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Cognitive Perspective Taking and Audience Awareness in Second Grade Narrative Writing

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Cognitive Perspective Taking and Audience Awareness in Second Grade Narrative Writing

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Amy Woodbridge

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ABSTRACT OF THE THESIS

Cognitive Perspective Taking and Audience Awareness

in Second Grade Narrative Writing

by

Amy Woodbridge

Master of Arts in Education

University of California, Los Angeles, 2017

Professor Alison Bailey, Chair

Children who display cognitive perspective taking (CPT) abilities demonstrate the awareness that others have knowledge and understanding independent from their own. This ability is an aspect of theory of mind, which is linked to verbal conversational skills. Written language, however, differs from conversation, as it lacks a reciprocal exchange between reader and writer. Writers must anticipate the needs of their non-present readers. In this mixed-methods study, I examined whether CPT abilities in kindergarten related to audience awareness in 2nd grade narrative writing. Following this analysis, I further explored a subsample of students' writing in order to determine how evidence of CPT appeared in narratives. This exploration was contextualized using interviews with participants' 2nd grade teachers on the topics of perspective taking and audience awareness. ANCOVA indicated no significant relationship between CPT abilities in kindergarten and audience awareness in 2nd grade. Most students in the subsample

had begun to demonstrate features of CPT in their writing by 2nd grade. However, students with higher CPT abilities in kindergarten showed qualitative differences in the way they presented emotions, speech and dialogue, and an understanding of mental models through their writing.

The thesis of Amy Woodbridge is approved.

Gerardo Ramirez

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Since the adoption of the Common Core State Standards in nearly every US state (Council of Chief State School Officers & National Governors Association, 2010c), writing is more crucial than ever for academic success in all subjects, including STEM subjects. First introduced in 2010, the mathematics standards state that students must be able to demonstrate their reasoning in mathematical problem solving (Council of Chief State School Officers & National Governors Association, 2010b), and the standards for English language arts and literacy in other subjects require that students "respond to the varying demands of audience, task, purpose, and discipline" (Council of Chief State School Officers & National Governors Association, 2010a, p. 7).

The ability to accommodate an audience in writing presents cognitive challenges, which I have explored below. Without the benefit of a physically present interlocutor, writers lack many of the communicative devices available to speakers. The achievement of successful writing first demands the ability to understand that the reader lacks the knowledge held by the writer; this ability is referred to as *cognitive perspective taking* (Kurdek, 1978), which is an aspect of theory of mind. While existing literature has established a relationship between theory of mind and verbal conversational skills (De Rosnay, Fink, Begeer, Slaughter, & Peterson, 2014), similar research conducted on written language is sparser. Moreover, a number of the studies that have been conducted on written language have focused on general writing proficiency (e.g., Burleson & Rowan, 1985; Rubin, Piche, Michlin, & Johnson, 1984), rather than focusing specifically on the ability to anticipate the reader's knowledge and accommodate that knowledge. The current study defined that ability as *audience awareness*, and has analyzed the relationship between students' sociocognitive skills and their success in accommodating the reader when producing

written narratives. It has also examined the ways that children, by 2nd grade, demonstrate cognitive perspective taking abilities through their own writing.

Background

Sociocognitive Challenges of Writing

Children begin displaying writing-like behavior by producing scribbled markings and repetitive symbols. Over time, they learn to form letters and words, eventually producing writing spontaneously, and finally developing the ability to construct meaningful texts (Clay, 1975). In the early stages of written language development, children supplement their minimal orthographical output with oral language. As their writing skills continue to develop, they are able to represent their thoughts orthographically and display less reliance on spoken elaboration (Dyson, 1988, 2006). Joseph and Konrad (2009) remind us that these abilities are not naturally acquired, but learned. Successful writing demands the simultaneous activation of numerous abilities and features acquired throughout development: vocabulary, self-regulation, and organization, in addition to learned literacy skills such as spelling, grammar, and an understanding of compositional structure (Deatline-Buchman & Jitendra, 2006). Development of written language, therefore, requires competence at the cognitive, linguistic, social-rhetorical, and even motor level (Singer & Bashir, 2004).

Michaels and Cook-Gumperz (1979) identify sociocognitive challenges children face when sharing information through language: in order to share information in a way that can be understood by her listener, the child must understand that the listener does not share her knowledge. She must then develop solutions to account for that. Although these authors are referring to oral language, I argue that writing poses an even more challenging task. Writers lack the advantage of a physically present audience: not only can they not assume that their audience

will share their background knowledge, they may not even be aware of who their audience is. Writers must anticipate and account for their readers' naïve perspectives (Traxler & Gernsbacher, 1992). They do not have the advantage of using paralinguistic features—such as gesture, intonation, and expression—to aid in their communicative production, nor can they gauge their reader's reaction or level of engagement through the observation of these same features, a process that has been shown to improve the quality of narratives (Bavelas, Coates, & Johnson, 2000; Pickering & Garrod, 2013). Bavelas and colleagues, for example, analyzed differences in the narratives of young adults based on whether the speaker received *generic* responses from the listener (e.g., "mm-hmm") or *specific* responses (e.g., wincing or exclaiming) based on conditions of distraction assigned to the listeners. They found that narratives told to attentive listeners, which received a greater percentage of specific responses, were of better quality, leading them to conclude that attentive listeners pay an important role in co-narration.

With this in mind, writers must understand how to "collaborate" with their non-present reader, taking into consideration the ways in which setting and circumstances affect meaning (Barton, & Hamilton, 2000; Schultz & Fecho, 2000). In this way, they learn to adjust their language to meet the needs of their reader, whose circumstances they cannot fully know during the process of written language production. In order to participate in this process, writers must learn to anticipate their readers' responses. This learning is scaffolded through interactions with teachers and peers (Dyson, 1995). Dyson, in her observation of children's writing practices, notes how students chose and revised narrative topics based on the navigation of peer preferences, and how the same students, acting out their narratives with the class, amended character roles based on feedback—both instructional and social—from their classmates. She presents the case of 2nd grade "Sammy," whose desire to fit in with his classmates first led to a

shift in the types of narratives he shared with the class: his initial ninja stories gave way to *X-Men* narratives based on his observations of preferences of other boys in the class. Sammy also revised his narrative presented at "Author's Theater" (where students acted out the narratives created by classmates), after classmates provided explicit feedback on how "fun" the presentation was, and whether various character roles were fully developed enough. Dyson's work highlights the abilities of children of this age to gauge the spoken and unspoken desires of their audience, and to make adjustments accordingly.

Holliway (2004) further explored the importance of audience by having students practice *acting as* the audience. In his study, 5th and 9th grade students were asked to revise their written descriptions of abstract geometric tangram shapes following either feedback given by their peers, or a condition in which they took the role of a reader for another peer's description. Participants who were asked to take the "reader" perspective were more successful in revising their own writing, allowing their reader to match the shape with the description. These results led the author to conclude that by experiencing the perspective of a naïve reader, students were better able to understand the needs of their own readers, suggesting that perspective taking is an important skill in written language.

The Relationship between Language and Theory of Mind

Cognitive perspective taking (CPT) is the ability to understand and interpret another's thoughts, viewpoints, and intentions (Kurdek, 1978). It is an aspect of theory of mind, or the understanding that individuals have mental states—such as knowledge, beliefs, desires, and emotions—independent of one's own (Premack & Woodruff, 1978). Representational theory of mind typically develops in children by or before age 5 (Jenkins & Astington, 1996), although it continues to develop during the school years (e.g., Baron-Cohen et al., 1999). Though theory of

mind correlates with perspective taking (Cutting & Dunn, 1999), most existing literature examining the relationship between social cognition and language refers generally to theory of mind, measured by first- or second-order false belief tasks, as opposed to cognitive perspective taking in particular (e.g., De Rosnay et al., 2014; Miller, 2009). My aim in conducting this study was to present this literature as evidence of a relationship between sociocognitive skills and language, while stressing the need for work focusing specifically on the construct of cognitive perspective taking.

What causes individual differences in social cognition, specifically theory of mind? Early maternal language input of mental-state references—for example, referring to someone *thinking, knowing,* or *meaning* something—relates to children's later social understanding (Ensor, Devine, Marks, & Hughes, 2014; Ensor & Hughes, 2008). Slaughter, Peterson, and Mackintosh (2007), however, argue that theory of mind abilities do not relate to maternal use of simple verbs of cognition, but to the use of explanatory, causal or contrastive language. Additional research has established a bidirectional relationship between language and social cognition. Theory of mind correlates with conversational skills in five- to eight-year-olds (De Rosnay et al., 2014) beyond what can be predicted from language proficiency alone. "Conversational skills," in this context, is defined using a measure of mindful conversational competence (Peterson, Garnett, Kelly, & Attwood, 2008) that assesses abilities such as providing background knowledge, understanding a listener's viewpoint, staying on topic, explaining one's thinking, and using appropriate register. Children who demonstrate more developed theory of mind are thought to be better able to gauge their conversational partner's understanding and engagement, resulting in mindful communication (De Rosnay et al., 2014). Studies also suggest that theory of mind gives children a greater grasp on *pragmatics*—socially appropriate use of language (Hymes, 1966)—by leading

to new forms of social interaction and communication (Hughes & Leekam, 2004). Developmentally advanced pragmatic abilities require more advanced theory of mind beyond simple false-belief understanding (Peterson, Wellman, & Slaughter, 2012). Researchers have also studied the link between theory of mind and oral communication by examining the language of individuals with Autism Spectrum Disorder (ASD), who typically experience difficulty in the development of theory of mind (Baron-Cohen et al., 1999; Colle, Baron-Cohen, Wheelwright, & Lely, 2008). Even when controlling for general language abilities, children with ASD aged 4-13 exhibit a greater level of difficulty staying on topic and responding to a conversational partner with contingent information (Hale & Tager-Flusberg, 2005). In addition, the narratives of adults on the autism spectrum lack sufficient background information, referential information, and temporal expressions when compared to those of a typical population. These differences persist even when the participants with ASD show no significant difference in narrative length or vocabulary as compared to a typical population, suggesting that the difficulties are related to differences in theory of mind abilities (Colle et al., 2008).

Written Language and Theory of Mind

While a number of studies have examined the relationship between oral language and theory of mind, fewer studies have been conducted on written language. Writing demands a heavier cognitive load than speaking (De La Paz, 2007; Peskin, Prusky, & Comay, 2014); this is partly due to the increased information-processing resources needed for spelling and letter formation (Peskin et al., 2014). An additional burden stems from what Vygotsky (1978) refers to as the *second-order symbolism* of writing: the written words themselves do not represent an action or object; rather, as children learn to write, representation of the action or object is first translated into oral language, which is then transferred into writing. Over time, children

internalize these skills, rendering the translation process unnecessary. Vygotsky's theory is supported by Dyson's observations of the gradual diminishment of the need to augment written output with speech in children aged five to seven (1988, 2006). Still, Dyson maintains that the demand "to simultaneously produce and analyze language" (1983, p. 3) remains a challenge in writing. Because of the additional cognitive burdens of written language, further studies on the role of sociocognitive abilities in this domain are warranted.

Theory of mind relates to the amount of background information and context provided; in addition, writers with a developed theory of mind provide more logical connectors between ideas and events, as well as a higher frequency of cognitive and emotional language in narratives (Loveland, McEvoy, Tunali, & Kelley, 1990). Previous studies have examined the relationship between theory of mind and writing abilities in fourth graders (Rubin et al., 1984) and young adults (Burleson & Rowan, 1985), but these studies focus on general writing proficiency rather than concentrating specifically on the capacity of the writer to accommodate the needs of her audience. A greater focus is still needed on *audience awareness*, defined below.

Audience Awareness

"Audience" is at once both a real entity as well as a concept that exists in the mind of the writer (Ede & Lunsford, 1984). Children must make a mental leap in order to understand that their cognitive connections—the ability to connect their perceptions with cognitive understanding—can yield a variety of mental representations (Flavell, 1988). As a result, the writer must understand how to represent the audience in her own mind but still take control over her own piece of writing. Ede and Lunsford (1984) argue that rather than simply *addressing* or *invoking* an audience, the writer has the power to decide what role she wishes her audience to play, demonstrating her representation of the reader only through written language.

Writing for an authentic audience—that is, a reader who is known to the writer— affects the way students show evidence of audience awareness (Frank, 1992; Rubin & O'Looney, 1990), an effect that is seen in persuasive writing as early as first grade (Wollman-Bonilla, 2001). Wollman-Bonilla's findings, however, do not tell us the difference we might see in a piece of narrative writing where the audience is not known to the writer, in which the child must create a mental representation of an abstract reader.

Although there is no firm consensus on the aspects of writing that form the construct of "audience awareness," literature on audience awareness in writers of all ages describes it as a quality to writing that comprises the following characteristics.

Description of feelings and significance of events. Odell (1999) argues that telling how characters feel or view things helps to shape the relationship with the reader. These expressions can form what Labov and Waletsky (1967) call evaluative statements, which underscore the significance of the event in a narrative and express the writer's feelings or stance (Imbens-Bailey & Snow, 1997). By conveying perspective, the writer demonstrates an awareness that the reader does not have the same perspective. In addition, writers may choose to describe their emotions in statements that are not necessarily evaluative statements, but share their mental states with their reader. Halliday and Mathiessen (2004) define four distinct classes of sensory verbs used to project mental states: perceptive, cognitive, desiderative, and emotive. These verbs include words such as *remember, feel, wish,* and *worry.*

Connected sentences and references. In order to provide exposition or explanation for their audience, writers must link items in their texts using language. Basic writers fail to take into account the needs of their readers and may not properly tie pronouns to their referents, or one part of a sentence to another (Shaughnessy, 1977).

Clear structure of events. Part of the writer's task in considering her audience is to create an understandable sequence of events. By providing a clear structure, the writer is better able to accommodate the needs of the reader (Colle et al., 2008; Loveland et al., 1990).

Supporting details. In failing to account for their audience, basic writers overlook supporting details that would aid their reader (Shaughnessy, 1977). Providing expository detail acknowledges that the reader lacks the background knowledge available to the writer.

