



Auditory Verbal Therapy and Consultation Services

Spoken Language Acquisition

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Agenda

- Exercise
- Typical Language Development
- Assessment of Language

Developmental vs. Remedial Approaches

- One of primary tenants of auditory-verbal approach is that children with hearing loss have the ability (with appropriate audiological management) to learn language in a fashion similar to peers with typical hearing function
- What does that mean?

Typical Language Development

What is normal??

Test Yourself....

- What pre-symbolic skills are necessary prior to development of meaningful communication?
- How many single words does a typical hearing child use before he is ready for the 2 word stage?
- How many words do typical hearing children use before they begin formal reading instruction?
- How many words does a child at language age 2 have to learn in the next 12 months in order to reach language age 3?

Cognition Auditory

- 0-1 mos: Reflexes
 - 1-4 mo: Primary Circular Reactions
(Repetitions/imitations of actions involving self)
 - 4-8 mo: Secondary Circular Reactions
(Imitates adult actions, searches for disappearing object)
 - 8-12 mo: Coordination of Secondary Reactions
(Anticipates actions, develops means/ends relationships)
- 0-3 months: Auditory Awareness and Attention
 - 3-6 months: Discrimination and Auditory Feedback
 - 6-9 months: Localization and Babbling
 - 9-12 months: Auditory Processing

Put them together...



Typical Language Development

- Cooing (2 to 4 months)
 - vowel-like sounds
- Babbling (4 to 12 months)
 - vocal play using all of the possible phonemes
 - raspberries, bubbles, etc.
 - reduplicated (e.g. mamama)
 - variegated (e.g. abadabagu)

Typical Language Development

- First Words (9-12 months)
 - meaningful approximations
- Word Combinations (18 to 24 months)
 - by 20 months children may have ~50 words
 - jargon –
 - talking with intonation as if making sentences
 - real words mixed in with babble sounds
 - mixing and matching single words to express a variety of intentions (e.g. “mama shoe”)

Typical Language Development

- Simple Sentences (24 to 36 months)
 - hundreds of words in their vocabularies
 - combining several words (e.g. “Want more juice”)
- Sentence Development (36+ months)
 - using adult-like structures by 5 years of age
 - articulation and grammar still not perfect

Development: Looking More Closely

Precursory Skills for Symbolic Communication

- Early Communicative Behaviors
- [Video 1 – Max](#), [Video 2 - ?](#)
 - Eye contact
 - Signaling of attention
 - Turn taking
 - Joint attention
 - Pointing and joint reference
 - Imitating objects with actions

- Absence of these behaviors can result in
 - Delayed rate of progress
 - Set-backs in parent child bonding
 - Unnecessary difficulties with language processing
- Therapist/teacher must work (with parent) to develop absent skills

Pre-Verbal Communicative Intent

- Attention seeking
 - To self
 - To events, objects, other people
- Requesting
 - objects,
 - Information
 - Action
- Greeting
- Transferring
- Protesting/Rejecting
- Responding/
Acknowledging
- Informing



(Roth and Spekman, JSHD 1984)

First Words

- Characteristics of Early Vocabulary
 - Includes receptive and expressive forms
 - Comprehension precedes production 50:10
 - Can be adult-based or idiosyncratic
 - Has referential stability (imitative or spontaneous)
 - Has phonetic stability

(Owens, 1996)



The First 50 Words

- Of 1st 100 understood:
 - Nouns – 56%, Verbs – 36%
 - Modifiers – 3%, Social – 5%
- Of 1st 50 used:
 - Nouns – 61% (mostly referential: individual objects, persons, etc.)
 - Action 19%
 - Modifiers – 10%
 - Social – 10%

(Owens, 1996)

Early Vocabulary Acquisition

- 12 months 1st word appears
- 18 months 20 -100 words
- 2 years 300 words
- 3 years 900 words
- 4 years 1500 words
- 5 years 2500 words
- 6 years 13,000 words

To go on to higher education, one needs to know 100,000 words



How are First Words Used?

