LINGUISTIC TRADE-OFFS AFTER A SHORT-TERM NARRATIVE INTERVENTION

Maria Resendiz, PhD, CCC-SLP
Texas State University
San Marcos, Texas

Lisa M. Bedore, PhD, CCC-SLP, Elizabeth D. Peña, PhD, CCC-SLP
University of Texas at Austin

Christine Fiestas, PhD, CCC-SLP
Texas A&M University - Kingsville

Maria Diana Gonzales, PhD, CCC-SLP
Texas State University
San Marcos, TX

Amy Louise Schwarz, PhD, CCC-SLP
Texas State University
San Marcos, TX

ABSTRACT

Long term gains in syntactic complexity for children with language impairment (LI) occur when syntactic complexity is explicitly targeted in narrative interventions (Petersen, Gillam, Spencer, & Gillam, 2010). Short term gains in language skills not explicitly targeted, such as increased production of syntactic complexity, are rarely reported in the literature (Davies, Shanks, & Davies, 2004; Wolter & Green, 2013). Despite this evidence, Ebbels (2014) suggests that indirect approaches can be effective for teaching syntax. The current study tests Ebbels (2014) assertion by comparing measures of syntactic complexity in the narrative productions of 46 children (*M* age = 7 years, 6 months) from culturally and linguistically diverse backgrounds after two intervention sessions that targeted story grammar components, but not syntactic complexity. Fourteen children were identified as LI and 32 children were identified as typically developing (TD). All children exhibited increases from pre-testing to post-testing in the number of grammatical utterances they produced. However, only children with LI demonstrated a linguistic trade off. Their use of complex utterances and morpho-syntactic overgeneralizations both increased. So, the trade-off for improvements in complex syntax is morpho-syntactic accuracy.

KEY WORDS: Language Impairment, Intervention, Syntax

INTRODUCTION

In clinical practice, children's narratives are regularly used to differentiate children with language impairment (LI) from typically developing language (TD) and provide useful, ecologically valid information for children from culturally and linguistically diverse backgrounds (CLD); Botting, 2002; Boudreau, 2008; Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004; Greenhalgh & Strong, 2001; Newman & McGregor, 2006; Norbury & Bishop, 2003; Thomson, 2005). Children with LI demonstrate immediate benefits from narrative intervention for explicitly targeted skills, such as production of story components (e.g., character, initiating event, internal response, action, consequence) (Brown, Garzarek, & Donegan, 2014; Hayward & Schneider, 2000) as well as increased production of complex syntax over time (Petersen et al., 2010). Kramer, Mallet, Schneider, and Hayward (2009) contend that children's increased production of story components may cause them to produce more complex syntax over time. Although studies rarely document changes in syntactic complexity and grammaticality when they are not explicitly targeted in the intervention, children with TD demonstrate gains in nontargeted skills, while children with LI do not (Kramer et al., 2009). In contrast to this evidence, Ebbels (2014) suggests that indirect approaches can be effective for teaching syntax.

To test Ebbels' (2014) assertion, we compared the grammatical changes made by children with LI and those with typical language development (TD) after two sessions of a narrative intervention that did not target syntactic complexity, but instead, targeted the inclusion of story components. To couch this study in the literature, we first discuss differences in syntactic complexity in oral narratives produced by children with LI and children with TD. Then we discuss how each group of children compares on the acquisition of explicit and nonexplicit language targets and how they respond to long-term and short-term language interventions. And finally, we discuss dynamic assessment and why we treated two sessions of the assessment as a short-term intervention.

