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The Ability of Six Children with Language Impairment to Generate Stories from Pictured Stimuli: A Pilot Study

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ABSTRACT

The Ability of Six Children with Language Impairment to Generate Stories
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Narrative production and comprehension is a difficult task for children with language impairment (LI). Their stories are typically shorter and contain more grammatical errors than the stories of typically developing age-matched peers. This pilot study describes the abilities of six children with LI to produce stories from pictured stimuli. Stories were elicited from each child during a 10-week period. Stimulus pictures and coding procedures from the Edmonton Narrative Norms Instrument were employed to analyze the participants' story grammar (SG). Eight SG elements were assessed including character introduction, setting, initiating event (IE), internal response (IR), internal plan (IP), attempt, and outcome. The children varied highly in their production of SG elements. The SG elements that described the internal states, emotions, and motivations of the characters were the most difficult for all participants.

ACKNOWLEDGMENTS

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DESCRIPTION OF THESIS STRUCTURE

This thesis, *The Ability of Six Children with Language Impairment to Generate Stories from Pictured Stimuli: A Pilot Study*, is part of a larger research study and is presented in journal article format. This format follows the updated requirements for thesis submission. This work may be included in future research in part or whole where the author is listed as a coauthor. Appendix A includes an annotated bibliography. Appendix B includes the Edmonton Narrative Norms Instrument story grammar scoring sheets.

Introduction

"We are a storying animal; we make sense of things commonly in story forms; ours is a largely story-shaped world" (Egan, 2012, pp. 96-97). Stories are complex narratives that require various levels of knowledge and understanding. Shapiro and Hudson (1991) concluded that, "the seemingly simple task of telling a make-believe story actually involves the coordination of a variety of knowledge structures and linguistic abilities" (p. 971). Areas of knowledge required for creating a story include world knowledge, knowledge of specific events, memories, knowledge of story structure, linguistic knowledge, and knowledge about people and social interactions (Colozzo, Gillam, Wood, Schnell, & Johnston, 2011; Hudson & Shapiro, 1991). The ability to understand and manipulate these different areas of knowledge to create a cohesive and organized story requires focused coordination that can be demanding for some children.

The task of story organization can be described in various ways. Shapiro and Hudson (1991) described an organized narrative as one that must include both cohesion and coherence. Coherence refers to the child's ability to organize a sequence of events into an understandable story. Cohesion refers to the child's ability to connect sentences and ideas within the story through linguistic devices (Shapiro & Hudson, 1991). When considering these two aspects of an organized narrative in combination with the variety of knowledge areas required to create, understand, and produce a narrative, the task of telling a story is complex. Even though this task is complex, it is used in a variety of communicative contexts.

Story Narratives in Academics

Story narratives are useful tools in academics and some argue that they are an integral part of academic success (Lyle, 2000). Story narratives are used by teachers in school to describe events, to teach and display academic knowledge, and to improve language skills. Story

narratives are incorporated into many aspects of academics and therefore play a significant role in the academic experience of children at various ages and grades (Ukrainetz, 2014). Children need to both understand and produce narratives to participate fully in the classroom culture (Chamberlain, 2014; Davies, Shanks, & Davies, 2004). In school, children are required to produce a structured, orderly, and topic-centered story narrative (Ukrainetz, 2014). Producing a story like this can be a difficult task for those with language difficulties (Botting, 2002; Colozzo et al., 2011; Schneider, Hayward, & Dubé, 2006). Considering the importance of story narratives in classroom activities, it is useful to review developmental patterns in typical children as well as in children with language impairment (LI).

Story Narrative Development in Typically Developing Children

Typically developing children begin to create story narratives at about three years of age (Botvin & Sutton-Smith, 1977). The simple narratives produced at this age do not revolve around a problem or solution, but rather are a string of events and facts lacking organization or relationships (Botvin & Sutton-Smith, 1977; Ukrainetz, 2014). Between the ages of four and five, children begin to show an understanding of story progression, and their narratives increase in complexity. They begin to organize statements and ideas around a conflict and implement a basic story structure (Applebee, 1978; Botvin & Sutton-Smith, 1977; Shapiro & Hudson, 1991). About the age of six, children expand aspects of the progression from point A to point B within a story, and complexity increases further. Children also begin to demonstrate connections within the story structure. At this point, they describe initiating actions, refer to characters' goals, and attempt to develop a plot. However, the development of a plot is often unsuccessful (Botvin & Sutton-Smith, 1977). At about age seven, children begin to include multiple events and episodes within their stories (Applebee, 1978; Shapiro & Hudson, 1991). A fully coherent and cohesive

complex story with multiple elements and episodes does not fully develop until the age of eleven or twelve (Applebee, 1978; Botvin & Sutton-Smith, 1977).

The ability to tell organized stories is an important skill that develops over time. Through stories, children can relate information in a fun and engaging manner. The ability to tell a story can increase their confidence (Davies et al., 2004), enhance their ability to understand others and make meaning of cultural events and experiences (Lyle, 2000), and improve their overall communicative relationships. As a child develops the ability to tell a story, this narrative form becomes an integral part of communication.

Story Narratives in Children with Language Impairment

As previously explained, story generation can be a difficult language task that requires multiple language skills. Children with LI typically have more difficulty producing story narratives than do their age-matched peers (Colozzo et al., 2011). For example, children with LI tend to produce narratives that have reduced story grammar (Colozzo et al., 2011; Schneider et al., 2006), shorter story lengths (Botting, 2002; Colozzo et al., 2011), a higher number of syntactic errors (Norbury & Bishop, 2003), and reduced structural complexity and cohesion (Ukrainetz & Spencer, 2014). This results in poorly organized stories that may lack both quality and quantity of information.

Colozzo et al. (2011) compared the form and content of story narratives produced by children with specific language impairment (SLI) and typically developing age-matched children. The results of this study demonstrated that children with SLI had difficulty with multiple aspects of producing narratives as compared to their age-matched peers. Children with SLI tended to show two distinct trends when producing narratives. Their stories were grammatically incorrect with sufficient story content or they were grammatically correct with

reduced story content. Ukrainetz and Spencer (2014) explained this outcome by stating, "A marker for children with language impairment is an uneven profile within narratives" (p. 161-162).

The difficulty that children with LI often demonstrate in story narratives may reflect their ability to communicate across various contexts. Thus, producing story narratives can constitute a useful assessment task.

Story Narratives as a Tool for Assessment

Story narratives are an excellent source of information when studying child language as they provide a wealth of information regarding various aspects of language. Story narratives provide a real-life context that reflects everyday language more than an assessment focused on specific aspects of language through questions and answers (Schneider et al., 2006). In reference to story narratives Botting (2002) stated, "Narrative ability is one of the most interesting and ecologically valid ways in which to measure communicative competence both in normal populations and in clinical groups, since narratives form the basis of many childhood speech acts" (p. 1-2). Story narratives allow for children to be creative with their language just as they are in day-to-day communication. No specific answer is required when asked to produce a story, thus children can communicate in a more natural way. Information can be gleaned from a story narratives describing children's "linguistic, cognitive, and social abilities" (Norbury & Bishop, 2003, p. 288). Story retell is more demanding on the language system than word or sentence level tasks and can therefore expose weaknesses that may not be seen at those levels (Ukrainetz & Spencer, 2014).

Story generation tasks demonstrate a child's ability to formulate a cohesive narrative rather than to recall information produced by someone else (Schneider et al., 2006). There are

multiple ways to elicit story narratives. One commonly used method consists of asking children to generate a story based on a sequence of pictures. Story generation tasks involving pictures provide children with support in the creation of a narrative without a specific narrative example to copy or reproduce. This allows for a supportive story environment in which the child can produce an original story based on sequential pictures (Shapiro & Hudson 1991). This type of story production requires focus and a variety of language skills in a naturalistic context that provides a significant amount of support. Botting (2002) argues that "the generation of stories from pictures" is an excellent way to "provide an ideal mixture of structured but imaginative communication" (p. 16).

Types of Narrative Analysis

In order to capitalize on the power of story narratives to display a variety of communicative skills, researchers have employed various types of narrative analyses to describe and study children's stories. These systems can be divided into microstructure analyses and macrostructure analyses.

Microstructure a**nalysis**. Microstructure analyses of narratives focus on the linguistic components included in a story such as cohesive devices, tense markers, lexical diversity, and sentence complexity (Hughes, McGillivary, & Schmidek, 1997). A specific example of a microstructure analysis is a cohesive tie analysis. Cohesion is the linguistic feature that provides a clearly organized flow of information to the reader or listener. A cohesive tie is the way "that sentences stick together or cohere into a unit to form a whole" (Hughes et al., 1997, p. 145). Thus, a cohesive tie analysis describes the overall cohesion of a narrative by focusing on specific cohesive devices that were produced. There are five specific categories of cohesive markers established by Halliday and Hasan (1976), which include reference words, conjunctive words,

lexical words, substitution words, and ellipsis. A cohesive tie analysis can be done by breaking a text down into T-units, categorizing cohesive markers, and analyzing these markers to determine if the cohesive ties are complete, incomplete, or erroneous. This process allows an examiner to determine the overall cohesive adequacy of the text (Hughes et al., 1997).

Macrostructure a**nalysis**. Macrostructure analyses focus on the overall global structure of a story or how the story is organized. Macrostructure analyses consider story elements, story grammar, or levels within a story. One example of a macrostructure analysis system is the story grammar analysis of Stein and Glenn (1979). Several analysis systems are based on the work of Stein and Glenn (Hedberg & Westby, 1993a). Stein and Glenn (1979) explained that a story is made up of at least one episode and that each episode within a story contains most or all of a specific set of story elements. The elements within an episode include a setting, an initiating event, reactions and attempts, consequences, reaction or resolution, and an ending. Employing a story grammar approach to narrative analysis allows an examiner to describe the participants' internal knowledge of story organization (Hedberg & Westby, 1993a). Stein and Glenn used T-units to describe and analyze the story grammar within a text. The T-units are categorized into each of the elements within an episode to determine if the story is a true narrative. It is determined as a "true narrative" when the story has "at least causal or purposive links" (Hedberg & Westby, 1993b, p. 112).

The Edmonton Narrative Norms Instrument (ENNI) is an example of a tool that implements story grammar analysis. The ENNI was created to assess the story grammar abilities of children aged four to nine years old. The ENNI analyzes the same key elements described by Stein and Glenn (1979). With this measure, a child is shown pictures illustrating a story sequence. The child is then asked to tell a story using these pictures. An analysis system is

provided to describe the story elements the child produces. This assessment has been a successful tool in discriminating between children with LI and typically developing children (Schneider et al., 2006).

The Current Study

The current study was a pilot investigation designed to describe the abilities of six children with LI to generate stories from pictured stimuli over a ten-week period of time. The ENNI pictures, protocol, and analysis system were used to elicit and identify production of the following story elements, character introduction, setting description, initiating event, internal response, internal plan, character attempt, outcome, and character reaction. Story generation was considered over the period of a ten-week intervention focusing on social communication. The following research question was posed: What story elements would children produce in response to the stimulus pictures over a ten-week period?

