SPV 221 Language Acquisition Lehman College W15
Course Notes

Day 1: Jan 2

Introductions
Explanation of Projects

- The 100 person idea
- Language
    - Symbols and referents
    - Speech Communities
    - Conventions/Expectations
    - Tool
- Modularity
- Technical
    - Speech
        - Speech vs. auditory perception
        - Dependence on listener
        - Coarticulation
    - Language
        - The Bell & Butterfly
    - Communication
- Major Domains of language
    - Form (Syntax & Morphology)
    - Content (Lexicon or Semantics)
    - Use (Pragmatics)
- Remarkable Features
    - Acquisition Rate
    - Universality
    - Human-ness
    - Productivity & Recursion

Day 2: Jan 5

- Movie
    - Deb Roy
    - Humanness
    - Steve's brain injury – Kathy Price (Broca's Aphasia & modularity)
    - Sensitivity to mother's voice – Fifer's lab at Columbia
    - Morgan & Christopher – polyglot
    - Chomsky – generative grammar and UG
    - Ofer's lab & the songbirds
    - After a few generations, we pick up language
    - Verghna-Kardem & FoxP2 & control over shaping words
    - Mark Pagel - the cultural growth & the 100 year experiment

- Language Difference vs. Disorder (TPS1)
  - Difference
    - GAD/GAE
      - Dialect
    - Bilingualism
      - Sequential vs simultaneous
      - Code switching
    - Gender
      - Txt
    - Genetic predisposition
      - Twin studies (16% of variability & 85% co-occurance)
    - Language Learning Environment
      - "open genetic program" (input is key – quantity and quality)
  - Disorder
    - Heritable – SLI
      - No other intellectual issues
    - Developmental Disabilities
      - Other intellectual issues
        - Developmental disabilities
        - ASD
    - TBI
      - Diffuse/focal
- TPS2

Science & Theory of Language Development
1. Who studies lang dev & why?
2. What are major approaches?
3. Major theories?
4. How do lang dev theories influence practice?

- EVIDENCE BASED PRACTICE
- TPS3
- Dialect Discrimination
- Basic Research
  - Theory
- Applied Research
  - Homes
  - Clinics
  - Schools
- Approaches to Studying Lang Acqui/Dev
  - Speech Perception – like in movie, Fifer's work on sensitivity to mother's voice
    - Short video
      - High Amplitude non-nutritive sucking procedure
      - Head turn preference procedure

- Preferential Looking
  - ERP
    - Rutgers video cause babies doing ERPs are cute
    - Event Related Potential
  - fMRI
    - blood flow to a part of the brain
  - Optical Topography
  - Marion Downs
- Language Production (NOT Speech per se)
  - Normative data
  - Observational studies (Deb Roy's project)
    - Language Observation
      - Listening and reslistening – this is all we got!
      - Not always clinically motivated
  - Experimental studies
    - Psuedowords - Wug test (Gleason)
- Language Comprehension (NOT Speech per se)
  - Infants – fixation time
  - Picture tasks
- Scenarios
- Major Lang Dev Theories
  - What do infants bring to the task of language learning?
    - Nature vs nuture
  - What mechanisms drive language acquisition?
    - Domain specific/general (modularity)
  - What types of input support the lang-learning system?
  - The theories - Nurture
    - Skinner (early interactions)
    - Vygotsky (zone of proximal dev – true for teaching)
    - Piaget (stages of childhood)
    - Bloom – Intentionality (child drives language b/c can't count on people)
    - MacWhinney - Competition (words & structures get strengthened)
    - Usage-based Tomasello – intentionality & other recognition
  - The theories – nature
    - Fodor – modularity
    - Chomsky – UG
    - Bootstrapping – Gleitman (constraint by surrounding context)
      - Syntactic
      - Semantic
      - Prosodic
    - Connectionist (nature & nurture) (connections between words)

