Using Language Samples to Develop Grammatical Intervention Goals

Lizbeth H. Finestack, Ph.D., CCC-SLP
Katherine Bangert, M.A., CCC-SLP
Timothy Huang, M.S., CCC-SLP

Introduction

• One area of language that is particularly difficult for many children to master is grammatical language.
  - Specific or primary language impairment
  - Fragile X syndrome
  - Autism spectrum disorder

• Clinicians must identify, develop, and monitor progress of grammatical goals.

Current Practice

• Treatment time spent targeting grammatical forms:
  - Preschool: 57%
  - Early Elementary: 48%

Current Practice

• More than 80% of clinicians use standardized tests at least some of the time to monitor treatment progress.
  - Preschool Language Scales (PLS; Zimmerman, Steiner, & Pond, 2002)
  - Comprehensive Evaluation of Language Fundamentals (CELF; Semel, Wiig, & Secord, 2003)
  - Structured Photographic Expressive Language Test (SPELT; Dawson, Stout, & Eyre, 2003)
  - Comprehensive Assessment of Spoken Language (CASS; Carrow-Woolfolk, 1999).
Current Practice

- Clinicians indicated that they use language sampling to monitor progress approximately 75% of the time.
  - MLU
  - TTR
- Systematic Analysis of Language Transcripts (SALT; Miller & Chapman, 2012)
  - Bound Morpheme Table
  - Developmental Sentence Scoring (DSS; Lee, 1971)

Today's Agenda

- Using Standardized Assessments to Develop and Monitor Grammatical Goals – Timothy Huang
- Using Clinician-designed Probes to Develop and Monitor Grammatical Goals – Timothy Huang
- Strategies for Eliciting Language Samples – Katie Bangert
- Using SALT to Develop and Monitor Grammatical Goals – Katie Bangert
- Using DSS to Develop and Monitor Grammatical Goals – Liza Finestack

Standardized Assessments

- Advantage: Efficiently identify grammatical weaknesses that may not occur in language samples
- Disadvantage: Each grammatical form is only assessed with a limited number of opportunities
Preschool Language Scale

- Expressive Communication

<table>
<thead>
<tr>
<th>Target</th>
<th>Test Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plural –s</td>
<td>31 a, b, c</td>
</tr>
<tr>
<td>Progressive –ing</td>
<td>34 a, b</td>
</tr>
<tr>
<td>Possessive ’s</td>
<td>40 a, b</td>
</tr>
<tr>
<td>Regular past –ed</td>
<td>54 a, b</td>
</tr>
<tr>
<td>Irregular past tense</td>
<td>54 c, d</td>
</tr>
<tr>
<td>Irregular plural</td>
<td>67 a, b, c</td>
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</tbody>
</table>

Clinical Evaluation of Language Fundamentals

- Word Structure

<table>
<thead>
<tr>
<th>Target</th>
<th>Test Item</th>
<th>Target</th>
<th>Test Item</th>
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</thead>
<tbody>
<tr>
<td>Regular plural –s</td>
<td>1, 2</td>
<td>Objective pronouns</td>
<td>17, 18</td>
</tr>
<tr>
<td>Irregular plural</td>
<td>3, 4</td>
<td>Future tense</td>
<td>19, 20</td>
</tr>
<tr>
<td>3rd person singular –s</td>
<td>5, 6</td>
<td>Comparative and superlative</td>
<td>21, 22, 23, 24</td>
</tr>
<tr>
<td>Possessive ’s</td>
<td>7, 8</td>
<td>Unconstricable copulas</td>
<td>25, 26</td>
</tr>
<tr>
<td>Derivation of nouns –s</td>
<td>9</td>
<td>Derivation of adjectives –y</td>
<td>27</td>
</tr>
<tr>
<td>Contractible copula</td>
<td>10</td>
<td>Reflective pronouns</td>
<td>28, 29</td>
</tr>
<tr>
<td>Progressive –ing</td>
<td>11, 12, 13, 14</td>
<td>Subjective pronouns</td>
<td>30, 31</td>
</tr>
<tr>
<td>Possessive pronouns</td>
<td>35, 36</td>
<td>Irregular past tense</td>
<td>37</td>
</tr>
<tr>
<td>Regular past –ed</td>
<td>16</td>
<td></td>
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</tr>
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</table>

