Helping Little Kids Say Big Sentences

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Helping Little Kids Say Big Sentences

• **Introduction**
  • What makes complex syntax complicated?
  • Complex syntax IS not just for big kids

• **Because/So sentences**
  • Science Instruction
  • Upcoming Study

• **Verb + to + Verb and Verb + (that) + Sentence sentences**
  • Vocabulary Lessons

• **Some Take Home Messages**
Everything from the fourth word of the sentence, *to*, to the last word of the sentence is an infinitive phrase. It contains a noun clause used as a direct object and an adjective (relative) clause modifying *terrorist*. The *x* represents the unexpressed relative pronoun *whom* or *that*.


Steffani 2007
Big sentences aren’t just for big kids

Vasilyeva, Waterfall & Huttenlocher, 2008

Group 1 = High School
Group 2 = College
Group 3 = Graduate Training

![Graph showing the use of complex sentences at different ages by each SES group.](image)

**Figure 3** Use of complex sentences at different ages by each SES group.
Henry and Henry’s big dog, Mudge, were playing outside one day, when Henry’s mom got a phone call.

Next to crackers, popcorn was Mudge’s favorite food. He liked to catch it in the air.

Carlos knows that wearing his bike helmet is a law.

Big leaves are needed to collect enough light in a shady forest.
Embedding adverbial clauses in science instruction!

Cause & Effect
Because & So
# Three Dimensions of Science

**NRC: “combine to form each NGSS”**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Categories/Classifications</th>
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</thead>
<tbody>
<tr>
<td><strong>8 Practices</strong></td>
<td>Asking Questions and Defining Problems</td>
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<td></td>
<td>Developing and Using Models</td>
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<td>Planning and Carrying Out Investigations</td>
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<td>Analyzing and Interpreting Data</td>
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<td>Using Mathematics, Information, and Computer Technology, and Computational Thinking</td>
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<td>Constructing Explanations and Designing Solutions</td>
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<td>Engaging in Argument From Evidence</td>
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<td>Obtaining, Evaluating, and Communicating Information</td>
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<td><strong>7 Cross-Cutting Concepts</strong></td>
<td>Concepts relating to Patterns, Similarity, and Diversity</td>
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<td>Concepts relating to Cause and Effect</td>
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<td>Concepts relating to Scale, Proportion and Quantity</td>
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<td>Concepts relating to Systems and System Models</td>
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<td>Concepts relating to Structure and Function</td>
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<td>Concepts relating to Stability and Change</td>
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<td><strong>4 Disciplinary Core Ideas</strong></td>
<td>Physical Sciences Domain</td>
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<tr>
<td></td>
<td>Life Sciences Domain</td>
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<tr>
<td></td>
<td>Earth and Space Sciences Domain</td>
</tr>
<tr>
<td></td>
<td>Engineering, Technology, &amp; Applications of Science Domain</td>
</tr>
</tbody>
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*Quoted text from Peter A’Hearn*
The kite flew **because** the wind pushed it.
The wind blew **so** the kite went up.

Adverbial Clauses for Cause & Effect
Approaches to teaching 2 clause sentences

**Graphic Organizer**

**Sentence Combining**

**Recast Therapy**

The wind blew.
The kite flew up.

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**SO and BECAUSE**

When do we use “so” and when do we use “because”? How is the meaning different?

- I was tired first.
- I went to bed because I was tired first.
  "I was tired first. It is the result of feeling tired."

- I went to bed first.
- "I went to bed first. It is the result of feeling tired."
Multiple Probe Design

- Screening & Pre-Test
- Baseline Probes
- Science Only
- Science Plus
- Post-Test

Science Content Probes
Causal Adverbial Probes
Control Structure Probes

Science Instruction
Language Treatment

- SPELT-3
- KBIT-2
- EVT-2
- CELFP-2 SS
- Expository Re-Tell
- Science Process Measures
- Science Unit Tests

- Expository Re-Tell
- Science Process Measures
- Science Unit Tests
## Participants

<table>
<thead>
<tr>
<th>Cohort 1</th>
<th>Age/Grade</th>
<th>Gender</th>
<th>In SLP Tx?</th>
<th>SPELT-3 Standard Score</th>
<th>CELFP-2 Sentence Structure</th>
<th>EVT-2 Standard Score</th>
<th>K-BIT2 Standard Score</th>
<th>Control Structure</th>
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<tr>
<td>Tier 1: Adam</td>
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<tr>
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<td>85</td>
<td>86</td>
<td>Passives</td>
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</tbody>
</table>
Cohort 1 – Expressive Only

Cohort 2 – Mixed

Language Probes by Conjunction

Adam

Breanna

Connor

Accurate Productions

BECAUSE SO Control Structure
Strategy 1: Recasts work for Complex Sentences, too

1. Prompt kids w/ a Why question to get a platform utterance
   - Prompt: E: Why do kites fly up?
   - Platform: C: Wind blows.
   - Recast: E: The kite flew up BECAUSE the wind blew

