

Language Acquisition Theories

⌘ Theories:

- ☑ Behaviorist
- ☑ Nativist - Syntactic
- ☑ Semantic/Cognitive
- ☑ Sociolinguistic
- ☑ Emergentist

⌘ Focus on implications for language impairment

Behaviorist Perspective - Review

⌘ Language acquisition can be explained by focusing on measurable behaviors

⌘ Classical and Operant Conditioning

- ☑ stimulus - response leads to associations
- ☑ behaviors can be increased or decreased with reinforcement
- ☑ shaping, chaining

⌘ Imitation plays an important role in language acquisition

Clinical Implications - Intervention

⌘ Applied Behavior Analysis (ABA)

⌘ Discrete trials Example1 Example2

⌘ A-B-C Analysis

- ☑ Antecedent - Behavior - Consequence
- ☑ Manipulate environment to achieve outcome, particularly useful for behavior problems

⌘ Modeling and Imitation

⌘ Reinforcement strategies

⌘ Prompting, cueing, fading

⌘ Shaping, chaining

⌘ Generalization

Limitations of Behaviorist

- ⌘ This theory does not adequately explain language acquisition
- ⌘ Therapy based upon these principles is highly adult-directed, not child-centered
- ⌘ Repeated drills or trials often are unrelated to meaning

Nativist - Syntactic Perspective

- ⌘ Language develops because of an innate **Language Acquisition Device (LAD)**
 - ☒ Chomsky's Transformational Grammar
- ⌘ **Biological Maturation Perspective**
 - ☒ Species-specific capacity
 - ☒ Focus on the biological basis of language

Biological Maturation Evidence

- ⌘ **Brain macrostructures (hemispheres, cortical regions) show localization for language**
 - ☒ Autopsy studies, MRI studies of impairment
 - ☒ Perisylvian region, **ectopias**
- ⌘ **Brain microstructures contribute to language development (cell growth, **myelination**)**
 - ☒ Rapid changes associated with development
- ⌘ **Genetic influence on language acquisition**
 - ☒ Strong positive familial history of language impairment (LI) in studies of children with LI

Clinical Implications

⌘ **Prevention and early identification**

- ☒ Prenatal and early childhood health
- ☒ Risk based on genetic factors
- ☒ Critical periods for intervention

⌘ **Attempt to assess neurological functioning**

- ☒ Limited measurements
- ☒ Referral to neurologist

⌘ **Intervention may attempt to stimulate brain growth/development, particularly for specialized skills**

Theories of LI – specific deficits

(1) Language impairment is a specific deficit in phonological working memory

- ☒ limitations in encoding, representing, storing and retrieving phonological information

(2) Language impairment is specific deficit in processing brief, acoustic info in rapid succession

- ☒ Tallal and Stark, 1981: 35 LI and 38 Normal children 5 to 8 years, LI children had trouble discriminating /ba/ vs. /da/, not /a/ vs. /ae/
- ☒ Tallal Repetition Test: sequence 2 tones with changing inter-stimulus intervals (ISI) of 17 to 150 ms

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⌘ **Computer-based intervention**

- ☒ Stimulating activities to keep attention
- ☒ Reinforcement frequent and motivating
- ☒ Intensive treatment
 - ☒ Minimum of 90 minutes 5 days/week

⌘ **Modified speech signal**

- ☒ Duration differences, longer sounds, longer ISI
- ☒ Gradually adapted as child improves

⌘ **Various oral language skills**

- ☒ Phoneme awareness
- ☒ Vocabulary and syntax

Limitations

- ⌘ **Limited understanding of the brain**
- ⌘ **Can't get to brain or central nervous system to treat directly; Only able to modify indirectly through learning processes**
- ⌘ **Identified deficit areas are not always best intervention goal areas**
 - ☒ **A limited focus on discrete bottom-up skills may or may not be relevant to everyday needs**

Semantic/Cognitive Models

- ⌘ **Shift in focus from syntax to semantics**
- ⌘ **Language is not innate, cognitive precursors are innate**
 - ☒ **"Logic Acquisition Device"**
- ⌘ **Language is a product of cognition**
- ⌘ **Renewal of interest in ideas by Piaget**

Clinical Implications

- ⌘ **Assessment of other areas of development in conjunction with language**
 - ☒ **play scales, developmental scales, nonverbal cognition**
- ⌘ **Cognitive referencing for identification of language impairment**
- ⌘ **Use of developmental guidelines when planning intervention**
 - ☒ **earlier acquired skills before later**
 - ☒ **cognitive precursors before language skills**

Limitations

- ⌘ **Cognitive theory fits normal acquisition but doesn't seem to explain impairment, especially when the language impairment seems separate from cognitive development**
- ⌘ **Strictly developmental approaches to intervention may not consider chronological age needs**

Sociolinguistic Perspective

- ⌘ **Language develops because children are motivated to interact socially**
- ⌘ **Babies are biologically wired to relate to people in special ways – faces and voices**
- ⌘ **Emphasis is placed upon intention to communicate**
- ⌘ **Parents and other social partners contribute significantly to language development**

Clinical Implications

- ⌘ **Goal of assessment to understand contextually-based difficulties**
- ⌘ **Shift in language intervention to include use or purpose of language and the context of communication**
- ⌘ **Scaffolding and interest in ideas of Vygotsky**

Limitations

- ⌘ Sometimes pragmatic goals are simply added to list of other goals rather than integrated
- ⌘ Natural is not always better
- ⌘ Perspective supports good clinical work but it doesn't mean that parents/ caregivers cause language impairment

Emergentism

- ⌘ Outgrowth of information processing models that describe how stimuli are encoded from the environment, interpreted, stored, and retrieved
- ⌘ Parallel patterns of processing - Parallel Distributive Processing (PDP)
- ⌘ Processing mechanisms develop with experience
- ⌘ Connections over time are strengthened or activated, others are weakened - Connectionist or Competition model

Theories of LI - general deficit

- (1) Language impairment is a general limitation in processing capacity
 - ☒ Limitation in resources available for processing info in working memory
- (2) LI is a general impairment of intake
 - ☒ Bootstrapping deficits - children with LI are unable to take advantage of input cues to construct an adult grammar

Bootstrapping

- ‡ Children “pull themselves up by their bootstraps” into language and grammar
- ‡ **Prosodic bootstrapping**
 - ☒ using prosodic input cues to segment speech stream
 - ☒ pauses, duration, intonation
- ‡ **Semantic bootstrapping**
 - ☒ context provides input cues to word meanings
- ‡ **Syntactic bootstrapping**
 - ☒ word classes and verb meanings are constrained by the linguistic context

Clinical Implications given Bootstrapping Model

- ‡ Input is important and can be modified to benefit the child
- ‡ Avoid telegraphic utterances
- ‡ Introduce key words in salient positions
- ‡ Use a variety of sentence forms when teaching verbs

Limitations

- ‡ Emergentism is a very recent model, fewer (or no direct) clinical applications