Voice. Regulating the "voice" in which a piece is written is a form of audience awareness (Frank, 1992). Features of written voice include appealing to shared knowledge between reader and writer, markers of emphasis and attitude, and internal dialogue (e.g., Humphrey, Walton, & Davidson, 2014; Hyland, 2005; Poppers, 2011) in order to both assert the writer's position and acknowledge the reader as a participant in the storytelling process.

Theoretical Framework

In examining cognitive perspective taking in writing, I applied Vygotsky's sociocultural theory (1978), which attributes cognitive development to social interaction. According to Vygotsky, learning is first external and interpersonal, scaffolded by adults or more developmentally capable peers. Through this scaffolding and interaction, learning is then internalized, becoming intrapersonal. The child is then capable of regulating her internalized knowledge. The concept of internalization, though, is a matter of some debate among scholars (John-Steiner & Mahn, 1996). In applying a sociocultural theoretical framework, I drew from an interpretation given by John-Steiner and Mahn, who argue,

> In contrast to facile internalization, which leads to a limited combination of ideas, internalization that involves sustained social and individual endeavors becomes a

constituent part of the interaction with what is known and leads to the creation of new knowledge (p. 197).

In other words, these authors argue that internalized knowledge continues to develop as the child undergoes complex processes of transmission and application of that knowledge.

In an attempt to study sociocognitive abilities while reducing the cognitive demands of writing, Peskin and colleagues (2014) conducted a study in which students dictated personal letters aloud rather than writing them. The authors concluded that performance on a theory of mind task performed in an experimental setting "is different from the more complex forms of social understanding required for effective written or dictated communication" (p. 41). From this, and the argument made above by John-Steiner and Mahn (1996), I argue that while we can hypothesize that perspective taking abilities will relate to audience awareness, we must also consider the extent to which children have practiced applying their abilities. Students who have only demonstrated internalization of this skill in a laboratory task relatively recently may not have the same application skills as a child who internalized the skill earlier and has therefore had time to practice it in a wider range of communicative tasks, including the cognitively demanding task of writing.

Current Study

The purpose of the current study was to examine the evidence of CPT in writing while addressing existing gaps in the literature surrounding the topic. The three major aims of the study were as follows: first, because most of the existing literature focuses specifically on oral language, it looked for related evidence in written language. Second, rather than examining the broader constructs of "theory of mind" or "writing proficiency," the study focused on two aspects within each of these constructs: CPT and audience awareness. Finally, while I

hypothesized a relationship between these two constructs, the project explored the possibility that there is a difference between the sociocognitive abilities of a child who has "facile internalization" (John-Steiner & Mahn, 1996, p. 197) and one who has had time and practice applying these abilities in complex communicative situations. To do this, I compared CPT abilities in kindergarten as they relate to audience awareness in 2nd grade in writing. I hypothesized that children who internalized these skills by kindergarten age would be better able to apply them in the demanding task of narrative writing.

To achieve these aims, I used a sequential mixed methods design. The initial quantitative phase of the study tested the relationship between scores on a CPT task taken in kindergarten to scores on audience awareness features given to narrative writing samples produced in 2nd grade, while controlling for overall writing proficiency. Following that analysis, I purposively selected 19 participants from the overall sample in order to investigate the more nuanced ways in which evidence of CPT may have appeared in their written language.

Based on the aims described, I asked the following research questions:

Research question 1: Are cognitive perspective taking abilities in kindergarten related to audience awareness in narrative writing at the 2nd grade level?

Research question 2: How, if at all, is cognitive perspective taking apparent in students' narrative writing?

I hypothesized that, for research question 1, I would observe a positive relationship between CPT and audience awareness. The exploratory nature of research question 2 was intended to aid in further conceptualization of CPT captured in writing in order to guide future measurement and research.

Methods

I used a sequential mixed methods design (Creswell, 2003, 2015) to examine how CPT abilities relate to students' demonstration of audience awareness and to further analyze the ways in which CPT appears in narrative writing. The quantitative findings of the initial phase informed the groupings from which I drew participants for the second study phase. The findings also helped better conceptualize the features I looked for in the qualitative phase by allowing me to focus my exploration and to concentrate on areas that I felt the quantitative measure did not sufficiently capture. The qualitative analysis was guided by the quantitative findings as well as teacher interviews that focused on the ways that perspective taking and audience awareness were addressed in the 2nd grade classrooms.

Quantitative Methods

Participants. Participants (*N*=48) were current fourth-grade students who have been part of a larger longitudinal study (Bailey & Mistry, 2012), now in its fifth year of data collection. Students are enrolled in a laboratory school in southern California. Each of the participants has been enrolled in the larger study since Pre-K or kindergarten, and all students remained in the same program (English medium education or dual language education) from kindergarten through 2nd grade. Students at the school represent a high SES; over 50% of the students in this sample came from families reporting annual incomes of over $200,000. Demographics of the participants are reported in Table 1. The 48 participants included all students in the larger study who had completed both the CPT task in kindergarten as well as the narrative writing assessment at the end of 2nd grade.

Table 1

Student Demographics

Demographic	*n*	% (*N*=48)
Gender		
Female	26	54.2%
Male	22	45.8%
Race		
White non-Latino	17	35.4%
Latino	8	16.7%
Latino and other	9	18.8%
African American	1	2.1%
Asian	6	12.5%
Multi non-Latino	6	12.5%
Not reported	1	2.1%
Family income		
<$50,000	4	8.3%
$50,000 – 100,000	6	12.5%
$100,000 – 200,000	11	22.9%
$200,000 – 350,000	13	27.1%
>$350,000	14	29.2%
Child language		
English monolingual	26	54.2%
Spanish monolingual	1	2.1%
English/Spanish bilingual	12	25.0%
Bilingual (other) / multilingual	9	18.8%
School program		
English medium	29	60.4%
Dual language	19	39.6%

Measures.

Cognitive perspective taking. Students were given a cognitive perspective taking task in kindergarten as part of the larger study. This was adapted from a task previously used in several studies to measure elementary-aged children's abilities in taking another's perspective (e.g., Aboud, 1981; Johnson & Aboud, 2013); coefficient alpha was .89 (Johnson & Aboud, 2013). In this task, participants were shown a "liking board" on which they placed pictures of objects or activities, with the objects they liked most closest to them, and the objects they liked least farther away from them on the liking board. After completing a warm-up activity, participants were

given six laminated cards containing pictures of activities (e.g., painting, swimming, playing board games) and asked to place the cards on the board in order of preference. The researcher confirmed the child's rankings, then produced an identical board said to belong to a student at another school. The researcher placed cards with the same activities in the opposite order of preference as the participant's, and told the participant that the other student chose this ranking. The participant was then asked if both children were right, or if someone was wrong, and if so, why. Following this, the activity was repeated with a new fictitious student's rankings, this time in yet another order.

During both trials, the participant was awarded a score of 0 for stating that one of the students was incorrect in their rankings. The participant was awarded a score of 1 if he answered that both students were correct but was unable to provide justification for this answer, and a score of 2 if he was able to justify the answer with an explanation. Scores were totaled for a final value ranging from 0-4; based on these scores, students were assigned to one of three groups: *No evidence of CPT, Non-naturalized CPT,* and *Naturalized CPT.* Students showed the development of CPT in their ability to understand that another child could have a different perspective or preference related to certain activities.

Features of audience awareness. In order to analyze students' abilities to demonstrate audience awareness in their writing, I developed a coding protocol using an iterative process. After gathering and transcribing the narratives, I conducted an initial exploratory review of 20 randomly selected narratives. I developed six features that encompassed a measure of audience awareness, based on existing literature: *evaluative statements, verbs of cognition, coherence, referential language, identification of characters,* and *identification of setting.* I then returned to the 20 narratives, ranking them in order of least to most evidence of each of these six features in

order to begin developing a preliminary scale by finding meaningful qualitative differences in the appearance or quality of each feature in the narratives.

Following this procedure, I returned to the literature to review features that proved to be problematic. The six features of audience awareness were revised to include *explicit labeling of mental states, implicit demonstration of mental states, coherence, referential language, identification of characters,* and *identification of setting and surroundings*. Using the same 20 narratives I had explored in my previous iteration of the measure, I developed an initial 4-point rating scale for each of the six features. However, following a cognitive lab procedure with another graduate student who would undergo training in the use of the measure, I condensed each feature to a 3-point scale in order to establish meaningful distinctions between each rating level and to ensure reliability.

The final step in developing the measure was randomly selecting a new set of 21 narratives for pilot coding. Each narrative was given a rating for the six features of audience awareness. I then examined the frequencies of each rating to determine whether distributions were approximately normal, and adjusted a few of the rating limits as necessary.

Each of the narratives in the larger sample was coded for each of the six features on the following 3-point scale: *No evidence, Some evidence,* or *Strong evidence* of the feature. Following this process, 12 narratives (21%) were randomly selected for coding by a second trained rater. Simple percent agreement between the two raters was higher than 80% for each feature, and Cohen's kappa ranged from .714 to 1.0 for each feature. Both raters were blind to CPT condition during this coding stage.

The resulting measure contained the following six items. A full overview of this measure can be found in Appendix A.

Explicit labeling of mental states. This feature captured students' use of *evaluative statements*, *explicit statements of emotion*, and *verbs of cognition.*

Implicit demonstration of mental states. Students were often able to convey mental states in less explicit ways, such as expressing *evaluative statements or emotions through dialogue*, through *graphic representation or written encoding of sound effects*, or through *descriptions of actions clearly intended to demonstrate emotions or mental states*.

Coherence. Examples of coherence in writing included words to connect or transition, such as *conjunctions* (e.g., *and, but, in addition*) or *sequencing words* (e.g., *first, next, when*) (Bailey & Heritage, 2014).

Referential language. Adapting to the needs of the reader includes the appropriate use of referential language in order to provide cohesion. Referential language was measured by the use of clearly tied *pronouns* and *deictic or demonstrative language* (e.g., that, then, over there), as well as *other word substitutions* (e.g., *There were so many cute dogs that I couldn't even choose* ***one****)* used anaphorically—following a previously identified referent (Colle et al., 2008). Correct use of the definite article was another area in which students demonstrated their understanding of the reader's naïve state (Colle et al., 2008; Schaeffer & Matthewson, 2005). Though English has a number of rules governing the use of articles, one that was most relevant here was the concept of "given + new" (Halliday & Mathiessen, 2004), where individuals must first introduce a noun phrase or other piece of information before referring to it using the definite article.

Identification of characters. Proper identification of characters entailed indicating the relationship between the narrator and other characters in the story. For example, a sentence such as "I went to the movies with Antonia" leaves the reader confused as to Antonia's identity—she

may be a sister, friend, or babysitter. “I went to the movies with *my friend* Antonia,” in contrast, shows awareness that the reader is not privy to all of the author’s social relationships.

Identification of setting and surroundings. Introducing the story’s setting and surroundings, including all relevant participants necessary to the narrative’s plot, again provided a level of background detail missing from the narratives of basic writers (Shaughnessy, 1977).

General writing proficiency. I controlled for general English-language writing skills using the available Woodcock-Johnson III Tests of Achievement (WJ-III) Basic Writing Skills subtest (Woodcock, McGrew, & Mather, 2001) from the larger study. The WJ-III is a nationally normed, individually administered battery. The Basic Writing skills subtest is a cluster consisting of tests of spelling and editing. Reliability for this cluster is reported as $r_{cc} = .94$, which falls at the desired level of .80 or higher (Schrank, McGrew, & Woodcock, 2001). Students were asked to spell single-word responses, as well as correct errors of spelling, punctuation, word choice, and capitalization in written text.

Procedure. This study examined existing data from a larger project (e.g., Bailey & Mistry, 2012; Bailey, Zwass, & Mistry, 2013) in addition to student writing assignments obtained from teachers.

Cognitive perspective taking task. All students were administered the CPT task in kindergarten and were labeled as having *No evidence of CPT, Non-naturalized CPT,* and *Naturalized CPT* based on their performance on the two trials of the CPT task. Participants were labeled *No evidence of CPT* following one of three results: if they were either not able to complete one or both trials; if they answered that one student was incorrect for both trials; or if they answered that both students were correct for only one trial, but were unable to provide justification for that answer. Participants under the *Non-naturalized CPT* label were able to

indicate that both students were correct during both trials of the task, but were not able to provide justification. Alternatively, participants who were able to provide justification during one trial, but responded that one student was incorrect during another trial, were labeled as having non-naturalized CPT. The *Naturalized CPT* label denoted that the participant had indicated that both students were correct during both trials of the task, and provided justification for one or both of these trials.

A distribution of CPT task results can be seen below in Table 2.

Table 2

Kindergarten CPT Classification

CPT Label	*n*	%
No evidence of CPT	26	54%
Non-naturalized CPT	6	13%
Naturalized CPT	16	16%
Total	48	100%

Narrative writing task. Students were administered a narrative writing assessment in the spring of 2nd grade as part of their school curriculum. Assessments were administered individually. Students were given 40 minutes to complete a personal narrative in response to the following prompt: *"Write about a special moment with family or friends."* The students' narratives, therefore, were non-fiction accounts of past events, requiring the writer to portray her own world to a naïve reader. I chose to analyze narrative writing as its "psychological and social focus" (Brown & Klein, 2011, p. 1471) ties it closely to the constructs of social cognition. Because of the nature of the timed writing, students did not have the opportunity to revise multiple drafts or receive feedback from peers or teachers, allowing me to examine their writing exactly as they had produced it. These writing assessments were placed in the child's portfolio maintained by the school. If students did have an audience in mind, that audience would consist

of their teacher and possibly other teachers or staff at the school. Having already undergone similar assessments at several points throughout 1st and 2nd grade, students most likely had the knowledge that they would not be given feedback or expected to revise this writing further; however, to my knowledge, this was not made explicit in the instructions given by the teacher.