Method

Overview of the Intervention

The current study was part of a larger research project investigating the effects of a social communication intervention on various aspects of behavior in children with LI. The intervention included story sharing and enactment activities designed to enhance social and emotional learning. As part of the larger project, each child was asked to generate a story from pictured stimuli approximately once a week. This study described the stories the children produced over a ten-week period. Approval for participant recruitment and study procedures was obtained from the Brigham Young University Institutional Review Board for Human Subjects.

Participants

Six children (4 girls, 2 boys) participated in this study. The ages of the participants ranged from 6;8 to 11;3 (years; months). These children were recruited by the speech-language pathologist at a local school. At the time of intervention, all children were identified with LI and each had been receiving speech and language services in the school. All participants were native English speakers. A school psychologist ruled out general intellectual disability for each child. Each participant passed a pure tone hearing screening that was administered by a school district speech-language pathologist. The participants were receiving speech therapy services in a pullout format for two 20-minute sessions each week.

The school speech-language pathologist recommended children with LI from her caseload of children who demonstrated social communication difficulties. The parents were contacted by the speech-language pathologist and those who were interested provided written consent for their children to participate in the study. The six participants were evaluated using two measures, the Clinical Evaluation of Language Fundamentals-5 (CELF-5; Wiig, Semel, & Secord, 2013), and the Children's Communication Checklist-2 (CCC-2; Bishop, 2003). The CELF-5 provided a standardized measure of the overall language abilities of each participant. The CCC-2 described the children's social communication strengths and difficulties as reported by each child's teacher. Table 1 presents the results of these two evaluations.

Table 1

Children's Communication Checklist-2 (CCC-2; Bishop, 2006) and Clinical Evaluation of Language Fundamentals-5 (CELF-5; Wiig, Semel, & Secord, 2013) Scores

Assessments	Participants and Percentiles					
	A.D.K.	A.L.K.	M.K.	S.S.	J.S.	J.R.S.
CELF-5[1]						
Core Language Percentile	23	2	14	2	7	.2
CCC-2[2] Subtests						
Speech	1	1	1	1	37	1
Syntax	1	9	1	0	2	16
Semantics	1	5	2	0	2	5
Coherence	16	2	2	1	2	5
Initiation	37	50	25	0	16	16
Scripted Language	37	25	50	1	50	16
Context	16	25	2	1	3	1
Nonverbal Communication	9	16	1	1	4	1
Social Relations	37	16	1	5	6	5
Interests	91	50	25	1	11	9
GCC[3] Percentile	2	4	1	1	4	2
SIDI[4]	36	15	12	5	7	1

Note. [1]Clinical Evaluation of Language Fundamentals-5 (CELF-5). [2]Children's Communication Checklist (CCC-2). [3]General Communication Composite. [4]Social Interaction Difference Index.

A.D.K. A.D.K. was a Caucasian female age 8;8 identified with Specific Learning Disorder (SLD) and LI during kindergarten. She received special education services targeting literacy and reading support in a resource room setting. Speech and language therapy targeted oral language and articulation. A.D.K.'s score fell within the 2nd percentile on the CCC-2 and her CELF-5 core language score fell within the 23rd percentile. She demonstrated difficulties with structural language, nonverbal communication, and coherence.

A.D.K. was described by her clinician as a very talkative child. She was able to maintain a conversation with peers and teachers but had difficulty with conversational inferencing, prediction, and adding new information to a conversation. A.D.K. also demonstrated difficulties with understanding and interpreting the emotional reactions of her conversational partners.

A.L.K. A.L.K. was a Caucasian female age 10;10 identified with LI in preschool. She had a history of language and articulation difficulties, specifically language structure. Cognitive and academic testing performed at age 8;0, indicated a SLD, and A.L.K. began to receive resource services for reading. At the beginning of this study, she was also receiving speech and language services focused on improving complex syntax and articulation. A.L.K.'s CCC-2 score fell within the 21st percentile and her CELF-5 core language score fell within the 8th percentile. A.L.K. demonstrated difficulties with structural language including syntactic, semantic, and morphological errors.

The school speech-language pathologist described A.L.K. as a child who was capable of making friends and participating in social interactions. However, the speech-language pathologist also reported that A.L.K. was reticent and often chose to play independently. It was also reported that A.L.K. demonstrated difficulties with inferring emotions during social interactions.

M.K. M.K. was a Caucasian female age 7;4 identified with SDL and LI in kindergarten. She received resource services targeting written language and math. She also received speech and language services targeting articulation and language goals. During the study M.K. was enrolled in a mainstream class and a self-contained resource class which provided reading support. M.K. fell within the 1st percentile on the CCC-2 and her CELF-5 core language score fell within the 14th percentile. Specific areas of difficulty identified included nonverbal communication, social relations, and language structure.

M.K. was described by the school speech-language pathologist as having multiple difficulties with social communication. Reportedly, M.K. spoke quietly and often used incomplete delayed responses during social interactions. She demonstrated difficulties initiating

conversations with peers and maintaining the conversational topic. M.K. also had difficulty responding to emotions expressed by others.

S.S. S.S. was a Caucasian male, age 10;4 diagnosed with SLD. He was homeschooled until the age of 8;3 when he was enrolled in a mainstream classroom. S.S. was diagnosed with autism spectrum disorder (ASD) by his pediatrician at age five and again by a neuropsychologist from a children's medical hospital at age eight. His educational team disagreed with the diagnosis of ASD, and at the age of 9;5 he was evaluated by the school psychologist and identified with SLD.

At the commencement of this study, S.S. was enrolled in a 3rd grade class, a self-contained resource class, and speech and language therapy. Areas of focus during speech and language therapy included fluency, language structure, and topic manipulation. S.S. fell within the 5th percentile on the CCC-2 as reported by his teacher ratings. The CCC-2 parent ratings demonstrated lower functioning than the teacher ratings. His CELF-5 core composite score fell in the 2nd percentile. Areas of difficulty based on the scores from these two tests included semantics, nonverbal communication, initiation, and coherence.

S.S.'s clinician reported that S.S. demonstrated a desire to interact socially, but he had difficulty with adaptive behavior and using appropriate comments with teachers and peers. Although S.S. seemed somewhat aware of his behavior, he was impulsive and had difficulty with self-monitoring. He would often be disruptive when attempting to join a conversation or play group. He demonstrated difficulties with identification and recognition of nonverbal cues, specifically facial expressions, body language, and voice inflections.

J.S. J.S. was a Caucasian female, age 6;8 initially diagnosed with a developmental delay[1], LI, and attention deficit hyperactivity disorder (ADHD). While attending a special needs preschool at age 4, testing demonstrated significant cognitive delays, expressive and receptive language delays, and delays in social and emotional development. At the beginning of the current study, J.S. was again identified with LI and enrolled in a mainstream class while receiving pullout services for reading and speech and language. Specific goals targeted during speech and language therapy included articulation and language. As completed by the teacher, J.S.'s CCC-2 score fell within the 9th percentile and her CELF-5 core language score fell within the 7th percentile. Difficulties were noted in the areas of syntax, coherence, and context.

The teacher reported that J.S. had difficulties with sustained attention and expressive language. The school speech-language pathologist corroborated these observations and added that J.S. demonstrated deficits in topic maintenance and communicative responses. Social interactions revealed the J.S. inconsistently responded appropriately to comments and questions and often provided off-topic comments.

J.R.S. J.R.S. was a Caucasian male age 11;3 identified with articulation and overall language deficits. As an infant, he had chronic otitis media, and his mother reported he was 'deaf' until the age of 3 or 4. At the age of 3;6, J.R.S. had tubes placed in his ears and audiometric testing performed at age 7;4 revealed typical hearing. Initially, at age 7;4, J.R.S. was identified with severe articulation and expressive language deficits, but at age 11;3 when retested, J.R.S. demonstrated mild articulation deficits and overall language deficits. Teacher ratings from the CCC-2 for J.R.S. fell within the 2nd percentile. J.R.S.'s CELF-5 core language

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[1] According to the school district policy, children who qualify for early intervention services may receive an initial educational classification of developmental delay. Upon reevaluation, the child's classification is either removed or designated as a disability rather than a delay.

score fell within the .02 percentile. Areas of difficulty included semantics, coherence, speech, nonverbal communication, context, and social relations.

J.R.S. had difficulties with sustained attention tasks and demonstrated poor listening skills. It was observed that he also had difficulty transitioning between activities. At the time of the current study, J.R.S. was enrolled in a mainstream class and was receiving resources services targeting reading, writing, and math. J.R.S. was also receiving speech and language services to address language and articulation goals.

Materials

Six stories were used from the ENNI. These consisted of cartoon picture stories that contained no print. The illustrations were sufficiently detailed as to provide the viewer with a story line and character emotions and responses. These six stories comprised two distinguished story sets, Set A and Set B. Each set including three progressively longer and more complex stories. In each story set, the first story introduced the two main characters (a male and a female) and depicted one story episode. The following stories included these same characters and increased in complexity by adding characters and episodes in each story. For the purposes of this study the stories A3 and B3 were shortened to include only two story episodes.

The two main characters depicted in story set A were Giraffe and Elephant while story set B depicted Rabbit and Dog. Set A contained the following stories: *Story A1 – Ball; Story A2 – Diving Board*; and *Story A3 – Airplane*. Set B contained the following stories: *Story B1 – Sandbox; Story B2 – Picnic*; and *Story B3 – Balloon*. These stories ranged in length from five to thirteen pictures. A binder was used for each story with one picture per page. The picture stories from the ENNI were chosen for this study due to their simplistic design that provided the children with a clear story outline by reducing irrelevant information. The pictures were first

shown to the participants and then the participants were asked to create a story based solely on the pictures. This provided the participants some structure while leaving room for original story generation.

Procedures

The current pilot study was completed within the context of a larger research project conducted under the supervision of the school speech-language pathologist and two doctoral level speech-language pathologists. The larger project employed a single subject, multiple baseline design across subjects including several baseline measures, an intervention component, and subsequent follow up measures. The intervention segment consisted of 20 sessions that were each about 20 minutes in length. These sessions were conducted over a ten-week period and were administered at the elementary school in lieu of the participant's regular speech and language services. During these sessions, various activities were carried out including scripted story sharing, role play, focused discussion, and personalized journal entries. In addition to the baseline and follow-up measures, certain probes were conducted during intervention sessions. The current study investigated a story retell task as a probe of story generation ability over time. A graduate student clinician administered the story retell probe in approximately half of the intervention sessions.

