

Research Article

Language Sampling With Adolescents: Building a Normative Database With Fables

Marilyn A. Nippold,^a Laura M. Vigeland,^a
Megan W. Frantz-Kaspar,^a and Jeannene M. Ward-Lonergan^b

Purpose: The goal of the study was to create a language sampling task appropriate for adolescents and to contribute normative data from speakers with typical language development.

Method: Thirty adolescents (mean age = 14 years, 1 month) participated in an interview that involved the retelling and interpretation of 4 Greek fables. Each speaker's performance on the task was audio-recorded, transcribed verbatim, and entered into the Systematic Analysis of Language Transcripts computer program (Miller & Iglesias, 2015). Samples were analyzed statistically for language productivity and syntactic complexity. In addition, each participant's perspective on the moral messages of the fables was examined informally.

Results: The Fables task was effective in prompting adolescents to use complex language and in encouraging them to express their opinions about the moral messages. Although boys and girls did not differ in their performance on the task, some fables were more effective than others at eliciting spoken language and complex syntax. Moreover, the adolescents tended to agree with the moral messages of the fables and appeared to find them relevant to their lives.

Conclusion: The Fables task has potential for clinical use with adolescents. Research is necessary to expand the normative database to include larger and more diverse groups of adolescents.

In the profession of speech-language pathology, the topic of adolescent language disorders has long been of interest and concern, especially to speech-language pathologists (SLPs) who work in the schools and witness firsthand how the presence of a spoken language disorder can limit a student's ability to succeed in a host of academic and social endeavors (Nippold, 2014). Nevertheless, many adolescents with language disorders do not receive the type of intense, frequent, explicit, and systematic intervention that would address their deficits effectively (Joffe & Nippold, 2012), and it is unfortunate that they continue to be underserved, even as progress has occurred in our understanding of the nature, assessment, and treatment of language disorders in adolescents (R. Paul & Norbury, 2012; Tomblin & Nippold, 2014).

This chronic lack of services for adolescents may stem, at least in part, from the often subtle nature of their spoken language disorders, deficits that may not be obvious during casual speaking situations. For example, research

has shown that when conversational language sampling tasks are used as an assessment tool, many adolescents with specific language impairment (SLI) or nonspecific language impairment (NLI) perform as well as their peers with typical language development (TLD; Nippold, Mansfield, Billow, & Tomblin, 2008), giving the impression that they are progressing adequately. However, when more challenging expository speaking tasks are used, deficits are often revealed in the ability of adolescents with SLI and NLI to generate the type of long and complex utterances that their peers with TLD can easily produce (Nippold et al., 2008; Nippold, Mansfield, Billow, & Tomblin, 2009). Adolescents with SLI and NLI also tend to produce fewer words and utterances than their peers with TLD and may struggle to express themselves with clarity, precision, and efficiency during challenging speaking tasks (Tomblin & Nippold, 2014). This would include academic settings where they are expected to make formal speeches or discuss complicated topics in classes such as astronomy, biology, chemistry, civics, economics, health, history, mathematics, physics, or social studies.

In our profession, language sampling is considered the "gold standard" of language assessment because it can indicate how a speaker communicates in real-world settings (Heilmann, Nockerts, & Miller, 2010). Although norm-referenced, standardized tests are useful for identifying

^aUniversity of Oregon, Eugene

^bUniversity of the Pacific, Stockton, CA

Correspondence to Marilyn A. Nippold: nippold@uoregon.edu

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language disorders in adolescents (Nippold et al., 2008, 2009; Stothard, Snowling, Bishop, Chipchase, & Kaplan, 1998), they provide little information about how adolescents actually express themselves for genuine purposes, and they may be subject to cultural bias (Heilmann & Malone, 2014). In contrast, a language sample can allow the SLP to determine where an adolescent speaker's individual strengths and weaknesses lie during naturalistic communication, providing information that is ecologically valid and relevant to real-world expectations. As such, it can provide direction for designing appropriate intervention for adolescents with language disorders (Heilmann & Malone, 2014; Miller, Andriacchi, & Nockerts, 2015, 2016; Nippold, 2014; Pavelko, Owens, Ireland, & Hahs-Vaughn, 2016).

Nevertheless, language sampling as a clinical assessment tool has been used primarily with young children (Hewitt, Scheffner Hammer, Yont, & Tomblin, 2005; Pavelko et al., 2016) and less often with adolescents (Nippold, 2014; Pavelko et al., 2016). Part of the explanation for this pattern may be that most language sampling tasks were designed for preschool or young school-age children and may not be appropriate for adolescents (Nippold, 2014). Another reason may be that students who are training to become SLPs receive little information on how to elicit and analyze language samples from adolescents. Time constraints are another relevant factor.

According to a recent survey of SLPs in the United States (Pavelko et al., 2016), only 45% of professionals who served adolescents in middle school and high school elicited language samples from their students. The primary reason offered for not eliciting language samples more frequently was that SLPs believed this activity required too much time. The survey also indicated that of those SLPs who did use language sampling tasks with adolescents, most elicited samples of simpler conversational speech rather than more complex narrative or expository speech, and often they did not make an audio or video recording of the samples or formally analyze them. This suggests that SLPs need more information on the benefits of conducting language sampling with adolescents and on current procedures that can be used to carry out this activity more effectively and efficiently.

In an effort to assist SLPs in their work with adolescents, investigators in recent years have been focusing more attention on this population, designing tasks to examine the spoken language skills of typically developing individuals ages 12 years and older (e.g., Heilmann & Malone, 2014; Miller et al., 2015, 2016; Nippold, Frantz-Kaspar, et al., 2014, 2015; Nippold, Hesketh, Duthie, & Mansfield, 2005; Nippold, Mansfield, & Billow, 2007). Findings from these studies have demonstrated that tasks that prompt a speaker to think about complicated topics (e.g., the nature of interpersonal conflicts, strategies needed to succeed at a favorite game or sport) are more likely to elicit complex spoken language than tasks that encourage discussion of simpler topics (e.g., casual conversations about school, family, pets).