Differences in the Syntactic Production of Children with LI and TD

In studies that have compared the oral narratives of children with LI and children with TD, children with LI produce shorter stories, use fewer complex sentences, engage in more syntactic errors, and produce shorter utterances than children with TD (Hesketh, 2006; Liles, Duffy, Merritt, & Purcell, 1995; MacLachlan & Chapman, 1988; Newman & McGregor, 2006; Reilly, Losh, Bellugi, & Wulfeck, 2004; Wetherell, Botting & Conti-Ramsden, 2007). For example, when the oral narratives of two groups of 2 ½-year-old children with and without LI were compared, children with LI struggled with the use of past tense verbs and personal pronouns while children without LI did not (Kaderavak & Sulzby, 2000). Even though the children with LI did not use personal pronouns, they still used the character names to maintain reference. Interestingly, another study of 99 TD children and 19 children with LI, found that even at 15 years of age, adolescents with LI still demonstrated more errors of tense agreement and morpheme errors than children with TD (Wetherell et al., 2007).

Overgeneralization is another measure of syntactic production. Overgeneralization requires a "productive application of the morphophonological system", even if the use of a morpheme may in fact be incorrect (Rice, Tomblin, Hoffman, Richman, & Marquis, 2004, p. 830). Children with LI produce fewer overgeneralizations and at a later stage in development than children who are TD. For example, children with LI produce overgeneralizations in an attempt to mark finiteness (e.g., falled for fell) in first through fourth grade, which is later than their peers with TD (Rice et al., 2004). Also, 5- to 6-year-old children with LI have been reported to produce fewer overgeneralizations than age-matched children with TD when using verbs such as sleep and slept (Loeb, Pye, Richardson, & Redmond, 1998). Overgeneralizations with intransitive verbs for children with TD decrease and are minimal by 8 years of age (Brooks, Tomasello, Dodson, & Lewis, 1999). Perhaps use of overgeneralizations changes over time for children with LI, much like it changes for children with TD, but at a different rate. When developing interventions to increase the accuracy and complexity of syntactic productions of children with LI, researchers identify explicit and non-explicit language targets for long-term and short-term interventions, which we discuss next.

Explicit Versus Non-Explicit Language Targets in Long-Term and Short-Term Interventions

Children with TD and LI demonstrate different patterns of progress on explicit and non-explicit language targets and respond differently to long-term and short-term interventions. Research suggests that eight-year-old children with TD language utilized the adult models provided when telling stories using a picture sequence and single picture narrative elicitation task, while younger children with TD language and children with LI did not use the models provided to them when telling narratives (Ukrainetz & Gillam, 2009). Teaching elaborated language, or the use of more complex syntax, needs to be explicitly addressed during narrative intervention sessions (Ukrainetz & Gillam, 2009). Specifically targeting microstructure in the context of literate narrative intervention can foster complex syntax language development (Petersen et al., 2010).

Children with LI make slow and steady changes during lengthy language interventions with 24, 48, and 96 sessions that directly focus on morpho-syntax (Leonard, Camarata, Pawlowska, Brown, & Camarata, 2008) with some generalization to non-targeted forms (Leonard, Camarata, Pawlowska, Brown, & Camarata, 2006; Leonard, Camarata, Brown, & Camarata, 2004; Tyler, Lewis, Haskill, & Tolbert, 2003). Changes that occur as a result of short-term intervention vary depending on children's language abilities and the type of grammatical structure targeted. For example, third grade children with TD improved on targeted and *non-targeted* components after participating in only two intervention sessions while focusing on just one story grammar element. Conversely, children with possible LI improved on *only* targeted components (Kramer et al., 2009). In contrast to these findings, Ebbels (2014) suggests that short-term indirect language interventions can be effective. Dynamic assessment (DAN), which we discuss next, provides a useful framework to evaluate short-term changes in the syntactic production of children with LI.