The story retell task used the ENNI story sets and was administered in accordance with the ENNI instructions. The clinician held the binder so that only the child could see the pictures and provided the following instructions word for word:

I have some pictures that tell a story. First I'll show you all the pictures. Then we'll go

back to the beginning of the story, and then I want you to look at the pictures and tell me

the story that you see in the pictures. I won't be able to see the pictures so you need to tell

me the story really well so I can understand it. Okay? (Schneider et al., 2006)

The clinician allowed the participant to see each picture for a few seconds before

returning to the first page so that the participant could begin the story. The clinician only

provided the participant with specific neutral responses such as "okay" and "oh." The only other

response the clinician provided was to repeat the participant's previous phrase. Story set A was

administered first in sequential order followed by story set B throughout the intervention process.

The recordings of each story were then transcribed and coded by a graduate student clinician

following establishment of interjudge reliability.

Analysis

The transcribed stories produced by the participants were analyzed by a graduate student

using the ENNI story grammar analysis system. The story analysis scoring sheets were provided

on the ENNI website for stories A1 and A3. Two graduate students then created analysis forms

for stories A2, B1, B2, and B3 based on the original scoring sheets for A1 and A3. These

scoring sheets were designed to evaluate a story based on specific story elements that should be

produced within each episode of the story. These elements, referred to as story grammar (SG)

units, provided information important for a well-formed story. Eight specific SG units were

identified within each story, and points were assigned to each. The SG units, their inclusion

criteria, and the number of points awarded are presented in Table 2.

Table 2

Story Grammar Unit Inclusion Criteria and Point System

SG Unit	Inclusion Criteria	Points Awarded
Characters	Each main character introduced by the participant by use of a noun. Pronouns were not accepted as valid character introductions unless the participant used the pronoun I/me and placed themselves in the story.	1 point for each character
Setting	Location, activity, and/or habitual state or characteristic (e.g., they were playing).	1
Initiating Event (IE)	Event/action that sets off the story's events; will cause the protagonist to respond in some way, evokes an immediate response.	2
Internal Response (IR)	Reaction of protagonist to the initiating event. It can be expressed in dialogue (e.g., "oh no!" expresses an internal response), emotion words, or desire (e.g., "she wants the ball.").	1
Internal Plan (IP)	Plan of protagonist to deal with the IE.	1
Attempt	Any effort made to obtain the goal.	2
Outcome	Consequence/effect of the attempt.	2
Reaction	How the character(s) feel or think about the outcome, or how they react physically (e.g., go home).	1 point for Reaction of each Character, or 1 point for Reaction of both/unknown (cannot award more points than there are characters)

Note. Adapted from "Story Grammar," by Schneider, Dubé, & Hayward, (2005). The Edmonton Narrative Norms Instrument. Retrieved from University of Alberta Faculty of Rehabilitation Medicine website: www.rehabresearch.ualberta.ca/enni

The SG units of initiating event, attempt and outcome were each awarded two points as they were determined to be essential story elements. (The ENNI website presents detailed information on the general scoring conventions and specifically describes scoring conventions for character identification, differentiation of the internal plan from attempt, and the internal response from the reaction.) Table 3 presents the number of episodes, number of characters, and

possible points based on SG units for each story. The story scoring sheets are provided in

Appendix B.

Table 3

Summary of Stories Based on Number of Episodes, Characters, and Total Story Grammar Units Possible

Story	Number of Episodes	Number of Characters	Total SG Units
Story A1	1	2	13 SG Units
Story A2	3	3	35 SG Units
Story A3	2	3	25 SG Units
Story B1	1	2	13 SG Units
Story B2	2	3	25 SG Units
Story B3	2	4	25 SG Units

Each story produced by the participants was coded following the above system. Results will be presented in table form.

Reliability

Interjudge agreement was established for story transcription and story coding. Agreement for story transcription was established when two graduate student clinicians achieved 98% agreement on 20% of the transcriptions using the formula (A/B) x 100. In this formula A represents the number of words that were agreed upon between the graduate students and B represents the total number of words possible. The graduate students randomly selected 20% of the stories and each transcribed these stories separately. They then compared their results to determine the agreement percentage. The remaining 80% of the stories were then transcribed individually without comparison.

To establish interjudge agreement on the story coding system, two graduate students read through and discussed the scoring instructions outlined on the ENNI website. They then discussed the scoring conventions with a doctoral speech-language pathologist before randomly selecting 20% of the transcriptions to score individually. Following individual scoring, the graduate students compared results and discussed discrepancies. They repeated this process until they achieved at least 90% agreement on 20% of the transcriptions.

Results

Each story production was transcribed and coded according to the system described above. Individual results are presented for each participant. The table columns represent the total SG units produced per story in chronological order throughout the course of the pilot study. Comparison of total SG unit production per story across all stories allows for an examination of narrative performance over time. The table rows represent the SG units produced out of the total possible SG units per SG category. The table rows also provide important information demonstrating which SG categories were the most challenging in comparison to other categories.

A.D.K.

Table 4 presents A.D.K.'s results for each of the seven stories she produced throughout the pilot study. A.D.K.'s overall SG scores per story over time demonstrated considerable variability. She included the most SG units in the first and second tellings of A1 and A3. Overall, A.D.K. produced 49% of the total possible SG units across the seven stories.

Table 4

A.D.K.'s Production of Story Grammar Elements

	First Retell					Second Retell		
SG Category	A1	A2	A3	B1	B2	A1	A2	Total
Character	0/2	1/3	2/3	0/2	1/3	0/2	1/3	5/18
Setting	1/1	1/1	1/1	1/1	1/1	1/1	1/1	7/7
IE[1]	2/2	6/6	4/4	0/2	0/4	2/2	4/6	18/26
IR[2]	0/1	0/3	0/2	0/1	0/2	0/1	0/3	0/13
IP[3]	0/1	0/3	0/2	0/1	0/2	0/1	0/3	0/13
Attempt	2/2	2/6	4/4	2/2	2/4	2/2	4/6	18/26
Outcome	2/2	4/6	2/4	2/2	2/4	2/2	4/6	18/26
Reaction	2/2	2/7	2/5	1/2	2/5	1/2	2/7	12/30
% Total[4]	69.2	45.7	60.0	46.1	32.0	61.5	45.7	49.0

Note. [1]Initiating Event. [2]Internal Response. [3]Internal Plan. [4]Points earned over total possible points per story.

A.D.K. produced the setting in every story. She produced the SG categories of Initiating Event (IE), Attempt, and Outcome about 70% of the time variably across story productions. The areas where A.D.K. demonstrated the most difficulty were character reactions and introducing characters. She often used pronouns such as he/she and they/them to refer to characters. According to the ENNI scoring system, these are not considered as appropriate character introductions. She did not produce any Internal Responses (IR) or Internal Plans (IP) in any of her story productions.

A.L.K.

Table 5 presents A.L.K.'s results across the eight stories she produced during the pilot study. Overall, she produced 62.5% of the total possible SG units across eight stories. The most consistent SG categories she included in her story productions were Character (100%), Setting

(87%), IE (80%), and Outcome (80%). A.L.K. demonstrated difficulty in the categories of Attempt, Reaction, IR, and IP. When considering all story productions, A.L.K. produced every SG category at least once during the pilot study. She included one IR in three out of eight stories and one IP in one out of eight stories.

Table 5

A.L.K.'s Production of Story Grammar Elements

	First Retell						Second Retell		
SG Category	A1	A2	A3	B1	B2	B3	A2	B1	Total
Character	2/2	3/3	3/3	2/2	3/3	3/3	3/3	2/2	21/21
Setting	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1	7/8
IE[1]	2/2	6/6	4/4	2/2	4/4	2/4	2/6	2/2	24/30
IR[2]	0/1	0/3	1/2	0/1	0/2	1/2	0/3	1/1	3/15
IP[3]	1/1	0/3	0/2	0/1	0/2	0/2	0/3	0/1	1/15
Attempt	0/2	2/6	4/4	2/2	4/4	4/4	6/6	0/2	22/30
Outcome	0/2	6/6	4/4	2/2	2/4	4/4	4/6	2/2	24/30
Reaction	1/2	0/7	4/5	2/2	1/5	2/5	1/7	2/2	13/35
% Total[4]	53.8	51.4	84.0	84.6	60.0	64.0	48.5	76.9	62.5

Note. [1]Initiating Event. [2]Internal Response. [3]Internal Plan. [4]Points earned over total possible points per story.

M.K.

M.K.'s scores from eight stories are presented in Table 6. Overall, M.K. produced 43.1% of SG units produced across all stories. M.K.'s story scores showed inconsistent variability with a range from 23% to 56%. Setting was the only SG category that M.K. included in every story. She demonstrated difficulty including all other SG categories consistently. She produced the SG categories of Attempt, Outcome, IE, Character, and Reaction less than 65% of the time across all stories. M.K. often introduced one character in each story and referred to the other characters

only with pronouns. Most of M.K.'s stories were short and seemed rushed in comparison to the other children's productions. She often left out the second Outcome story element when telling a story with multiple episodes. She did not produce the SG categories IR or IP in any story production.

Table 6

M.K.'s Production of Story Grammar Elements

SG Category	First Retell					Second Retell			Total
	A1	A3	B1	B2	B3	A1	A2	A3	
Character	1/2	2/3	0/2	1/3	1/3	1/2	1/3	1/3	8/21
Setting	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	8/8
IE[1]	2/2	4/4	0/2	0/4	0/4	2/2	2/6	4/4	14/28
IR[2]	0/1	0/2	0/1	0/2	0/2	0/1	0/3	0/2	0/14
IP[3]	0/1	0/2	0/1	0/2	0/2	0/1	0/3	0/2	0/14
Attempt	2/2	4/4	0/2	4/4	0/4	2/2	2/6	4/4	18/28
Outcome	0/2	2/4	2/2	4/4	4/4	0/2	4/6	2/4	18/28
Reaction	1/2	1/5	0/2	2/5	1/5	1/2	1/7	2/5	9/33
% Total[4]	53.8	56.0	23.0	48.0	28.0	53.8	31.4	56.0	43.1

Note. [1]Initiating Event. [2]Internal Response. [3]Internal Plan. [4]Points earned over total possible points per story.

S.S.

Table 7 presents S.S.'s results across the seven stories he produced during intervention. S.S. produced 54.7% of the total possible SG units across all seven stories. S.S.'s production of SG units in A1 was consistent across tellings (76.9% of the SG units). S.S.'s produced slightly more SG units in the second telling of A2 than he did in the first telling (5.7% increase). The most consistent SG categories S.S. produced included Attempt (92.3%) and Setting (85.7%). He produced the rest of the SG categories less than 70% of the time. He introduced characters with

55.5% accuracy. He introduced at least one character appropriately in each story, but used pronouns or simply did not refer to other characters. The IP and IR were the most difficult categories for S.S. with only one production of IR and no productions of IP across all seven stories.