TABLE 2.3
Overview of language development theories

Theory (proponent)	Nature–nurture continuum	Major tenets	Key concepts
Behaviorist theory (Skinner)	Nurture inspired	Language is like any other human behavior, and it does not reflect any special innate endowment.	Operant conditioning
		Children learn language through operant conditioning and shaping; some verbal behaviors are reinforced and others are suppressed.	Reinforcement
		Complex behaviors (e.g., speaking in complete sentences) are learned as a series of steps in a chain, in which each step stimulates each successive step.	
Social-interactionist theory (Vygotsky)	Nurture inspired	Language emerges through social interaction with peers and adults.	Social plane–psychological plane,
		Language skills move from a social plane to a psychological plane.	Zone of proximal development
		Initially, language and cognition are intertwined processes, but they become separate capabilities by about age 2 years.	
Cognitive theory (Piaget)	Nurture inspired	Children's cognitive development precedes their language development.	Cognition hypothesis
		Children's speech begins as egocentric because children can view the world only from their own perspective.	Egocentric speech
Intentionality model (Bloom)	Nurture inspired	The tension between the desire to communicate intentions to other people and the effort required to communicate these intentions drives language development.	Intentionality
Competition model (MacWhinney)	Nurture inspired	Repeated exposure to reliable language input strengthens children's "correct" representations of the morphology, phonology, and syntax of their language.	Reliable input, strengthened representation

Theory (proponent)	Nature–nurture continuum	Major tenets	Key concepts
Usage-based theory (Tomasello)	Nurture inspired	Children attend to and understand other people's intentions and then imitate other persons' intentional communicative actions to learn language.	Joint attention, intention reading
Modularity theory (Fodor)	Nature inspired	Language is organized in highly specific modules in the brain.	Localization
		Language modules perform dedicated functions but can interact with one another to produce combinations of functions.	Encapsulization
Universal grammar (Chomsky)	Nature inspired	Children are born with general grammatical rules and categories common to all languages.	Language acquisition device
		Children use input to discover the parameters their language uses to satisfy the general grammatical rules and categories they are born with.	Parameters
Syntactic bootstrapping (Gleitman)	Nature inspired	Children use their knowledge of syntactic categories to make inferences about the meanings of new words.	Bootstrapping, syntax
Semantic bootsrapping (Pinker)	Nature inspired	Children use their knowledge of word meanings to make inferences about the syntactic categories to which the words belong.	Bootstrapping, semantics
Prosodic bootstrapping (Wanner & Gleitman)	Nature inspired	Children use their sensitivity to the prosodic or acoustic structure of language to make inferences about the structure of units such as clauses, phrases, and words.	Bootstrapping, prosody, acoustics
Connectionist theories	Nature or nurture inspired	Language is organized in a network containing nodes and connections.	Nodes
(Rumelhart & McClelland)		The network of nodes and connections undergoes constant transformation in response to language input.	Connections

Theory	What do infants bring to the task of language learning?	What mechanisms drive language acquisition?	What types of input support the language-learning system?
Behaviorist theory	No mention	Operant conditioning by parents and adults—a domain-general process	Reinforcement of desirable verbal behavior and punishment of undesirable verbal behavior
Social-interactionist theory	General social structure	Social interactions with others—a domain-general process	Linguistic input that is within the child's zone of proximal development
Cognitive theory	General cognitive structure	General cognitive processing abilities—a domain-general process	Understanding events, relations, and phenomena in a nonlinguistic sense
Intentionality model	General social structure	Engaging with other people and objects—a domain-general process	The tension between the desire to engage with other people and the effort required to express elaborate intentional states
Competition model	Ability to attend to and organize linguistic data	Induction and hypothesis testing—domain-general processes	Reliable and frequent input patterns
Usage-based theory	Intention reading, which emerges during infancy	The child's interpretation of the social environment—a domain-general process	Reproducing intentional communicative actions through cultural or imitative learning
Modularity theory	Specialized modules in the brain	Functions performed by dedicated language modules—domain-specific processes	Input that promotes parameter setting of modules and interactions among language modules
Universal grammar	Explicit, domain-specific linguistic knowledge	Discovery of the parameters that a person's language encompasses—domain-specific processes	General linguistic input (even of an impoverished quality)
Syntactic bootstrapping	Syntactic categories	Domain-general processes to understand how language works, domain-specific processes to notice correlations between syntax and meaning	Syntactic input
Semantic bootstrapping	Semantic categories, ability to parse sentences, ability to link words in sentences to semantic categories	Domain-general processes to understand how language works, domain-specific processes to make hypotheses about new words	Semantic input
Prosodic bootstrapping	Sensitivity to prosodic or acoustic structure of language (pitch, rhythm, pauses, stress, etc).	Domain-general processes to understand how language works, domain-specific processes to notice correlations between acoustic properties of speech and syntactic categories.	Acoustic input
Connectionist theories	Ability to attend to and organize linguistic data	Pattern detection—a domain-general process	Reliable and frequent input patterns