Taken together, those studies represent an effort to create normative databases of language samples that can

serve as points of reference for analyzing the performance of adolescents with known or suspected language disorders. As part of that effort, Nippold, Frantz-Kaspar, et al. (2014, 2015) designed a language sampling task for adolescents that involved fables. Fables are stories that attempt to teach moral lessons through the actions of animals that act like people (*Aesop's Fables*, 1947). Many fables shared today were created by Aesop (circa 620–560 B.C.), the Greek storyteller, more than 2,500 years ago, and thus they have an enduring appeal that cuts across centuries, countries, cultures, and languages (Knopf, 1992). Moreover, fables commonly occur in the modern curriculum at the elementary, middle, and high school levels, where students may be assigned to read, retell, and interpret those stories in their language arts or literature classes (e.g., McDougal Littell, 2006).

It is essential that school-based SLPs elicit, transcribe, and analyze language samples that apply to classroom expectations, including the *Common Core State Standards* (CCSS; National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010), which have now been adopted in most states in the United States. For example, the standards for Speaking and Listening (SL) in English/Language Arts (ELA) indicate that adolescents in Grade 8 are expected to use spoken language and critical-thinking skills to express themselves clearly and coherently, and to support their points with relevant details, valid evidence, and solid reasoning (CCSS.ELA-Literacy.SL.8.4; National Governors Association..., 2010). They also are expected to “vary their sentence patterns for meaning, reader/listener interest, and style” (L.6.3a; National Governors Association..., 2010, p. 56). The rationale for establishing these standards is that students who can meet them are likely to be successful in college and in their careers. Underlying these standards is the ability to use complex syntax proficiently.

Fables are particularly appropriate for middle school students because these young adolescents are in a stage of cognitive and socioemotional development when their reasoning skills and moral values are becoming more sophisticated, leading them to question the common beliefs and assumptions of others and to decide for themselves what to believe (Lerner, 2002; Santrock, 1996; Schickedanz, Schickedanz, Forsyth, & Forsyth, 2001). When adolescents are encouraged to ponder the deeper meanings of fables, to indicate whether they agree or disagree with the moral messages, and to give reasons for their views, they are provided with an opportunity to engage in critical thinking, which is the ability to analyze the validity, logic, and relevance of information (R. W. Paul, 1993; R. W. Paul, Binker, Jensen, & Kreklau, 1987). As mentioned above, the development of critical-thinking skills is a prominent part of the CCSS (National Governors Association..., 2010) and helps to ensure that young people are well prepared to make sound decisions that affect their lives and well-being.

In a previous study with adolescents (mean age = 14 years; $n = 40$), all of whom were developing typically, Nippold, Frantz-Kaspar, et al. (2015) presented two fables,

The Mice in Council (Aesop's Fables, 1997) and *The Monkey and the Dolphin* (Aesop's Fables, 1947), both of which deal with complex mental states (e.g., pride, sacrifice, wisdom, goodwill, trust, pretense). Participants were asked to listen to each fable, retell it to an examiner, and answer a set of critical-thinking questions about the deeper meaning of the story. Results indicated that the participants successfully retold the fables and answered the questions, and that syntactic complexity was greater during the fable-retelling and critical-thinking activities compared with a conversational task with the same examiner. Given the high level of linguistic competence demonstrated by adolescents in retelling the fables and answering the questions in the previous study, the present study was designed to expand the normative database in spoken language production in typically developing adolescents using four additional fables.

The Fables task used in the present study is similar to the Peer Conflict Resolution (PCR) task that has been used in previous research with adolescents and adults (Nippold, Cramond, & Hayward-Mayhew, 2014; Nippold et al., 2007, 2009). The PCR task used a set of hypothetical stories about disagreements between young people. The participant listened to each story as it was read aloud by an examiner, and a language sample was recorded as the participant retold the story and answered a set of questions about the conflict and how it should be handled. Studies that used the PCR task indicated that it was effective in eliciting long and complex utterances from speakers ages 10 to 70 years as they retold the stories and answered the questions (Nippold, Cramond, et al., 2014; Nippold et al., 2007, 2009). In the present study, the stories were fables, and the questions concerned the moral messages they expressed.

Each recorded sample was transcribed and analyzed for language productivity and syntactic complexity. Language productivity was measured in terms of the total number of communication units (C-units) produced (TCU), and syntactic complexity was measured in terms of mean length of C-unit (MLCU) and clausal density (CD). Prior research had indicated that all three measures—TCU, MLCU, and CD—are sensitive to language growth during the school-age and adolescent years (Miller et al., 2015; Nippold, Hesketh, et al., 2005; Nippold et al., 2007; Ravid & Berman, 2006) and that students with language disorders often show deficits on these measures (Nippold et al., 2008, 2009; Scott & Windsor, 2000; Strong & Shaver, 1991). In view of those findings, we included these measures in the present study.

Given the potential clinical application of the Fables task as a language sampling tool for adolescents, it was also of interest to determine whether there were differences in language productivity and syntactic complexity, depending on the fable or the gender of the participant. In other words, it would be useful to know, for example, if one particular fable elicits significantly higher-quality (or lower-quality) performance than another, or if female participants outperform male participants or vice versa on any

of the fables. If one fable elicits better performance than another, or if it favors boys or girls, then that story could be analyzed more closely to determine the underlying reasons. This information could assist SLPs in choosing fables for assessment with adolescents who have or are suspected of having language disorders.

In the present study, questions concerning the moral messages of the fables were posed in order to prompt critical thinking and complex speaking. The questions also allowed us to discover what the participants actually thought about the morals and whether they agreed or disagreed with them. We expected this information to be useful in determining whether the fables and their moral messages were appropriate for adolescents and relevant to their lives. To accomplish this, we informally examined the participants' responses to the questions concerning the morals.