Table 7

S.S.'s Production of Story Grammar Elements

SG Category	First Retell					Second Retell		Total
	A1	A2	A3	B1	B3	A1	A2	
Character	1/2	1/3	2/3	2/2	1/3	2/2	1/3	10/18
Setting	1/1	1/1	1/1	1/1	0/1	1/1	1/1	6/7
IE[1]	2/2	2/6	4/4	2/2	0/4	2/2	2/6	14/26
IR[2]	0/1	0/3	0/2	0/1	1/2	0/1	0/3	1/13
IP[3]	0/1	0/3	0/2	0/1	0/2	0/1	0/3	0/13
Attempt	2/2	4/6	4/4	2/2	4/4	2/2	6/6	24/26
Outcome	2/2	4/6	4/4	0/2	2/4	2/2	4/6	18/26
Reaction	2/2	2/7	2/5	2/2	3/5	1/2	2/7	14/30
% Total[4]	76.9	40.0	68.0	69.2	44.0	76.9	45.7	54.7

Note. [1]Initiating Event. [2]Internal Response. [3]Internal Plan. [4]Points earned over total possible points per story.

J.S.

J.S.'s scores from six stories are presented in Table 8. Overall, J.S. produced 31.4% of SG units across stories. Her production of SG units was quite variable across trials, ranging from 17.1% in the story retell of A2 to 61.5% in the story retell of A1. She included the Setting in five out of the six stories and produced the categories of IE, Attempt, and Outcome with 50% accuracy or less. J.S. did not produce the SG categories of Character or IP in any story production. She

either used pronouns such as he/she and they/them to refer to characters or did not specifically refer to characters. She produced IR in 1 out of 10 opportunities.

Table 8

J.S.'s Production of Story Grammar Elements

SG Category	First Retell				Second Retell		Total
	A1	A3	B1	B2	A1	A2	
Character	0/2	0/3	0/2	0/3	0/2	0/3	0/15
Setting	1/1	0/1	1/1	1/1	1/1	1/1	5/6
IE[1]	2/2	0/4	0/2	2/4	2/2	0/6	6/20
IR[2]	0/1	1/2	0/1	0/2	0/1	0/3	1/10
IP[3]	0/1	0/2	0/1	0/2	0/1	0/3	0/10
Attempt	2/2	2/4	2/2	2/4	2/2	0/6	10/20
Outcome	0/2	2/4	0/2	2/4	2/2	4/6	10/20
Reaction	2/2	2/5	1/2	0/5	1/2	1/7	7/23
% Total[4]	53.8	28.0	30.7	28.0	61.5	17.1	31.4

Note. [1]Initiating Event. [2]Internal Response. [3]Internal Plan. [4]Points earned over total possible points per story.

J.R.S.

The SG scores for the nine stories J.R.S. produced during the pilot study are presented in Table 9. J.R.S. produced 48.8% of the total possible SG units across the nine stories. J.R.S.'s production of SG units was highly variable across stories. J.R.S. performed best in the categories of Outcome (82.3%) and Setting (77.7%). He produced the categories of Character, IE, IR, Attempt, and Reaction with less than 65% accuracy. J.R.S. frequently used pronouns when referring to characters without an initial introduction. He did not produce IP in any of the story productions.

Table 9

J.R.S.'s Production of Story Grammar Elements

SG Category	First Retell						Second Retell			
	A1	A2	A3	B1	B2	B3	A1	A2	A3	Total
Character	0/2	1/3	3/3	0/2	3/3	2/3	0/2	1/3	1/3	11/24
Setting	0/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	7/9
IE[1]	2/2	4/6	0/4	2/2	4/4	0/4	2/2	2/6	4/4	20/34
IR[2]	0/1	0/3	0/2	0/1	1/2	0/2	0/1	0/3	0/2	1/17
IP[3]	0/1	0/3	0/2	0/1	0/2	0/2	0/1	0/3	0/2	0/17
Attempt	2/2	4/6	4/4	2/2	4/4	2/4	2/2	4/6	4/4	22/34
Outcome	2/2	2/6	4/4	2/2	4/4	4/4	2/2	2/6	4/4	28/34
Reaction	1/2	2/7	2/5	2/2	0/5	1/5	1/2	2/7	2/5	13/40
% Total[4]	53.8	40.0	56.0	61.5	68.0	40.0	61.5	34.2	64.0	48.8

Note. [1]Initiating Event. [2]Internal Response. [3]Internal Plan. [4]Points earned over total possible points per story.

Discussion

The current pilot study reported how six children with LI organized stories in response to pictured stimuli. Production of a story based on pictured stimuli is a highly supported task and generally easy for typically developing children of a similar and younger age (Schneider et al., 2006). As discussed earlier, however, children with LI may find producing story narratives much more challenging (Colozzo et al., 2011, Ukrainetz, 2014). That proved to be the case in the current pilot study as the children showed a range of capabilities across story productions and SG units. A discussion of individual results and general findings is presented.

Individual Patterns

A.D.K. Overall, A.D.K.'s stories were difficult to understand and lacked important character details. She produced short stories comprised of nonspecific statements that lacked

cohesion. She often referred to objects and items as "it" with no initial reference. Character introduction was difficult for A.D.K. because she almost always referred to characters with pronouns. She often confused the pronouns in the story making it difficult to understand which character she was referring to. For example, she said, "then he she dropped it" and "He sh- they I loved it." A.D.K. had difficulty including character reactions and did not describe any of the characters' internal responses or plans. She evidently had difficulty with inferencing in that she rarely indicated how characters might think and act within a story.

A.L.K. A.L.K. typically started her stories by introducing the characters and the setting. She produced stories with most elements in a sequential order, the highest average number of SG elements, and her stories were the most organized and complex in comparison with the other participants. However, A.L.K. only produced the internal plans and responses of characters in 4 out of 30 possible productions which demonstrated difficulty with inferencing. She did show some understanding of characters' perspectives, and she expressed this in the form of story dialogue. A.L.K. included phrases such as, "he said…" and "she says…" in every story production. For example, in one story she stated, "the lifeguard came over, he said what's all the fuss about?" In this case, she was able to take the perspective of the lifeguard and infer what the lifeguard would say. Generally A.L.K. produced stories that were sequential, cohesive, and included character dialogue.

M.K. Overall M.K. produced short hurried stories that lacked pertinent details and necessary referential information. She regularly left out multiple story elements near the end of a story episode such as character reactions and story outcomes, especially in stories with multiple episodes. She used nonspecific words like "it" and "thing" without explanation of what she was referring to. She also used nonspecific actions like "did" and "doing" without reference to what

exactly the character was doing. For example, she said, "and her did" when attempting to describe a picture of an adult elephant giving a balloon to another character. Producing a story setting is a very concrete concept in comparison to many of the other story elements such as IR, IP, IE, and character reaction. M.K. included the story setting in every story but had difficulty with all other story elements most likely because they were abstract and less concrete. Her stories lacked cohesion and were difficult to understand due to a reduced amount of story information and specific details.

S.S. In comparison to the other participants, S.S. produced the longest stories with the most descriptive details. His stories followed a sequential order and he often used the cohesive tie "and then" to connect story events. However, his stories often lacked pertinent story elements such as character introduction, IR, IP, and character reactions. He demonstrated some understanding of characters' emotions and reactions based on the characters' facial expressions and/or body posture. He frequently included character dialogue and explained what the characters were thinking. For example, in one story he stated, "and he wondered if if he can join them," and, "they were all hoping it would make it." Overall S.S. produced sequential detailed stories that often lacked abstract story elements.

J.S. J.S. was the youngest of the group of participants, and she had the most difficulty with story production. At the beginning of the pilot study J.S. was 6:8 and her performance in story production was well below what would be expected of her typically developing age-matched peers (Botvin & Sutton-Smith, 1977).

J.S.'s stories often contained short descriptive statements that lacked causal relationships. She did not introduce any characters in the six stories she produced and instead referred to them only with pronouns. Some of her stories appeared to include character dialogue without any

specific reference as to which character was making the statement in the story. She demonstrated difficulty in all SG categories except for setting, which is the most concrete SG category. Her stories were difficult to understand and demonstrated a lack of character introduction, character reactions, causal relationships, referential information, cohesion, and story resolution.

J.R.S. J.R.S.'s stories varied in length, and were often comprised of sequential descriptive statements. He frequently described causal relations with the use of the cohesive tie "and then." He was most successful in including the SG category of Setting in that he generally described where the story took place. J.R.S. included the Outcome in all stories except for A2. This could be due to the complexity of A2 because it contained multiple story episodes. However, he still demonstrated difficulty across other SG categories including character introduction, IR, IP, and character reactions. He also made grammatical modifications in irregular past-tense verbs (bringed, telled, and falled).

General Findings and Conclusions

Typically developing children within the age range of the children in this study are fairly skilled at telling a relatively simple story with the support of pictured stimuli (Schneider et al., 2006). However, the results of this pilot study suggested that this task was a difficult task for the children with LI. The individual participants' story generations were highly variable and showed no clear pattern of increase or decline over time. In general, the children with LI were most adept at describing the more concrete categories such as the setting. However, except for A.L.K., most of the participants demonstrated some difficulty introducing characters. In these instances, the children evidently did not understand the need to introduce the characters to the listener or they could not take the listener's perspective into account.

Most of the children produced the SG categories of IE, Attempt, and Outcome in some retellings. IE, Attempt, and Outcome might be considered the most essential story elements since they provide causal relations and goal-oriented links within a story (Hedberg & Westby, 1993b; Schneider et al., 2006). Still, some participants produced these elements only 50% of the time. The children particularly struggled to produce other SG categories that required social inferencing, perspective taking, and emotion understanding. For example, they infrequently described IP, IR, or character reactions. They rarely described what the characters were planning, thinking, and feeling.

In summary, the task of story generation, even with the support of picture stimuli, was challenging for the children with LI. Their retellings tended to be limited and concrete, and children had difficulty taking the perspective of their listener in order to provide sufficient information about story events. In addition, they had particular difficulty producing SG elements that involved the internal states, emotions, and motivations of story characters. The production of these story grammar elements continued to prove difficult for the children even though they were involved in intervention activities that highlighted the emotional reactions and states of characters.

Study Limitations

This pilot study was designed to observe and describe the stories of six children over a ten-week period. The results provided descriptive information about the participants' story productions, but conclusions may be limited due to the nature of the probes, participant variability, and number of participants. The children found the task difficult, and they often lacked interest in the stories or enthusiasm for the task. They sometimes complained about the

retell tasks saying, "Didn't we already do this?" and "This one again?" Sometimes participants seemed to produce the stories quickly in an attempt to finish quickly.

Even though all the children were identified with LI, there was considerable variability within the group. Participants varied in age, language skill, level of attention, and general behaviors. In addition, only six children were observed. Generalizability to a wider population of children with LI has yet to be established.

Future Research

Future research focusing on ways to describe and support story generation in children with LI is needed. It will be helpful to determine what types of books, materials, and tasks might be most engaging for children. It will be particularly important to devise interventions to support children's ability to infer, understand, and anticipate characters' internal states, emotions, and motivations.

Summary

This pilot study considered the abilities of six children with LI to retell stories from picture stimuli. The ENNI story probes and analysis systems were used to present, score, and describe the performance of six children individually. The participants produced stories over a 10-week period, and eight specific SG categories were included in the descriptive analysis.