Dynamic Assessment

Traditional assessments use static measures and a snapshot of the child's language ability. Dynamic Assessment of Narratives (DAN) differs from the traditional assessment approach because examiners are interested in children's modifiability (Peña, Gillam, Malek, Ruiz-Felter, Resendiz, Fiestas & Sabel, 2006). Modifiability refers to the amount of examiner effort required when working with children and how responsive the child is to the intervention. DAN has accurately differentiated children with TD and children with LI (Miller, Gillam, & Peña, 2001; Peña et al., 2006). DAN is grounded in Vygotsky's (1978) idea of the Zone of Proximal Development, which describes the distance between the child's lower level of independent functioning and the child's higher level of adult-supported functioning (see Gillam, Peña & Miller, 1999). DAN evaluates the child's changes from pre-test to post-test resulting from participation in Mediated Learning Experience (MLE) sessions (Gillam et al., 1999). Those sessions are scripted and contain the five components of mediated learning: (a) intention to teach, (b) meaning, (c) transcendence, (d) planning, and (e) transfer (Lidz, 1991).

For the intention to teach component, the adult selects a specific goal, explains the goal to the child, and verifies that the child understands the goal. For example, the adult could explain that the child's goal is to identify the characters' names when telling a story. For the meaning component, the adult explains to the child why the goal is important. For example, the adult could explain that the person listening to the story needs to know the names of the characters to understand the story. For the transcendence component, the adult helps the child understand how the goal applies to other aspects of the child's everyday life. For example, the adult could connect storytelling to conversation and ask the child what would happen if the child were trying to have a conversation about two mutual friends with someone and the conversational partner never identified the names of the two friends. For the planning component, the adult helps the child develop a plan for enacting the learning goal. For example, the adult could help the child create a character map to identify who is in the story that the child plans to tell (Gillam et al., 1999). For the transfer component, the adult helps the child develop a plan for applying the goal to other aspects of the child's life (Lidz, 1991). For example, the adult could help the child create the plan of stating the name of each person he or she refers to in a conversation and then observe whether the child enacts the goal during conversation. By progressing through these components, the examiner is able to evaluate small changes the child makes during the MLE sessions and the child's ability to generalize the learning goal (Peña, Resendiz, & Gillam, 2007).

MLE sessions then provide the teach-test learning environment that are a hallmark of intervention.

Therefore, two MLE sessions are an appropriate context for examining the short-term effects that intervention has on explicit and non-explicit language targets.

Summary and Research Questions

When the oral narratives of children with LI and TD are compared, the narratives of children with LI contain more simple sentences, fewer complex sentences, more syntactic errors, and fewer overgeneralizations than children with TD (Hesketh, 2006; Liles et al., 1995; Loeb et al., 1998; MacLachlan & Chapman, 1988; Newman & McGregor, 2006; Reilly et al., 2004; Wetherell et al., 2007). When exposed to short-term language intervention, children with LI only progress on explicitly taught language targets, while children with TD progress on both explicit and non-explicit targets (Kramer et al., 2009). Despite this evidence, Ebbels (2014) advocates for short-term interventions that indirectly target syntax. To test Ebbels' (2014) assertion, we designed a study to evaluate short-term changes in the context of a DAN narrative task. The explicit language targets were components of story grammar (e.g., character, initiating event, internal response, action, consequence). The non-explicit language targets were the number of dependent clauses in communication units, the number of grammatical utterances, and a change score for the number of overgeneralizations produced between two pre- and post-test sessions. Our specific research questions were:

- Do children with TD and LI make changes in syntax and morpho-syntax from pre-test to post-test after participating in two MLE sessions that focus on teaching story elements?
- Do changes in syntax and morpho-syntax result in improvements for all children or are there trade-offs?
- What aspects of morpho-syntax change from pre-test to post-test for children with LI?

METHODS

Participants

Subjects included 46 first and second grade students from culturally and linguistically diverse backgrounds (European American: 20, Hispanic: 18, African-American: 7, Other: 1). The subjects were enrolled in first and second grade (M age = 7 years 6 months) from Central Texas and Los Angeles area school districts. Some children (LI = 14; TD = 30) were selected from the treatment group of a large scale narrative dynamic assessment study (Peña et al., 2006). The remaining children (TD = 2) were recruited specifically for this study.

