in the text, but did not explain that the exclamation mark was the reason for reading with increased volume). Appendix A includes our codebook book with our codes, corresponding definitions and descriptions of each code, and examples of each code.

**Findings**

The data analysis generated findings in two areas: (a) which semiotic resources children relied on when making meaning with picturebooks and (b) how children articulated their meaning making. We used the codes for the five semiotic resources (e.g., paralinguistic, illustration, design feature, typography, and background knowledge) across the three levels of meaning articulation (e.g., explicit, referential, and performance). Table 4 includes our frequency counts of the instance of each code across each level of articulation.

**Paralinguistic resource**

We defined paralinguistic features as those features related to the text, but that were not linguistic in nature, such as punctuation (e.g., exclamation points and question marks) and capitalization. This semiotic resource was the most frequently relied on resource in readers’ meaning making with 83 of the 324 coded instances falling within this category. Readers used paralinguistic features to gauge characters’ emotional states during their readings. For instance, when Adriana explained to the researcher that she believed Piggie was excited, she referenced the exclamation marks as evidence for her thinking:

Adriana: Piggie’s really excited that, um, that, sh: ther, that a, that a reader’s reading them.

Researcher: How do you know that Piggie’s really excited?

Adriana: There’s two exclamation marks and she has smiles on both pages and she looks really happy.

Similarly, Aliya identified exclamation marks as indicators of excitement:

Aliya: They’re so excited cause I-maybe because everybody could look at them cause they’re inside a book.

Researcher: And how do you know that they’re so excited?

Aliya: Because-cause Gerald’s saying something so loud and there’s a exclamation mark and their-I see their mouths so like [mimics image]. They’re so funny.

**Table 4.** Frequency counts.

<table>
<thead>
<tr>
<th></th>
<th>Explicit</th>
<th>Referential</th>
<th>Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typography</td>
<td>2</td>
<td>1</td>
<td>50*</td>
</tr>
<tr>
<td>Paralinguistic</td>
<td>5</td>
<td>3</td>
<td>101*</td>
</tr>
<tr>
<td>Design feature</td>
<td>10</td>
<td>10</td>
<td>44</td>
</tr>
<tr>
<td>Illustration</td>
<td>13</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>Background knowledge</td>
<td>4</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>Subtotals</td>
<td>34</td>
<td>50</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td>324</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *26 of the 50 typography codes and the 101 paralinguistic codes occurred simultaneously.
As Aliya’s comments indicate, readers also relied on paralinguistic features to make determinations about reading volume. Exclamation marks were equated with loudness. For example, during his reading of pages 18 and 19 of *We Are in a Book*, Mateo increased his volume and added an excited tone to his reading. When asked by the researcher why he read the text in this way, Mateo replied, “Because there, the words are big, and they’re capital, and there’s an exclamation mark.” Of the eight readers, seven increased the volume of their reading when an exclamation mark was present on the page. While these seven readers did not all do this consistently, the frequency of use and the commonality of use across readers indicates that this paralinguistic feature in particular is a heavily relied on tool for meaning making. Furthermore, six of the eight readers dragged out their readings of words followed by an ellipsis, and then followed their drawn out readings with a short pause. This suggests readers used paralinguistic features as cues to establish dramatic pacing.

While the paralinguistic resource was the resource that readers relied upon most frequently, it was also the resource of which was least frequently explained by readers. Only eight of the 83 instances where readers relied on paralinguistic features were accompanied by an explanation for how the feature contributed to meaning making. Rather, 75 instances manifested through observable data with readers altering their inflection, tone of voice, and volume while reading.

**Illustration**

Data analysis revealed illustration (i.e., the images or characteristics of the images such as characters’ facial expressions and body positioning) to be the second most commonly relied on semiotic resource for students’ meaning making with picturebooks. Of 324 coded instances, 69 related to illustrations. This resource was also the most explicitly relied on resource in readers’ explanations of meaning making. In 13 instances, readers explicitly identified an aspect of the illustration that motivated their meaning making. In 32 instances, readers referenced or indicated the illustration as part of their meaning making process either through the mimicking of the image or by pointing to an aspect of the illustration.