In sum, the study posed the following questions with respect to a language sampling task involving fables designed specifically for adolescents:

1. Would different fables reveal different levels of language productivity and syntactic complexity?
2. Would boys and girls differ in their performance on the Fables task?
3. Would adolescents agree or disagree with the moral messages of the fables?
4. Would adolescents find the moral messages of fables relevant to their lives?

Method

The project was approved by the University of Oregon Research Compliance Office before any participants were recruited. All approved procedures were followed throughout the study. The parents/guardians of each participant signed a consent form allowing their son or daughter to participate in the study, and on the day of testing, each adolescent signed an assent form, agreeing to participate. Each adolescent received a gift card for participating in the study.

All testing was conducted by three research assistants (examiners) who had passed an online Collaborative Institutional Training Initiative course, which provided instruction in ethics, integrity, and confidentiality when working with research participants and collecting and analyzing data. The examiners were trained by the principal investigator in norm-referenced standardized test administration, language sampling procedures, and the Systematic Analysis of Language Transcripts (SALT) computer program (Miller & Iglesias, 2015).

Participants

A total of 30 eighth-grade students (mean age = 14 years, 1 month) participated in this study; 14 were boys and 16 were girls. They all spoke Standard American

English and lived in California, Oregon, or Washington. Chronological age, mother's education level, and ethnicity data were collected to describe participant demographics. The mothers' average education level was almost 17 years, indicating that the participants generally came from college-educated families. Most participants in the study were White ($n = 26$), although there were a few students of Latino, mixed, or other ethnic backgrounds. The Word Classes and Recalling Sentences subtests of the Clinical Evaluation of Language Fundamentals–Fifth Edition (CELF-5; Wiig, Semel, & Secord, 2013) were administered to confirm TLD in the participants. Standard scores from those two subtests were combined to yield a language composite score. All participants scored at average to above-average levels. Table 1 provides more details on the participants.

Procedures

Participants were tested at a school, library, residence, or other private setting. All testing took place in a quiet room free from distractions. Each session began with the examiner explaining the testing procedures and answering any questions the participant had before he or she signed the assent form. Then the examiner administered the Word Classes and Recalling Sentences subtests of the CELF-5 in order to examine the participant's lexical and syntactic development and to confirm the presence of TLD.

Next, the examiner elicited a language sample by asking the participant to retell and answer critical-thinking questions about four fables that had been adapted from *Aesop's Fables* (1947). They were as follows: (a) *The Oak and the Reed* (p. 179), (b) *The Fox and the Crow* (pp. 5–6),

(c) *The Dog and His Shadow* (p. 176), and (d) *The Stag at the Pool* (pp. 125–126). For the remainder of this article, the fables will be referred to as Oak, Fox, Dog, and Stag, respectively. The fables used in this study are contained in Appendix A. As in our previous research involving fables (Nippold, Frantz-Kaspar, et al., 2015), these particular stories were chosen because they dealt with complex mental states (e.g., pride, humility, vanity, deception, greed, confusion, arrogance, ingratitude) that we believed might be of interest to adolescents. The fables were always presented in the same order (Oak, Fox, Dog, Stag), which ranged from easier to more difficult on the basis of the Flesch–Kincaid readability level (Flesch, 1948) and calculated by Microsoft Word (2016). The Flesch–Kincaid metric is a general index of comprehension difficulty based on the average length of words and sentences contained in a passage of text (McNamara, Graesser, McCarthy, & Cai, 2014). The approximate reading levels of the four fables, respectively, were Grades 3, 4, 5, and 6. Given that the participants were in Grade 8, we expected that they would comprehend the fables well. A written copy of each fable, accompanied by a colorful illustration, was provided for the participant to view while the examiner read it aloud. After presenting the fable, the examiner covered the text, allowing the illustration to remain, and asked the participant to retell the story in his or her own words. The examiner then asked the following questions about the fable:

1. Do you agree with the moral of this story?
2. Why do you agree? (if participants responds “Yes” to Question #1)/ Why do you disagree? (if participant responds “No” to Question #1)
3. Can you think of an example in real life where that moral would apply?
4. Is there anything you would like to add about the moral or the story?

All fable retellings and answers to questions were audio-recorded for transcription. Each language sample consisted of the participant retelling a fable and answering the questions. Thus, there were four language samples for each participant (Oak, Fox, Dog, and Stag). Approximately 5 to 10 min were required to elicit the retelling of each story and answers to the questions; 20–30 min were required to transcribe the elicited language sample; and another 20 min were required to break the sample into C-units and code it for all main and subordinate clauses.

After the language samples were obtained, a research assistant transcribed them, broke them into C-units, and coded them for all main and subordinate clauses on the basis of procedures developed by Nippold (2014). Definitions and examples of C-units and each type of clause are contained in Appendix B. The following codes were used for clauses: main clause = [MC], adverbial clause = [ADV], relative clause = [REL], nominal clause = [NOM], infinitive clause = [INF], gerundive clause = [GER], and participial

Table 1. Descriptive features of the participants ($N = 30$).

Parameter	Value
Age (years;months)	
<i>M</i>	14;1
<i>SD</i>	00.33
Range	13;5–14;9
Gender	
Male	14
Female	16
Racial/ethnic background	
White	26
Latino	1
Mixed	2
Other	1
CELF-5 composite (Word Classes + Recalling Sentences)	
<i>M</i>	11.10
<i>SD</i>	02.04
Range	8–16
Mother's education (years)	
<i>M</i>	16.79
<i>SD</i>	02.97
Range	12–22

Note. CELF-5 = Clinical Evaluation of Language Fundamentals–Fifth Edition.

clause = [PRT]. Each code was placed immediately after the verb of the clause (with one space after the verb).

After the research assistant transcribed and coded the samples, all transcripts ($4 \times 30 = 120$) were fully reviewed for accuracy by the principal investigator. Initial agreement levels exceeded 90%. All disagreements were resolved through discussion between the principal investigator and the research assistant until consensus was reached.