The 14 children were identified as LI by meeting two of the three following criteria: (1) diagnosis of LI by a certified SLP, (2) parent or teacher concern about language (speech, receptive, expressive), and (3) standardized score at or below -1.25 SD on the Test Of Language Development - Primary 3rd Edition (Newcomer & Hammill, 1997) or CASL (Carrow-Woolfolk, 1999). Thirty-two children were identified as TD by meeting three of the four following criteria:(1) no teacher concern about speech, receptive, or expressive language, (2) no parent concern about speech, receptive or expressive language, (3) fewer than 15% semantic, syntactic, and/or pragmatic errors during classroom observation (Patterson & Gillam, 1995), and (4) standardized score within 1 SD on the TOLD:P3 (Newcomer & Hammill, 1997) or CASL (Carrow-Woolfolk, 1999).

Procedure

Two Friends (Miller, 1999), a wordless picture book, was used to elicit the pre-test narrative from all of the children (LI and TD). Approximately two weeks later, *Bird and His Ring* (Miller, 1999), another wordless picture book, was used to elicit the post-test narrative. These two books were selected because they are balanced for targeted components (Peña et al., 2006). Two scripted MLE sessions, each lasting approximately 30 minutes occurred between the pre- and post-test. MLE sessions included the five components of mediated learning explained previously (i.e., intention to teach, meaning, transcendence, planning, transfer). Specific feedback was only provided to the children on the story components (e.g., character, initiating event, internal response, action, consequences). Non-targeted areas included productivity and morpho-syntax. The productivity measures were the subordination index and the number of grammatical utterances. The morpho-syntax measure was a change score based on the number of overgeneralizations produced between the two pre- and post-test DAN sessions. Overgeneralizations were considered to occur any time that a child produced a bound morpheme incorrectly. Incorrect bound morpheme productions included overgeneralizing a regular morpheme rule and substituting an incorrect morpheme. By using a morpheme, children were demonstrating that they were

aware there was a morpheme that should be used, even if the morpheme they used was incorrect. We viewed this as a more productive error than omitting the bound morphemes. For example, if a child said "runned" instead of "ran" that was considered an overgeneralization. Also, if a child said "they walks" instead of "they walked" or "they walk" this was also considered an overgeneralization because the child was attempting to use a bound morpheme, even though the attempt was incorrect.

Use of dialect was taken into consideration for speakers of African American English (AAE). Children who spoke AAE were not penalized for use of AAE dialect. Following the guidelines from Oetting & McDonald (2001), utterances produced by children who used AAE features were not counted as ungrammatical if the constructions followed the rules of AAE. For example, if a child was judged to be a speaker of AAE dialect and used zero regular third person present in the utterance "She talk to the dog," this construction was not counted as an error. Pre-test and post-test narratives were transcribed and coded using Systematic Analysis of Language Transcripts (SALT) (Miller & Chapman, 2002).

RESULTS

Changes from pre-test to post-test were calculated using a repeated measures ANOVA, with narrative (pre-test and post-test) as the within-subjects factor and group (LI and TD) as the between subjects factors. All children increased the length of their stories as well as the length of their utterances from pre-test to post-test.

To further evaluate the utterances, change in complexity of utterances was calculated using the subordination index (SI). SI was calculated by dividing the number of clauses by the number of utterances in the sample. There was a main effect for time, $F(1,46)=16.459$, $p<.001$. Therefore, both groups increased the complexity of their utterances from pre-test to post-test. Children with LI appeared to benefit from the intervention in the area of sentence complexity (See Figure 1).
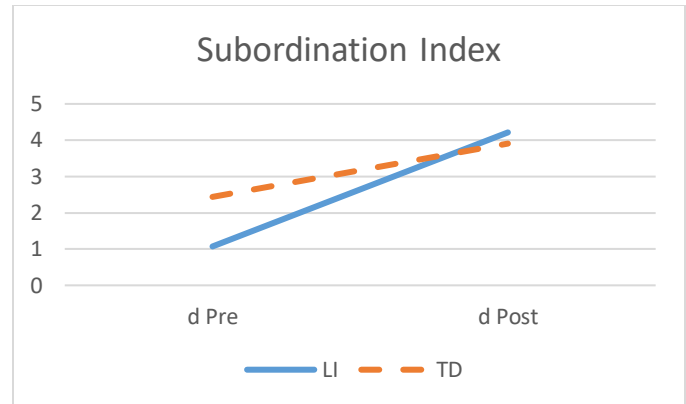

