



# Beyond Letters, Nouns, and Numbers:

## Shifting Focus to Verbs and Sentences to Enhance Language Development Trajectories

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# Objectives

- Developmental aspects of verbs
- Language growth trajectories
- **CDI** (MacArthur-Bates Communicative Development Inventories)
- Language facilitation & parent input to enhance verb lexicon development
- Strategies



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# Terminology

**Lexicon**= the words a child understands and says  
OR the mental dictionary of word meanings stored  
in the mind, ie., verb lexicon

**Diversity**= different (different words, different verbs)

**Verb acquisition**= acquiring verbs

**Input diversity**= providing different types of input

**Sentence types**=simple vs complex sentences



# Developmental Aspects of Verbs



## Verbs - A Vital Component to Language Development (Hadley, Rispoli, Hsu, 2013)

Current research by Hadley, Rispoli & Hsu (2013) have indicated “the importance of input diversity to verb acquisition and that parent lexical verb input diversity, rather than input quantity was the primary input factor contributing to children’s subsequent verb lexicon size.”

These findings “demonstrate the relative contribution of developmental and input factors to individual differences in toddler’s language development and establish the importance of input diversity to verb acquisition.”

The ability to produce child-like sentences is the critical developmental step towards adult grammar (Hadley & Rispoli, 2013).



# Developmental Expectations: Words, Verbs/Combinations & Sentences

(Hadley & Rispoli, 2015)

## Single Word User by 21 Months

- Children learn to say their first 50 word
- Usually say one word at a time
- Words typically refer to important people and objects used in daily activities.

Early words: mommy, doggy, juice, more, up, hi, byebye



## Verb User/Word Combiner by 24 mos.

- Vocabulary grows 50-200 words
- Uses words which describe actions/events/needs
- Descriptive and action words
- Begins to put words together

Word combinations:

with verbs: want more, go home, eat it

without verbs: hi daddy, more juice, big doggy

## Child-like Sentence User by 30 mos.

- Rate of word learning is most rapid for descriptive words (adjectives) and action words (verbs).
- As verb vocabulary grows, children combine words into

different types of simple sentences. At this age, most sentences are not “grammatical” by adult standards.

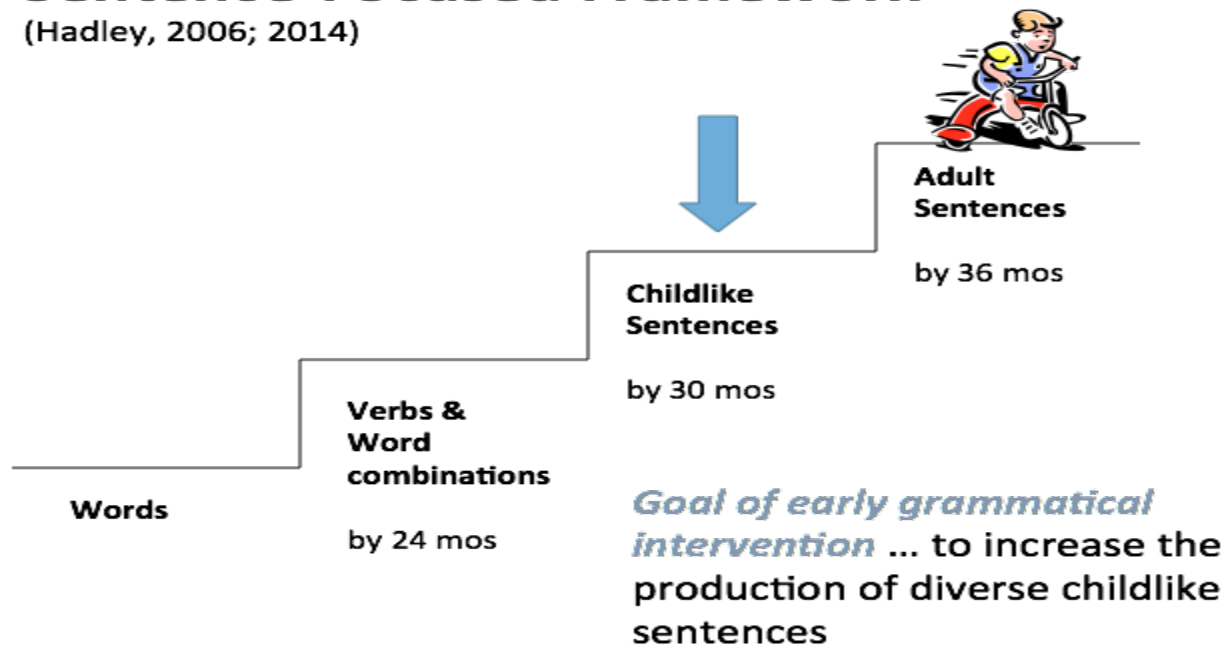
Simple sentences:

“I” sentences: I want more, I fall, me eat

“Other” sentences: It go in, Doggy eat it, Baby sleeping

# Sentence-Focused Framework

(Hadley, 2006; 2014)



## Sentence-Focused Framework (Hadley, 2006; 2014)

- Each step is the foundation to the next level
- There is uniform sequence in development of tense although differences in rate of growth
- Sentences, not word combinations are the critical foundation for the development of grammar

# Word Combinations or Sentences (Hadley, 2009)

hi mom

byebye daddy

daddy gone byebye

mommy go

elmo airplane

baby wake up

brown bear

# Sentence Diversity

Creates opportunities for children to discover, learn and practice grammatical features.