The research assistant then recorded the TCU, MLCU, and CD variables for each fable retelling/interpretation language sample. Data for TCU and MLCU were calculated by SALT (Miller & Iglesias, 2015). To calculate CD, the Statistical Analysis System (SAS Institute, 2013) was used, which divided the total number of clauses by the TCU of the sample. Total C-units was chosen as the measure of language productivity, and MLCU and CD were chosen as measures of syntactic complexity, as was done by Nippold, Frantz-Kaspar, et al. (2014, 2015) in previous studies with fables.

In addition to language productivity and syntactic complexity, we examined the adolescents' perspectives on the fables and their tendency to question the truthfulness or absolute nature of the moral messages. To accomplish this, after each fable retelling, the examiner asked the participant if he or she agreed with the moral (Question 1) and then to explain why he or she agreed or disagreed with it (Question 2). After the language samples had been transcribed, a research assistant coded each participant's level of agreement for each moral based upon his or her answers to the questions for each fable. There were four levels of agreement: (a) Definite Yes (the participant agrees with all parts of the moral completely); (b) Qualified Yes (the participant generally agrees with the moral, with a few exceptions); (c) Definite No (the participant completely disagrees with all parts of the moral); and (d) Qualified No (the participant generally disagrees with the moral, with a few exceptions). Thus, any response other than a Definite Yes was thought to reflect a tendency to question the truthfulness or absolute nature of a fable's moral message. After the research assistant coded the responses, the principal investigator reviewed all coded responses for reliability. The initial agreement level was 94% (113/120). All disagreements between raters were resolved through discussion until consensus was reached.

In addition to the adolescents' agreement or disagreement with the moral messages, we were interested in the extent to which they found the fables relevant to their own lives. To address this issue, we examined their responses to the question that asked if they could think of a situation in real life where the moral would apply (Question 3). Each response to this question for each fable was assigned a score of 1 (relevant example) or 0 (no response or an irrelevant example) by the principal investigator and a research assistant, both of whom independently rated all responses from all participants ($4 \times 30 = 120$). The initial agreement level was 94% (113/120); all disagreements were resolved through discussion until consensus was reached.

Results

For each fable, Table 2 reports the results for language productivity (TCU) and syntactic complexity (MLCU and CD). To examine the effects of fable and gender, a repeated measures analysis of variance was performed on each variable. As recommended by Meline and Schmitt (1997, p. 38), the eta coefficient was used to measure the effect sizes, and following Cohen (1969, p. 276), the effect sizes were interpreted as small (.10–.23), medium (.24–.36), or large (.37–.71). To determine where the differences occurred, paired *t* tests were run using the Bonferroni correction factor for multiple comparisons ($\alpha = .0028$), and Cohen's *d* was used to measure the effect sizes as small ($d = 0.20$), medium ($d = 0.50$), or large ($d = 0.80$; Cohen, 1988, pp. 24–27).

Language Productivity (TCU)

For TCU, a statistically significant main effect was found for fable, $F(3, 26) = 18.67, p < .0001, \eta = .83$, but not for gender, $F(1, 28) = 2.55, p = .1213, \eta = .29$; the interaction between fable and gender was not statistically significant, $F(3, 26) = 0.84, p = .4847, \eta = .30$. The effect size for fable was large. Paired *t* tests indicated that TCU was greater for Stag than Dog, $t(30) = 6.21, p < .0001, d = 0.80$, Stag than Fox, $t(30) = 6.21, p < .0001, d = 0.77$, and Stag than Oak, $t(30) = 5.35, p < .0001, d = 0.80$; the effect sizes were large. No other differences between fables were statistically significant for TCU. Thus, the fables differed in their capacity to elicit spoken language, with Stag eliciting substantially more C-units than each of the other three fables.

Syntactic Complexity (MLCU and CD)

For MLCU, there were no statistically significant main effects for fable, $F(3, 26) = 2.24, p = .1076, \eta = .45$, or gender, $F(1, 28) = 0.21, p = .6474, \eta = .09$; the interaction between fable and gender was not statistically significant, $F(3, 26) = 0.20, p = .8954, \eta = .15$. For CD, a statistically significant main effect was found for fable, $F(3, 26) = 8.12, p = .0006, \eta = .70$, but not for gender, $F(1, 28) = 0.77, p = .3874, \eta = .16$; the interaction between fable and gender was not statistically significant, $F(3, 26) = 0.06, p = .9805, \eta = .08$. Paired *t* tests indicated that CD was greater for Fox than Stag, $t(30) = 3.72, p = .0008, d = 0.83$, and Oak than Stag, $t(30) = 4.23, p = .0002, d = 0.81$, with large effect sizes. In sum, although the fables did not differ on MLCU, they did differ on CD, with Fox and Oak more likely to elicit complex syntax than Stag.

As in our previous research with fables (Nippold, Frantz-Kaspar, et al., 2014), we calculated Pearson product-moment correlations between MLCU and CD to determine how closely these variables were associated. The results were statistically significant, strong, and positive for each fable: Dog, $r = .94, p < .0001$; Fox, $r = .90, p < .0001$; Oak, $r = .92, p < .0001$; Stag, $r = .90, p < .0001$.

Table 2. Measures of language productivity (TCU) and syntactic complexity (MLCU, CD) for each fable and for all fables combined ($N = 30$).

Measure	Dog	Fox	Oak	Stag	All
TCU					
<i>M</i>	18.77	19.33	19.10	26.03	83.23
<i>SD</i>	09.30	08.65	08.63	08.76	31.56
Range	8–47	8–43	8–42	11–44	37–170
MLCU					
<i>M</i>	11.93	12.38	11.68	11.26	11.66
<i>SD</i>	02.54	02.50	02.52	02.30	01.97
Range	6.50–17.87	8.90–19.63	7.43–19.46	8.17–18.18	9.13–18.75
CD					
<i>M</i>	02.24	02.40	02.36	01.98	02.20
<i>SD</i>	00.51	00.61	00.55	00.39	00.35
Range	1.17–3.09	1.55–4.22	1.48–4.08	1.36–2.95	1.63–3.34

Note. TCU = total number of communication units (C-unit); MLCU = mean length of C-unit; CD = clausal density.