WJ-III Basic Writing Skills test. The WJ-III Basic Writing Skills subtest, which was used to control for students' English-language writing proficiency, was administered to students at the beginning of 2nd grade. The test was administered to students individually by a trained researcher. Students were given a series of questions or exercises in spelling, word choice, and mechanics. The basal score was determined when the student had answered six questions correctly, and ceiling was reached once the student had completed the last item or answered six items in a row incorrectly.

Of the students in the larger project who completed both the CPT task in kindergarten and the 2nd grade narrative writing task, one did not complete the WJ-III Basic Writing Skills test in 2nd grade. Because of the already-small sample size, I opted to enter a proxy score for this student, calculated by finding the mean of others in the same program (dual language) and language background (English-Spanish bilingual), to avoid losing additional statistical power.

Analysis. I conducted a principal components analysis (PCA) to explore the components within the measure of audience awareness. Results of the PCA indicated one component consisting of four items: *implicit demonstration of mental states, coherence, identification of characters,* and *identification of setting.* Students' demonstration of "audience awareness," therefore, was operationalized as their resulting component score calculated by this analysis. Scores of the overall sample of written narratives ranged from -2.339 to 1.886.

To analyze the relationship between kindergarten CPT abilities and 2nd grade audience awareness, I performed several one-way ANCOVA, using CPT classification (*No evidence of CPT, Non-naturalized CPT,* or *Naturalized CPT)* as the grouping variable. The outcome variable was the child's resulting component score from the PCA, representing overall audience awareness. However, for further exploratory purposes and possible direction in the subsequent qualitative phase, each of the six individual features of audience awareness was also tested as an outcome variable. For each of the analyses, the student's score on the WJ-III Basic Writing Skills subtest was used as a covariate. I chose to conduct ANCOVA using a grouping variable, rather than using the number of points students accumulated on the CPT test to conduct a regression analysis, as the total number of points (two per trial) were not sufficiently continuous for a regression.

Qualitative Methods

Participants. To select participants for the qualitative phase, I employed a purposive sampling procedure based on Lieber's (2009) stratification model. Participants for the qualitative portion of the study were selected from the overall sample based on belonging to one of four groups within the dataset: Low CPT/Low Audience Awareness; Low CPT/High Audience Awareness; High CPT/Low Audience Awareness; and High CPT/High Audience Awareness. Kindergarten CPT scores of *No evidence, Non-naturalized,* and *Naturalized* were Low CPT, Mid CPT, and High CPT, respectively. To define Low, Mid, and High audience awareness, narratives from the larger sample of 57 students were sorted by their overall component score on the audience awareness measure and divided into thirds (Low = score of -2.34 to -0.30; Mid = -0.29 to 0.33; High = 0.47 to 1.89). Following this procedure, the current sample of 48 students was sorted by CPT and audience awareness level as illustrated in Figure 1 below.

CPT

Audience Awareness	Low (No evidence)	Mid (Non-naturalized)	High (Naturalized)
Low	Low CPT/Low AA (n=9)	(n=1)	High CPT/Low AA (n=4)
Mid	(n=9)	(n=3)	(n=6)
High	Low CPT/High AA (n=8)	(n=2)	High CPT/High AA (n=6)

Figure 1. Selection of qualitative participants

A resulting subsample (*n*=19) was chosen from the four groups. Five narratives were selected from each group, except in the case of the High CPT/Low Audience Awareness group, which contained only four narratives. Within these groups, I attempted to select as diverse a sample as possible in terms of gender, home language, and school program (dual language immersion versus English medium education). This purposive selection was intended to account for differences owing to the effect of second language experience on sociocognitive abilities (e.g., Cheung, Mak, Luo, & Xiao, 2010; Goetz, 2003), as well as the possible effect of gender on language (e.g., Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991; Özçalişkan & Goldin-Meadow, 2010; Ramer, 1976) and literacy development (e.g., Gambell & Hunter, 1999). An overview of the qualitative subsample is shown in Table 3.

In addition, I conducted interviews with four classroom teachers, two from the dual language program and two from the English medium program, in order to understand how perspective taking and audience were addressed in the classroom. Teachers' responses were used during the deductive phase of coding to aid with the analysis of the ways in which CPT appeared in the students' narratives. The four teachers who participated in these interviews are listed in

Table 4. All four of the teachers interviewed had been teaching for at least six years and were the lead 2nd grade classroom teachers for the cohort of student participants.

Table 3

Participants in Qualitative Phase

Name	Gender	Home language	School program
Low CPT / Low AA			
Lily	Girl	English	English medium
Brayden	Boy	English	English medium
Mari	Girl	English/Spanish	Dual language
Gwen	Girl	English	English medium
Miguel	Boy	English/Spanish/other	Dual language
Low CPT / High AA			
Mario	Boy	English/Spanish	Dual language
Andrea	Girl	English/Spanish/other	English medium
Matias	Boy	English/Spanish	Dual language
Hannah	Girl	English	Dual language
Diego	Boy	English/Spanish/other	Dual language
High CPT / Low AA			
Silvia	Girl	English/Spanish/other	English medium
Joel	Boy	English	English medium
Deva	Girl	English/Spanish	Dual language
Jacob	Boy	English	English medium
High CPT / High AA			
Grace	Girl	English	Dual language
Ben	Boy	English	English medium
Nicola	Girl	English/Spanish	English medium
Julia	Girl	English/Spanish	Dual language
Luke	Boy	English	Dual language

Table 4

Classroom Teachers

Name	School program
Camila	Dual language
Heather	English medium
Patricia	English medium
Marissa	Dual language

Procedure. After selecting the subsample of participants for the qualitative phase, I reviewed the 19 narratives in preparation for analysis, which I will describe in detail below. The intent of the qualitative analysis was to explore the more nuanced ways in which CPT abilities appeared in students' narrative writing by 2nd grade. No further contact was made with student participants throughout this study.

I also conducted four interviews with classroom teachers lasting approximately 30 minutes each. Interviews were conducted after school or during breaks in the day. All interviews took place either in a side room adjacent to the main classrooms, or within the classrooms themselves if students were not present. At the time of the teacher interviews, which took place over eight weeks in the winter of 2017, the cohort of students in this study were no longer members of these classrooms. However, teachers were aware of the cohort in question, and when relevant to the question at hand—for example, when they recalled examples of exchanges that had occurred in class—they were asked to keep this study's cohort in mind. These interviews provided insight into the ways in which the school environment may have helped to develop students' CPT abilities, and the ways in which such abilities might have appeared in their writing. The full interview protocol can be found in Appendix B.

The interviews were audio recorded and later transcribed. The transcriptions of these interviews were then coded into basic themes; these themes guided deductive coding of the narratives when looking for the ways that students demonstrated perspective taking abilities.

Analysis. To explore the additional ways children exhibit CPT abilities in their writing, I first reviewed the subsample of 19 narratives several times. I then divided the narratives into those written by the "Low CPT" and "High CPT" groups. The use of analytic memos allowed me to begin coding the sample inductively, using open coding. Simultaneous coding (Saldaña,

2013) was applied throughout, as many of the data reflected various ways of demonstrating CPT. I first coded any instances of *implicit* or *explicit demonstrations of emotion*. These two items had appeared in the audience awareness rubric; however, I felt the quantitative rubric had perhaps been overly blunt in that it did not account for frequency. In addition, while the quantitative feature *explicit labeling of mental states* did not load onto the primary component of audience awareness in the PCA, the labeling of emotions and affect may, according to literature, relate to a child's CPT or social understanding (e.g., Ensor et al., 2014; Ensor & Hughes, 2008). I continued by mapping the use of third-person characters in narratives (e.g., characters other than the first-person narrator), including the *inclusion of third-person characters*, *instances of dialogue spoken by third-person characters*, and *thoughts and feelings of third-person characters*.

To better isolate the indicators of CPT in the narratives, I returned to the literature and examined the broader themes that had emerged in my preliminary analysis of teacher interviews. I then coded deductively based on this information. I first expanded my exploration of mental state awareness by examining the frequencies of *explicit statements of emotion*, *explicit statements of other mental states,* and *explicit evaluative statements or descriptions of affect*, followed by the frequencies of *implicit demonstrations of emotion*, *implicit evaluative statements or descriptions of affect*, and *graphic encoding conveying emotions*. Following this, I explored the use of speech and dialogue in the narrative, coding instances of *reported speech* (indirect quotes) and *quoted speech* (direct quotes). After a final review of literature, I coded the ways in which students acknowledged the thoughts of the reader using *direct reader appeal*. Finally, to account for the writer's acknowledgement of mental models, I coded instances of *clarifications and corrections*, and *addressing the reader's mental model*. Further axial coding allowed me to

identify overlaps between uses of dialogue, the roles of third-person characters, and the demonstration of mental states. The full codebook can be found in Appendix C.

Findings

Relationship between CPT and Audience Awareness

An overview of the descriptive statistics for each item is presented in Table 5 below. Each item had a minimum score of 0 and a maximum score of 2. The distribution of scores for each item can be found in Appendix D.

Table 5

Descriptive Statistics for Features of Audience Awareness

Feature	*Mean*	*SD*	*Median*	*Mode*
Explicit mental states	1.063	.727	1.000	1.000
Implicit mental states	1.146	.772	1.000	1.000
Coherence	1.125	.733	1.000	1.000
Referential language	1.083	.795	1.000	1.000
Identification of characters	1.479	.684	2.000	2.000
Identification of setting/ surr.	.917	.679	1.000	1.000

Initial Spearman correlations showed a weak relationship between all variables of interest, aside from the relationship between individual variables of audience awareness and the "Overall AA" score.[1] These correlations can be seen below in Table 6.

[1] Note that the relationship between Identification of Characters and Overall AA, while not significant at the $p < .05$ level, approached significance ($p = .052$).

Table 6

Correlations between CPT and Audience Awareness Variables

	1	2	3	4	5	6	7	8
1. CPT	--							
2. Overall AA	-.013	--						
3. Expl. Mental	.211	.102	--					
4. Impl. Mental	.063	.685*	.206	--				
5. Coherence	-.052	.586*	-.032	.202	--			
6. Ref. Lang.	.108	.001	-.160	-.123	.014	--		
7. Characters	-.054	.283	.066	.117	.033	.040	--	
8. Setting	-.054	.715*	.143	.245	.228	.038	.115	--

Note. * p<.001

One-way ANCOVA revealed no significant relationship between scores on the CPT task in kindergarten and scores on the audience awareness rubric in 2nd grade when controlling for basic writing skills. There was no significant effect of CPT grouping on the resulting component score of audience awareness ("Overall AA") when controlling for basic writing skills, $F(2, 44) = .609$, $p = .613$. Even when not controlling for basic writing skills, one-way ANOVA revealed no significant relationship between kindergarten CPT scores and 2nd grade audience awareness scores, $F(2,44) = .040$, $p = .961$.

To further examine any potential relationship, additional one-way ANCOVA were performed using each of the original six features of audience awareness as an outcome variable. CPT scores in kindergarten were not significantly related to scores on any of the features of audience awareness when controlling for basic writing skills, nor were they related when not controlling for basic writing skills. The results of these analyses are shown in Appendix E.

Evidence of Cognitive Perspective Taking in Writing

Heather, one of the classroom teachers, addressed the development of perspective taking abilities in the students: "We talk a lot about how people have different perspectives… they're starting to be at a developmental stage where they can understand that. And they're starting to

realize that not everybody thinks exactly the same as they do." All four of the classroom teachers confirmed that they addressed concepts such as personal differences, empathy and emotions, and supporting opinions within their classrooms, whether in writing instruction or through instruction in other subjects. Therefore, I expected that many students would have developed the skills to demonstrate this understanding in their narratives. By 2nd grade, students who had both low and high levels of CPT in kindergarten were now showing evidence of this ability through their writing; however, those who had achieved higher CPT scores in kindergarten did differ qualitatively in their narratives. CPT was evident through the ways that children talked about emotions in their narratives, as well as through the ways they used speech and dialogue.

Appearance and variety of the description of emotions. The quantitative coding scheme used in the first phase of this study was a fairly blunt instrument, recognizing some degree of variety, but very little in terms of the frequency with which emotions or affective statements appeared in narratives. As such, I analyzed the subset in more detail, exploring frequencies as well as the impact of the use of various devices *in combination* with one another.

Variety of evaluative and affective statements. According to the principal components analysis conducted on the quantitative variables, *explicit labeling of mental states* is not a feature through which students demonstrate audience awareness. However, use of these statements allows children to portray their mental and emotional states, as well as convey the significance of events—indications that students understand the need to share their perspective. To further explore this, I looked at the use of both *statements of emotion*, which referred directly to the child or another person (e.g., *I was so scared*), as well as *evaluative or affective statements*, which referred to the scene or narrative as a whole (e.g., *It was so fun*). Thirteen of the 19 children used one or both of these kinds of statements in their narratives, with students in the

Low CPT and High CPT groups showing relatively equal frequency: both groups contained a total of 19 total instances of explicit labeling (an average of 1.9 and 2.1 uses per narrative in the Low CPT and High CPT groups, respectively). Given this data, we might assume that the Low CPT group had "caught up" to the High CPT group in terms of the language used to express emotions or importance.