Figure 1. Subordination Index for pre to post changes for children with LI and TD.

Given these results, we speculated that children's inclusion of dialogue in their narratives might have increased their sentence complexity. For example, the children could have said "The dog said, 'I found the cat'" instead of "The dog found the cat." We found no relationship between children's use of dialogue and sentence complexity.

Grammaticality of utterances was evaluated to examine the quality of children's utterances. There was a main effect for time, $F(1,46)=6.873$, $p=.012$, but no main effect for group. All groups increased the number of grammatical utterances produced (See Figure 2).
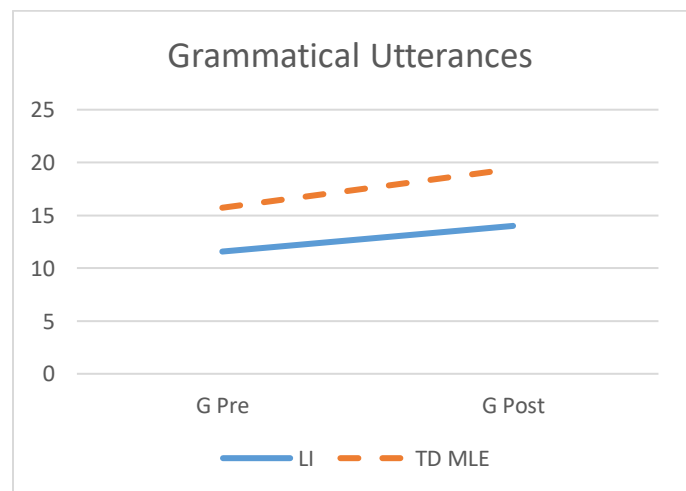

Figure 2. Number of grammatical utterances produced at pre-test and post-test by children with LI and TD.

Changes in morpho-syntax were evaluated to look at grammaticality in more detail. For the use of overgeneralizations of bound morphemes, we found a main effect for time, $F(1,46)=4.985$, $p=.031$, and a trend for group, $F(1, 46)=3.658$, $p=.06$. As shown in Figure 3, children with TD produced a minimal number of overgeneralizations while children with LI increased in overgeneralizations from pre- to post-test.
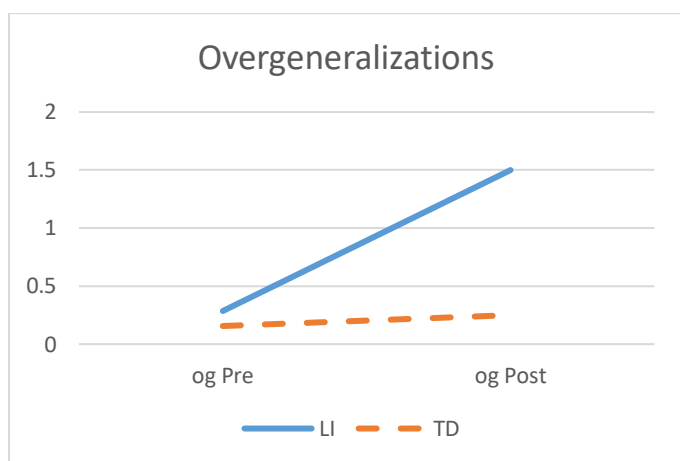

Figure 3. Use of overgeneralizations by children with LI and TD at pre- and post-test.