Perspective on the Moral Messages: Agreement and Relevance

Table 3 reports the extent to which the adolescents agreed with the moral messages of the fables (Question 1). Recall that any response other than a Definite Yes reflected a tendency to question the truthfulness or absolute nature of the moral message of a fable. The results indicated that the most common response was a Definite Yes, followed by a Qualified Yes. Few responses in the No category (Definite or Qualified) occurred. Thus, the adolescents were largely in agreement with the moral messages of the fables, although some subtle differences seemed to occur. For example, participants were most likely to question the moral of the Fox fable, “Beware of flatterers” (*Aesop’s Fables*, 1947, p. 6), with only 60% of them in full agreement; conversely, they were least likely to question the moral of the Stag fable, “What is truly most valuable is often underrated” (*Aesop’s Fables*, 1947, p. 126), with 90% in full agreement. Some examples of participant responses to the question that asked them to explain why they agreed or disagreed with the moral message (Question 2) are contained in Table 4.

Table 5 reports the number of adolescents who, for each fable, were able to provide an example of a situation in real life where the moral would apply (Question 3). Inspection of this table indicates that the participants were successful in performing this task, particularly in relation to the Oak, Fox, and Stag fables, where 93%, 93%, and 90% of them, respectively, could generate a relevant example.

The data also indicate that the adolescents were somewhat more challenged by the Dog fable, with only 73% of them able to generate a relevant example. Overall, these findings suggest that the adolescents found the fables relevant to their lives.

Discussion

This study contributes normative information that SLPs could use to assess adolescents’ spoken language abilities (see Table 2). The findings build upon previous studies using fables to examine spoken language production in adolescents (Nippold, Frantz-Kaspar, et al., 2014, 2015). None of the factors that were examined in this study demonstrated statistically significant differences in performance on the basis of gender. This indicates that the Fables task may be a valuable assessment tool in that it does not favor girls or boys. In addition, the fables did not differ with respect to one measure of syntactic complexity, MLCU. However, there were statistically significant differences for TCU and CD depending on the fable, suggesting that some were better than others at eliciting language productivity and CD.

For example, participants produced more C-units when retelling and discussing the Stag fable than the other three fables. The reason for this difference is unclear. The Stag fable is longer than the Dog and Oak fables, but it is shorter than the Fox fable, and yet participants produced more C-units during the Stag fable. It is possible that interest level played a role. In the Stag fable, the stag loses his

Table 3. Number (and percentage) of participants producing each type of agreement response to Question 1 concerning the moral message of each fable ($N = 30$).

Fable	Moral	Agree with the moral of the story?			
		Definite Yes	Qualified Yes	Definite No	Qualified No
Dog	If you grasp at the shadow, you will lose the substance.	24 (80)	5 (17)	0 (0)	1 (3)
Fox	Beware of flatterers.	18 (60)	9 (30)	3 (10)	0 (0)
Oak	It is better to bend than to break.	26 (87)	3 (10)	0 (0)	1 (3)
Stag	What is truly most valuable is often underrated.	27 (90)	1 (3)	1 (3)	1 (3)

Table 4. Examples of participants' responses to Question 2 concerning their reasons for agreement or disagreement with the moral messages of fables.

Adolescent	Gender, age (years)	Fable	Moral	Response	Explanation
1	Boy, 14	Stag	What is truly most valuable is often underrated.	Qualified No	If you ask [ADV] parents this, (um they're) they're probably gon [MC] na say [INF] that their children are [NOM] their most valuable things. And they're [MC] not underrated. So yes, this moral could be [MC] true with some things. But most of the times, it's [MC] not really true, cuz often people, like parents, (who) have [ADV] stuff that they don't think [REL] is [NOM] underrated.
2	Girl, 14	Oak	It is better to bend than to break.	Qualified Yes	You shouldn't always let [MC] people or forces or anything push [INF] you around when you think [ADV] (it's necessarily) you're supposed [NOM] to be [INF] there. (Like) if it's [ADV] just something that you should let [REL] roll [INF] off your back, like someone's just being [NOM] a jerk, then you can be [MC] like, "Okay, cool, have [NOM] fun, whatever, go [NOM] away." But if someone's constantly hounding [ADV] you and slandering [ADV] you, then you stand [MC] up to them and get [MC] help and stuff like that. It's [MC] better to break [INF] from having [GER] something like that happen [INF] than to bend [INF].

Note. ADV = adverbial clause; MC = main clause; INF = infinitive clause; NOM = nominal clause; REL = relative clause; GER = gerundive clause.

life to hunters because of his own vanity, which may have been a more exciting tale than the crow losing her cheese in the Fox fable. The participants also may have found the moral of the Stag fable ("What is truly most valuable is

often underrated"; *Aesop's Fables*, 1947, p. 126) more useful or inspiring than the moral of the Fox fable ("Beware of flatterers"; *Aesop's Fables*, 1947, p. 6) because more participants agreed with the Stag moral than the Fox moral;

Table 5. For each fable, the number (and percentage) of participants who provided an example in real life where the moral would apply ($N = 30$).