The children demonstrated a wide range of story production capabilities as individual performance was highly variable. All six participants demonstrated difficulties in producing stories that included all of the story elements. Many of the children produced short stories that lacked cohesion and were difficult to understand. Children particularly struggled with SG elements that described the internal states, emotions, and motivations of characters.

References

Applebee, A. N. (1978). *The child's concept of story: Ages two to seventeen*. Chicago, IL: University of Chicago Press.

Bishop, D. (2006). *Children's Communication Checklist-2 United States Edition.* (CCC—2). Minneapolis, MN: Pearson Assessments.

Botting, N. (2002). Narrative as a tool for the assessment of linguistic and pragmatic impairments. *Child Language Teaching and Therapy*, *18*(1), 1-21.

Botvin, G. J., & Sutton-Smith, B. (1977). The development of structural complexity in children's fantasy narratives. *Developmental Psychology*, *13*(4), 377-388.

Chamberlain, M. L. (2014) Story Generation Ability in Four Children with Language Impairment. (Unpublished master's thesis) Brigham Young University, Provo, UT.

Colozzo, P., Gillam, R. B., Wood, M., Schnell, R. D., & Johnston, J. R. (2011). Content and form in the narratives of children with specific language impairment. *Journal of Speech, Language, and Hearing Research*, *54*(6), 1609-1627. doi:10.1044/1092-4388(2011/10-0247)

Davies, P., Shanks, B., & Davies, K. (2004). Improving narrative skills in young children with delayed language development. *Educational Review*, *56*(3), 271-286.

Egan, K. (2012). The story form and the organization of meaning. In K. Egan (Ed.), *Primary understanding: Education in early childhood* (Vol. 27, pp. 96-129). New York, NY: Routledge.

Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. Hong Kong, SAR: Sheck Wah Tong Printing Press.

Hedberg, N. L., & Westby, C. E. (1993a). Collection of story samples and preparation for analysis (pp. 17-50). *Analyzing storytelling skills: Theory to practice*. Tucson, AZ: Communication Skill Builders.

Hedberg, N. L., & Westby, C. E. (1993b). Story grammar analysis (pp. 107-136). *Analyzing storytelling skills: Theory to practice*. Tucson, AZ: Communication Skill Builders.

Hudson, J. A., & Shapiro, L. R. (1991). From knowing to telling: The development of children's scripts, stories, and personal narratives. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 89-136). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hughes, D. L., McGillivray, L., & Schmidek, M. (1997). Analysis of narrative language. *Guide to narrative language: Procedures for assessment* (pp. 111-179). Eau Claire, WI: Thinking Publications.

Lyle, S. (2000). Narrative understanding: Developing a theoretical context for understanding how children make meaning in classroom settings. *Journal of Curriculum Studies*, *32*, 45–63.

Norbury, C. F., & Bishop, D. V. (2003). Narrative skills of children with communication impairments. *International Journal of Language & Communication Disorders*, *38*(3), 287-313.

Schneider, P., Dubé, R. V., & Hayward, D. (2005). The Edmonton Narrative Norms Instrument. Retrieved from www.rehabresearch.ualberta.ca/enni

Schneider, P., Hayward, D., & Dubé, R. V. (2006). Storytelling from pictures using the Edmonton Narrative Norms Instrument. *Journal of Speech Language Pathology and Audiology, 30*(4), 224-238.

Shapiro, L. R., & Hudson, J. A. (1991). Tell me a make-believe story: Coherence and cohesion in young children's picture-elicited narratives. *Developmental Psychology*, *27*(6), 960.

Stein, N. L., & Glenn, C. G. (1979). An analysis of story comprehension in elementary school children. In R.O. Freedle (Ed.), *New directions of discourse processing* (Vol. 2, pp. 53-120). Norwood, NJ: Ablex.

Ukrainetz, T. A. (2014). Telling a good story: Teaching the structure of narrative. In T. A. Ukrainetz (Ed.), *School-age language intervention: Evidence-based practices* (335-377). Austin, TX: PRO-ED, Incorporated.

Ukrainetz, T. A., & Spencer, T. D. (2014). Sorting the learning disorders: Language impairment and reading disability. In T. A. Ukrainetz (Ed.), *School-age language intervention: Evidence-bbased ppractices* (161-163). Austin, TX: PRO-ED, Incorporated.

Wiig, E. Semel, E., Secord, W. (2013). *Clinical Evaluation of Language Fundamentals—5th ed*. (CELF-5). Minneapolis, MN: Pearson Assessments.

APPENDIX A

Annotated Bibliography

Applebee, A. N. (1978). *The child's concept of story: Ages two to seventeen*. Chicago, IL:
University of Chicago Press.

Purpose of the work: This book discussed the typical developmental characteristics of children's story narratives.

Summary: The author first described the theoretical knowledge surrounding story organization. Children's story narratives become progressively more complex as children age. They start as a simple story form lacking in content, causal relationships, and organization. With age, children begin to incorporate more story elements into their story form. They tell sequential stories, filled with details and cause effect relationships between events. The author gave examples of story narratives produced by children at various ages and discussed the story organization, how children approached stories at different ages, and what children considered to be a story. Children used multiple language processes when creating stories at all ages.

Conclusions: Story narratives progressively increase in complexity with age. Multiple facets of language are required to produce and understand story narratives.

Relevance to the current work: This book described how typical children produce narratives at various ages. The current pilot study discusses typical story narrative development and how it relates to the stories produced by six children with LI.

Botting, N. (2002). Narrative as a tool for the assessment of linguistic and pragmatic impairments. *Child Language Teaching and Therapy*, *18*(1), 1-21.

Purpose of the study: This article discussed the use of narrative tasks to assess children with linguistic and/or pragmatic language impairments.

Method: Participants: This study consisted of five children with severe pragmatic language impairments (PLI) and five children with specific language impairment (SLI). The ages of the children ranged from 7:7 to 8:8.
Procedures: The participants were assessed using a receptive language test, an expressive language test, an expressive vocabulary test, and a nonverbal abilities test. The children were also assessed using two narratives, *The Bus Story* which was a story retell task, and *The Frog Story* which was a generative story task. For the story retell task the clinician presented the story with a picture book and then asked the child to retell the story using the pictures from the book as cues. For the generative story task the child was instructed to look through a picture book and create a story based on the pictures. These two stories were analyzed based on length, narrative devices, and story structure.

Results: For the Bus Story general information scores proved to be within a normal range for both SLI and PLI groups. The mean number of subordinate clauses and the mean sentence length

proved to be below average from both groups. For *The Frog Story,* children with SLI demonstrated a shorter mean story length than what is expected of a normally developing group, whereas children with PLI produced narratives of a comparable length to what is expected. Both groups demonstrated more tense marking errors than expected in typically developing children. *The Bus Story* word lengths were shorter than *The Frog Story* word lengths for both groups and the gap was much larger for the PLI group.

Conclusions: Narrative ability of children with SLI and PLI relates directly to pragmatic skill. Both groups demonstrated difficulties in the areas of tense marking, subordinate clauses, and sentence length. The article supported the notion that narrative assessments are useful tools for assessing many aspects of language in children with language impairments. Tense marking errors, story lengths, and overall story organization are good ways to assess narrative ability in children with language impairments. The results and previous research support the idea that story generation may be more useful in assessing a mixture of structured and imaginative communication in children.

Relevance to current work: This study is relevant to the current study because it supports the use of narratives as a tool for assessment.

Botvin, G. J., & Sutton-Smith, B. (1977). The development of structural complexity in children's fantasy narratives. *Developmental Psychology*, *13*(4), 377-388.

Purpose of the study: The purpose of this study was to describe story productions of children and determine if stories increased in complexity with age.

Method: 80 children (40 males and 40 females) ranging from age 3-12 participated in the first experiment. The second experiment consisted of 140 children (70 males and 70 females) ranging from 3-12**.** Both experiments followed the same procedural guidelines. Each participant was asked to produce a creative and original narrative. These narratives were then written down, decomposed, and analyzed to assess organization in accordance with seven hypothetical levels of structural complexity.

Results: There was a high correlation between narrative structural complexity and age. Children produced longer stories as complexity and age increased. The increase in length correlated with structural complexity more so than with increases in age.

Conclusions: As age increased so did the complexity of children's narratives. This increase in structural complexity appeared to facilitate the use of more story information leading to longer stories.

Relevance to current work: This study demonstrated that typically developing children tell stories that increase in complexity and length as they age. The current pilot study described the complexity of the stories told by six children with LI.

Chamberlain, M. L. (2014) Story Generation Ability in Four Children with Language Impairment. (Unpublished master's thesis) Brigham Young University, Provo, UT.

Purpose of the study: The purpose of this study was to describe the abilities of 4 children with language impairment (LI) to generate stories using a wordless storybook. The study focused on determining the complexity of the narratives across multiple sessions in terms of story grammar elements.

Method: Participants: The participants of this study consisted of three boys and one girl ranging in age from 5:3 to 6:10. These participants all passed a pure tone hearing screening and they were each assessed with *Comprehensive Assessment of Spoken Language* (CASL) and the *Universal Nonverbal Intelligence* Test (UNIT) before the intervention began.

Procedures: Each participant was seen 2-3 times per week for a 20 minute individual therapy session for a total of 20 session. These session targeted emotion understanding with a variety of activities including book sharing, story enactment, story generation, and journal writing. The Mercer Mayer wordless books *A Boy, A Dog, and A Frog* and *A Boy, A Dog, A Frog, and A Friend* were used as the foundation for the therapeutic activities. At the beginning of about one session per week the child was instructed to produce a story based on the presented Mercer Mayer book with minimal clinician prompts. These stories were recorded, transcribed and coded. Each utterance was coded by being categorized into the areas of labeling/description, cause/effect, or emotional content.

Results: Participant 1 demonstrated a prenarrative level by only producing utterances that described characters and actions. An increase in the use of emotional content words across sessions was seen with participant 1. Participant 2 labeled or described pictures and produced the emotion word *happy* a total of 5 times across all sessions. Participant 3 demonstrated an increase in complexity of story elements and in the use of emotion words. The majority of participant 4's utterances were descriptive, but he did show some emergence of complex narrative abilities with cause and effect. Participant 4 mostly used emotion words as descriptors.

Conclusions: Story generation is a difficult task for the children with LI. Some participants demonstrated slight improvements in the use of emotion words and complex story elements but performance was variable.

Relevance to current work: This study used wordless picture books and a story generation task to assess aspects of child narrative abilities in children with LI. The current study also uses wordless picture books to assess the narrative abilities of children with LI.

Colozzo, P., Gillam, R. B., Wood, M., Schnell, R. D., & Johnston, J. R. (2011). Content and form in the narratives of children with specific language impairment. *Journal of Speech, Language, and Hearing Research*, *54*(6), 1609-1627. doi:10.1044/1092-4388(2011/10-0247)

Purpose of the study: The objective of this study was to compare narratives produced by typically developing children with those produced by children with specific language impairment (SLI). Narrative analysis was based on content and form..