However, closer examination revealed clear differences in the *variety* of the language used by the children in this sample. A pattern emerged between those who had developed CPT earlier, and between those who had not. Students in the Low CPT group displayed very little variety in their affective statements; in fact, statements used the word "fun" nearly exclusively, as illustrated in the following two examples:

> *...I was walking in the Honolulu hotel room in Hawaii. I was excited to play with the dolphins. When we saw the dolphin the owner told us it had a Hawaiian name.* ***It was so fun.*** *My Dad watch me swim with the dolphin. Actually it was my first time I was going to meet them. I felt nervous, scared, happy, and of course felt a lot of love from that dolphin. It could do a lot of tricks and we had to feed him dead fish.* ***It was creepy but fun.*** *(Gwen)*
>
> *When I went to the desert in Abu Dhabi. I went and there was really! tall mountains.* ***And it was so so fun.*** *I loved it. And the tires were flat so the car didn't tip over. I thought it was going to tip over but it didn't. So I talk with my brother.* ***I was so fun.*** *When I went on the camels and horses.* ***It was so fun!*** *When I was on the horses and camels* ***I couldn't imagine how fun it was!*** *And we got to control them. But it was hard… we controlled them with ropes. I was amazed! It was a little hard. But it was pretty hard for me. But my mom was good at it. (Miguel)*

Both of the students above used descriptive vocabulary related to their own emotions: *I felt nervous, scared happy; I loved it;* and *I was amazed!* In doing so, they successfully communicated their emotional states. However, when conveying their overall perspective on the events in the narrative, they relied heavily on the word "fun," while some of the students in the High CPT group had begun to deviate from this norm. While it is possible that these differences

can be at least partially attributed to students' English vocabulary, the purposive selection of students was intended to mitigate this effect, with students from both CPT groups representing each school language program, as well as a mix of home language exposure. Examples from the High CPT group, using a wider variety of descriptive vocabulary, are shown below:

> *One sunny Friday there was an instrument concert, and I was in it. My grandma came. My brother was in it too. He played saxophone, I played violin. –Soon it was time!—I was very excited. We started practicing with our teacher. (We got nervous.) Soon we played Radetzky March. It was very fast. So were we. We played other songs like Twinkle Twinkle Little Star, just us. Then we listened to the older kids play.* ***It was amazing…*** *(Deva)*

> *Me and my jujitsu coach were ready to spar. We were having so much fun. Then we stopped. He was talking for a minute… He was talking about my belt. I was on my white belt with a black stripe. I would go to my gray belt. I was glad because I got my gray belt. It felt good.* ***It was a big deal for me because I've wanted it for a long time.*** *My whole family was proud of me. But I was a little embarrassed. That's my story of my jujitsu belt. (Jacob)*

These students also included emotional language, such as *we got nervous.* However, their evaluative statements, while still simple, began to show more creativity. Jacob, in particular, demonstrated impressive perspective taking abilities in his provision of justification for his reasoning. Not only did he explicitly tell the reader that the event was a "big deal," he explained why that was the case, thus fully conveying his perspective.

Explicit mention of the emotions of others. While more than half of the children described their own emotions, few had begun to depict the emotions of others. Several children used the first-person plural, *we*, when labeling both their own emotions and the emotions of other characters. Silvia, for example, described a car accident experienced by her, her mother, and her friends or siblings (the relationship is not made clear) using *we*: *We were scared.* However, statements using the first-person plural do not necessarily reflect that the child has deduced the emotional state of another person. In fact, the exact opposite is possible: in stating that "we" felt

a certain way, the writer might be inaccurately imparting her own emotions onto someone else, essentially demonstrating a lack of understanding that the other individual has emotions independent from those of the student.

Because I could not reliably determine the child's motivation based solely on the information in the narrative, I did not code instances of *we* as exhibiting the emotions of a third-person character. It is possible, however, that the use of "we" (or its equivalent, such as "my sister and I") represents the middle stage of a progression, where students move from portraying only their own emotions to the emotions of others. If this skill is indeed a representation of students' CPT, then the data from this study supports that interpretation, as shown in Figure 2:

	"I" statements	"We" statements	"He/she/they" statements
Low CPT	4	1	0
High CPT	5	3	2

Figure 2. Number of students describing emotions in the first-person singular, first-person plural, or third person

Students in the Low CPT group almost exclusively referred to their own emotions when making explicit statements; only one student out of 10 mentioned other family members using "we." However, three out of the 9 High CPT students used the first-person plural, and two had begun to refer explicitly to the emotions of other characters in the narrative.

These two students—Jacob and Ben—not only noted the emotions of others, they made a point to contrast these emotions with their own. Recall Jacob's description of his family in his jiu-jitsu story:

> *It was a big deal for me because I've wanted it for a long time.* ***My whole family was proud of me. But I was a little embarrassed.***

Not only did Jacob consider and communicate the feelings of his other family members, he also clarified the way his emotional state differed from theirs during the narrative. Ben,

meanwhile, took a self-deprecating approach, displaying how his own feelings of restlessness impacted his family members:

> *It was on a bright and hot afternoon. We were spending it at the Getty. I was enjoying the day, but I wanted to go outside.* ***After a few agonizing minutes (only for my Mom and my siblings, who were at the Getty with me,)*** *my mom and my siblings finally gave into my complaints.*

Here, Ben's sociocognitive awareness is clear: he recognized that while he felt a mixture of enjoyment and impatience, his complaints caused any feelings of enjoyment on the part of his siblings to evaporate, turning the experience into an "agonizing" one. Jacob and Ben's emotional insight is sophisticated. Both boys demonstrated not only what Wellman, Harris, Banerjee, and Sinclair (1995) term *individuated contrastives*—the knowledge that different people can have different emotions—but also *subjective contrastives*, a subset of individuated contrastives in which children express the understanding that two people can have different emotional reactions to the same object or event.

Explicit mention of others' knowledge and beliefs. While two students had begun to describe others' *emotions*, no students in the qualitative sample explicitly mentioned non-emotional mental states of other characters, such as their thoughts, knowledge, or beliefs. Based on literature defining CPT and theory of mind in general (e.g., Kurdek, 1978; Premack & Woodruff, 1978), we might have expected students to begin to refer to these mental states in addition to emotion. Classroom teachers, too, addressed the idea of considering the thoughts and opinions of other people. Camila confirmed that she taught this during reading instruction: "We're reading about people who have made a difference, and that's something that we really go in depth about and try to put ourselves in their shoes." Marissa also explained how students learned to consider others' thought processes during science instruction by acknowledging

classmates' opposing stances on the benefits and dangers of bats. However, references to the thoughts and beliefs of others remained conspicuously absent from the children's narratives.

Implicit demonstration of emotions. Like the explicit labeling, above, an implicit demonstration of emotions suggests that a student possesses awareness that the reader does not know her mental state. Unlike explicit statements of emotions, children may not use vocabulary clearly intended to label emotional or mental states (or may use this vocabulary as part of quoted speech), but has employed language or descriptions of actions that clearly convey a mental state to the reader.

Examples of the former include dialogue intended to exhibit emotions, such as Hannah's lament, following a visit to friends who had moved out of state: *When we got home I said, "I really, really miss our friends."* This statement is considered implicit as it was directed towards her family members, not towards the reader (although she does also employ an explicit statement of emotion, *I was SO SAD*). Nicola, meanwhile, provided an example of an action that, while not accompanied by an explicit statement of emotion, expressed her mental state:

> *One day I was at a horse show in Palm Springs. And I was practicing on my pony. And done practicing. I went into the ring. At the end of me showing I fell off. Boom!!! I was not crying. I jumped up and said booya!*

Nicola also uses *graphic representation* to convey her mental state; this can include punctuation such as exclamation points (*Booya!*) or the use of capital letters or elongated spelling (*I was SO SAD*).

The implicit demonstration of mental states is, according to the principal component analysis, one feature of audience awareness, yet it also seems strongly tied to the ability to understand the independent mental states of individuals. Its presence may indicate an area of

overlap between the two constructs, an idea I will explore further in the subsequent discussion of these findings.

Combining features. A limitation of the quantitative coding scheme in this study is that, while it takes some variety of features into account, it fails to more holistically evaluate how *well* a child is able to convey emotions. Children who were able to combine explicit statements of emotion with implicit features, or who combined multiple implicit features, more clearly conveyed their emotional states. Consider Mario's account of a Dodgers game, in which he employed dialogue to implicitly demonstrate his emotions:

> *We won 2 to 1 but someone broke Clayton Kershaw's record by hitting a home run. They were versing the Padres. And better I got a Dodger ball.* ***I said, "ya".*** *So did my brother. Then we got another one.* ***We both said, "super ya."***

Although Mario, who was in the Low CPT group, did communicate his emotions through dialogue, his account did not portray excitement or happiness particularly well. Compare this to Grace's narrative, from the High CPT group, about playing a game at a school fair:

> *…They said we need to throw a small ball into a jar and suddenly* ***I felt a bit nervous.*** *I went for it. I threw the ball…* ***I WON!*** *And I got a…* ***FISH.*** *A golden great fish.* ***I was sooo excited and happy****. I named it Bubbles, and guess what? He's alive right now****!!***

Grace's use of both explicit and implicit statements, and the manner in which she combined elements, provided much clearer insight into her feelings. The use of ellipses between her feeling of nervousness, leading to an all-capitals exclamation, indicated a sudden shift. She then underscored this excitement with an explicit statement (*I was sooo excited and happy*), though even this statement was emphasized further by the elongated spelling of *sooo*.

Use of dialogue. When asked to provide feedback on a student writing sample, teachers cited the usefulness of dialogue in both providing insight to the reader as well as allowing story

characters a voice. Seventeen of the 19 students sampled included some form of speech or dialogue in their narratives. This included both directly and indirectly quoted speech (e.g., *I said, "I want to see it again,"* versus *When we saw the dolphin the owner told us it had a Hawaiian name*). While nearly all students from both groups included speech in one way or another, we see a small difference in the way speech was represented. Students in the High CPT group had no instances of reporting their own speech, as Andrea (Low CPT) did:

> *Once at my house* ***I asked my mom if we could have a dog for a pet.*** *First she said no. Then after a while she said yes because I had proved to her that I could take care of a puppy.*

Rather, students in the High CPT group more frequently quoted speech of other characters, as highlighted again in Grace's narrative:

> *On the very day before Halloween 2014, my friend Ariela invited me to a Halloween party at her school. I went in my witch costume. Ariela and Natalie also had a witch costume. We all walked to Ariela's school and first we went to a few games. Then we ate pizza, french fries and tacos.* ***Then Ariela asked, "What game should we play next?" Natalie responded excitedly, "The fishy game!"***

The inclusion of other characters and their speech—something that half of the High CPT group contained in their narratives—quite literally gives another person a voice in the story. While the majority of the Low CPT students did use directly quoted dialogue in their narratives, most only quoted themselves without including a direct response from other characters. When looking purely at the number of instances of third-person dialogue, we do not initially see a difference between the two groups: the Low CPT group had 11 instances (in 10 narratives) of third-person dialogue, and the High CPT group had 10 instances within 9 narratives. However, 9 of the 11 instances of the Low CPT group's third-person dialogue came from a single student, Diego, whose narrative was something of an outlier in that it was four times the length of the average of all others. Excluding Diego's extraordinary essay, we see that 38% of the use of

speech and dialogue in the High CPT group came from 3rd person dialogue, whereas only 13% of the Low CPT group's did.

Addressing mental models. The final way we can observe evidence of CPT in students' writing is through the means by which they reveal awareness of their own thought processes, as well as the mental models of others.

Clarifications and corrections. Because the writing samples used in this study were timed, unrevised writing assessments, students had very little opportunity to make edits; for most, the first draft (usually following a page of notes or other graphic brainstorming technique) was also the finished product. As such, a few students appeared to have added information "after the fact": illustrative details or material that would be necessary for the reader to better understand the story. This information might have been best presented initially, but its appearance indicates that the student realized, during the writing process, that its inclusion would benefit the story. An example of this is Mari's small correction in her story about being home sick:

> *One Monday when I had a fever I will tell you all about it. Ok so first in the morning I was resting,* ***well watching TV and a little of iPad.*** *Then I was hungry so I ate rice and some medicine so I would feel better. A little bit later I ate lunch.*

Had she been given the time to create a new draft, Mari might have chosen to provide these details first in order to avoid correcting herself. Her adjustment shows her thought process as she wrote the narrative—that the reader, unaware of what "resting" might entail for her, would benefit from this information. Similarly, Julia's narrative about getting lost during a school event contained a parenthetical useful to the reader:

> *Towards the end of the In-N-Out party at school, my mom said "we're going to her class." I thought it was my class but it was my sister's class, so they went without me knowing* ***(little sister),*** *so I did not know where she was.*

The clarification here—that the sibling in question was Julia's little sister—was not essential to understanding the story, but helped provide a level of detail into a relationship unknown to the reader. Again, the narrative would have read more smoothly had this information been incorporated earlier in the sentence, so its addition here does not seem to be a stylistic choice, but one that Julia felt was justified based on the clarification it would give to the reader.

It is important to note that inclusion of these corrections does not necessarily indicate more developed CPT. Children with well-developed CPT abilities might have had the foresight to include the appropriate amount of detail from the beginning, thus eliminating the need for such additions. I do not wish to claim that this is a feature that will necessarily begin appearing more often in students' narratives as they develop, nor that it should be. However, its presence does indicate that the child, by this point in time, did have the ability to consider the background knowledge of another person, to realize that the information she had provided was insufficient, and to correct for this insufficiency.

Anticipating the reader's mental model. Two students, Mari and Grace, opted to address the reader directly within their narratives:

> *One Monday when I had a fever **I will tell you all about it.** Ok so first in the morning I was resting, well watching TV and a little of iPad. Then I was hungry so I ate rice and some medicine so I would feel better. A little bit later I ate lunch. I ate chicken noodle soup. "Huu, huu" I said. A five hours later I had a rreeeaaallllyyyyy bad fever. I could hardly move and I could hardly remember anything. **Guess what happened the next day…** (Mari)*

> *… They said we need to throw a small ball into a jar and suddenly I felt a bit nervous. I went for it. I threw the ball… I WON! And I got a… FISH. A golden great fish. I was sooo excited and happy. I named it Bubbles, and **guess what?** He's alive right now!! (Grace)*

These forms of direct address, on the one hand, reveal a clear awareness of audience: the students showed that they had the reader in mind by pulling the reader into the language of the

narrative. However, the inclusion of "guess what?" in both narratives also suggests the presence of CPT abilities. When Grace said, "Guess what?" to her reader, she deliberately paced the story in a way that suggests she knew what her reader must be thinking: that the excitement of the fair was short-lived, and that the fish was possibly already long dead.

Mari—who, unlike Grace, was in the Low CPT group—ended her story by trailing off after asking "Guess what?" She also anticipated her reader's mental model, assuming that the reader would have formed a guess as to what would happen next in the story. However, unlike Grace (who may or may not have been correct in her assumption), Mari's formation of this mental model is somewhat inappropriate, because her reader is not able to guess what might have happened after the story ended. Although she demonstrated the knowledge that her reader does have a mental model, thereby showing some level of CPT abilities, her low level of audience awareness prevented her from supplying the reader with the necessary information to complete that mental model.