Comprehensive Assessment of Spoken Language

- Syntax Construction

<table>
<thead>
<tr>
<th>Target</th>
<th>Test Item</th>
<th>Target</th>
<th>Test Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copula + complement</td>
<td>3</td>
<td>&quot;Because&quot; dependent clause</td>
<td>21, 34, 48</td>
</tr>
<tr>
<td>Prepositional –s</td>
<td>4, 5, 6, 7</td>
<td>conjunction “and”</td>
<td>23, 29, 32</td>
</tr>
<tr>
<td>Progressive –ing</td>
<td>8, 14, 20, 22</td>
<td>Relation clause</td>
<td>34, 49</td>
</tr>
<tr>
<td>3rd person singular –s</td>
<td>5, 6</td>
<td>Plural –s</td>
<td>36, 38</td>
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<tr>
<td>Infinitive</td>
<td>10, 21</td>
<td>Past subjunctive verbs</td>
<td>37</td>
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<tr>
<td>Participle</td>
<td>13, 20</td>
<td>Future perfect</td>
<td>46</td>
</tr>
<tr>
<td>Regular past –ed</td>
<td>13, 24</td>
<td>Possessive of a noun’s</td>
<td>47</td>
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<tr>
<td>Negative</td>
<td>17, 30, 40</td>
<td>Present perfect</td>
<td>52</td>
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<tr>
<td>Irregular past tense</td>
<td>18</td>
<td>Past perfect subjunctive</td>
<td>54</td>
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<tr>
<td>Y/N interrogative</td>
<td>19</td>
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Structured Photographic Expressive Language Test

<table>
<thead>
<tr>
<th>Target</th>
<th>Test Item</th>
<th>Target</th>
<th>Test Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepositional phrase</td>
<td>1, 2, 3, 4</td>
<td>Wh-clause</td>
<td>35</td>
</tr>
<tr>
<td>Plural –s</td>
<td>5, 6, 7</td>
<td>Participle</td>
<td>36, 37</td>
</tr>
<tr>
<td>Progressive –ing</td>
<td>8, 13, 15, 17, 18, 19</td>
<td>Negative</td>
<td>38, 39, 40</td>
</tr>
<tr>
<td>3rd person singular –s</td>
<td>9</td>
<td>Positive</td>
<td>40</td>
</tr>
<tr>
<td>Future modal “will”</td>
<td>10, 32</td>
<td>Reflective pronouns</td>
<td>41</td>
</tr>
<tr>
<td>Regular past –ed</td>
<td>11, 14</td>
<td>Y/N interrogative</td>
<td>42, 43, 44</td>
</tr>
<tr>
<td>Irregular past tense</td>
<td>14, 23</td>
<td>Wh-quantifier</td>
<td>45, 46, 47</td>
</tr>
<tr>
<td>Past tense copula be</td>
<td>20, 21, 22</td>
<td>Direct/indirect object</td>
<td>48</td>
</tr>
<tr>
<td>Infinitive</td>
<td>24, 25, 26</td>
<td>Copula+complement</td>
<td>50</td>
</tr>
<tr>
<td>Conjunction “and”</td>
<td>27</td>
<td>Propositional clause</td>
<td>51</td>
</tr>
<tr>
<td>“Because”</td>
<td>28</td>
<td>Relative clause</td>
<td>52</td>
</tr>
<tr>
<td>Possessive ’s</td>
<td>29, 30</td>
<td>Embedded clause</td>
<td>53</td>
</tr>
<tr>
<td>Possessive pronoun</td>
<td>31, 32, 33, 34</td>
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</table>
Test of Early Grammatical Impairment

<table>
<thead>
<tr>
<th>Target</th>
<th>Test Item</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd person singular -s</td>
<td>(I) 1-10</td>
<td>10</td>
</tr>
<tr>
<td>Regular past -ed</td>
<td>(II) 1, 4, 5, 6, 8, 9, 11, 13, 16, 17</td>
<td>10</td>
</tr>
<tr>
<td>Irregular past tense</td>
<td>(II) 2, 3, 7, 10, 12, 14, 15, 18</td>
<td>8</td>
</tr>
<tr>
<td>Copula be</td>
<td>(III) 7, 8, 11, 12, 18, 20, 24, 25, 26, 29, 34, 36</td>
<td>12</td>
</tr>
<tr>
<td>Auxiliary be</td>
<td>(III) 1, 2, 4, 5, 6, 23, 27, 28, 30, 31, 32, 33, 35</td>
<td>13</td>
</tr>
<tr>
<td>Auxiliary do/does</td>
<td>(III) 3, 9, 10, 13, 14, 15, 16, 17, 19, 21, 22</td>
<td>11</td>
</tr>
</tbody>
</table>