From Pg 56, 57, 58

Jan 6
How does Theory Influence Practice
- Prevention
    - Phonological Awareness
- Intervention
- Remediation
- Enrichment
    - Improve academic language – teach SAE (video)
- Evidence Based Practice
    - Commonsense is not evidence
    - ASHA Guidelines
- LeRoy Case Study

    Transcription Example

Jan 7 Project Proposal Due TOMORROW
1. What is phonological development?
2. What is morphological development?
3. What is syntactic development?
4. What is semantic development?
5. What is pragmatic development?

- Phonology
    - Phonemes
        - Minimal pair (cat/bat; lake/rake)
        - Children develop internal representations before external (3yrs)
        - Phonological rules
            - /z/ /s/
    - Building blocks
        - Cues to segment speech
            - Prosodic cues
            - Phonotactic cues
        - Phomenic inventory
            - Phonological knowledge
            - Phonological production
                - Voiced/voiceless pairs
                - Place of articulation pairs
        - Phonologically aware
            - Syllables
                - How many in brooklyn or manhattan
            - Rhyme detection
                - Mice, time, row, dice
            - Intial sound ID
                - Subway
            - Initial sound elision
                - Table – t = able
            - Phoneme counting
                - Queens

- Phonological awareness (apple, apple bo bapple…) is NOT phonemic awareness (phonemic is all the above)
- Develops with:
  - Frequency of exposure (i.e., bilingual child 60%Eng 40%Sp will develop Eng first, but ultimately, they'll be even)
  - Variations in type of language (income)
- Morphological development
  - Grammatical Morphemes
    - I walk *he walk
    - *Three dog
    - 3 glibs *3glib
  - Derivational Morphemes
    - Quick-ly
    - Joy-ful-ly
    - Wugly, mickness

TABLE 3.1
Grammatical morphemes acquired in early childhood

Grammatical morpheme	Age (in months)	Example
Present progressive -ing	19–28	"Mommy eating"
Plural -s	27–30	"Baby shoes"
Preposition in	27–30	"Hat in box"
Preposition on	31–34	"Hat on chair"
Possessive 's	31–34	"Baby's ball"
Regular past tense -ed	43–46	"Kitty jumped."
Irregular past tense	43–46	"We ate."
Regular third person singular -s	43–46	"Mommy drives."
Articles a, the, an	43–46	"The car"
Contractible copula be	43–46	"She's happy."
Contractible auxiliary	47–50	"She's coming."
Uncontractible copula be	47–50	"We were here."
Uncontractible auxiliary	47–50	"She was coming."
Irregular third person	47–50	"She did it."

Source: Information from *A First Language: The Early Stages,* by R. Brown, 1973, Cambridge, MA: Harvard University Press.

- Grammatical morphemes
  - Free
    - Words (school)
  - Bound
  - Obligatory contexts The man hat big
- Derivational morphemes
  - Prefixes
  - Suffixes
  - Infix – in English?
- Influences on Development

- Language has no effect – highly inflected languages are not acquired faster
- SLA
  - The book says that people learning a 2nd language may never learn the morphemes in the 2nd language that do not exist in the first.
    - THIS IS NOT TRUE
    - Affectiveness can be learned and does not exist in every language
    - The plural thing can be learned by Chinese speakers, the reasons for this are complex, and largely socially based, not biological
- Dialects
- SLI
  - Syntactic Development
    - Increase utterance length
      - Mean Length of Utterance
        - Usually means have more of the closed class of words (prepositions, determiners, etc)
    - Use of different sentence modalities
      - Declaratives (age 3, all types)
      - Negatives (age 4, develop auxiliary)
      - Interrogatives (wh is easier than aux "is")
    - Complex syntax
      - NP PP VP AP (age3)
    - Influences on Syntactic Dev
      - Most reliable element (even M/F differences disappear)
      - Child directed speech
      - Complexity of surrounding language (SES)
      - Language Impairment
        - SLI