Summary of features. How do children demonstrate cognitive perspective taking through writing? The initial stage of this ability is the understanding and written encoding of emotions and other mental processes. The majority (although not the entirety) of the children in this study conveyed an awareness of mental states. However, more sophisticated demonstrations of CPT go beyond straightforward awareness. The most successful displays of CPT in this group of storytellers showed that the writer knew that other individuals within the narrative had their own emotions not shared by the writer, and that these emotions deserved to be acknowledged. Finally, children who exhibit high levels of CPT are also able to infer that the reader is another individual with independent mental states; a 2nd grader with developed CPT abilities is beginning to use this knowledge in ways that can help enrich the narrative for the reader. This leads to better

understanding of how the thoughts and emotions of the characters helped drive the narrative, or why the student chose to tell the narrative at all.

This last claim may help make sense of the potential relationship between CPT and audience awareness. While the two constructs are distinct, the ability to take the perspective of another appears to play a role in making a narrative more enjoyable or understandable for a reader. This point is one that will be further addressed in the discussion below.

Discussion

Relationship between CPT and Audience Awareness

The quantitative findings of this study indicated that CPT abilities in kindergarten do not relate to audience awareness abilities in 2nd grade narrative writing. In turn, the qualitative findings showed that students in both the Low CPT and High CPT groups in kindergarten showed evidence of CPT in their writing by 2nd grade. This may lend support to the interpretation that perhaps the quantitative analysis showed no group differences in audience awareness simply because the Low CPT students had "caught up" by 2nd grade. However, further exploratory analysis suggested that the children who received higher CPT scores in kindergarten wrote about emotions and other characters in ways that might suggest more sophisticated perspective taking development in 2nd grade. Therefore, differences in abilities may still exist by 2nd grade, even if they are not shown in terms of the child's audience awareness.

Evidence of Cognitive Perspective Taking in Writing

The qualitative findings demonstrated that students in the High CPT group in kindergarten had, by second grade, begun to explore more descriptive portrayals of their emotions and of the emotional affect of the scene or narrative as a whole, expressing what it meant to them using more diverse vocabulary. Their use of speech allowed characters other than

themselves more dialogue, displaying recognition of the voice of others. Similarly, a few students showed insight into the mental states of others and how those mental states differed from the student's own. It is important to note that only two students did this, so I am hesitant to make a claim about the presence of this occurrence in children's writing. However, further study in continuing grade levels is warranted to determine whether a clearer picture emerges.

Although not an initial goal of the project, during the course of my analysis it became clear that additional fine-grained study is needed to determine exactly how the constructs of audience awareness and CPT in writing differ, and in what ways they overlap. Although my quantitative analysis showed no relationship between the constructs in the way I had hypothesized (that earlier development of CPT would lead to more advanced audience awareness in writing by 2nd grade), there is reason to believe that the two constructs may intersect. The implicit demonstration of emotions, for example, was shown through principal components analysis to be a feature of audience awareness, yet it seems that use of this feature is also a way that students are able to display CPT abilities in writing.

Drawing on teacher insight may prove valuable to future study of these constructs. Camila, for example, spoke about the importance of anticipating questions readers would have: "I always reiterated how important it is that you think about your audience as you're creating this argument, and try to anticipate the kinds of rebuttals or the types of questions that they might ask you so that you could prepare yourself, and include that in your writing." She also stressed keeping the reader's interest, saying, "When I do teach my students about audience, I tell them, 'the more details you have, the more interested your reader's going to be.'" Although both of these quotes speak to an awareness of audience, only the former addresses CPT in that it asks students to imagine their reader's mental state. This suggests that teachers, too, might treat these

constructs as overlapping but different: whereas students demonstrate CPT by understanding the mind of their reader, audience awareness requires that the writer comprehend what makes for an overall effective and engrossing reading experience. Since preliminary analysis of teacher interviews revealed areas of overlap between the two concepts in the classroom, future study may help to provide clearer definitions of what it means to demonstrate "audience awareness" or "cognitive perspective taking through writing" for 2nd grade students.

We may also better understand how these constructs relate by considering how the features of cognitive perspective taking might differ based on the child's intended audience. Grace's narrative, for example, used nonconventional spelling and punctuation more appropriate for an audience of peers than of teachers (*I was sooo excited and happy*). In this particular instance, Grace may have felt comfortable enough with her teacher to stray from written conventions. However, would her writing exhibit different features if she knew it was intended for the school principal, for example? Would students provide the same amount of correction and clarification in a letter to a classmate as they would when writing for an unknown adult? We cannot know the answer based on this study's data, but the examination of the ways in which the features of CPT relate to intended audience has provided further insight.

Limitations and Future Directions

The quantitative phase of this study was limited to a small sample size due to a relatively small initial sample from the larger study, compounded by missing data from several students. Perhaps even more important, though, is the necessity of returning to the coding scheme/rubric used for the initial phase of the study having conducted further exploratory analysis. The features of CPT in writing that emerged during the second phase of this study are quantifiable, and may play a role in audience awareness. Further revisions could also be made after fully analyzing

teacher interviews, which provided information about devices taught in class to keep a reader's attention, to make stories more interesting, and to express differences in opinion (both in writing and in the classroom context in general).

In addition, it is impossible to know what features that appeared in students' writing were a result of their own "natural" CPT abilities or audience awareness, and which were functions of specific classroom learning that had taken place in their reading and writing instruction. It would be impossible to overcome this limitation in any analysis, although studying a more diverse group of students from different classrooms and schools would allow me to better discern the effects we might be seeing as a result of classroom writing instruction. As acknowledged, students in this study represented a high average SES. Teachers at the school confirmed that they were able to address perspective taking in the classroom and were given the resources to do so, an advantage not available in every school. Therefore, the abilities demonstrated by these children may not be generalizable to all 2nd grade students.

Preliminary analysis of interviews with teachers, which helped guide the qualitative analysis in this study, suggests that there may still be other features to consider—or other ways of considering existing features—when measuring "audience awareness." Using the results of this qualitative portion, in addition to interviews with 2nd grade teachers, I may revisit the measure of audience awareness. However, this study has provided an important first step in exploring these constructs. Future studies could also extend to other genres of writing, such as persuasive writing, a genre cited by teachers as one in which students must consider their audience in order to be successful.

In addition, the qualitative portion of this study has provided the start of more fine-grained assessment of children's cognitive perspective taking abilities in writing—an academic

task—than can perhaps be achieved through an experimental task. Though we know that theory of mind does continue to develop (e.g., Baron-Cohen et al., 1999), literature has established that the majority of experimental theory of mind batteries are designed for children up to approximately age 5. By attempting to observe cognitive perspective taking abilities in an applied setting, with a new age group, I hope to extend our understanding of this concept and to expand what it means to demonstrate these abilities in later childhood. A holistic exploration of written language provides more thorough understanding of this development, and will allow researchers and educators to better discern the ways in which these abilities are manifested in the academically vital and cognitively demanding task of writing.

Conclusion

Writing is critical to students' academic success, yet knowledge of academic vocabulary or complex syntax is insufficient in meeting today's educational standards. Children must understand their audience. Students face additional challenges in writing beyond the demands of verbal communication: a writer must understand that the reader may not share her background knowledge, and must account for that lack of knowledge without the benefit of face-to-face discourse. In order to write successfully, children must possess the abilities to understand this challenge and develop the communicative tools to overcome it.

The findings of this study suggest that early adoption of CPT abilities does not necessarily lead to better audience awareness in later primary years. However, students who internalize these skills earlier may be able to produce richer narratives that demonstrate a better understanding of other individuals' emotions and mental models. Further study in this domain may provide different avenues for assessing students' perspective taking abilities beyond what we can observe in experimental tasks. We may also be able to extend this to additional genres of

writing. In addition, continued work with classroom teachers is necessary if we are to better understand the relationship between CPT and audience awareness in writing, and the ways through which educators can help develop these abilities in their students. Not only can educators' insight lead to more research on these constructs, that research can then in turn inform best practices for the development of children's perspective taking and writing abilities.

Appendix A: Quantitative Coding Protocol

I. EXPLICIT LABELING OF MENTAL STATES

0	No evaluative statements (whether about a portion of the narrative or the narrative as a whole), explicit statements of emotion reflecting either the narrator's or another character's emotions, or verbs of cognition showing the mental state of the narrator or another character
	When I was in Honolulu, I saw a stingray and a bunch of fish. I tried to catch some fish, but they are too fast for me. I called my mom, "I see a stingray." When my mom came it was gone. It left. I couldn't find it. Maybe it went to the open sea. The stingray looked harmless. (15003) Narrative contains no evaluative statements, statements of emotion, or verbs of cognition

1	Includes at least one instance of ONE type from the following list: -Eval. statement about a portion of the narrative -Eval. statement about the narrative as a whole -Explicit statement of emotion reflecting the emotions of the narrator or another character -Verb of cognition showing the mental state of the narrator or another character
	My mom drove me to an apartment. Isabella was waiting at the door. She said hello. I said back to her, "hi." We went into her room… Her bed was a castle. It was amazing. Isabella said her dad built it. ***I was shocked in a good way!*** *There were stuffed animals tucked in the corners of the bed. After that we played princesses. Then we started painting. We both painted towers. Isabella's mom called up to us, "Do you guys want a snack?" Our answer was yes. We went downstairs and Isabella's mom gave us a snack. We ate it. Then we played the cat. Then we watched Isabella on a fashion runway! She was beautiful. My mom called and said, "I'm coming to pick you up." Isabella gave me two sticker packs. One of them was an animal pack. One of them was a colorful bow pack. Isabella said, "Goodbye." I said, "Thank you for inviting me." (16003)* Narrative contains an explicit statement of emotion, but does not contain an evaluative statement about the narrative.

2	Must include an evaluative statement about the narrative as a whole Additionally, must include ONE of the following: -Evaluative statement about a portion of the narrative -Explicit statement of emotion reflecting the emotions of the narrator or another character

	-Verb of cognition showing the mental state of the narrator or another character
	Easter is the best holiday. I paint Easter eggs. I went on an Easter egg hunt. I find Easter eggs in the forest. They were pink. ***I feel happy.*** *I eat chocolate bunnies.* ***I love chocolate. Easter is the best holiday.*** *(16001)* While an imperfect narrative, this piece contains an explicit statement of emotion, an evaluative statement about one of the actions in the narrative ("I love chocolate"), and an evaluative statement about the narrative as a whole.

II. IMPLICIT DEMONSTRATION OF MENTAL STATES

0	No instances of indirect or dialogue-based evaluative statements or statements of emotion; graphic representation; or actions representing emotions
	When I was in Honolulu, I saw a stingray and a bunch of fish. I tried to catch some fish, but they are too fast for me. I called my mom, "I see a stingray." When my mom came it was gone. It left. I couldn't find it. Maybe it went to the open sea. The stingray looked harmless. (15003) Although this narrative contains dialogue and makes observations, it does not convey any implicit mental states to the reader

1	Includes at least one instance of ONE type from the following list: -Indirect statements or dialogue -Graphic representation -Actions
	On the very day before Halloween 2014, my friend Ariela invited me to a Halloween party at her school. I went in my witch costume. Ariela and [Name2] also had a witch costume. We all walked to Ariela's school and first we went to a few games. Then we ate pizza, french fries and tacos. Then Ariela asked, "What game should we play next?" Natalie responded excitedly, "The fishy game!" So we went to the "Fishy game." The game seemed popular. There was a LONG line. Once we were in the front of the line, I was up… They said we need to throw a small ball into a jar and suddenly I felt a bit nervous. I went for it. I threw the ball… ***I WON!*** *And I got a…* ***FISH.*** *A golden great fish. I was sooo excited and happy. I named it Bubbles, and guess what? He's alive right now!! And with a friend: Goldy. And we all live happily ever after. (17011)* The capitalization and exclamation point on "I won" demonstrates the student's excitement. While capitalizing "fish" would not necessarily demonstrate excitement in every context, here the student has elaborated by calling it a "golden great fish" and explicitly telling the reader of her excitement; therefore, we can assume the

	capitalization represents her feeling of excitement. The capitalization of "long," on the other hand, does not necessarily show the reader the student's feelings about the line. Because there is no evidence supporting the fact that the student has any feeling towards the long line, we must assume here that its capitalization only represents its magnitude (it was very long). *Once at my house I asked my mom if we could have a dog for a pet. First she said no. Then after a while she said yes because I had proved to her that I could take care of a puppy. Later, me and my mom went to the pet shelter.* ***When we got the shelter I was so surprised that how many animals there were!*** *There were so many cute dogs that I couldn't even choose one! But there was one little puppy that caught my eye. Her name was Cocutut. She was as small as a teacup and she was all white and her eyes were blue. She was the size of my hand. Then we adopted her. (14002)* The use of exclamation points shows the reader the student's surprise *One day I was playing basketball in my play basement while my big brother and sister and her friend were to my house Lily named Adriana. When they were doing that in my garage something terrible happened… I tried to dunk and right before I got in air I twisted my foot. I started to cry really loud. My mom heard me and she* ***raced*** *out of the garage and went upstairs to get me an ice pack. Once I put it on for a little bit it felt better. (16016)* This narrative contains an action by the narrator ("I started to cry really loud"), but it conveys physical pain and not a mental state. However, by telling us that his mother "raced" to him instead of just "went upstairs," he conveys his mother's panic and worry.