DISCUSSION

DAN provided an opportunity to evaluate linguistic changes beyond the domains that were targeted in the MLE sessions. From a clinical perspective, this provides information about changes that can be expected during interventions in both targeted and non-targeted areas.

All children exhibited increases from pre-testing to post-testing in the number of complex utterances and the grammaticality of those utterances. Group differences emerged in their production of overgeneralizations. Children with TD demonstrated almost no change from pre- to post-test in their production of over-generalizations while children with LI produced a similar number of overgeneralizations as children with TD at pre-test but produced many more overgeneralizations than children with TD at post-test.

In contrast with previous studies where children with LI produced fewer complex sentences and more syntactic errors (Hesketh, 2006; Liles et al.,1995; Newman &

McGregor, 2006; MacLachlan & Chapman, 1988; Reilly et al., 2004), children with LI and TD in the current study did not have significant differences in sentence complexity and grammaticality.

Both groups of children produced more grammatical utterances at post-test but the children with TD produced more grammatical utterances than the children with LI. Grammaticality and bound morphemes are an area of difficulty for children with LI at this age. Contrary to previous studies where children with LI omitted bound morphemes (Bellaire, Plante, & Swisher, 1994); children with LI in the current study omitted very few bound morphemes but increased their production of overgeneralizations.

Children with LI demonstrated linguistic trade-offs between syntax and morpho-syntax. As children with LI increased the complexity of their utterances, they also increased the number of errors they made with bound morphemes. This finding supports Ebbels (2014) assertion that short-term indirect approaches can be effective for targeting morpho-syntax indirectly in the context of MLE sessions that directly target story components. Future research is needed to see if these results can be generalized to other language learning tasks across different populations. While trade-offs may occur for children throughout different stages of language learning, the specific trade-offs are likely different for children depending on their language level and age.

Clinical Implications

These results support the importance of continuous assessment of student progress in both targeted and non-targeted areas of language during intervention. The type of errors should also be assessed during intervention, as some errors may be considered more productive than other errors. A specific example that was observed in the current study is the use of overgeneralizations instead of omissions of bound morphemes.

REFERENCES

Bellaire, S., Plante, E., & Swisher, L. (1994). Bound-morpheme skills in the oral language of school-age,

language-impaired children. *Journal of Communication Disorders, 27,* 265-279. doi:10.1016/0021-9924(94)90017-5

Botting, N. (2002). Narrative as a tool for the assessment of linguistic and pragmatic impairments. *Child Language Teaching and Therapy, 18,* 1-22. doi:10.1191/0265659002ct224oa

Boudreau, D. (2008). Narrative abilities: Advances in research and implications for clinical practice. *Topics in Language Disorders, 28,* 99-114. doi:10.1097/01.TLD.0000318932.08807.da

Brooks, P. J., Tomasello, M., Dodson, K., & Lewis., L. B. (1999). Young children's overgeneralizations with fixed transivity verbs. *Child Development 70*(6), 1325-1337. doi:0009-3920/99/7006-0005

Brown, J. A., Garzarek, B. A. & Donegan, K. L. (2014). Effects of a narrative intervention on story retelling in at-risk young children. Topics in Early Childhood Special Education, 34(3), 154-164. doi:10.1177/0271121414536447

Carrow-Woolfolk, E. (1999). *Comprehensive assessment of spoken language.* Circle Pines, MN: AGS.