USING CLINICIAN-DESIGNED PROBES TO DEVELOP AND MONITOR GRAMMATICAL GOALS

Designing Probes
- 10-12 probes for each target
- 1 demonstration and 2 practice items
- Standard and additional prompts
- Vocabulary
- Picture stimuli

Structured Photographic Expressive Language Test

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</tr>
<tr>
<td>Progressive -ing</td>
<td>8, 13, 15, 17, 18, 19, Negative</td>
<td>38, 39, 49</td>
<td></td>
</tr>
<tr>
<td>3rd person singular -s</td>
<td>9</td>
<td>Passive</td>
<td>40</td>
</tr>
<tr>
<td>Future modal “will”</td>
<td>10, 32</td>
<td>Infinitive: present</td>
<td>41</td>
</tr>
<tr>
<td>Regular past -ed</td>
<td>11, 16</td>
<td>Y/N interrogative</td>
<td>42, 43, 44</td>
</tr>
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<td>14, 23</td>
<td>Wh-question</td>
<td>45, 46, 47</td>
</tr>
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<td>Past tense copula be</td>
<td>20, 21, 22</td>
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<td>Embedded clause</td>
<td>53</td>
</tr>
<tr>
<td>Possessive pronoun</td>
<td>31, 32, 33, 34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reflexive Pronoun Probes

• Potential targets: himself, herself, themselves
• Standard and additional prompts
  – “The boy looks in the mirror. Who does he see?”
  – “Start with He…”
• Structure analysis: Subject + Verb + target
• Think of 10-12 verbs/actions that are appropriate in this context!

Reflexive Pronoun Probes

• Demonstration
  – “Look at the picture. Who does the boy see?”
  – “He sees himself.”

Reflexive Pronoun Probes

• Practice 1
  – “Look at the picture. Who does the girl hug?”
  – “Start with She...”
Reflexive Pronoun Probes

- Practice 2
  - "Look at the picture. Who do the children cover?"
  - "Start with They..."

Reflexive Pronoun Probes

- Question 1
  - "Look at the picture. Who does the boy hurt?"
  - "Start with He..."

Past Tense Copula Be Probes

- Potential targets: was and were
- Standard and additional prompts
  - "Why did the girl go to bed?"
  - "She was tired."
- Structure Analysis
  - Subject + target + complement
- Think of 10-12 adjectives!

Past Tense Copula Be Probes

- Example 1
  - "Why did the girl wear a sweater and a scarf?"
  - "She was cold."
Past Tense Copula Be Probes

- Example 2
  - “Why did the children cry?”
  - “They were sad.”

Relative Clause Probes

- Example 1
  - “Look at the pictures. One boy reads a book, and the other plays video games. Who wears glasses?”
  - “The boy who plays video games.”

Relative Clause Probes

- Example 2
  - “Look at the pictures. One girl rides a bike, and the other rides a horse. Who wears a helmet?”
  - “The girl who rides a bike.”

More Probes

- Reflexive pronoun
- Past tense copula
- Relative clause
- Passive
- Wh-question
- Negative wh-question
- Propositional clause
- 3s+infinitive
- Auxiliary+verb+infinitive
- And more...
STRATEGIES FOR ELICITING LANGUAGE SAMPLES

Katie Bangert

Language Sampling Benefits

- Can assess how close to mastery, or if grammatical structures are emerging vs. absent.
- Can select contexts/settings in which child is more successful with language.
- Can be used to assess language outcomes.
  - Standardized tests are not designed for repeated testing intervals.
  - Language sample features can be administered repeatedly and normative comparisons can be made.

Sample Length

- Samples should range from 50-100 utterances.

Context

Free Play

Conversation

Narrative

Expository
Expressive Language Sampling in Children with ASD

- Currently conducting a longitudinal study with children with ASD.

- Research Aim: Can we use language samples as an outcome measure in clinical trials for children with ASD?