From illustrations, readers relied on characters’ facial expressions and body positioning in order to make meaning. Both aspects were used to draw conclusions about characters’ emotional states. For example, both Amelia and Adriana referenced a sequence of illustrations in which the characters appear to jump up and down as proof of the characters’ excitement. As Adriana explains:

Adriana: They both love it—that they’re in the same—that they’re in a book.
Researcher: How do you know that they love it?
Adriana: Cause they’re really excited and they’re jumping up and down from this page [she turns the page to demonstrate her point] to this page.

In this case, the positioning of the characters’ bodies within the illustrations led the reader to conclude that the characters were jumping up and down. This behavior was indicative for the reader of excitement. Carter cited the shape a character’s mouth within the illustration as evidence of their feelings:
Carter: Gerald’s really happy.
Researcher: How do you know that?
Carter: Look at—[he points to the character who appears to be smiling]. Look at his mouth. That’s usually to tell why.

Carter’s comment suggests that within the illustration the mouth of a character can be relied on to give the reader clues about the characters’ emotional state. Other readers referred to other aspects of the characters’ facial expressions in a similar manner. Aliya pointed to the characters’ mouths as evidence for excitement. Mateo noted that Piggie had serious eyes suggesting a specific emotional state and behavior, while Amelia and Brandon referenced the movement of Elephant’s ears as indicative of confusion and embarrassment.

Readers also used illustration to draw conclusions about narrative content. For instance, Amelia relied on the characters’ eyes, but in this case, she used the directionality of Piggie’s eyes (staring out of the book) to draw the conclusion that the character was aware of the reader’s presence. Figure 1 is a screen shot of Amelia in the process of using her fingers to connect the character’s eyes to her eyes, as if they were making eye contact. While readers could glean this information from reading the words in the text, the positionality of the character proved notable to the reader in this case.

**Design Features**

Design features were considered aspects of a picturebook spread that were external to the illustration (e.g., word bubbles, page numbers, motion lines, and sound effects words). As a resource for meaning making, design features were a close third in frequency of use by students with 64 coded instances. However, it must be noted that *We Are in a Book* (Willems, 2010) is a picturebook that exclusively relies on certain design features to

![Figure 1. Amelia and character eye contact.](image)
convey characters’ speech and laughter. Willems uses word bubbles on nearly every page of the text to represent speech. Furthermore, the characters specifically mention the word bubbles by name, therefore drawing attention to this particular feature.

Only one of the eight readers did not identify the word bubbles as a meaning making resource either explicitly or referentially. As Alex explained, students recognized that word bubbles were used in books for authors “to write words in them.” More specifically, students identified these words as characters’ speech. In her explanation of word bubbles, Amelia circled one of the bubbles with her finger, and stated, “…the speech bubbles are coming out of their mouth of what they say.” This design feature also contributed to students’ understanding of the reader’s positionality in the text as when Aliya recognized that by reading the word bubbles she was “gonna be reading their ideas.”

Students also used the design feature of color to develop their understanding of the text. Carter explained to the researcher that each character had “their own color bubble,” while Amelia went into more detail: “So, like, when it’s grey, when a grey speech bubble comes out, that means Gerald is saying. And when Piggie says it a pink one, a pink speech bubbles comes out.” This suggests that readers used the color of the speech bubbles to aid them in identifying which bubbles belonged to which character. Since color coding word bubbles is a rarely used convention in picturebooks and comics, this is interesting because it is unlikely that students would have encountered such use of color before.