Method: Participants: Two separate studies were completed. One study was conducted with 26 children, 13 with SLI and 13 typical age matched peers. The median age of these children was

9;0. The second study was conducted with 40 children, 20 with SLI and 20 typical age matched peers. The median age of these children was 7;6.

　　Procedures: The Test of Narrative Language (TNL; Gillam & Pearson, 2004) was used to score and analyze the children's narratives.

Results: The results from both studies showed that children with SLI obtained TNL scores significantly lower than their typical age matched peers. Children with SLI tended to produce stories that were grammatically correct, but lacked content or stories with grammatically correct form that lacked content. .

Conclusions: These studies indicated that children with SLI tend to have difficulty producing narratives in comparison to age matched peers. Children with SLI especially have difficulty producing strong narratives that are both grammatical and elaborate.

Relevance to current work: This article helps provide an understanding of the types of problems that children with SLI have when producing narratives and supports the need for intervention that would improve these children's narratives.

Davies, P., Shanks, B., & Davies, K. (2004). Improving narrative skills in young children with delayed language development. *Educational Review*, *56*(3), 271-286.

Purpose of the study: The objective of this study was to determine the effects of a collaborative story grammar therapeutic approach on young children with delayed language development.

Method: Participants: 34 children were selected from six different UK school in areas of low socioeconomic status. The average age of these children was 5:11 and the majority of these children had not been receiving classroom support or speech therapy services. Before therapy was administered, the children were tested using the Renfrew Action Picture Test (RAPT) and the Bus Story, which is a story re-tell task.

　　Procedures: The children participated in three group therapy sessions per week for one school term. Each therapy session was 40 minutes long and the first session of each week for the initial 8 weeks was led by a speech therapist while the other two were conducted by a trained assistant. The therapy focused on six story elements, who, what, where, when, why, and the ending. These aspects were focused on individually and together as therapy progressed. Materials such as story books, classic nursery rhymes, puppets, and colored cue cards were all used during group therapy sessions.

Results: The results of the microstructure tests were mixed. They showed significant improvement in the quantity of information provided by the children, but no significant improvement in number of propositions or the Bus Story score. The macrostructure measurements demonstrated a significant improvement in the structural aspect of the children's narratives. Teachers reported improvement in the children's confidence and ability to pay attention and contribute in class.

Conclusions: Although there was no control group, the results suggested that an intervention focused on oral narratives can improve the quality of a child's narrative, confidence, and ability to contribute in class.

Relevance to current work: This study highlighted the importance of narrative abilities for young children in building relationships and in academic success. It also demonstrated a similar therapeutic approach to that of the current study which focuses on story telling through multiple means such as re-tell, role play, and structured activities.

Egan, K. (2012). The story form and the organization of meaning. In K. Egan (Ed.), *Primary understanding: Education in early childhood* (Vol. 27, pp. 96-129). New York, NY: Routledge.

Purpose of the work: This text describes the importance of story narratives and how they are organized.

Summary: Stories play a crucial role in how we make sense of the world. They are important in social communication and in education. A story is composed of multiple events that lead a reader or listener to feel something. Stories provide affective meaning. A story provides a reader with satisfaction by allowing the reader to know exactly how to feel about characters and events. This satisfaction is not always available in real life situations as it is in stories. The best stories as described by the author are those that, "stimulate vivid and diverse images and organize them into an affectively gripping pattern (p. 105)." Stories are important in education as they provide children with a strategy to organize events, facts, ideas, and characters into meaningful structures. Stories can expand knowledge and experience in educational settings by providing children with a structured way to learn and understand both real and conceptual information.

Conclusions: Stories are useful in communication, socializing, and in education. Stories affect how a person feels in relation to the events and/or characters in that story. Stories play a crucial role in how we make sense of the world.

Relevance to the current work: This chapter explains why story narratives are so important in making sense of the world. This provides evidence and support to the current study as it is focused on understanding story narratives in children with LI.

Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. Hong Kong, SAR: Sheck Wah Tong Printing Press.

Purpose of the work: This book describes the concept of cohesion across various contexts and provides detailed information about cohesive devices.

Summary: Cohesion is defined as a semantic concept. Cohesion is the term that describes how connected a text is based on terms of reference, substitution, ellipsis, conjunction, and lexical cohesion. Each cohesive device is defined, discussed, and exemplified throughout the text and across the multiple chapters. Reference is a cohesive device which relates two distinct linguistic units that refer to the same thing. Substitution occurs when a specific linguistic element is

replaced by a substitution instead of the original term or element. Ellipsis refers to an omission of a linguistic element. Conjunction refers to the use of a term that specifically marks a semantic relation. Lexical cohesion occurs when two linguistic units relate based on a shared lexical field.

Conclusions: Cohesion is a linguistic feature that provides the reader with an organized flow of information. This flow is established through the use of cohesive devices or ties.

Relevance to the current work: Stories are highly organized. Cohesion is one example of how a text or story might be analyzed to understand its organization.

Hedberg, N. L., & Westby, C. E. (1993a). Collection of story samples and preparation for analysis (pp. 17-50). *Analyzing storytelling skills: Theory to practice*. Tucson, AZ: Communication Skill Builders.

Purpose of the work: This text discussed various types of narratives and how to prepare them for analysis.

Summary: Hedberg and Westby outlined how story samples are collected and how to prepare them for analysis. They define T-units and discuss how to organize a transcription into T-units. T-uinits are a useful way to organize a transcription prior to data analysis. There are multiple types of sentences including simple, compound, and complex. Each of these sentences can be divided into one or more T-units. Story grammar analysis uses T-units and provides an overall understanding of the internal organizational skills of a child when producing a narrative.

Conclusions: There are multiple ways to analyze a narrative. T-units provide useful information when organizing a transcription for later analysis.

Relevance to the current work: This work details how to prepare a story transcription for a story grammar analysis. The current study uses a story grammar analysis system based on the one described in this chapter.

Hedberg, N. L., & Westby, C. E. (1993b). Story grammar analysis (pp. 107-136). *Analyzing storytelling skills: Theory to practice*. Tucson, AZ: Communication Skill Builders.

Purpose of the work: This text discussed types of narrative analyses and the importance of narrative analysis.

Summary: The authors described story grammar analysis and explained the elements involved in a story episode. A story episode includes a setting, an initiating event, reaction and attempts, a consequence, a reaction or resolution, and an ending. Each of the story elements are defined and discussed. It is necessary for a true narrative to contain most of these story elements. Stories should be purposive and have causal links. For story grammar analysis to be effective, it is important to use minimal stimuli as to allow the examinee to create and develop his or her own story.

Conclusions: Story grammar provides a detailed view of the general organization of a narrative. Story grammar is a useful tool when analyzing child narratives. Certain story elements are necessary for a complete narrative.

Relevance to the current work: This work details story grammar as a means to analyze a narrative. The current study used a form of story grammar analysis to describe the story production abilities of six children with LI.

Hudson, J. A., & Shapiro, L. R. (1991). From knowing to telling: The development of children's scripts, stories, and personal narratives. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 89-136). Hillsdale, NJ: Lawrence Erlbaum Associates.

Purpose of the work: This chapter discussed how children's scripts, stories, and personal narratives change and develop with age and complexity and the types of knowledge required for production.

Summary: Many types of knowledge are required and used when producing a narrative of any kind. Four types of knowledge are specifically discussed in this chapter including content knowledge, structural knowledge, microlinguistic knowledge, and contextual knowledge. The author described these types of knowledge and how they relate to the different narrative forms of scripts, stories, and personal narratives. Content knowledge refers to the fact that children must have some understanding of the topic about which a narrative will be produced. Structural knowledge refers to the aspect of a narrative which make it coherent. Microlinguistic knowledge refers to an understanding of connection, correct pronoun use, and tense adjustments. Contextual knowledge refers to the narrators' understanding of the function of a narrative in the particular scenario it was given.

Conclusions: All types of narratives, including stories, require various levels of knowledge. Narratives become more complex as children age and develop a better understanding of the various knowledge areas.

Relevance to the current work: The current pilot study described the story narrative abilities of six children with LI and this chapter provides information as to why narratives may be difficult for children who do not have a firm understanding of all the areas of knowledge required for producing narratives.

Hughes, D. L., McGillivray, L., & Schmidek, M. (1997). Analysis of narrative language. *Guide to narrative language: Procedures for assessment* (pp. 111-179). Eau Claire, WI: Thinking Publications.

Purpose of the work: This chapter discussed narrative analysis in terms of a macrostructure and a microstructure.

Summary: Narratives can be analyzed at a macrostructure level and a microstructure level. The macrostructure level looks at a narrative in a global sense to describe the overall organization of a narrative. The microstructure level looks at the details of a story found in the linguistic

components. The microstructure includes studies of cohesive devices, tense markers, vocabulary, and sentence complexity. The macrostructure level can be conducted through Applebee's six levels approach, an episodic analysis, a high point analysis, or a macroanalysis of scripts.

Conclusions: There are multiple ways to analyze a story narrative. Each method offers different types of information and a different perspective on narrative performance. Narrative analysis systems can be divided into two categories, macrostructure and microstructure.

Relevance to the current work: This chapter discussed narrative analysis and provided a detailed source of macrostructure and microstructure systems. The current study uses a macrostructure analysis system to study the story narratives of children with language impairment.

Lyle, S. (2000). Narrative understanding: Developing a theoretical context for understanding how children make meaning in classroom settings. *Journal of Curriculum Studies*, *32*, 45–63.

Purpose of the work: This text discussed research from a variety of disciplines to demonstrate the importance of narratives in children's understanding and learning.

Summary: The author summarized research and theories from multiple disciplines regarding cognitive development, intelligence, and learning through social, emotional, and cultural contexts. The author then described how narratives play a key role in the way that children understand the world. Narratives are a tool used to create meaning. The importance of narratives being used in education and specifically in the classroom setting was then discussed.

Conclusions: It is widely accepted that narratives are a key tool that children use to make sense of the world. Educational programs should incorporate narrative models of thought to best utilize this tool for understanding.

Relevance to current work: This text demonstrated how important narratives are as a tool for understanding and making sense of the world. It supported the idea that children would benefit from an improved ability to produce and understand narratives.

Marton, K., Abramoff, B., & Rosenzweig, S. (2004). Social cognition and language in children with specific language impairment (SLI). *Journal of Communication Disorders*, *38*(2), 143-162.

Purpose of the study: This research studied the relationship between social cognition and language in children with specific language impairment (SLI) and their peers.

Method: A total of 38 children between the ages of 7-10 participated in this study. The participants consisted of two groups, 19 children with SLI and 19 age-matched typically developing peers. Each group contained 10 girls and 9 boys. All of the participants were presented with hypothetical scenarios and follow up questions to assess negotiation and conflict resolution abilities, a yes/no self-esteem questionnaire targeting social and academic self-esteem,

and parent and teacher questionnaires to address social competence and behaviors. Each child participated in one testing session to complete all testing tasks.