- In context to express larger meanings
 - “cookie” can mean
 - “I want a cookie”
 - “There’s a cookie”
 - “hit” can mean
 - “He hit me”
 - “I hit the ball”
- With preference for encoding the new or changed element in the environment
 - “bye bye” when an object disappears from sight



(Owens, 1996)

Intention Expressed at the Single Word Level

- Naming
- Commenting
- Requesting objects
 - Present
 - Absent
- Requesting action
- Requesting information
- Responding
- Protesting/Rejecting
- Attention Seeking
- Greeting



Over and Underextension

- As child gains knowledge about the world, s/he refines meanings of words
 - makes hypotheses about underlying concepts
 - extends his current meanings to include new examples
- Underextension
 - Child under-applies meaning and assigns too few examples
 - E.g. uses word “chair” only for his specific highchair
- Overextension
 - Meanings are too broad, contain more examples than adult meaning
 - e.g. calling all men “daddy”

Two Word Combinations

- Once a child has approximately 50 words in his vocabulary, he will begin to combine them
- Bloom and Lahey referred to early combination rules as “semantic/syntactic”
 - components are meaning based
 - Follow word-order relationships

Combination Types

- Agent + action (“Daddy eat”)
- Action + object (“throw ball”)
- Agent + object (“Daddy ball”)
- Entity + attribute (“big shoe”)
- Possessor + possession (“mommy shoe”)
- Recurrence (“more cookie”)
- Nonexistence/disappearance/rejection (“gone cookie”, “no bed”)
- Demonstrative + entity (“this cup”)
- Entity + locative (“doggy bed”)
- Action + locative (“throw me”)

Multi Word Combinations

- Once ~ 1/2 of a child's utterances contain 2 words, he will begin to create longer combinations
- Most common
 - Agent + action + object
 - Agent + action + location

- Formed in 2 ways

- Recombination

- “Daddy throw” and “throw ball” becomes “Daddy throw ball”

- Expansion

- “Eat cookie” becomes “Eat big cookie”

7-12 months

- Cognitively: exploring toys, anticipating outcomes, recognizing object permanence, using objects functionally, imitating actions
- Communication: vocalizes for attention, listens to others, receptive vocabulary growing, jargoning, follows commands, may be using first words

12 – 24 months

- At 15 months
 - 4-6 words expressively
 - Will point to toys, animals, persons named
 - Solitary play, imitates housework, likes music and dancing
- At 18 months
 - 20 – 50 words expressively
 - Begins 2 word combinations
 - Identifies body parts
 - Uses own name

12 – 24 months

- 18 – 24 months
 - Vocabulary explosion! From 20 to 300
 - Parallel play
 - Syntax:
 - Personal pronouns: I, mine
 - Present progressive beginning (-ing verbs)

24 – 36 Months

- Brown's late Stage I – Stage III
- 200 – 300 word vocabulary by 2nd birthday
- Symbolic play
- Syntax: short incomplete sentences
 - Prepositions: *in/on* 24 months, *under* 36 months
 - Pronouns: *I, me, you*
 - Verb endings: *-ing*, irregular past, reg. Past, 3rd person –s
 - Plural: *-s* 27 – 33 months
 - Subject + Verb + Object 30 months
 - Subject + Copula + Complement (30 months)

36 – 48 Months

- Brown's Stages IV – V+
- Vocabulary: 900 – 1000 words
- Can follow 2 step commands
- Cooperative play begins
- Takes turns, shares (sometimes!)

36 – 48 Months cont.

- Syntax:
 - 3 – 4 word sentences: simple construction
 - Prepositions: *next to* 40 months; *behind/in back/in front* 48 months
 - Family terms
 - Pronouns
 - Superlatives *-est* 42 months
 - At Stage V – subordinate clauses begin
 - Sentence Types (see slide)

Syntax Rules of Thumb

- 50 words needed expressively before children are ready to combine
- *In/on* come before *behind*
- 1 time actions appear in past tense 1st (e.g. *fell, broke*) while ongoing actions 1st appear in the present (e.g. *eat, play*)
- *Yes/No* before *Wh-* questions
- Concepts:
 - General first, then more specific
 - Positive first, then negative

Sentence Types

- Agent + Action/ Action + Object
 - 12 – 22 months
- Subject + Verb + Object
 - Appears ~22 months, mastered by 30
- Subject + Copula + Complement
 - 28 months
- Subject + Auxilliary + Verb + Object
 - 32 months
- Subject + Aux. + Verb + Indirect Obj. + Obj.
 - 46 months