2	2+ instances total, including at least one instance from TWO different types from the following list: -Indirect statements or dialogue -Graphic representation -Actions
	You have probably been to Legoland, right? Well, this story takes place in Legoland! And here is how the story goes. *It was the day before my birthday, August 13, 2013. I was going to bed. The next morning… my mom had taped toilet paper to the wall! Then my dad said, "LET'S GO TO LEGOLAND."* ***"YAY!"*** *I said. "There's a van that goes to Legoland!" said my dad. "Put your bathing suits on," said dad. "Letttttttt's GO!"* *We got to Legoland, finally****!*** *We showed our ticket… We're in.* ***YAY!*** *We explored and*

	explored. Then we said, hey, there's a water park. "Can we go to the water park?" I asked. We went in. Then we waited in line for a water activity. Finally we were up! We got our floaty doughnut and… SPLASH!!!!!!! We were in the waaater! We collected Legos on the way to the end. There was a Lego fireman with a hose that sprayed water! ***I said, "AAAAA, THIS IS FUN!"*** *Then sadly it was over. We got off and dried off, and went to go eat! (10003)* The student uses dialogue, indirect representation of emotions, and various written encodings to show emotions, often in combination. Although the narrative contains many instances of written encodings of sound effects, some of these only imitate sound effects without conveying any emotion (e.g., "SPLASH!!!!!!") and do not count towards this feature.

III. COHERENCE

0	0-1 devices of coherence OR Difficult for the reader to understand in terms of sequencing or plot
	Zoom zip, red light crash. "Are you ok mom?" asked Sandra . "Sandra how are you?" yelled mom. "I'm ok." answered Sandra. "Mia are you ok?" I asked. "Yes." "Are you ok Silvia?" yelled my mom. "No!" I answered. My mom pulled over. She got out of the car and she got the iPhone 6t. She took some pictures. We were scared. We asked my mom, "are we going to school?" "No." (15005) Contains no devices of coherence ***When*** *I was in Honolulu, I saw a stingray and a bunch of fish. I tried to catch some fish, but they are too fast for me. I called my mom, "I see a stingray." When my mom came it was gone. It left. I couldn't find it. Maybe it went to the open sea. The stingray looked harmless. (15003)* Contains one device of coherence

1	Use of 2-3 types of devices of coherence. Does not include repetitive use of the same word or phrase. May be missing a device of coherence in an obligatory or anticipated context.

	OR Syntax or punctuation may make sequencing difficult for the reader to understand. This may occur when periods between sentences are omitted, making transitional words ambiguous in their sentence placement. OR May take some effort on the reader's part to understand sequencing or plot. May include 1-2 incomplete or unclear episodes, or episodes that are not clearly connected to each other.
	We were going home. **When** my mom opened the door we went inside my house. My dog wasn't barking. I was [XXX]. My mom was looking for my dog. She told us he was gone. We were so sad. I cried so much. My mom did too. My dad didn't. He was [XXX]. **Next morning** we went to look for my dog. **Then** we went to go get my sister. We told my sister what happened. She also cried too. **Then** the next morning when I was going to school, I told everyone my dog was lost. **After** it was snack. I cried a little. But my friends cheered me up so I could get happy. I was kind of happy. <u>It was time to go home.</u> I went to go to my bed to cry. I saw my sister too. **Then** my mom told me it was ok. **Then** she started to cry. My dad never cries. My dad told us no more crying to make us happy. It didn't really help us. **Then** my sister said can we get two new dogs and puppy? Mom said yes. Contains 4 different devices of coherence (does not count repetitive use of the same word). However, the sentence "It was time to go home" is a sentence in which a transitional device is anticipated or needed, but is lacking. *One day **after** religious school, my parents took me to my friend Mario's birthday party. **Next**, when we got to the movie theater, "Hey Mario," I said. "Come inside to eat." We ate. **Then** we went outside and played What Time is it Mr. Fox and Simon Says. **Later** we watched the movie. It was kind of scary. **Then** I went in Mario's car. **Then** I went to his house **and** helped him open his presents, and **after** we played tennis. My mom said, "It's time to go," so I left. I said to my mom, "Fun, fun, fun. I cant wait to see my family and dog." (17019)* Student uses 5 different devices of coherence. However, despite the use of sequencing words, the timeline of the story is unclear, with the children arriving at the movie theater but doing other activities before the movie is mentioned again.

	*One sunny Friday there was an instrument concert, and I was in it. My grandma came. My brother was in it too. He played saxophone, I played violin. –**Soon** it was time!—I was very excited. We started practicing with our teacher. (We got nervous.) **Soon** we played Radetzky March. It was very fast. So were we. We played other songs like Twinkle Twinkle Little Star, just us. **Then** we listened to the older kids play. It was amazing. **Soon** it was over. We had to go home and sleep. Everyone got flowers but I did not because I was going to get frozen yogurt, more better than flowers, but **the next day** I was going to get frozen yogurt. **The next day** my grandma did not leave! I went on a bike ride with my dad and my brother **and** we got frozen yogurt there **and** also ate it there. I got all chocolate and other yummy toping's. It was very good. I did not finish mine so we put it in the refrigerator. **Then** me, my grandma, and my brother went to go see a movie. The movie was called Cinderella. It was another version of Cinderella. It was a good movie, really good. (13007)* Student uses 4 different devices of coherence, but the events of the story are not as explicit as they should be—for example, the reader is not clear when the concert started, or when the family went home after the bike ride. *[excerpt from longer story] …**After** we ate breakfast my dad started up the engine on the car. "Vroom vroom" the car was going. **On our way to Legoland** me and my sister were bored in the car. To make us less bored was to look at things outside, play spelling games, play games, play mental games and read books. But still it was fun with my younger sister and my funny mom. Finally we looked out the window. We saw Lego figures. My sister yelled, "Mommy! Mommy! Mommy! Look there's Lego people outside" she yelled. "That means we're almost there" my mom said… (17007)* Despite a number of devices of coherence throughout the narrative, the student misses one in an anticipated context. "Finally we looked out the window" does not make sense on its own; "Finally we looked out the window **and** we saw Lego figures" would appropriately link these two ideas, making the word "finally" logical here.

2	Use of 4+ devices of coherence. Does not include repetitive use of the same word or phrase. Is not missing any devices of coherence in obligatory or anticipated context that disrupts the sequence or logic of the narrative. AND Logical sequencing of all ideas. Plot is easy for the reader to understand.
	*Once at my house I asked my mom if we could have a dog for a pet. **First** she said no. **Then after a while** she said yes because I had proved to her that I could take care of a puppy. **Later**, me and my mom went to the pet shelter. **When** we got the shelter I was so*

	surprised that how many animals there were! There were so many cute dogs that I couldn't even choose one! But there was one little puppy that caught my eye. Her name was Cocutut. She was as small as a teacup and she was all white and her eyes were blue. She was the size of my hand. Then we adopted her. (14002) Narrative contains a variety of coherent devices, and the plot is easy for the reader to understand.
	I broke my arm on the stairs **when** I fell. Immediately I went to the hospital, got a cast. **At first** it was boring watching tv, **then**… a three foot pile of presents arrived. My dad, sister, and my brother. He gave me a picture, my sister gave me a vine, my dad gave me a card. **The next day** I got up **and** drank some milk **but** I spilled milk on my cast. At 8:30 I got my weekly blood test. I walked a little **til** I got there. I sat down. (17015) Narrative contains a variety of coherent devices, and the plot is easy for the reader to understand.

IV. REFERENTIAL LANGUAGE

0	Contains 2+ instances of the following (this could be two instances of one kind of mistake, or one of each): -improperly tied references in obligatory and anticipated contexts -improper uses of the definite article that violate the "given + new" Repeated use of the same pronoun—when the pronoun is clearly referring to the same entity each time, despite that entity not having been properly identified to the reader—counts as only one instance. This includes both the subjective and objective use of the pronoun: for example, use of *we* and *us*, when clearly referring to the same (ambiguous) group of people, counts as only one improperly tied reference. OR Contains any deictic language that "points" to the student's presence in time or space without previously setting this up for the reader
	*We were going home. When my mom opened **the** door we went inside **my** house. **My** dog wasn't barking. I was [XXX]. My mom was looking for my dog. **She** told us **he** was gone. We were so sad. I cried so much. My mom did too. My dad didn't. **He** was [XXX]. Next morning **we** went to look for my dog. Then **we** went to go get my sister. **We** told my sister what happened. **She** also cried too. Then the next morning when I was going to school, I told everyone my dog was lost. After it was snack. I cried a little. But my friends cheered me up so I could get happy. I was kind of happy. It was time to go*

	*home. I went to go to my bed to cry. I saw my sister too. Then my mom told me it was ok. Then **she** started to cry. My dad never cries. My dad told **us** no more crying to make **us** happy. It didn't really help **us**. Then my sister said can **we** get two new dogs and puppy? Mom said yes. (13002)* This explanation begins with "we," but the people involved have not been identified to the reader. From the next sentence, the reader can assume that "we" included the student's mother. However, a few sentences later, the mother "told us he was gone," referring to a group that did not include the student's mother. These pronouns therefore do not refer to the same group, and count as two separate instances. However, in the sequence "She told us he was gone. We were so sad," *us* and *we* clearly refer to the same group of people, and count as only one instance of an ambiguously tied pronoun. *I was going! I was going! I was going on **the** slide. Down that huge slide right now? I do not want to. The next thing I know I was sliding down **the** slide. I went on **a** turn and then down. I was screaming! my head off. When I saw **a** fake shark I screamed. **The** wind was blowing my hair. It was **a** sunny day and the were, no one was **there**. I was scared [ting?] to lay down and closed my eyes until it was midnight dark and there was NOTHING I could do about it… I did not know what was happening. So I just rode **it**. I did **a** sharp turn. And almost fall off. **The** slid was so scary. I said to my self I am never riding **that** again. I splashed into water and that was it. (16002)* The deictic *that* points the reader towards something in the writer's physical "here and now." In addition, the reader is not clear as to what the student is referring to when he says "there was nothing I could do about *it*."

1	Contains 1 instance of *either* of the following: -improperly tied references in obligatory and anticipated contexts -improper uses of the definite article that violate the "given + new" Repeated use of the same pronoun—when the pronoun is clearly referring to the same entity each time, despite that entity not having been properly identified to the reader—counts as only one instance. This includes both the subjective and objective use of the pronoun: for example, use of *we* and *us*, when clearly referring to the same (ambiguous) group of people, counts as only one improperly tied reference.
	*One day I was playing basketball in **my** play basement while my big brother and sister and her friend were to my house Lily named Adriana. When they were doing that in my garage something terrible happened… I tried to dunk and right before I got in air I twisted my foot. I started to cry really loud. My mom heard me and she raced out of **the** garage and went upstairs to get me **an** ice pack. Once I put **it** on for a little bit it felt better. (16016)*

	That is used as a demonstrative pronoun, but the noun phrase it is intended to replace is unclear to the reader.

2	All references are properly tied in obligatory and anticipated AND All articles are used appropriately
	*I was with my mom and my two brothers. **We** were in Pet Co where **the** sun was shining down. My mom was deciding if **we** will get a puppy or not. (**We** came to see **a** puppy and decide if **we** wanted **it**.) (**That** puppy was Topaz.) By **the** look on my mom's face she was NOT going to get **him**. (Getting **a** puppy was my dream.) Then Topaz looked up at my mom with cute little juicy eyes that changed my mom's face from almost no to **a** full yes. We got Topaz and **the** stuff **he** need. My dream came true. (14007)* All references are properly tied, and all articles are used properly. Although the student does refer to the puppy as "it" and "he" interchangeably, the reader is clear that these pronouns refer to the dog.

V. IDENTIFICATION OF CHARACTERS

0	One or more relationships between characters are unclear. OR 2 or more relationships are not explicitly defined, but story context allows the reader to make an assumption as to whether the character is a friend, sibling, adult, or other. "Relationships" can be extended to include the identification of other elements of the story functioning as characters driving the plot (for example, video game characters)
	I was playing Skylanders with my friend on a Kaos challenge, Level 10. I was Wollop, Lob-star and Zoo Lou. My friend was Wildfire (who is mine) and Tread Head (who is also mine.) The battle started… A Crancanstein (crank-en-stein) came out first. I smashed it with my hammers. [Name] burned him with his fire chains. We defeated him. "Yes, yes, yes." "Hooray hooray." (15004) The game and characters are not identified to the reader.

1	One character relationship is not explicitly identified, but story context allows the reader to make an assumption as to whether the character is a friend, sibling, adult, or other.

	"Relationship" can be extended to include the identification of other elements of the story functioning as characters driving the plot (for example, video game characters) OR Narrative contains no additional characters other than the narrator
	One day I had a sleepover with Lydia. First we were planting in the creek. Then I went to the movie theater to watch… ¡Home! with Lydia's mom. After, my baby-sitter called Lydia. She made pasta. Me and Lydia were watching a movie. Then we talked, laughed, and played. "Ha, ha," said Lydia. Then I fell asleep. Then she did. Next morning we ate breakfast. After she left. (17005) Although Lydia's relationship with the narrator is not defined, the story context allows the reader to assume that the two are friends.

2	People are clearly identified and relationships made clear. AND Other elements of the story functioning as characters driving the plot (for example, video game characters) are clearly explained or identified.
	One day I went to Connecticut and saw my best friends who moved. I hugged all of them. My family went inside their house, and me and ***my friend Cate*** *played spy. It was so fun!! In a blink of an eye we were on our scooters going around the driveway. Then we went on a hike. There was lake and the water was frozen!!!! IT WAS SO COLD!! When we got back* ***the oldest friend*** *babysat us while the parents went on a walk. In a blink of a eye we were on the way home. We rode a tiny plane for one hour to W.DC/Washington D.C., then a regular plane back to LA. I was SO SAD. When we got home I said, "I really, really miss our friends." (17006)* Not all characters are named, but for those who are, their relationship with the narrator is explicitly identified. *May 9th 2015. It's my first communion. I woke up early in the morning. I got to church with* ***my grandparents****. Mass had started, they had been calling our names. I was last. After church we went to my house to have a party. After we came* ***my friend Ana*** *came with* ***my other friend Marina****, and* ***Jose who is Marina's brother*** *and* ***Lucrecia, Marina's sister****, and* ***Marina's cousins Emilia and Santiago****. After we played a little* ***the next guests came. Their names were Isabella and Diego****. We played with them too. Then more guests came,* ***my nanny and her husband, her mom and her daughter****.* ***Last guest came, his name is Luis.*** *They all gave me presents. After that I counted how*

	much money I got and I got… ~$211~ (10004) The author makes an effort to clearly identify characters as friends, family members, or at least guests, as opposed to simply listing names (e.g., "After we played a little, Isabella and Diego came" would leave the reader confused as to whether she should understand who Isabella and Diego were).