ASD Study: Context

- Narrative
- Conversation
- Autism Diagnostic Observation Schedule-2 (ADOS)


Conversational Language Sample

<table>
<thead>
<tr>
<th>Idiosyncratic topic</th>
<th>After school</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>School day</td>
<td>Playing games</td>
<td>TV show</td>
</tr>
<tr>
<td>Pets</td>
<td>Vacation</td>
<td>Hobbies/interests</td>
</tr>
</tbody>
</table>

Idiosyncratic topic

- I was talking to your Mom/Dad/Teacher and they told me that you... [TOPIC]

- That sounds so interesting-like so much fun. Tell me about that.
Conversational Language Sample

• Idiosyncratic topic: follow-up
  I’d like to hear more about...
  - [TOPIC]
  - what you like about [TOPIC]
  - why you like [TOPIC]
  - how you [TOPIC]
  - what happens when you [TOPIC]

Conversational Language Sample

• School Day
  - So, what grade are you in?
  - It’s been a long time since I was in school so I really don’t remember very much about the [participant’s grade level].
  - Tell me what you did in school yesterday [or the last day the participant was in school].
    - Tell me everything you can remember.

Conversational Language Sample

• School Day: follow-up
  - What’s your favorite part of school?
    - Tell me all about that.
    - Tell me why you like doing that.
  - What’s the first thing you do when you get to school?
    - Tell me about what you do first
  - What’s the last thing you do at school before you go home?
  - Is there anything you don’t like about school?
    - Tell me why you don’t like that.

Narrative Language Sample
Narrative Language Sample

- The goal of the clinician is to give as little input as possible
- 2 passes through the book
  - First pass: no talking just, look at pictures
  - Clinician always turns the pages

Narrative Language Sample

- 2nd pass: Child tells the story
  - 5-7 seconds per page (no matter what!)
- 1st page
  - How does the story start?
  - Hierarchy of prompts

Narrative Language Sample

- PROMPT A [If no response or IDK]
  - What’s happening in this part of the story?

- PROMPT B [minimal response]
  - That’s a good start. Tell me a little more about what’s happening in this part of the story.
Narrative Language Sample

- PROMPT C [if no or minimal response to prompt A or B]
  - What about the boy? What’s he doing?
  - What about the frog? What’s he doing?
  - What about the turtle? What’s he doing?
- Anything else? (use sparingly)
  - Okay, here’s the next page.

ADOS Language Sample

- Narrative
- Conversation
- Expository Discourse
- Free Play

ADOS: Narrative
ADOS: Narrative

Cartoon

ADOS: Conversation

• Throughout the ADOS session, examiner is looking for opportunities for conversion.
• Jump into topics as they come up by the child.
• Also provide opportunities with general questioning.
• Examiner “leads”
  • “I did something really cool yesterday…”
  • “Oh that reminds me of something funny…”

ADOS: Structured Conversation

• Description of a Picture:
• Interview: Relationships, school, emotions
ADOS: Play
- Make Believe Play
- Joint Interactive Play

ADOS: Play
- Free Play: younger children (does not yet use complex grammar, 5 years or younger)

ADOS: Expository
- Demonstration Task
  - "Pretend like I don't know how to brush my teeth, you are going to show and tell me how to do it."

Katie Bangert
USING SALT TO DEVELOP AND MONITOR GRAMMATICAL GOALS
Systematic Analysis of Language Transcripts


SALT

- Software designed to improve the efficacy and accuracy of language sampling analysis.
- Once a language sample is transcribed, run it through SALT software to get a variety of language measures
  - MLU, TTR, NDW, mazes, bound morphemes table

Transcription Conventions

- Utterance Segmentation
  - C-units: Independent clause and its modifiers

C The frog was sitting on a lily pad.
C And then it jumped in.
C Now we can’t find my cat who always runs away.
E That’s too bad!
Standard Measures
Possible Grammatical Goal

- Child will produce the 3rd person singular verb with 90% accuracy in obligatory contexts in a 100-utterance narrative language sample (moving from present level 38% accuracy).

Liza Finestack
USING DSS TO DEVELOP AND MONITOR GRAMMATICAL GOALS

Developmental Sentence Scoring
(Lee, 1971)

DSS Categories
- Indefinite Pronouns or Noun Modifiers
- Personal Pronouns
- Main Verbs
- Secondary Verbs
- Negatives
- Conjunctions
- Interrogative Reversals
DSS

- Each category has scores ranging from 1-8
- Each utterance with subject + verb scored
- Need at least 50 utterances; ideally, 100
Rubric

Possible Grammatical Goal

• Child will produce auxiliary modals (can, will) + verb with 80% accuracy in a 100-utterance narrative sample.

Questions?

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