Item	Fable				Total (120 possible)
	Oak	Fox	Dog	Stag	
No. (%) Moral	28 (93) It is better to bend than to break.	28 (93) Beware of flatterers.	22 (73) If you grasp at the shadow, you will lose the substance.	27 (90) What is truly most valuable is often underrated.	105 (88)
Sample response Respondent, gender, age (years)	Girl, 14	Boy, 14	Boy, 13	Girl, 14	
Text of response	When you're working [ADV] in a group and someone wants [ADV] to lead [INF], but you want [ADV] to lead [INF] the group, you kind of have [MC] to go [INF] with the flow. And you don't want [MC] to break [INF] your relationship. And you want [MC] to bend [INF] and go [INF] with the flow.	If you were saying [ADV] how beautiful somebody was [NOM] because you wanted [ADV] their money because they're [ADV] super rich. They're [MC] super rich. And all you want [NOM] is [MC] their money. And then you would tell [MC] them how beautiful they are [NOM].	If you just got paid [ADV] and then you go [ADV] gamble [INF] it all away to try [INF] to get [INF] some more money, most likely you're not going [MC] to win [INF]. So you're [MC] better off just keeping [GER] what you have [NOM].	Well, like I said [ADV], people who are criticizing [REL] themselves and saying [REL] like, "I don't like [NOM] my hair. ... " But then they get [MC] a job interview, to model [INF] for their hair because it is [ADV] so thick and it's [ADV] luminous and not thin. She thought [MC] it was [NOM] very thick and hard to deal [INF] with. But she got [MC] a model interview. And she got [MC] the job.	

Note. ADV = adverbial clause; NOM = nominal clause; REL = relative clause; INF = infinitive clause; MC = main clause; GER = gerundive clause.

thus, they may have had more to say about a situation where the Stag moral applies. Although MLCU as a measure of syntactic complexity did not differ across the four fables, participants demonstrated significantly lower CD during the Stag fable than during the Fox and Oak fables. This indicates that they used proportionately fewer clauses during the Stag fable than in two other fables. Again, the reason for this difference is unclear and warrants further study.

In addition to TCU, MLCU, and CD, the study informally examined the participants' perspectives on the moral messages of the fables. This was accomplished by asking them if they agreed with the morals and then to provide an example of a situation in real life where the moral would apply. The purpose of examining their perspectives was to determine whether the Fables task was engaging to adolescents, and whether the morals were relevant to their lives. We also expected the questions to prompt critical thinking and therefore the use of complex language as they responded. The results indicated that most participants fully agreed with the moral messages, although a few of them questioned the truthfulness or absolute nature of those messages. In discussing the morals, they demonstrated critical thinking and an awareness of others' perspectives as they explained their answers, and they used complex language to do so. This can be seen in the examples of participants' responses contained in Table 4. Adolescent 1, for example, used critical-thinking and social perspective-taking ability to describe why he disagreed with the moral message of the Stag fable when he brought in the view of parents. In doing so, he used complex syntax, producing adverbial, infinitive, relative, and nominal clauses in his explanation. In a similar way, Adolescent 2 agreed with the moral message of the Oak fable but questioned the absolute nature of it, providing a counterexample. In her explanation, she also brought up complicated issues, such as fairness and defending what is right, and she used complex syntax to do so. It is noteworthy that her longest C-unit, a 32-word sentence, contained three levels of clausal embedding, a condition where one clause was subordinate to another. This condition, called *hierarchical complexity* (Nippold, 2014), is illustrated in Figure 1, where each indentation represents a level of embedding.

There were many other adolescents in the study who agreed or disagreed with the moral messages of the fables and, in the process, displayed critical thinking, complex speaking, and an awareness of others' perspectives as they justified their opinions. It is clear from these results and the examples that asking adolescents their opinions about the moral messages of fables can be an excellent way to engage them in critical thinking. This activity can also prompt the use of complex language as they justify their answers and reflect on multiple perspectives.

In addition, asking adolescents to generate examples of situations where the moral messages of the fables would apply prompted the use of complex language, as illustrated by the responses shown in Table 5. Answers to this question also suggest that most of the adolescents found

Figure 1. An example of hierarchical complexity, where each indentation represents a level of clausal embedding.

(Like) if it's just something
that you should let
roll off your back,
like someone's just being a jerk,
then you can be like,
"Okay, cool, have fun, whatever,
go away."

the fables relevant to their lives. For instance, when asked to provide an example of a situation where the moral of the Oak fable, "It is better to bend than to break," would apply, several adolescents described situations working with others where it was necessary to compromise or "go with the flow" in order to accomplish a goal in a harmonious manner.

Clinical Implications

In contemporary language arts or English classes, middle school teachers often assign their students to read, retell, and discuss different types of narratives, including fables (McDougal Littell, 2006). However, adolescents with language disorders are likely to struggle to perform these tasks. It is therefore reasonable for an SLP working in a middle school to focus on fables as a way to build spoken language skills in adolescents and to address the language demands of the classroom by designing an academically relevant intervention plan. It is also a way to help adolescents meet the CCSS for Speaking and Listening in English/Language Arts (National Governors Association..., 2010).

For example, using information from the present study, the SLP could elicit a language sample to examine a middle school student's ability to retell and interpret one of the fables used in the study. As reported earlier, this required about 5 to 10 min per story, and another 20–30 min to transcribe. Given the amount and complexity of language that adolescents in the present study produced during the Fables task, we recommend that the SLP audio-record the interview and transcribe it accurately and completely. The transcribed sample then could be segmented into C-units, coded for all main and subordinate clauses, and entered into SALT (Miller & Iglesias, 2015), which will report the total number of C-units produced, the MLCU, and the frequency with which main clauses and different types of subordinate clauses occurred. These data then could be used to calculate CD by adding up the total number of clauses (main and subordinate) and dividing

by the total number of C-units in the sample. Although some SLPs may argue that these activities are overly time-consuming, we believe that the information obtained is well worth the investment of resources, yielding data that provide insight into the student's individual strengths and weaknesses. For example, by coding all main and subordinate clauses, the SLP will be able to evaluate the adolescent's ability to use a range of clause types to express varied meanings effectively. Examining the spontaneous use of language in this way provides ecologically valid information that is impossible to obtain from norm-referenced standardized language tests.