Another design feature that Willems relies on in We are in a Book is sound effects words. Over the course of four in sequence spreads, Willems incorporates a series of “Has” and “Hees” to represent character laughter. These onomatopoeias are incorporated into the overall design of the spread. However, these words remain apart from the illustration itself and are also not included in the speech bubbles. Yet, all of the students took the time to read the onomatopoeias. Some students read each “Ha” and “He” while others enacted the “Has” and “Hes” by imitating more natural laughter. Furthermore, at least one student recognized that these words, while part of the story, were not necessary to the narrative. After reading the “Has” and “Hes” on the first two spreads, Alex told the researcher that he could not “read all that” on following pages. In this case, he had already established that he understood these words to be laughter, but also knew that he did not need to read them on subsequent pages to understand what they represented.

**Background knowledge**

While students did not often articulate how their background knowledge and experience helped them make meaning with the picturebook, it quickly became apparent that these resources contributed to how they made meaning with the text. For the purposes of this study, we considered background knowledge to include any previous knowledge that the child had about another text (intertextual knowledge), another form of media (intervisual knowledge), social behavior/practice, content knowledge, or other information. Carter, Amelia, and Maria had prior experience with other picturebooks authored and illustrated by Mo Willems. This knowledge helped Carter identify the author’s name even though a significant portion of the author’s name was covered by an illustration on the title page. Prior knowledge allowed Amelia to identify a character, Pigeon, from another Mo Willems series when he appeared in the endpapers. Also, her prior knowledge of Willems’s books prompted her to look at the endpapers in search of such instances.
Maria referred to another *Elephant and Piggie* book in justifying her conclusion about Piggie’s behavior. She recognized Piggie’s body position in one illustration as being similar to that of an illustration in “the ballet one (i.e., *Elephants Cannot Dance*) and “*A Big Guy Stole [Took] My Ball.*” From this recognition, Maria claimed that Piggie was “like ‘my hero’ again.”

Readers also used background knowledge to draw conclusions about characters’ behavior and emotional states, as well as to help them determine the premise of the narrative. During her reading of the picturebook Amelia mentioned that people “sometimes do that [when they laugh]” when viewing an illustration of Gerald and Piggie rolling around on the floor, presumably laughing. Maria compared an illustration of Piggie where the character’s palms are pressed flat against an invisible wall that separates the reader from the inside of the book to television shows she had seen where a similar action was performed by the characters. This helped Maria to recognize that Piggie and Gerald were inside the book, which supported her understanding of the text’s premise.

Another way in which background knowledge helped readers create meaning with the text was through the use of voice. While six of the eight readers occasionally created character voices for Gerald and Piggie, Adriana alternated voices for each character throughout the entire book. Although she never explained to the researcher why she chose to use specific voices for each character, we can assume that she has had some experience that involved the reader of a picturebook giving voices to characters. This is a common practice around the reading of picturebooks and contributed to her construction of characterization when reading the book out loud herself.

**Typography**

As with the paralinguistic resource, students rarely explicitly articulated their meaning making in regard to the typographical resource. However, there were 27 instances where readers performed their reading of the picturebook differently when the typographic features of the text changed. Size, in particular, impacted students’ reading. For example, on page 5 of *We are in a Book*, Gerald whispers in Piggie’s ear, which is indicated by a decrease in the text size. Four of the students decreased the volume at which they were reading when they encountered the smaller sized text on this page. As Amelia explained, she knew Gerald was whispering because “the letters are small, and when they’re medium like this [she points to the medium sized text on page 4] that means they’re talking like medium, and then, when they’re like big letters, they’re yelling.” An increase in size often prompted students to read the text with increased volume, as Carter and Maria did on page 29 where the word “Banana” appears in larger letters.

**Discussion**

It bears noting that readers often referred to several resources when explaining their meaning making. In readers’ responses used throughout the findings, readers rarely identified one resource as evidence of their thinking. Paralinguistic features were reported alongside evidence based on the illustrations. Background knowledge and experience are used to inform students’ thinking about design features and illustrations.
Even when readers were not explicitly referencing resources, there was evidence that readers used multiple resources to make meaning. For example, in addition to the 27 typographical instances and the 83 paralinguistic instances recorded by researchers, there were an additional 26 instances where the typographical resource appeared in tandem with the paralinguistic resource. This made it impossible to determine which resource prompted students to change the volume or inflection of their reading. However, since capital and larger letters were frequently paired with exclamation points in order to indicate yelling or excitement, it is likely that readers were accustomed to responding to these resources in combination.