Uses different sentence types with more diverse verb forms:

## Slow developer

I want that

I want there

I want more

## Average developer

I want doll out

He don't have a plate

Waffle goes in there

# Research-Based Evidence on Verbs

- To attain full expressive power of language, children must rely on grammatical encoding which is a developmental accomplishment (Rispoli & Hadley, 2010)
- Verb acquisition forms a critical interface between lexical and grammatical development (Pinker, 1989, Tomasello, 2005)
- The ability to generate novel sentences is a central developmental accomplishment (Hadley, 2012).
- The shift to grammatical encoding which is accomplished in the 3rd year of life, is necessary for children's production of novel and diverse adult-like sentences (Hadley, 2012).

# Early Indicators of Language Disorders

At age 2, children's verb lexicon has been identified as a good indicator of subsequent language development

(Lee, 2011, Olswang, Rodriguez & Timler, 1998).

Patterns of verb growth from 24-30 months can be useful for differentiating slow-typically developing children from children at-risk for language disorders (Hadley,

Rispoli & Hsu, 2013).



# Diagnosis of SLI (specific language impairment)

Numerous researchers have indicated:

- Limited verb lexicons are characteristic of children with SLI
- Deficit in mastery of tense/agreement is hallmark characteristic of preschool and school-age children with SLI (Leonard,1998;Oetting & Hadley, 2009).
- Red flag of SLI with later onset/ slower growth in productivity of sentences and tense/agreement morphemes during third year of life (Hadley et al.,2012).
- Children's non-mastery of grammatical tense is especially sensitive to the diagnosis of SLI between the ages of 5 and 6 (Rice et al.,1998).
- Grammar is a clinical marker of specific language impairment whereas vocabulary growth is not (Hadley, 2009).

# Why Target Verbs with Young Children?

**The ultimate language goal for children is to:**

- Express an infinite number of ideas in an effective and efficient way
- Share knowledge, thought, ideas and socially interact
- Understand the language of instruction

When working in early language development, when child has larger verb lexicon he can generate a greater number and variety of word combinations which will lead to diversity of sentences. Diversity of sentences is a developmental priority (Hadley & Rispoli, 2013).



# Language Growth Trajectories



# Language Growth Trajectories

Characterizes the nature of language development across multiple time points (growth over time)

Allows for consideration of individual language profiles (individual differences in growth)

Can be used to make clinical decisions in regards to intervention

Multiple studies have used language growth trajectories to track various aspects of language development over time.



# MacArthur-Bates Communicative Development Inventories CDI

Fenson et. al, 2007

# CDI

- Assesses early language development
- Parent report tool designed to be completed by parents
- Designed for children aged 8-37 mos.
- Spanish version
- Inventories with questions about vocabulary/ grammar development
- Standardized measure of language/communication development
- CLEX
- CDI Excel Form


## Value of CDI (Therapist point of view)

- Based on parent report
- Parent/professional friendly tool
- Useful for monitoring and showing growth
- Can be used by all providers
- Positive means for demonstrating growth and emergent skills
- Useful for variety of diverse populations
- CDI as opposed to structured language test

# Clinical Utility of CDI

Papastratakos, McCartin, Hadley & Rispoli (2015) indicated clinical utility of CDI for monitoring lexical verb growth for differentiating children developing slowly but typically from those at-risk for SLI. Their research indicated that monitoring verb growth along with parent report, for children aged 24-27 months could be used to make possible clinical decisions regarding intervention.





# Understanding the Importance of Language Facilitation & Parent Input for Development of Verb Lexicon

# Influence on Children's Verb Lexicon Size

Hsu, Hadley & Rispoli (2013) in a review of the literature suggested three sources of influence on a child's verb lexicon size:

- Parent input
- Child developmental factors
- Bidirectional influence in parent/child conversation

# Diversity Matters: How Parent Input Affects Toddler's Verb Lexicon Size

Hsu, Hadley & Rispoli (2015) This study looked at the contribution of parent input to children's subsequent verb lexicon.

Participants: Children aged 21 mos with verb lexicon sizes in the low to average range were assessed using the following measures:

- Developmental measure- CDI total words, # of different words (NDW) and # of complete & intelligible utterances
- Parent input- # of total verbs (NTV) and # of different verbs (NDV) within language sample
- Children aged 27 mos.- analyzed for verb lexicon size (# of different lexical verbs-NDV) produced in language sample

# Results

At 21 months, CDI total was a significant predictor of their 27 months verb lexicon size.