Results: The children with SLI made more grammatical errors than did the typically developing children in their responses to hypothetical scenarios. The typically developing children demonstrated adequate social pragmatic skills in most cases in response to the hypothetical scenarios, whereas the children with SLI demonstrated deficits in conversation initiation, negotiation, and conflict resolution. The self-esteem questionnaire demonstrated that the children with SLI showed a significant difference between academic and social self-esteem with a lower rating in regard to social self-esteem. Both the parents and the teachers rated the children with SLI lower than the typically developing children with regard to social and language performance.

Conclusions: Children with SLI have difficulties in various areas of social cognition. They tend to have difficulties in knowing how to initiate conversations with peers, negotiating with peers, and resolving conflicts with peers. Children with SLI generally have poorer pragmatic and syntactic abilities than age matched peers.

Relevance to current work: This study described specific difficulties that children with SLI have in regard to language and social cognition. The current study focuses on a similar population.

Norbury, C. F., & Bishop, D. V. (2003). Narrative skills of children with communication impairments. *International Journal of Language & Communication Disorders*, *38*(3), 287-313.

Purpose of the study: This study compared the narrative ability of children with communication impairments to the narrative ability of typically developing children.

Method: Participants: The participants in this study consisted of 68 children, 17 with Specific Language Impairment (SLI), 21 with Pragmatic Language Impairment (PLI), 12 with High Functioning Autism (HFA), and 18 typically developing children. These children ranged in age from 6-10 years old.
    Procedures: Each child was required to generate a story based on the wordless picture book *Frog, Where Are You*? by Mayer. The children were instructed to look through the story to determine what happens and then tell the story to the examiner. The narratives produced by the children were analyzed according to three criteria. These criteria consisted of aspects of global structure, local structure, and evaluative comments.

Results: There were no differences between the four groups of children in global structure or evaluation. The children with SLI and HFA demonstrated a higher number of syntactic errors as compared to the group with PLI and the control group. The HFA group was more likely to produce ambiguous references in the narrative. There was no significant relationship between the Children's Communication Checklist and narrative measures.

Conclusions: Narrative is an effective assessment tool that addresses many aspects of language. However, global structure analysis did not appear sensitive enough to distinguish between

children with or without impairments. Local language analysis, such as sentence complexity and tense errors, were more useful in distinguishing children with impairments from typically developing children. Core language skills influenced narrative development rather than pragmatic abilities or diagnosis.

Relevance to current work: This study used narratives to analyze various language abilities in children with language impairments.

Schneider, P., Hayward, D., & Dubé, R. V. (2006). Storytelling from pictures using the Edmonton Narrative Norms Instrument. *Journal of Speech Language Pathology and Audiology, 30*(4), 224-238.

Purpose of the study: This study described the Edmonton Narrative Norms Instrument (ENNI) and investigated the effectiveness of the ENNI in detecting developmental differences in the production of stories of children with and without language impairment.

Method: Participants: For this study 377 children between the ages of 4;0 and 9;11 were selected. Within each age group there were two subgroups, typically developing children and children with language impairment. 300 children were typically developing and 77 had language impairments.

Procedures: Six picture stories were created within three different complexities and lengths. These stories were placed in binders and used as the stimuli for eliciting oral stories from the participants. Each child participated in two individual sessions. The first session consisted of telling the stories to the examiner and the second session consisted of a comprehension task along with the Clinical Test of Language Fundamentals (CELF), using either the CELF-Preschool or the CELF-III. The examiner presented the stories to the children in a way that only the child could see the pictures. The examiner explained that they would not be able to see the pictures and the participant was required to give a good story so they could understand. These stories were then transcribed and analyzed for the inclusion of three specific story grammar units: the initiating event, the attempt, and the outcome.

Results: For both simple and complex stories, an increase in story grammar units was seen with an increase in age. This increase leveled off in the scores of the 8 and 9-year-old children. The study also demonstrated that children with typical language development scored significantly higher than children with specific language impairment in all age groups except for age 9 and age 7 with the simple stories. 80.8% of all participants were correctly classified as typically developing or having a language impairment.

Conclusions: The ENNI can be a useful tool in discriminating between children with language impairments and typically developing children between the ages of 4 and 8. It should not be the only test used, but can be helpful in describing one aspect of a child's impairment.

Relevance to current work: This study demonstrates the effectiveness of the ENNI as a tool for assessing language abilities in children with language impairments. This study helps to justify the use of the ENNI as an assessment tool in the current study.

Shapiro, L. R., & Hudson, J. A. (1991). Tell me a make-believe story: Coherence and cohesion in young children's picture-elicited narratives. *Developmental Psychology*, *27*(6), 960.

Purpose of the study: The purpose of this study was to describe how preschoolers and first graders produced stories when given the support of pictured stimuli.

Method: There were a total of 96 (53 boys and 43 girls) preschoolers and first graders who participated in this study. Two picture sequences were created and used to provide support for the children's story productions. Each participant was asked to tell a story based on the presented pictures. Half of the children were allowed to see the entire picture sequence once before producing the stories and the other half were required to produce stories on initial presentation of the pictures. The story productions were recorded, transcribed, and assessed for aspects of coherence, cohesion, and organization.

Results: The first graders produced stories that demonstrated a higher level of linguistic complexity, more frequent usage of past tense markers, and more character information than the stories of the preschoolers. The children provided more beginnings and endings in response to the problem-based story picture sequence rather than the event-based story picture sequence when shown a preview of the story pictures. Children also included more dialogue in the event-based picture stories than in the problem-based picture stories when shown previews. Children focused more on actions in the event-based stories and on character development in the problem-based stories. First graders produced stories that were more goal directed and included more episodic elements than preschoolers.

Conclusions: The stories of the preschoolers were less complex and less cohesive than those of the first graders. Providing a picture sequence allowed for young children like preschoolers to use basic problem-solution structures in their stories. The children's story narratives increased in complexity with age.

Relevance to current work: This study used pictured stimuli to elicit stories from children. The current pilot study also used pictured stimuli to elicit stories from six children with LI.

Stein, N. L., & Glenn, C. G. (1979). An analysis of story comprehension in elementary school children. In R.O. Freedle (Ed.), *New directions of discourse processing* (Vol. 2, pp. 53-120). Norwood, NJ: Ablex.

Purpose of the study: The objective of this study was to describe and test a theoretical story schema. Testing was completed to determine the usefulness of the story schema in distinguishing between different aspects of story information and to determine the effects of age and time on story production.

Method: Participants: 24 first grade and 24 fifth grade students participated in this study. There were approximately even amounts of males and females in each grade. The mean ages for the first and fifth grade students were 6:5 and 10:6 respectively.
Procedures: Each child was tested individually across two sessions. The children were given instructions to listen carefully to an orally presented story and repeat it word for word.

After presentation, first graders were asked to count to 20 and fifth graders were asked to count backwards by 3's from 50. Immediately after completion of this task the children reproduced the orally presented story. This was completed with two different stories for each child. One week later the children were asked to recall these stories in any order they could without cueing or support.

Results: There were significant differences seen in the immediate recall of all four stories between first and fifth graders. Fifth graders recalled stories more accurately than first graders. More units were recalled in the immediate condition than the delayed condition across three of the four stories. The stories were also analyzed across seven story categories within one story episode. Fifth graders recalled more internal response categories than first graders. Across all four stories the children's recalls closely followed the original story sequence. Temporal ordering errors were rarely observed.

Conclusions: This study demonstrated that age and time significantly affect the accuracy of story recall. It also demonstrated that there is a stable pattern in the way that story information is recalled and presented. The findings support the theory that story recall in children is an organized and predictable process. This specific story schema can be useful in helping understand the internal representation of story information.

Relevance to current work: The current study uses a story grammar analysis that was based on the story schema described and tested in this study.

Ukrainetz, T. A. (2014). Telling a good story: Teaching the structure of narrative. In T. A. Ukrainetz (Ed.), *School-age language intervention: Evidence-based practices* (335-377). Austin, TX: PRO-ED, Incorporated.

Purpose of the work: This chapter outlined why narratives are important, different forms of story narrative analysis, and specific narrative intervention techniques.

Summary: Narratives are important because they are central to one's life. They have many uses such as to report, evaluate, and regulate. Narratives are especially important for success in academics. The kinds of narratives required in school can be difficult for children to understand and develop. Narratives are complex and can be challenging for those with weak language skills such as children with LI.

Story grammar analysis describes how narratives are organized into episodes. Young children often lack goal-directedness within their stories. Goals are an important aspect of stories and give statements and events meaning and purpose within a narrative. Stories can also be analyzed through cohesion analysis and story art analysis. These forms are both discussed and defined.

Narratives are then discussed as a tool for intervention. Literature can provide a wide variety of information about a child's language skills. Customized narratives can be used to teach children specific skills due to their simplicity and clear organization. One can use an abbreviated story that is shortened or simplified or demonstrated through simple pictures. This can provide the child with a minimal structure while encouraging proper story grammar.

Conclusions: Narratives are essential for communication. Narratives are an important aspect of academic success and therefore teaching narrative skills is important. Goals are an important aspect of narratives because they provide meaning and causation to a story. Narratives can be a useful tool in intervention.

Relevance to the current work: This chapter noted the importance of narratives in academic success and described how narratives can and should be used in intervention. The current study focused on narrative probes.

Ukrainetz, T. A., & Spencer, T. D. (2014). Sorting the learning disorders: Language impairment and reading disability. In T. A. Ukrainetz (Ed.), *School-age language intervention: Evidence-based practices* (161-163). Austin, TX: PRO-ED, Incorporated.

Purpose of the work: This text discussed the linguistic characteristics of Specific Language Impairment (SLI).

Summary: Ukrainetz outlined specific areas of difficulty for children with SLI. Deficits in language are seen in the areas of syntax, semantics, discourse, and pragmatics. The major area of difficulty is syntax. Weak aspects of syntax include understanding and use of morphology, relative clauses, and passive sentences. Children with SLI demonstrate delayed onset of first word and reduced vocabulary as toddlers. They also show difficulty accessing words quickly and with accuracy. The author then described discourse and discussed the difficulties that children have in dealing with the macrostructure of discourse. Children with SLI typically produce discourses with shorter sentences, reduced complex syntax, and more grammatical mistakes.

Conclusions: Children with SLI have more difficulty understanding complex sentences than do typically developing children. Narrative language tasks are difficult for children with SLI and therefore show deficits that may have been missed in word or sentence level tasks. Children with SLI have deficits across multiple aspects of language.

Relevance to the current work: This work detailed linguistic characteristics of children with SLI and provided support for using a narrative task to analyze language difficulties.