While research related to ways young children make meaning with multimodal ensembles is growing (Arizpe & Styles, 2003; Serafini, 2015; Sipe, 1998), there remains a need to further explore how the design features and other semiotic resources affect the meaning potential and the ways readers interact with these texts (Bandré & Button, 2011; Serafini, 2012). This study adds to the current body of research by providing an in-depth analysis of ways first graders used these semiotic resources to make meaning with a contemporary picturebook.

Many teachers use the text leveling gradients as a guide for what books young children are allowed to read. Within the scope of these formulas, many of the design features and characteristics present in Mo Willems’s book could be seen as posing challenges or distractions for young readers. Yet our findings indicate the opposite. In this study, the semiotic resources beyond the text level provided support and opportunities for meaning making.

This being said, additional research is needed. One potential limitation of our research is the context in which the study was conducted. We examined eight cases in a clinical manner with each students’ reading isolated from their classroom context. In future research, we would like to consider how readers make sense of different resources in a classroom context, how pairs interact around these texts, as well as how students engage with these texts independently (Moses & Ogden, 2017). Furthermore, these students were already familiar with both Mo Willems’s picturebooks and with semiotic resources. In the future, we hope to explore the difference between classrooms in which students have such a familiarity and classrooms in which students do not.

Implications

Based on our analysis of the data, it becomes evident that young readers do not exclusively rely on textual resources when making meaning with text. Rather, readers rely on a variety of resources including typographical features, paralinguistic features, illustrations, design features, and background knowledge in order to construct their reading. These systems of meaning move beyond language, allowing readers to draw on available resources to both make sense with these texts and to talk about them. These resources work together synergistically (Sipe, 1998) in picturebooks with the parts working together to create a whole. Drawing readers’ attention to these resources helps them construct meaning from the parts, as well as the whole, so they can think and talk more deeply about the texts.

However, reading instruction in today’s classrooms focuses almost exclusively on textual resources (Serafini, 2011, 2012) even though multimodal texts often dominate students’ out of school literacy experiences (Lankshear & Knobel, 2006). This suggests that
classroom instruction is missing a variety of opportunities for supporting young readers’ reading comprehension by failing to address the other resources available to readers and their corresponding meaning making potentials. Providing instruction in how these resources work has the potential to expand readers’ meaning making repertoires by giving them a larger toolbox from which to pull. While more research in the area of readers’ meaning making from multimodal texts is still needed, we hope that this research helps to foster greater conversation about how young readers make meaning in a multimodal age.

In addition, because the systems of representation inherent in picturebooks offer a variety of visual and textual resources for constructing and expressing meanings, teachers need to familiarize themselves with various approaches for analyzing and understanding visual images and design elements, in addition to the strategies they utilize for comprehending written language. If teachers are going to be able to help students make sense of the visual images, design elements, and written language of a picturebook, they need to first be able to analyze and investigate these multimodal ensembles in greater detail by themselves.

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References


**Children’s Literature Reference**


**Appendix A**

<table>
<thead>
<tr>
<th>Typography</th>
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<tbody>
<tr>
<td>Features related to the type of font used, the weight of the font, usage of typographical emphasis (italics, bold, underlined), and font size.</td>
</tr>
<tr>
<td><strong>Explicit usage</strong></td>
</tr>
<tr>
<td>Child directly states a typographical feature when explaining their meaning making with the text, or when articulating a change in reading pattern or performance.</td>
</tr>
<tr>
<td><strong>Referential usage</strong></td>
</tr>
<tr>
<td>Child refers to (but does not name) a typographical feature through speech or touch when explaining their meaning making of the text, or when articulating a change in reading pattern or performance.</td>
</tr>
<tr>
<td><strong>Performed usage</strong></td>
</tr>
<tr>
<td>Child changes their reading pattern or reading performance during which a typographical feature appears to cue the performance change. Child does not explain the reason for the change.</td>
</tr>
</tbody>
</table>

S: He’s whispering. Because he w-he hears the reader reading the book [rubs hands across book]. We’re reading what they’re saying.