Parent lexical verb input diversity was more important than lexical verb input quantity.

The most frequent verbs in input were less meaning-specific.

Parents with more diverse verb lexicons exposed their children to more meaning specific verbs, even though in input these verb occurred infrequently

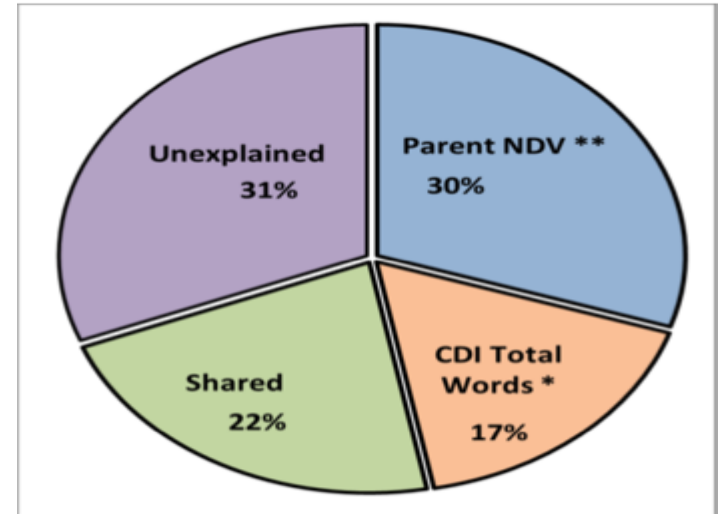
Exposure to more meaning-specific verbs provides critical opportunities for children to increase verb lexicon size.

# From General to More Specific Verbs ( Hadley, Rispoli & Hsu, 2015)

- General movement verb *go*
- manner-specific counterparts such as *walk*, *run*, and *step*
- General activity verb *play*.
- precise play actions such as *bounce*, *lift*, and *toss*
- More specific activity verb *cook*
- Even more semantic specificity à *stir*, *fry*, *bake*

# Hsu (2015)

- Children's 21-month CDI total vocabulary AND parents' number of different verbs (NDV) in 21-month in the input explains 69% of the variance in children's 27-month verb lexicon diversity in spontaneous speech
  - 17% CDI total words\*
  - 22% shared
  - 30% parent NDV\*\*



# Hsu (2015)





# Strategies



# Strategies to Continue to Use (Hadley & Rispoli, 2015)

- Self-talk and parallel talk
- Naturalistic language modeling strategies (Hadley & Walsh, 2013)
- Descriptive commenting
- Match content of language input to children's interests and activities
- Use language of everyday activity based routines or activities of daily living
- Involve parents and help parents move beyond labeling

# Developmental Expectations: Words, Verbs/Combinations, and Sentences

( Hadley, Rispoli & Hsu, 2015)

Provide greater input to:

- Descriptive (adjectives) and actions words (verbs)
- Word combinations with verbs
- Use a variety of sentence types -“Other” sentence types, beside “I” sentences

# Strategies to Facilitate Development of Diverse Child-Like Sentences (Hadley & Walsh, 2013)

Give the object its name (move beyond labels).

Encourage use of lexical nouns:

- it's soft=the kitty is soft

Talk about states, actions and properties of toys:

- it's a cow=the cow fits (state)
- that's a baby=the baby is drinking her juice (action)
- this is juice= the juice is sweet (property)



Goal: Increase the production of diverse child-like sentences

Once toddlers have a core verb vocabulary and have begun to combine words then it is appropriate to target sentence diversity.

Sentences are the critical foundation for the development of grammar.

# Strategies for Selecting Verbs as Lexical Targets from Family/Child Activities of Daily Lives

- “Spice up” the daily routine with more semantically-specific lexical verbs, increase exposure for the **tiny** words in the word cloud. (reference Hsu, 2015)

# Involving Parents (Hadley, 2012)

- Select target words that include verbs and adjectives
- Move beyond labels, numbers, letters, names for things
- Provide alternatives to simple labeling.
- Talk about toys in the environment/pictures in the books
- Move beyond self/parallel talk to describe properties, states and actions

**“Parental involvement is critical for attaining the intervention intensity required for children with true language impairments”.** (Hadley 2009)

# Remember

Provide input diversity through use of diverse verbs/ sentence types using more semantically specific lexical verbs.

Model input diversity to parents.

Keep in mind individual differences and developmental factors which impact each child's language development.



## Conclusion

Understanding the relationships between verbs, sentences, tense/agreement in children's early language growth and parent input may provide new ways to accelerate grammatical development with young children (Hadley, 2012).

If we want to contribute to toddler language development, input and input to diversity to verb acquisition is what matters (Hadley, 2015).