46 – 60 Months

- Vocabulary: 1500 – 1600 words
- Questions! (see below)
- Recounts stories/events
- Role plays
- Syntax:
 - Using more complex sentence types
 - Has trouble answering *how/why*
 - Prepositions *before/after*, 60 months

Question Development

- Yes/no with single words and rising intonation 12 -22 months
- What doing? 22 -36 months
- Where going? 22 -26 months
- That x? 22 – 26 months
- More developed What and Where? 28 – 30 months
- Do, Can, Will? 34 months
- Who, Whose, Which? 36 months
- When, How? 40 months
- Why? 46 months

60 – 72 Months

- Vocabulary: 2100 – 2500 words
- Understands time concepts
- Part/whole relationships
- Follows 3-step commands
- Syntax:
 - Has 90% of grammar acquisition
 - Comparative *-er*
 - Derivatives *-er* (e.g. “singer”)

Early School Years

- At 6 years
 - Vocabulary: 2600 expressive, 20,000 receptive
- 7 years and on...
 - Figurative language
 - Fine tuning of syntax rules
 - Reading
 - Vocabulary continues to grow

Intro to Language Assessment

Language Sampling

- Process of assessing language development by recording language in a natural setting
 - Recording what child says vs. what you think they said (i.e. without “filling in the blanks”)
- Analyze for total number of words or morphemes per utterance

Brown's Stages of Language Development

- *A First Language: The Early Stages* (1973)
 - Mean Length of Utterance (MLU)
 - A preschooler's language development corresponds with average utterance length
 - Stages I-V+
 - Brown's 14 Grammatical Morphemes

Comment on

- Setting used
 - Who is present
 - What toys or materials are used
- Type of discourse
 - Narrative
 - Conversation
 - Expository (giving directions, etc.)
- Interactions with others
 - E.g. are utterances in response to questions, etc.

Mean Length of Utterance

- Using a language sample of 50 to 100 utterances, analyze by morphemes (minimal meaningful unit of language)
 - When analyzing a child's sample, must sometimes guess as to whether child is using meaningfully (e.g. irregular past tense verbs count as 1 morpheme b/c it is not clear that children relate them to present form)
- Count and average

Brown's Stages of Language Development

- Stage I: MLU 1.0 – 2.0; 12 - 26 months
- Stage II: MLU 2.0 – 2.5; 27 - 30 months
- Stage III: MLU 2.5 – 3.0; 31 - 34 months
- Stage IV: MLU 3.0 – 3.75; 35 - 40 months
- Stage V: MLU 3.75 – 4.5; 41 - 46 months
- Stage V+: MLU 4.5+; 47+ months

Brown's 14 Morphemes: Development

- Present progressive
 - In
 - On
 - Regular plural –s
 - Irreg past verb
 - Possessive –s
 - Uncontractible copula
 - Articles
 - Regular past
 - 3rd person –s
 - Irreg. 3rd person
 - Uncontractible auxiliary
 - Contractible copula
 - Contractible auxiliary
- 19 – 28 months
 - 27 – 30 months
 - 27 – 30 months
 - 24 – 33 months
 - 25 – 46 months
 - 26 – 40 months
 - 27 – 39 months
 - 28 – 46 months
 - 26 – 48 months
 - 26 – 46 months
 - 28 – 50 months
 - 29 – 48 months
 - 29 – 29 months
 - 30 – 50 months

Owens, 1988

How many morphemes?

- No, no
- Billy Bob
- He sat on the bed
- My feet
- Daddy's shoes
- Cccccandy
- The boys ate pizzas and walked to the mall

Brown's 14 Grammatical Morphemes

- Stage II
 - *-ing*
 - Plural *-s*
 - *in*
- Stage III
 - *on*
 - possessive *'s*
- Stage V
 - irregular past tense
 - articles *a, the*
 - regular past tense
 - regular 3rd person singular
 - contractible copula *be*
- Stage V+
 - uncontractible copula *be*
 - irregular 3rd person singular
 - uncontractible auxiliary "be"
 - contractible auxiliary "be"