VI. IDENTIFICATION OF SETTING AND SURROUNDINGS

0	Spatial setting is not identified Certain characters may be missing in such a way that leaves the reader confused and wondering about their presence, or where the story does not make logical sense when the character is excluded OR The location of other characters is integral to the story's plot and is excluded, leaving the reader unclear as to the location or proximity of these characters.
	I was going! I was going! I was going on the slide. Down that huge slide right now? I do not want to. The next thing I know I was sliding down the slide. I went on a turn and then down. I was screaming! my head off. When I saw a fake shark I screamed. The wind was blowing my hair. It was a sunny day and the were, no one was there. I was scared [ting?] to lay down and closed my eyes until it was midnight dark and there was NOTHING I could do about it… I did not know what was happening. So I just rode it. I did a sharp turn. And almost fall off. The slid was so scary. I said to my self I am never riding that again. I splashed into water and that was it. (16002) Spatial setting is not identified *I broke my arm on the stairs when I fell. Immediately I went to the hospital, got a cast. At first it was boring watching tv, then… a three foot pile of presents arrived. My dad, sister, and my brother. He gave me a picture, my sister gave me a vine, my dad gave me a card. The next day I got up and drank some milk but I spilled milk on my cast. At 8:30 I got my weekly blood test. I walked a little til I got there. I sat down. (17015)* The reader is not clear where the student broke his arm, or where the main event of the story – his recuperation and receiving presents – takes place

1	Spatial setting is clearly identified, but temporal setting is not identified or alluded to AND

	The location or proximity of other characters, when integral to the story's plot, is included The amount of detail in the spatial setting may vary, but the reader must be sure of the student's physical surroundings on a scale that is pertinent to the story. For example, talking about going to a friend's house does not require specification that the house is located in Los Angeles. However, talking about ice skating on a frozen pond needs further specification of the city/region where this occurred, since it is clearly outside of where the student and teacher reside. OR Certain characters are missing in such a way that leaves the reader confused and wondering about their presence, or where the story does not make logical sense when the character is excluded
	Once at my house I asked my mom if we could have a dog for a pet. First she said no. Then after a while she said yes because I had proved to her that I could take care of a puppy. Later, me and my mom went to the pet shelter. When we got the shelter I was so surprised that how many animals there were! There were so many cute dogs that I couldn't even choose one! But there was one little puppy that caught my eye. Her name was Cocutut. She was as small as a teacup and she was all white and her eyes were blue. She was the size of my hand. Then we adopted her. (14002) Spatial setting is clearly identified, but temporal setting is not identified *I arrived at the fair and I felt so happy! I found a tent that had a sign that said, "Toss a ball and lands on a color, you get a prize." So I tried and on my last ball… I got the ball on the color red. I was so happy. I look at the prizes and mumbled, "I want the fat penguin." I was sooooooooo HAPPY!!!! I felt like I was the happiest girl in the… WORLD. I hugged my mom. She hugged me. I could feel how fuzzy on the penguin. My mom asked, "What is his name?" I think Pangwino." Cool. Then I ran to Grandma and yelled, "Look what I won. Look, look." She said, "Awesome." (16017)* The reader is told that the story takes place at a fair, but temporal setting is not identified *One sunny Sunday morning me and my sister woke up. We got out of bed and brushed our teeth and changed our pajamas to our clothes. My dad woke up before we did. He called us for breakfast. When we came downstairs we ate our breakfast. When we were eating my dad said, "Do you want to go to Legoland because it's summer vacation?" We all said yes. After we ate breakfast my dad started up the engine on the car.*

	"Vroom vroom" the car was going. On our way to Legoland me and my sister were bored in the car. To make us less bored was to look at things outside, play spelling games, play games, play mental games and read books. But still it was fun with my younger sister and my funny mom. [story continues] (17007) The reader is left confused by the absence of the student's mother, who shows up abruptly later in the story. Note that the reader should not impose her own familial assumptions (i.e., that the student has two parents, etc) unless given information otherwise that suggests the family unit is not being properly represented.

2	Spatial setting is clearly identified, and temporal setting is identified or alluded to An aesthetic expression such as "one day" does not allude to temporal setting, but some additional degree of specificity, such as "one weekend," does attempt to explain some pertinent information to the reader AND The reader is not left feeling that any necessary characters are missing from the story Note that this does not mean that every individual in the story—store clerks, every student in the class, etc—must be explicitly mentioned, but characters cannot be excluded to the extent that they make the story confusing.
	On the very day before Halloween 2014, my friend Ariela invited me to a Halloween party at her school. I went in my witch costume. Ariela and Natalie also had a witch costume. We all walked to Ariela's school and first we went to a few games. Then we ate pizza, french fries and tacos. Then Ariela asked, "What game should we play next?" Natalie responded excitedly, "The fishy game!" So we went to the "Fishy game." The game seemed popular. There was a LONG line. Once we were in the front of the line, I was up… They said we need to throw a small ball into a jar and suddenly I felt a bit nervous. I went for it. I threw the ball… I WON! And I got a… FISH. A golden great fish. I was sooo excited and happy. I named it Bubbles, and guess what? He's alive right now!! And with a friend: Goldy. And we all live happily ever after. (17011) Both temporal and spatial setting are clearly identified

Appendix B: Teacher Interview Protocol

Personal information

- Can you briefly take me through the path you took from college to teaching here?
- Have you taught grades other than this one?

Writing instruction

- How does writing instruction fit into your overall literacy framework? (In other words, how does it intersect with reading instruction?)
- During writing instruction, what are the key aspects you focus on?
- What challenges do your students face the most in their writing?

Perspective taking

- How much do you value the idea of talking about the perspective of others in the classroom? This does not have to be specific to writing lessons.
- Do you spend time in class explicitly talking about considering perspectives of other people? This does not have to be in writing lessons.
    - (If yes): How much/how often?
- (If the answer to the above question was yes): In addition to explicitly *addressing* perspective-taking in class, have you ever taught a classroom *lesson* that focuses on considering other peoples' perspectives and viewpoints?
- Do you spend time specifically in writing lessons talking about considering the perspectives of other people?
    - (If yes): How much/how often?

Audience awareness

- How would you define "audience awareness" in writing?
- Is it a focus for you in writing instruction?
- Do you spend time in writing class explicitly talking about audience awareness?
    - (If yes): How much/how often?
    - (If yes): What kind of language do you use when you talk about this with students in writing instruction?
- When children first produce their own writing in class—that is, their first drafts without your feedback—to what extent do you think they provide sufficient expository detail?
    - How much would do you need to remind students to add this?
    - How much does this vary by student?

For LTL teachers

- Do you think being in the LTL program affects students' understanding of how other people perceive things?
- What kind of challenges do you think students face the most when writing in their non-native language?

Showing student work (bring de-identified transcript of student work to show teacher):

- If you ignore grammatical and mechanical errors, what kind of feedback would you give a student on this work? Assume time is not a factor and that the student will revise the work and compose new drafts.
- Imagine this story were being read by a reader who is not known to the student. What are your thoughts on how well the student has been able to present this story to the reader?
    - What have they done well? What critical feedback would you suggest?
    - In terms of the feedback you have suggested, is this something you would realistically be able to approach or focus on in your classroom instruction?

Appendix C: Qualitative Codebook

Set/theme	Code	Description	Example
Open codes			
Story structure	"Illustrative" intro	Introduction does not begin immediately with exposition/orientation, but takes the reader directly into the action using illustrative/creative language (often sensory language) May use sound effects, onomatopoeia, etc.	**Zoom zip, red light crash.** "Are you ok mom?" asked Sandra. (15055)
	Orientation – who	Contains exposition/orientation that introduces necessary characters within the first sentence or two of the narrative	I was playing Skylanders with my friend on a Kaos challenge, Level 10. (15004)
	Orientation – what	Contains exposition/orientation that introduces the start of the action or story plot within the first sentence or two of the narrative	One sunny Friday there was an instrument concert, and I was in it. (13007)
	Orientation – where	Contains exposition/orientation that describes the spatial setting within the first sentence or two of the narrative	One day I went to Connecticut and saw my best friends who moved. (17006)
	Orientation – when	Contains exposition/orientation that describes the temporal setting within the first sentence or two of the narrative	One Mother's Day I woke up. (17003)
	Complicating action anywhere	Narrative contains a "complicating action," i.e., an action that introduces an obstacle, hurdle, or conflict that requires resolution	I went into the ring. At the end of me showing I fell off. Boom!!! (14008)
	Complicating action in first 1/3	The complicating action (if one exists in the narrative) occurs in the first 1/3 of the story The reader should spend the majority of the narrative in "action" as the narrator or other characters work to resolve the complication	Towards the end of the In-N-Out party at school, my mom said "we're going to her class." I thought it was my class but it was my sister's class, so they went without me knowing (little sister), so I did not know where she was. (17018)
	Evaluation	Includes statements that reflect the importance of the narrative as a whole, or its impact/emotional effect on the writer	I was SO SAD. When we got home I said, "I really, really miss our friends." (17006)

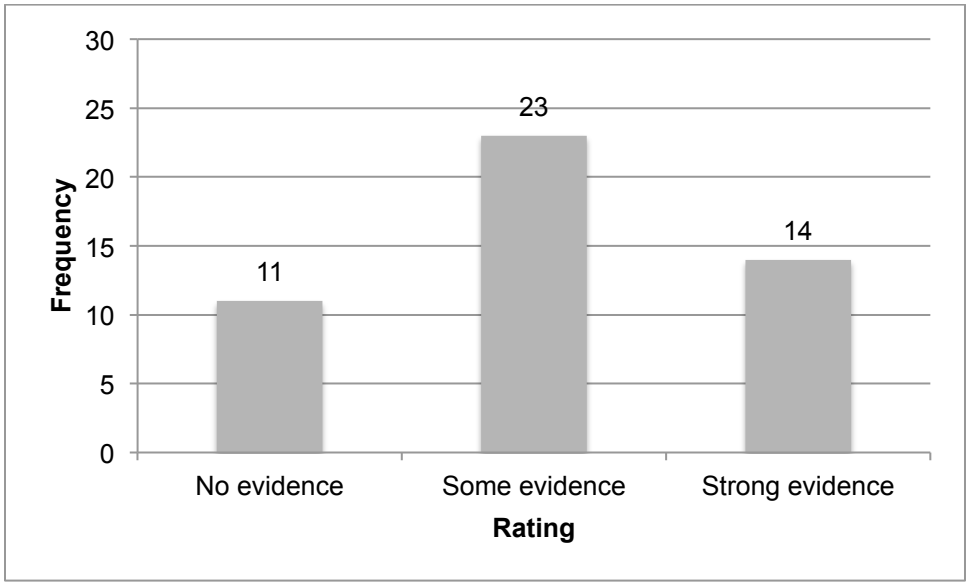
		i.e., Answers the question "so what?" in regards to why the writer has chosen to tell the story Can occur through dialogue	
	Resolution	Brings the action to a close. The narrative has a resolution if it does not simply end on one of a series of actions. It contains a statement that indicates the narrative is now over. Can still occur even if there is no complicating action.	It could do a lot of tricks and we had to feed him dead fish. It was creepy but fun. "Thank you!" I whispered. Off I went. (16006)
	Coda	Provides a link from the narrative back to the present. The coda reminds the reader that they have been listening to a story, but they are now being returned from that story. Can be in the form of a storytelling device, e.g., "And they lived happily ever after."	That's my story of my jujitsu belt. The end (16015) And we all live happily ever after. (17011)
Other characters	Contains other characters	Narrative contains characters other than the child/writer	One day after religious school, my parents took me to my friend Mario's birthday party. (17019)
	Other character thoughts	3rd person characters explicitly shown to have thoughts	None
	Other character dialogue	3rd person characters have dialogue (direct quotes)	After the movie I said "I want to see it again" but **my mom said "we can't see it again"** (17003)
	Other character mental states conveyed through action	3rd-person implicit mental states (including emotions) demonstrated through action Examples would be crying, screaming, laughing	When I came out of the ring. **My mom was crying.** (14008)
Emotions – explicit	Explicit emotion – self	Explicit statements that tell the emotion of the child/writer Often uses words like "I felt…" "I was…" etc, but does not necessarily need to. The description should be one of emotion/affect and refer directly to the individual, not to a situation or event.	**I was excited** to play with the dolphins… Actually it was my first time I was going to meet them. **I felt nervous, scared, happy,** and of course felt a lot of love from that dolphin. (16006)

	Explicit emotion – other	Explicit statements that tell the emotion of a character other than the child/writer Often uses words like "He felt…" "She was…" etc, but does not necessarily need to. The description should be one of emotion/affect and refer directly to the individual(s), not to a situation or event. Does NOT include instances where the writer describes the emotions of multiple characters *including herself* (e.g., "we")	My whole family was proud of me. (16015)
	Explicit evaluative statement/ description of affect	Explicit statements that contain emotional or affective vocabulary referring to the situation or event	I went and there was really! tall mountains. And it was so so fun. (17020) Then we listened to the older kids play. It was amazing. (13007)
	"We" statements	Explicit statements that express emotions jointly shared between the writer and another character(s) Can use the pronoun "we," but does not have to – can also name characters directly (e.g., "Me and my sister")	Me and my sister were bored. (17007) We were scared. (15005)
	Justification	An explanation for an emotional, affective, or evaluative statement that tells the reader why the writer felt the way she did, or why the situation had the affective impact that it did. Often contains "because" or another causal connector, but can occur without these connectors if the link between the emotion/affect and the justification is clear to the reader.	It got a little boring because I had to go on baby rides that my sister likes. (17007) I was glad because I got my gray belt. (16015) Actually it was my first time I was going to meet them. I felt nervous, scared, happy… (16006)
Emotions – implicit	Implicit emotion – self	Emotions of the child/writer expressed through dialogue or action. Emotions are clear, but the statement is not directed *at* the	**I was not crying.** I jumped up and said **booya!** (14008) I said to my mom, "Fun, fun, fun. I cant wait to see