As a time-saving device, however, it is worth noting that SALT now provides an alternative method of calculating CD, one that does not require the SLP to identify each type of clause the client has produced (Miller et al., 2015). In SALT, there is a code called SI that can be inserted at the end of every C-unit. Rather than labeling each type of clause contained in a C-unit, the SLP simply counts the total number of clauses the client has produced and inserts the appropriate code. For example, if a client has produced a C-unit containing six clauses, the code [SI-6] is selected from a list and automatically inserted at the end of the sentence. A list of SI codes with any number of clauses can be created (e.g., SI-0, SI-1, SI-2, SI-3), and the SLP can quickly select the appropriate one for automatic insertion. An SI composite score will then be calculated and reported automatically by SALT in essentially the same way that CD is calculated by hand (i.e., the total number of clauses divided by the total number of C-units produced in a sample). Allowing SALT to calculate the SI composite will yield the same results as calculating CD in the way we have described. Obviously, however, it will not provide detailed information concerning the range and diversity of clause types a client has produced.

Nevertheless, using either CD or the SI composite score, the SLP could compare the client's performance with the normative data reported in this study, with the caveat that the results are preliminary. If the client shows certain obvious weaknesses (e.g., produces mostly short and simple utterances, numerous fragments, few subordinate clauses), the SLP could use the information to formulate appropriate intervention goals and activities. For example, the SLP could work with the adolescent to retell small sections of a fable drawn from the student's English class, strategically targeting the characters' thoughts, feelings, and perspectives to elicit the use of complex sentences. Following a period of intervention that encourages the use of longer utterances containing multiple clauses, the SLP could reassess the client by obtaining another language sample using a different fable to measure progress over time.

It should be noted that for each of the four fables used in this study, MLCU and CD were closely associated, as determined by the statistically significant correlation coefficients that ranged from .90 to .94. Given that the calculation of CD, as carried out in the present study, requires specialized knowledge of different types of finite and

nonfinite clauses, and perhaps additional formal training, some SLPs may elect to use only MLCU as a solid and time-saving measure of syntactic complexity that is automatically calculated and reported by SALT. On the other hand, it can be helpful to know if adolescents who have or are suspected of having language disorders are able to use a variety of clause types to express themselves effectively. For this reason, the SLP may wish to calculate CD and to investigate the use of different types of clauses during a fable retelling/interpretation task, in addition to examining MLCU.

Indeed, the ability to use different types of subordinate clauses could assist clients to express themselves with greater clarity, precision, and efficiency, a goal that is consistent with the CCSS. For example, when speaking or writing, adolescents in Grades 9 and 10 are expected to use standard English grammar, including a variety of clause types "to convey specific meanings and add variety and interest" (CCSS; National Governors Association..., 2010; ELA, Language, 9-10.1b, p. 54). Applying this to language intervention, perhaps a detailed evaluation indicates that a client produces mostly short and simple utterances, and that when subordinate clauses are used, they consist mostly of infinitives and a few adverbials that begin with the subordinate conjunction *because*. The SLP could use this information to design an individualized intervention plan that builds CD (and therefore syntactic complexity) through metalinguistic activities that teach the client the functions of different types of clauses and how clauses can enhance the effectiveness of communication. In addition to building syntactic complexity, this approach could be used to encourage the use and understanding of a more diverse set of words. For example, in retelling the Fox fable, a client who was unfamiliar with the word *talons* could be encouraged to define this word using a relative clause, resulting in a complex sentence such as, "And then the fox noticed the crow's *talons*, which are a type of claw *that is super sharp and strong*." In a similar way, to encourage the use of nominal clauses (and social perspective-taking ability), the client could be encouraged to talk about the characters' thoughts and feelings using a variety of metacognitive verbs (e.g., *believe, assume, fear*), producing sentences such as, "The fox believed *he could trick the crow into dropping her cheese*" or "The crow assumed *the fox was sincere*." Moreover, to promote the use of adverbial clauses ("The crow sang for the fox, *even though her voice was shrill*"), the client could be taught to use a diverse set of subordinate conjunctions to express varied meanings, such as those that convey aspects of time (*after, before, until*), condition (*unless, whenever, as long as*), or concession (e.g., *although, even though, whereas*). As a result, the client may begin producing sentences to express subtle and more sophisticated meanings (e.g., "The fox was crafty *whereas the crow was naïve*") that were previously out of reach.

Study Limitations and Future Research

The results of the investigation should be considered preliminary. The study included a relatively small number

of participants, all of whom were native speakers of Standard American English who had TLD, and most came from college-educated families. Thus, it may be difficult to generalize the results to other groups of adolescents. It is therefore important to continue to expand the normative database in spoken language production, and in future studies to include larger numbers of participants from more diverse backgrounds.

It is essential also that future studies administer the Fables task to adolescents who have language disorders in order to evaluate their performance in relation to the normative data, and then to conduct high-quality intervention studies that address their difficulties with spoken language in real-world contexts. The larger goal would be to assist adolescents to become more confident speakers who can use language with greater clarity, precision, and efficiency. These types of assessment and intervention studies would be of great benefit to our profession.

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Appendix A (p. 1 of 2)

Fables used in the study with their individual readability levels and questions

1. *The Oak and the Reed*

(Adapted from *Aesop's Fables*, 1947, p. 179; Flesch–Kincaid Grade Level = 3.4)

A proud oak grew upon the bank of a stream. For a full hundred years, it had withstood the buffeting of the winds. But one day, there came a violent storm. The great oak fell with a mighty crash into the swollen river and was carried down toward the sea.

Later, the oak tree came to rest on the shore where some reeds were growing. The tree was amazed to see the reeds standing upright.

“How ever did you manage to weather that terrible storm?” he asked. “I have stood up against many a storm. But this one was too strong for me.”

“That’s just it,” replied one of the reeds. “All these years you have stubbornly pitted your great strength against the wind. You were too proud to yield a little. I, on the other hand, knowing my weakness, just bend and let the wind blow over me without trying to resist it. The harder the wind blows, the more I humble myself. So here I am!”

The moral of the story is, “It is better to bend than to break.”