2. Try for 1 recast/minute, established therapeutic dose

3. Start with a conjunction the child already uses in simple sentences (because before so).

5. Use content from the child’s grade level curriculum - the child does not need to have established content knowledge to learn the syntactic form & they will likely learn academic content simultaneously.
Science Instruction + Language Intervention
NSF Funded Study

• Academic Year 2017-2018 – Pilot materials
  • Dual language learners, not yet proficient in English complex sentences
  • Typical learners in their first language
  • 4-6 year olds (not yet in 1st grade)
  • Pre test + 10 days science instruction + Post test

• Science Summer Camp – Summers 2018, 2019, 2020
  • 60 kids w/ Expressive/Receptive Communication Disorder as Primary Impairment
  • No Hearing Impairment, Autism, Intellectual Disability or other significant concerns
  • 4-6 year olds (not yet in 1st grade) who speak English as their primary language
  • Refer for Screenings NOW
  • Pre test + 5 week 1/2 day science summer camp + Post test
  • All groups get treatment: Complex Syntax, Tier 2 Vocabulary, Phonological Awareness

http://udel.edu/tell-lab
Using Vocabulary Words to Make Complex Syntax Instruction Easier!

Verbs of Cognition, Perception, Communication, & Desire
The main verb influences how you finish the sentence

**Action Verbs – Simple Active Bias**

“Record” most frequently occurs in simple active sentences.

87%

*I recorded her voice.*

13%

*Mom recorded the recital.*

**Cognitive Verbs – Complex Bias**

“Pretend” most frequently occurs in complex sentences.

86%

*Tommy pretended to be a lion.*

14%

*The kids pretend that they can fly.*

**Sally pretends a lot.**
Vocabulary Instruction instead of Syntax Change?

Can a focus on **vocabulary words**, selected to co-occur with complex sentences, **increase the amount of complex syntax in teacher talk to children?**
## Participants
6 Head Start classrooms/18 teachers/66 kids

<table>
<thead>
<tr>
<th></th>
<th>Action/Simple</th>
<th>Cognitive/Complex</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Teacher Ed</td>
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<td>Class 1</td>
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<td>Class 3</td>
<td>10</td>
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Verb Selection

**Action Verbs**

**Simple Bias**
- Identify: 0.6
- Observe: 1
- Forgive: 1.04
- Describe: 1.11
- Compare: 1.34
- Measure: 1.71
- Practice: 1.82
- Record: 2.7
- Feel: 3.02
- Write: 3.13

**Cognitive Verbs**

**Complex Bias**
- Predict: 0
- Attempt: 0.6
- Intend: 1.04
- Assume: 1.15
- Allow: 2.16
- Decide: 2.27
- Wish: 2.33
- Pretend: 2.47
- Wonder: 2.65
- Try: 3.4

Proportion of times each verb is used in a complex sentence

Proportion Complex
Sample Lessons

**Action - Identify**

- **Definition** – To know and say who someone is or what something is
- **Book** – *Mouse Shapes* by Ellen Stoll Walsh
- **Large Group** – Which letter? Kids see letters in different fonts and **identify** the letter.
- **Small Group** – Mouse shapes craft Kids glue precut shapes to make a mouse and **identify** the shape before pasting.
- **Independent** – What’s that smell? Kids smell familiar things w/ strong scents and **identify** the smell.

**Cognitive – Try**

- **Definition** - To work hard at something even if you aren’t able to do something
- **Book** - *Excuse me, I’m Trying to Read*, by Mary Jo Amani
- **Large Group** – **Try** to do this! Kids **try** to perform gross motor actions without falling off a line on the floor.
- **Small Group** – Cotton ball Tong Craft – Craft where children **try** to pick up cotton balls with tongs to place on glue
- **Independent** – Memory game – **Try** to find a match
## Verb Selection

### Action Verbs

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### Cognitive Verbs

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### Complex Bias

Proportion of times each verb is used in a complex sentence.
Strategy 2: Word of the Week (Mental Verbs)

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<th>Perception</th>
<th>Desire</th>
<th>Communication</th>
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<tr>
<td>Think</td>
<td>See</td>
<td>Want</td>
<td>Say</td>
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<td>Wonder</td>
<td>Notice</td>
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<td>Announce</td>
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<tr>
<td>Understand</td>
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Helping Little Kids Say Big Sentences

• Typical kids start using complex syntax at 2;6 & proficient by kindergarten
• Two clause sentences are a key part of everyday and academic communication
  
  Our kids are at a disadvantage of we don’t focus on these sentences too!

• Recasts work
• Curricular embedding is okay
• Mental verbs can help

See us about upcoming studies if you work with 4-9 year olds

http://udel.edu/tell-lab