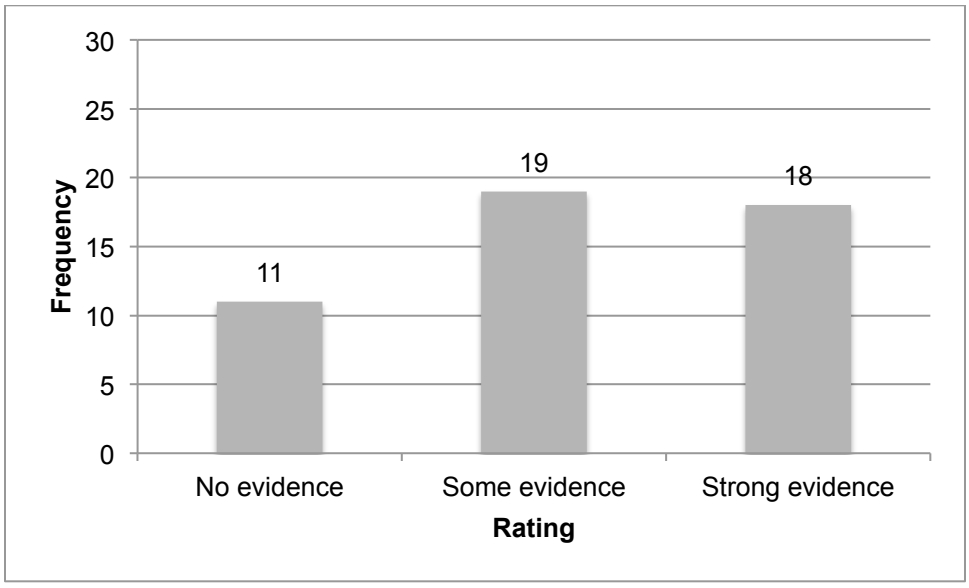
		reader. E.g., for dialogue, the statement would be directed at another character but would still express the emotion. Dialogue can contain explicit emotional words (e.g., "I said, 'I'm lonely'"), but does not have to (e.g., "I said, 'hooray!'")	my family and dog." (17019)
	Implicit emotion – other	Emotions of a 3rd person character other than the child/writer expressed through dialogue or action. Emotions are clear, but the statement is not directed *at* the reader. E.g., for dialogue, the statement would be directed at another character but would still express the emotion. Dialogue can contain explicit emotional words (e.g., "He said, 'I'm lonely'"), but does not have to (e.g., "She said, 'hooray!'") Does NOT include instances where the writer describes the emotions of multiple characters *including herself* (e.g., "we")	Natalie responded excitedly, "The fishy game!" (17011)
	Implicit evaluative statement/ description of affect	Writer uses vocabulary to indicate emotions or affect. This vocabulary describes the emotions/affect of the scene or event and does not directly refer to an individual. Does not have to be strictly emotional vocabulary – for example, can use adverbs to indicate impatience, relief, etc surrounding an event.	On our way to Legoland me and my sister were bored in the car… **Finally** we looked out the window. We saw Lego figures. (17007)
	Graphic encoding conveying emotions	Use of elongated words, capitalization, and exclamation points allowing the reader to "hear" a tone of excitement in writing.	We saw who was pitching. It was Clayton Kershaw! (14010) I WON! And I got a… FISH. A golden great fish. I was sooo excited and happy. (17011)

Further deductive/axial codes			
Other mental states	3rd person mental states	Writer explicitly mentions the thoughts, beliefs, or knowledge of another character Does NOT include other characters' emotions	None
Dialogue	Quoted speech – self	Direct quotes expressing dialogue; the writer (narrator) is the speaker	"I want to go on the dragon roller coaster" I said. (17007)
	Quoted speech – other	Direct quotes expressing dialogue; a 3rd person (not the writer/narrator) is the speaker	"Are you ok mom?" asked Sandra. "Sandra how are you?" yelled mom. "I'm ok." answered Sandra. (15005)
	Reported speech – self	Indirect quotes expressing that speech has occurred; the writer (narrator) is the speaker	Once at my house I asked my mom if we could have a dog for a pet. (14002)
	Reported speech – other	Indirect quotes expressing that speech has occurred; a 3rd person (not the writer/narrator) is the speaker	When we saw the dolphin the owner told us it had a Hawaiian name. (16006)
Addressing mental models	Direct reader appeal	The writer directly addresses the reader	One Monday when I had a fever **I will tell you all about it.** (17012)
	Corrections and clarifications	The writer provides additional information **after the fact** indicating that they realized that (1) the reader would need more information, or (2) they wanted to correct something that had previously been said. Not all information in parentheses count towards this.	…my mom said "we're going to her class." I thought it was my class but it was my sister's class, so they went without me knowing **(little sister),** so I did not know where she was. (17018)
	Addressing own mental misconceptions	Writer demonstrates her own thought process to be incorrect, i.e., not matching what is actually true in reality. Usually results in a misunderstanding or mistake, explained by first telling what she thought, then telling what the truth was, and realizing her mistake	I was jumping when I thought I saw a rock just above the surface. I jumped, and splash!!! I landed in the water, because the rock was in the pool! (16005)

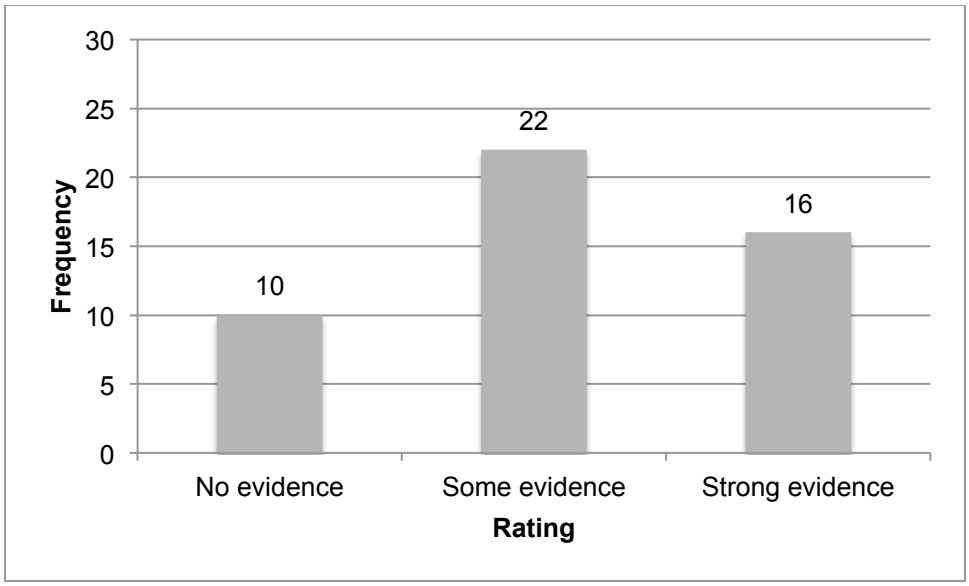
Appendix D: Distribution of Ratings for Features Included in Quantitative Coding Protocol



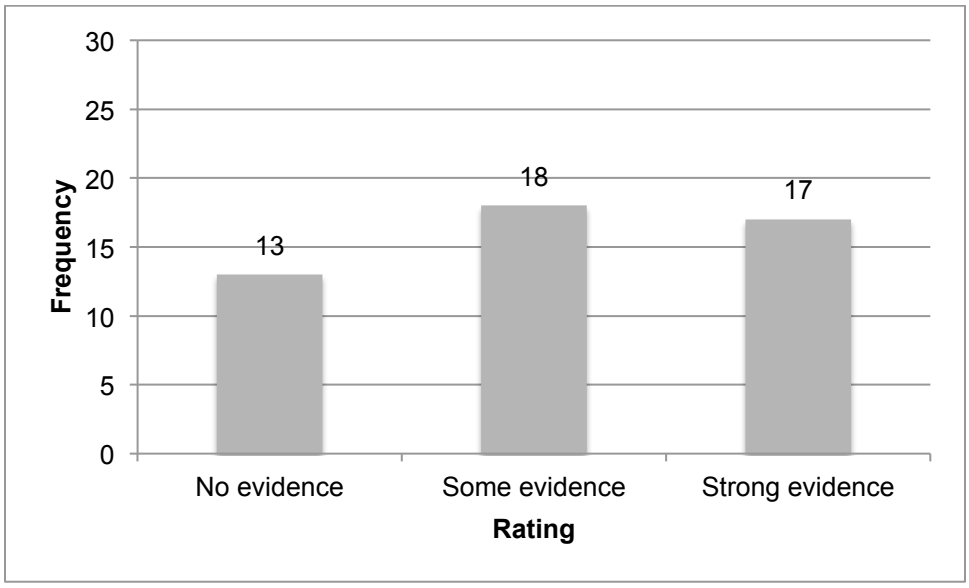
Rating frequency: Explicit labeling of mental states



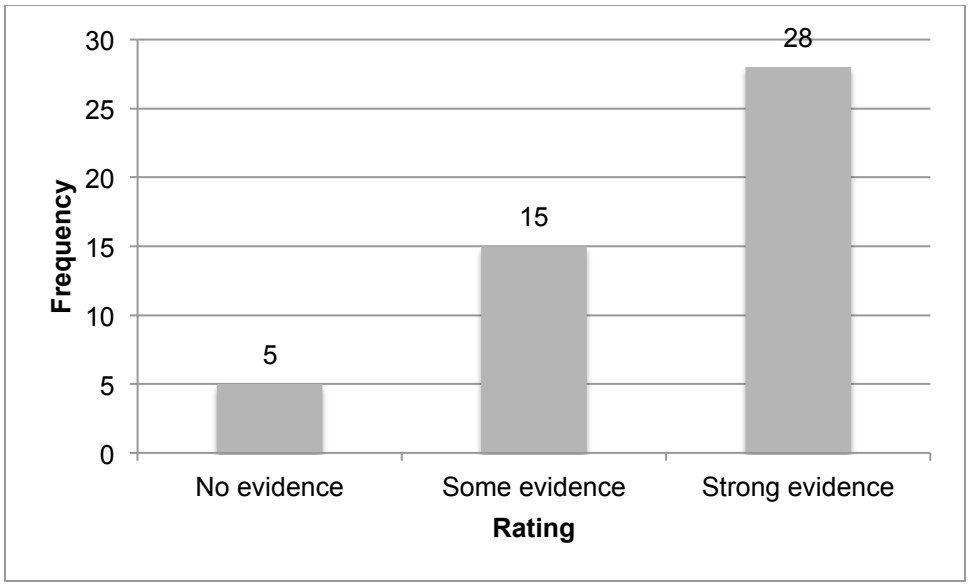
Rating frequency: Implicit demonstration of mental states



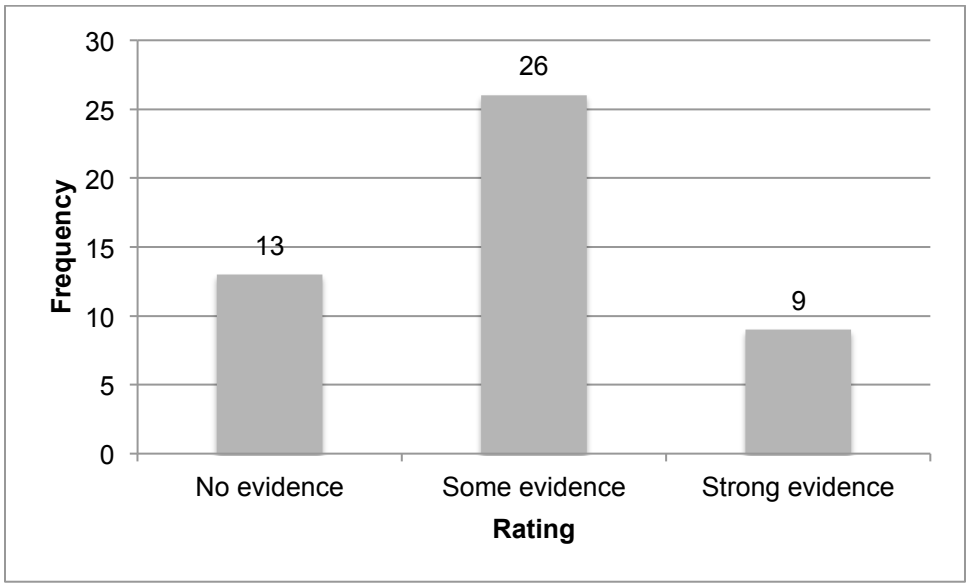
Rating frequency: Coherence



Rating frequency: Referential language



Rating frequency: Identification of characters



Rating frequency: Identification of setting and surroundings

Appendix E: Effect of Grouping on Audience Awareness Scores, With and Without Controlling for Basic Writing Skills

Effect of Grouping on Audience Awareness Scores

	CPT Group			Controlling for writing skills		Not controlling for writing skills	
	No evidence	Non-naturalized	Naturalized				
Feature	*M* *(SD)*	*M* *(SD)*	*M* *(SD)*	*F*	*p*	*F*	*p*
Overall AA	.100 (.947)	.105 (.667)	.016 (1.109)	0.609	.613	0.040	.961
Explicit Mental	.923 (.744)	1.167 (.753)	1.250 (.683)	0.718	.547	1.077	.349
Implicit Mental	1.115 (.816)	1.000 (.633)	1.250 (.775)	0.330	.804	0.265	.769
Coherence	1.154 (.732)	1.167 (.753)	1.063 (.772)	0.326	.807	0.085	.919
Ref. Language	1.000 (.849)	1.167 (.753)	1.188 (.750)	0.392	.759	0.304	.739
Characters	1.538 (.647)	1.333 (.516)	1.438 (.814)	0.194	.900	0.256	.776
Setting	.923 (.688)	1.167 (.408)	.813 (.750)	0.975	.413	0.586	.561

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