Need pg 93 for Language Analysis Project

TABLE 3.3
Stages of grammatical development

Stage	MLU range (midpoint)	Stage description
I	1.0–1.99 (1.75)	Single-word utterances predominate. Grammatical inflections not used.
II	2.0–2.49 (2.25)	Two- and three-word utterances predominate. Grammatical inflections emerge (e.g., present progressive marker, plural marker). Emergence of grammar as child follows basic word-order patterns (e.g., Agent + Action: "*Mommy go*"; Agent + Action + Object: "*DeeDee ate bone*").
III	2.5–2.99 (2.75)	Emergence of different sentence modalities: yes–no questions, *wh*-questions, imperatives, and negatives.
IV	3.0–3.99 (3.5)	Complex sentences emerge to feature multiclause sentences, such as object–noun phrase complements ("This is the one I made"), embedded *wh*- questions ("That's why she went outside"), and embedded relative clauses ("Clifford, who was so good, is still waiting").
V	4.01	Emergence of coordinating conjunctions and adverbial conjuncts ("I am tired because I didn't take a nap"; "I'm helping Daddy do the dishes and make dinner").

MLU = mean length of utterance.
Source: Based on *A First Language: The Early Stages* (1-59) by R. Brown, 1973, Cambridge, MA: Harvard University Press.

Jan 8 PROJECT PROPOSAL DUE
- Semantic Language Development
    - Mental lexicon (60,000 at adulthood)
        - Receptive
        - Expressive
        - Vocab spurt DOES NOT HAPPEN
            - Very linear development, just can articulate that much
        - Semantic Taxonomy – IMPORTANT for Language Analysis
            - Specific nominal (mostly proper nouns)
            - General nominlas
            - Action Words (verbs & verbal modifiers i.e., "no jumping")
            - Modifiers (adjectives
            - Personal-Social words (this gets complicated, think of it as a politeness marker)
    - Learning new words rapidly – 3 factors
        - Concept represented by word – sign/referent (abstractness)
        - Phonological Form of the word (common sounds learned more quickly than abstract)
        - Contextual conditions at initial exposure
            - Lead-in (outside of focus)
            - Follow-in (in focus)
        - Extralinguistic content
            - Eye gaze
            - Ostentive contexts (lots of context)
            - Nonostentive (inferential)
    - Organizing into semantic network
        - Take all this with a grain of salt – this is a theory, there are others
            - Relationships between words
                - Syntactic relationships (I/we; him/her; a/the)
                - Semantic relationships (Christmas/Thanksgiving; hand/foot)
                - Phonological relationships (glow/grow or hit/hip)
    - Influences on Semantic Development
        - Gender
            - Girls are faster
            - By age 6-7, everyone's even
        - SLI
        - Language Exposure
            - This is HUGE for vocabulary & has correlations w/SES
        - Income
- Pragmatic Development
    - Communication Functions
        - Forces of utterances – types of illocutionary force (do NOT use illocution)
        - Intentionality hypothesis
            - Children develop language to express their intentions

TABLE 3.5
Basic communication functions (purposes of communication)

Function	Description
Instrumental	Used to ask for something
Regulatory	Used to give directions and to direct others
Interactional	Used to interact and converse with others in a social way
Personal	Used to express a state of mind or feelings about something
Heuristic	Used to find out information and to inquire
Imaginative	Used to tell stories and to role-play
Informative	Used to provide an organized description of an event or object

Source: Based on *Learning How to Mean: Explorations in the Development of Language Development* by M. A. Halliday, 1975, London: Arnold; and "Presentation of Communication Evaluation Information," by C. Simon and C. L. Holway, in *Communication Skills and Classroom Success* (pp. 151–199), edited by C. Simon, 1991, Eau Claire, WI: Thinking Publications.

- Conversational Skills
    - Just like every new experience, have to figure it out & make a map the first time
    - Conversational schema
        - Establish topic
        - Maintain or shift topic
        - Resolution & closure
    - Joint attention
        - Focus on same thing, infant must multitask (thing and caregiver)
- Sensitivity to Extralinguistic cues
    - Eye contact
    - Proximity
    - Pitch
    - Gaze
    - Posture
    - Facial expression
- Register
    - Varying in preschool, but really develop in school
- Influences on Prag Dev
    - Temperment
    - Social & Cultural Contexts

Jan 9 GIVE Projects back