Questions:

1. Do you agree with the moral of this story, “It is better to bend than to break”?
2. Why or why not (do you agree or disagree)?
3. Can you think of a situation in real life where that moral would apply?
4. Can you tell me anything more about the moral or the situation?

2. *The Fox and the Crow*

(Adapted from *Aesop's Fables*, 1947, pp. 5–6; Flesch–Kincaid Grade Level = 4.0)

A crow who had stolen a piece of cheese was flying toward the top of a tall tree where she hoped to enjoy her prize. Suddenly, a fox spied her. “If I plan this right,” said the fox to himself, “I shall have cheese for supper.”

So, as he sat under the tree, he began to speak in his politest tones. “Good day, mistress crow! How well you are looking today! Your wings are so glossy! Your eyes twinkle like stars! And your claws—I beg pardon—your *talons* are as strong as steel! I have not heard your voice, but I am certain that it must surpass that of any other bird, just as your beauty does.”

The vain crow was pleased by all this flattery. She believed every word of it and wagged her tail and flapped her wings to show her pleasure. She liked especially what friend fox said about her voice, for she had sometimes been told that her caw was a bit rusty.

So, chuckling to think how she was going to surprise the fox with her most beautiful voice, she opened wide her mouth. Down dropped the piece of cheese!

The wily fox snatched it before it touched the ground. And as he walked away, licking his chops, he offered these words of advice to the silly crow. “The next time someone praises your beauty, be sure to hold your tongue.”

The moral of the story is, “Beware of flatterers.”

Questions:

1. Do you agree with the moral of this story, “Beware of flatterers”?
2. Why or why not (do you agree or disagree)?
3. Can you think of a situation in real life where that moral would apply?
4. Can you tell me anything more about the moral or the situation?

Appendix A (p. 2 of 2)

Fables used in the study with their individual readability levels and questions

3. *The Dog and His Shadow*

(Adapted from *Aesop's Fables*, 1947, p. 176; Flesch–Kincaid Grade Level = 5.7)

One day, a dog stole a piece of meat out of a butcher shop. And on his way to a safe place where he could eat it without interruption, he had to cross a footbridge over a clear stream. Looking down, he saw his own reflection in the water.

Thinking that the reflection was another dog with another piece of meat, and being a greedy dog, he made up his mind to have that also. So he snarled and made a grab for the other dog's meat.

As his greedy mouth opened, out dropped the piece of meat, which fell into the stream and was lost.

The moral of the story is, "If you grasp at the shadow, you will lose the substance."

Questions:

1. Do you agree with the moral of this story, "If you grasp at the shadow, you will lose the substance?"
2. Why or why not (do you agree or disagree)?
3. Can you think of a situation in real life where that moral would apply?
4. Can you tell me anything more about the moral or the situation?

4. *The Stag at the Pool*

(Adapted from *Aesop's Fables*, 1947, pp. 125–126; Flesch–Kincaid Grade Level = 6.5)

A stag, one summer day, came to a pool of clear, still water to quench his thirst. As he drank, he noticed his reflection in the pool, and he could not help admiring the image he saw there.

"I really am very handsome," said he to himself. "I should be proud of those beautiful, stately antlers. But those spindly legs and tiny feet are another matter. I wish that nature might have been more kind to me and had given me legs more worthy to bear such a noble crown."

Just at that moment, the stag's sensitive nostrils scented the approach of a hunter. And even as he lingered, an arrow whizzed past him. With a bound, he was away, and the legs and feet of which he had just been so critical carried him speedily to a place of safety.

But once out of harm's way, the stag again fell to musing over his appearance. And before he knew it, he had wandered into a thicket. The noble antlers which he had so greatly admired now held him fast, and the more he struggled, the more firmly entangled he became. Then the hunters came, and as the arrow found its mark, he gasped, "Now that it is too late, I realize that my own vanity led to my undoing."

The moral of the story is, "What is truly most valuable is often underrated."

Questions:

1. Do you agree with the moral of this story, "What is truly most valuable is often underrated"?
 2. Why or why not (do you agree or disagree)?
 3. Can you think of a situation in real life where that moral would apply?
 4. Can you tell me anything more about the moral or the situation?
-

Appendix B

Definitions and examples of communication units (C-units) and different types of clauses that were examined in the study (Nippold, 2014)

Communication Unit

An utterance that contains one main clause and any subordinate clauses that are attached to it. For example:

A storm came up suddenly.

There was once an oak that was very tall.

An utterance that contains two main clauses but with a single subject is also counted as a C-unit. For example, the following sentence contains two coordinated main clauses:

He thought it was another dog and grabbed at the piece of meat.

A C-unit can also include answers to questions that lack a main clause. For example:

Yes.

OK.

Not really.

Comments that add meaning to the discourse (and are not mazes) but lack a main clause are also included as C-units because they reflect natural communication. For example:

And things like that.

And now for the moral.

To exclude these types of meaningful utterances from analysis would not reflect natural language use.

Clause Types

Main clause: Contains a subject and a predicate and can stand alone. For example:

The dog ran after the cat.

The cat hid under the bush.

Subordinate clauses: Usually attached to a main clause to express meaning; includes adverbial, relative, nominal, infinitive, participial, and gerundive clauses.

Adverbial: Provides information about condition, manner, or time. For example:

Once you get to school, you'll find your locker.

The deer got trapped in the woods as his antlers twisted into the bushes.

Before the movie began, we bought popcorn.

Relative: Modifies the noun that precedes it, much like an adjective. For example:

There was a tall tree that grew by a river bank.

Nominal: Completes a thought introduced by the main clause. For example:

The fox believed he could trick the crow.

Infinitive: Contains a verb in the infinitive (unmarked) form (to X). For example:

She was trying to run home.

Participial: Describes an object or event. For example:

Thanking the teacher, the boy hoped to get a good grade.

Gerundive: Acts like an object or other entity. For example:

Treading water saved us from drowning in the ocean.