Davies, P., Shanks, B. & Davies, K. (2004). Improving narrative skills in young children with delayed language development. *Educational Review, 56*(3), 271-286. doi:10.1080/0013191042000201181

Ebbels, S. (2014). Effectiveness of intervention for grammar in school-aged children with primary language impairments: A review of the evidence. *Child Language Teaching and Therapy, 30*(1), 7-40. doi:10.1177/0265659013512321

Fey, M. E., Catts, H. W., Proctor-Williams, K., Tomblin, J. B., & Zhang, X. (2004). Oral and written story composition skills of children with language impairment. *Journal of Speech, Language, and Hearing Research, 47,* 1301-1318. doi:10.1044/1092-4388(2004/098)

Gillam, R. B., Peña, E. D. & Miller, L. (1999). Dynamic assessment of narrative and expository discourse. *Topics in Language Disorders, 20*(1), 33-47. doi:10.1097/00011363-199911000-00005

Greenhalgh, K. S. & Strong, C. J. (2001). Literate language features in spoken narratives of children with typical language and children with language impairments. *Language, Speech, and Hearing Services in Schools, 32,* 114-125. doi:10.1044/0161-1461(2001/010)

Hesketh, A. (2006). The use of relative clauses by children with language impairment. *Clinical Linguistics & Phonetics, 20,* 539-546. doi:org/10.1080/02699200500266398

Hayward, D. & Schneider, P. (2000). Effectiveness of teaching story grammar knowledge to pre-school children with language impairment: An exploratory study. *Child Language Teaching and Therapy, 16*, 255-284. doi:0265-6590(00)CT2060A

Kaderavek, J. N. & Sulzby, E. (2000). Narrative production by children with and without specific language impairment: Oral narratives and emergent readings. *Journal of Speech, Language, and Hearing Research, 43,* 34-49. doi:10.1044/jslhr.4301.34

Kramer, K., Mallet, P., Schneider, P. & Hayward, D. (2009). Dynamic assessment of narratives with grade 3 children in a First Nations community. *Canadian Journal of Speech-Language Pathology and Audiology 33*(3), 119-128.

Leonard, L. B., Camarata, S. M., Pawlowska, M., Brown, B., & Camarata, M. N. (2008). The aquisition of tense and agreement morphemes by children with specific language impairment during intervention: Phase 3. *Journal of Speech, Language, and Hearing Research, 51,* 120-125. doi:10.1044/1092-4388(2008/008)

Leonard, L. B., Camarata, S. M., Pawloska, M., Brown, B., & Camarata, M. N. (2006). Tense and agreement morphemes in the speech of children with specific language impairment during intervention: Phase 2. *Journal of Speech, Language, and Hearing Research, 49,* 749-770. doi:10.1044/1092-4388(2006/054)

Leonard, L. B., Camarata, S. M., Brown, B., & Camarata, M. N. (2004). Tense and agreement in the speech of children with specific language impairment: Patterns of generalization through intervention. *Journal of Speech, Language, and Hearing Research, 47,* 1363-1379. doi:10.1044/1092-4388(2004/102)

Lidz, C. S. (1991). *Practitioner's guide to dynamic assessment.* New York: Guilford Press.

Liles, B. Z., Duffy, R. J., Merritt, D. D., & Purcell, S. L. (1995). Measurement of narrative discourse ability in children with language disorders. *Journal of Speech and Hearing Research, 38,* 415-425. doi:10.1044/jshr.3802.415

Loeb, D. F., Pye, C., Richardson, L. Z., Redmond, S. (1998). Causative alternations of children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 44,* 1103-1114. doi:10.1044/jslhr.4105.1103

MacLachlan, B. G. & Chapman, R. S. (1988). Communication breakdowns in normal and language-learning disabled children's conversation and narration. *Journal of Speech and Hearing Disorders, 53,* 2-7. doi:10.1044/jshd.5301.02

Miller, L. (1999). *Bird and his ring.* Austin, TX: Neon Rose Productions.

Miller, L. (1999) *Two friends*. Austin, TX. Neon Rose Productions.

Miller, J. & Chapman, R.S. (2002). *SALT for Windows – Research Version 7.0.,* University of Wisconsin-Madison, Language Analysis Laboratory, Madison, WI: Waisman Center

Miller, L., Gillam, R. B., Peña, E. D. (2001). *Dynamic assessment and intervention: Improving children's narrative skills.* Austin, TX: Pro-Ed.