R: How do you know he’s whispering?

S: [turns page back and forth, points at text within image] Like these are little on these pages and these are big an-right here they’re little!

S: Because th-the letters [traces finger along word bubble] are small, and when they’re medium like [points at other bubble] this, that means they’re talking like medium and then-when they’re like [moving hands around] big letters, they’re yelling.

(Continued)
Paralinguistic

<table>
<thead>
<tr>
<th>Explicit usage</th>
<th>Referential usage</th>
<th>Performed usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child directly states a paralinguistic feature when explaining their meaning making with the text, or when articulating a change in reading pattern or performance.</td>
<td>Child refers to (but does not name) a paralinguistic feature through speech or touch when explaining their meaning making of the text, or when articulating a change in reading pattern or performance.</td>
<td>Child changes their reading pattern or reading performance during which a paralinguistic feature appears to cue the performance change. Child does not explain the reason for the change.</td>
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</tbody>
</table>

R: Why did you read it like that?

S: There's like two [points to punctuation] so we have to say it like really loud and like, [small head tilt] hm.

TEXT: No. It is...

S: Because there-the words are big [points to text] and they're-and they're capital, and there's an exclamation mark [points to text again]

S: No. It is:s [begins to turns page, but stops]

Design features

<table>
<thead>
<tr>
<th>Explicit usage</th>
<th>Referential usage</th>
<th>Performed usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child directly states a design feature when explaining their meaning making with the text, or when articulating a change in reading pattern or performance.</td>
<td>Child refers to (but does not name) a design feature through speech or touch when explaining their meaning making of the text, or when articulating a change in reading pattern or performance.</td>
<td>Child changes their reading pattern or reading performance during which a design feature appears to cue the performance change. Child does not explain the reason for the change.</td>
</tr>
</tbody>
</table>

R: What do you notice here?

S: (points at second page which is covered in Has and Hes) Okay, I can't read all that.

S: *Page 57? It is page 64*—What? [turns back a page, turns page, looks at page number] ((quietly)) Page-oh yeah. [turns page]

Illustration

<table>
<thead>
<tr>
<th>Explicit usage</th>
<th>Referential usage</th>
<th>Performed usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>The images drawn on the spread or a characteristic of the of the illustration such as the characters’ facial expression or body positioning.</td>
<td></td>
<td></td>
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</table>

(Continued)
Explicit usage
Child directly names an illustration or a characteristic of an illustration when explaining their meaning making with the text, or when articulating a change in reading pattern or performance.

Referential usage
Child refers to (but does not name) an illustration or a characteristic of an illustration through speech or touch when explaining their meaning making of the text, or when articulating a change in reading pattern or performance.

Performed usage
Child changes their reading pattern or reading performance during which an illustration or a characteristic of an illustration appears to cue the performance change. Child does not explain the reason for the change.

S: [points at right image] Like the eyes, they’re black and these ones [points at opposite page] see this page, it’s like looking straight at the reader [gestures back and forth between book and self] when you look right at it. And like here [gestures again] it looks right at us.

R: What do you notice? What’s going on on this page?

S: They’re like, Gerald’s like, he’s telling him a secret and h-he’s like, do you notice? [points at image, Lindsey gives small laugh, turns page]

TEXT: If the reader reads out loud.

S changes the voice for each character.

R: Oh. Hm!

S: [points at image again] Like on the book.

R: ((laughing)) Oh! Oh yeah, tell me what you’re thinking about that. How’r’y-What did you notice?

AL: Look at like [points at image] it’s-it’s pink and-and he’s like [lifts hands to mimic] touching, and they’ll just ha-put their hands down instead of up.

R: Oh. [Great.]

AL: [So if] they’re touching something, they’ll put their hands up. /Like if it’s a TV and they were in the TV.