APPENDIX B

ENNI Story Grammar Scoring Sheets

Edmonton Narrative Norms Instrument
Story Grammar Scoring Sheet for Story A1

SG Unit	Acceptable *[child need only have one alternative per unit to get credit for that unit]*	Score
Character 1	giraffe / male / boy (or any type of animal such as horse) [not acceptable: pronoun]	0 1
Character 2	elephant / female / girl (or any type of animal such as cow) [not acceptable: pronoun]	0 1
Setting	swimming pool had a ball / playing with ball / want to play ball	0 1
Initiating Event	ball goes in water/pool/sand/mud ball is in water they see a ball	0 2
Internal response	one / both want to get ball elephant says, e.g., "look what happened," "what am I going to do?" E upset/sad [not: he/she/they want to go swimming]	0 1
Internal plan	G decides to / thinks he will get the ball	0 1
Attempt	G jumps in pool / swims toward ball / tries to get ball [not: giraffe swimming (without goal); giraffe falls in water]	0 2
Outcome	G gets ball / gives ball to E [not: E gives ball to G, unless it is noted as unexpected, e.g., "but instead, E gets it and gives it to him"]	0 2
Reaction of Giraffe	G is happy / proud / smiles G says "you're welcome" G's teeth are chattering / G is cold/wet	0 1
Reaction of Elephant	E is happy / is grateful / says "thank you" E hugs the ball [not: holds/has the ball]	0 1
Reaction both/ unknown	"they" are happy / in love/ are friends [code only as a replacement for Reaction of Character 1 or 2; there should not be more than 2 reactions total]	0 1
	Total Score:	

Edmonton Narrative Norms Instrument
Story Grammar Scoring Sheet for Story A2

SG Unit	Acceptable *[child need only have one alternative per unit to get credit for that unit]*	Score
Character 1	giraffe / male / boy (or any type of animal such as horse) [not acceptable: pronoun]	0 1
Character 2	elephant / female / girl (or any type of animal such as cow) [not acceptable: pronoun]	0 1
Setting	swimming pool no running allowed / going swimming / diving	0 1
Initiating Event	E starts to run towards diving board/ running/ going too fast	0 2
Internal response	E wants to go diving/ wants to dive/ wants to play in the water	0 1
Internal plan	E decides to / thinks she will run / swim	0 1
Attempt	E runs / goes fast	0 2
Outcome	E falls / gets hurt/ bumps knee	0 2
Reaction of Elephant	E sad / cries / upset / holds her knee	0 1
Reaction of Giraffe	G is scared/ worried/ goes to help	0 1
Reaction both/ unknown	"they" are unhappy / sad / upset [code only as a replacement for Reaction of Character 1 or 2; there should not be more than 2 reactions total]	0 1
Character 3 (C3)	lifeguard / other elephant / other male / her father / her brother	0 1
Initiating event	C3 shows up/comes over/ G sees C3/ C3 sees that E is hurt / asks what happened	0 2
Internal response	E/G hopes C3 can help/ C3 wants to help	0 1
Internal plan	Lifeguard decides/wants to help	0 1
Attempt	C3 tries to put Band-Aid on / puts Band-Aid on	0 2

Outcome	E gets help / feels better / has a Band-Aid / sits on bench	0 2
Reaction C1	G is relieved / happy / says "you're all better"/ encourages	0 1
Reaction C2	E feels better / not hurt / not sad / stares at Band-Aid	0 1
Reaction C3	C3 is pleased / happy / proud / takes E to bench/ encourages	0 1
Reaction of both/ unknown	"they" are happy / say "thank you"	0 1
Initiating Event	C3 points to no running sign	0 2
Internal response	C3 wants E to follow rules / doesn't want her to get hurt/ wants to help	0 1
Internal Plan	C3 decides to explain rules	0 1
Attempt	C3 explains rules / tells E "no running"	0 2
Outcome	E understands / listens / knows rules	0 2
Reaction of E	E nervous / worried / sorry / says sorry	0 1
Reaction of C3	C3 is upset / angry / stern	0 1
Reaction of both/ unknown	"they" are worried / upset / angry / sorry	0 1
	Total Score:	

Edmonton Narrative Norms Instrument
Story Grammar Scoring Sheet for Story A3

SG Unit	Acceptable *[child need only have one alternative per unit to get credit for that unit]*	Score
Character 1	giraffe / male / boy (or any type of animal such as horse) [not acceptable: pronoun]	0 1
Character 2	elephant / female / girl (or any type of animal such as cow) [not acceptable: pronoun]	0 1
Setting	at swimming pool / going swimming / are playing has/is holding airplane / one asks other to play	0 1
Initiating Event	G playing with airplane / making airplane fly G shows/gives E his airplane	0 2
Internal response	E wants / is interested in airplane	0 1
Internal plan	E decides to take airplane	0 1
Attempt	E takes airplane / zooms airplane around / makes airplane fly/ G gives E a turn	0 2
Outcome	airplane falls in pool / E throws plane in pool	0 2
Reaction of Giraffe	G angry/yells/stares at plane	0 1
Reaction of Elephant	E feels bad/embarrassed/scared / E stares at plane / says oops	0 1
Reaction both/ unknown	"they" are unhappy [code only as a replacement for Reaction of Character 1 or 2; there should not be more than 2 reactions total]	0 1
Character 3 (C3)	lifeguard / other elephant / other female / her mother / her sister / other person	0 1
Initiating event	C3 shows up / comes over / has net / C3 sees plane in water / asks what happened	0 2
Internal response	C3 wants to help / knows how to get plane / offers to help	0 1
Internal plan	C3 decides to try / has idea / says she will get it E/G asks C3 to get it	0 1
Attempt*	C3 reaches for plane / is going to get it / tries to get it C3 gets plane	0 2
Outcome*	C3 gives plane to G / G has plane	0 2
Reaction G	G is happy / amazed / excited / hugs plane / says thanks	0 1
Reaction E	E is happy / relieved / feels better / says thanks	0 1
Reaction C3	C3 is relieved / pleased	0 1
Reaction of both/ unknown	"they" are happy/excited / say thanks [code only as replacement for Reaction of another character; there should not be more than 3 reactions total]	0 1
	Total Score:	

*For this story and this episode, either her attempt to get the plane or her actually getting it qualify as the Attempt, while the Outcome is her giving the plane to the giraffe, because the goal of the episode is to get the plane back to the giraffe.

Edmonton Narrative Norms Instrument
Story Grammar Scoring Sheet for Story B1

SG Unit	Acceptable *[child need only have one alternative per unit to get credit for that unit]*	Score
Character 1	rabbit / bunny / male / boy (or any type of animal such as mouse) [not acceptable: pronoun]	0 1
Character 2	dog / female / girl (or any type of animal such as hamster) [not acceptable: pronoun]	0 1
Setting	at sand box / building sand castle / using shovels	0 1
Initiating Event	D and R build sand castle / play together	0 2
Internal response	R wants to dump sand / destroy castle	0 1
Internal plan	R decides to dump sand on castle	0 1
Attempt	R picks up the bucket / dumps sand	0 2
Outcome	sand castle is ruined / destroyed / broken	0 2
Reaction of Rabbit	R is worried / nervous / scared	0 1
Reaction of Dog	D cries / is sad / is upset / tries to fix castle	0 1
Reaction both/ unknown	"they" are unhappy / sad / upset / worried [code only as a replacement for Reaction of Character 1 or 2; there should not be more than 2 reactions total]	0 1
	Total Score:	

Edmonton Narrative Norms Instrument
Story Grammar Scoring Sheet for Story B2

SG Unit	Acceptable *[child need only have one alternative per unit to get credit for that unit]*	Score
Character 1	rabbit / bunny / male / boy (or any type of animal such as mouse) [not acceptable: pronoun]	0 1
Character 2	dog / female / girl (or any type of animal such as hamster) [not acceptable: pronoun]	0 1
Setting	walking outside / at park / at a picnic	0 1
Initiating Event	D and R are eating/getting food	0 2
Internal response	R feels hungry / wants food	0 1
Internal plan	R decides to eat	0 1
Attempt	R eats a lot of food / eats junk food / eats too fast	0 2
Outcome	R's belly is big / is full / gets sick	0 2
Reaction of Rabbit	R feels sick / holds belly / is worried	0 1
Reaction of Dog	D is worried about R / confused	0 1
Reaction both/ unknown	"they" are unhappy / sad / upset / worried [code only as a replacement for Reaction of Character 1 or 2; there should not be more than 2 reactions total]	0 1
Character 3 (C3)	doctor / other rabbit / other female / his mother	0 1
Initiating event	C3 shows up / comes over / D sees C3 / D gets C3 / C3 asks what happened	0 2
Internal response	D/R hopes C3 can help / C3 wants to help	0 1
Internal plan	D decides to ask for help / explains what happened / doctor decides to help NOT: D talks to C3 (without specifying what about)	0 1
Attempt	C3 gives R medicine / makes R better / checks R / tells R to not eat so much	0 2

Outcome	R gets help / feels better / goes home/ walks away	0	2
Reaction R	R feels better / happy / is not hurt / not sad	0	1
Reaction D	D is relieved / happy	0	1
Reaction C3	C3 is pleased / happy / proud / takes R home	0	1
Reaction of both/ Unknown	"they" are happy	0	1
	Total Score:		

Edmonton Narrative Norms Instrument
Story Grammar Scoring Sheet for Story B3

SG Unit	Acceptable *[child need only have one alternative per unit to get credit for that unit]*	Score
Character 1	rabbit / bunny / male / boy (or any type of animal such as mouse) [not acceptable: pronoun]	0 1
Character 2	dog / female / girl (or any type of animal such as hamster) [not acceptable: pronoun]	0 1
Setting	outside/ at park / walking / playing with wagon / balloon	0 1
Initiating Event	D has balloon	0 2
Internal response	R wants / is interested in balloon	0 1
Internal plan	R decides to untie balloon / get balloon	0 1
Attempt	R unties balloon	0 2
Outcome	R lets go of balloon / balloon flies away	0 2
Reaction of Rabbit	R feels sad / nervous / embarrassed / sorry / worried/ guilty	0 1
Reaction of Dog	D is angry / upset / mad	0 1
Reaction both/ unknown	"they" are unhappy / upset / worried [code only as a replacement for Reaction of Character 1 or 2; there should not be more than 2 reactions total.	0 1
Character 3 (C3)	doctor / other rabbit / other female / his mother	0 1
Character 4 (C4)	balloon man / other rabbit	
Initiating event	C3 shows up / comes over / R sees C3 / R asks C3 for a balloon / money / help	0 2
Internal response	D/R hopes C3 will get balloon / C3 wants to help	0 1
Internal plan	D decides to ask for balloon / money / explains what happened / C3 decides to help

NOT: D talks to C3 (without specifying what about) | 0 1 |

Attempt	C3 gives R money / pays for / buys balloon	0	2
Outcome	R and D get new balloons / have balloons / play with balloons / hold balloons	0	2
Reaction R	R feels happy / excited / is grateful / says "thank you"	0	1
Reaction D	D feels happy / excited / is grateful / says "thank you" / hugs balloon	0	1
Reaction C3	C3 is pleased / happy / says "you're welcome"	0	1
Reaction of both/ unknown	"they" are happy	0	1
	Total Score:		