Newcomer, P. & Hammill, D. (1997). *Test of Language Development – Primary, Third Edition.* Austin, TX: Pro-Ed.

Newman, R. M. & McGregor, K. K. (2006). Teachers and laypersons discern quality differences between narratives produced by children with or without SLI. *Journal of Speech, Language, and Hearing Research, 49,* 1022-1036. doi:10.1044/1092-4388(2006/073)

Norbury, C. F. & Bishop, D. V. M. (2003). Narratives skills of children with communication impairments. *International Journal of Language & Communication Disorders, 38,* 287-313. doi:10.1080/136820310000108133

Oetting, J. B. & McDonald, J. L. (2001). Nonmainstream dialect use and specific language impairment. *Journal of Speech, Language, and Hearing Research, 44,* 207-223. Doi:10.1044/1092-4388(2001/018

Patterson, S. & Gillam, R. B. (1995). Team collaboration in the evaluation of language in students above the primary grades. In D. Tibbits (Ed.), *Language intervention: beyond the primary grades*. Austin, TX: Pro-Ed.

Peña, E. D., Gillam, R. B., Malek, M., Ruiz-Felter, R., Resendiz, M., Fiestas, C., & Sabel, T. (2006). Dynamic assessment of school-age children's narrative ability: An experimental investigation of classification accuracy. *Journal of Speech, Language, and Hearing Research, 49,* 1037-1057. doi:10.1044/1092-4388(2006/074)

Peña, E. D., Resendiz, M. & Gillam, R. B. (2007). The role of clinical judgements of modifiability in the diagnosis of language impairment. *Advances in Speech Language Pathology, 9*(4), 332-345. doi:org/10.1080/14417040701413738

Petersen, D. B., Gillam, S. L., Spencer, T. & Gillam, R. B. (2010). The effects of literate narrative intervention on children with neurologically based language impairment: An early stage study. *Journal of Speech, Language, and Hearing Research, 53*, 961-981. doi:10.1044/1092-4388(2009/09-0001)

Reilly, J., Losh, M., Bellugi, U., & Wulfeck, B. (2004). "Frog, where are you?" narratives in children with specific language impairment, early focal brain injury, and Williams syndrome. *Brain and Language, 88,* 229-247. doi:10.1016/S0093-934X(03)00101-9

Rice, M. L., Tomblin, J. B., Hoffman, L., Richman, W. A., Marquis, J. (2004). Grammatical tense deficits in children with SLI and nonspecific language impairment: Relationships with nonverbal IQ over time. *Journal of Speech, Language, and Hearing Research, 47,* 816-834. doi:10.1044/1092-4388(2004/061)

Thomson, J. (2005). Theme analysis of narratives produced by children with and without specific language impairment. *Clinical Linguistics & Phonetics, 19,* 175-190. doi:org/10.1080/02699200410001698616

Tyler, A. A., Lewis, K. E., Haskill, A., & Tolbert, L. C. (2003). Outcomes of different speech and language goal attack strategies. *Journal of Speech, Language,*

and Hearing Research, 46, 1077-1094. doi:10.1044/1092-4388(2003/085)

Ukrainetz, T & Gillam, R. B. (2009). The expressive elaboration of imaginative narratives by children with specific language impairment. *Journal of Speech, Language, and Hearing, 52,* 883-898. doi:1092-4388/09/5204-0883

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard Unversity Press.

Wetherell, D., Botting, N., & Conti-Ramsden, G. (2007). Narrative in adolescent specific language impairment (SLI): A comparison with peers across two different narrative genres. *International Journal of Language & Communication Disorders*, *42*(5), 583-605. doi:10.1080/13682820601056228

Wolter, J. A. & Green, L. (2013). Morphological awareness intervention in school-age childten with language and literacy deficits, *Topics in Language Disorders,* *33*(1), 27-41. doi:10.1097/TLD.0b013e318280/5aa