A reminder of early topics from the class

And how they fit together

Chimp language studies

- They can learn signs/words, but generally do not acquire true syntax
  - Word order issues
  - Longer sentences do not add additional information
- Generally not creative
  - Every sign had been just used
  - Everything is a request for food

Critical periods/Sensitive periods

- There appears to be an optimal age for learning a language
- Beyond that point, learning outcomes rarely reach native levels of performance
- However, this is not an absolute cut-off as in a true "critical period"
- Educational implications: SLA
- Clinical implications: Dialect reduction
- Clinical implications: Cochlear implants

Early perceptual abilities

- Infants can hear their mother's speech *in utero*, and this encourages them to attend to their native language after birth (thus enhancing its learning)
- Infants learn many aspects of language during their first year of life.
- But infant hearing is considerably poorer than that of adults.

Piaget's theory/early cognitive underpinnings

- There are different stages of cognitive development, each building upon one another
- Cognitive skills such as object permanence, causality, imitation are like to be prerequisites to learning language

Joint attention - another cognitive underpinning

- Joint attention - focusing on the same thing
- Infants use this when learning words
- Relates to long-term development
  - RJA at 6 mo. predicts receptive language development through at least 2 years
  - IJA at 18 mo. predicts social development through 3 years, IJA in preschool predicts social outcomes in adolescence
  - IJA at 12 mo. predicts IQ & language development through 8 years
  - IJA impaired in autism; may help to explain their language deficits

Early speech perception

- Infants show categorical perception for phonemes, but do so at first for both native and nonnative contrasts
- Between 8 & 12 months, infants lose perceptual ability for nonnative contrasts, apparently as a result of statistical patterns in input
- Perception appears syllabic in nature, not phonemic

Early speech production (babbling)

- At first, infant's productions are reflexive
  - These behaviors then get recruited for communication
- Further development of vocalizations
  - Babbling at first seems to be based on simple movements (jaw oscillation) and is relatively universal
  - But babbling becomes more and more akin to the native language as time progresses, merging into first words and early speech production

Segmentation

- Finding where one word ends and another begins is fundamental to learning those words, and there aren't pauses to signal these boundaries
  - Parents help by placing target words word-finally, emphasizing them, and varying adjacent context
  - Children track statistical patterns to identify boundaries

Building blocks

- All of these early skills are building blocks for language development
  - Clinical links: Otitis media, autism, hearing loss, childhood apraxia
- SLI?
- Dissociation in Williams Syndrome?

Stages of language processing

- Phonology
- Semantics
- Morphology
- Syntax
- Pragmatics

Phonology

- General (rough) pattern as to which sounds are learned first
- Common patterns of simplification
  - Assimilation patterns
  - Substitutions patterns
  - Syllable simplification patterns

Semantics: Word-learning

- Three problems:
  - Inductive problem/Indeterminacy of reference
    - Potentially wide range of hypotheses
  - Mapping problem
    - Cross-linguistic variation - meaning can't be just intuitive
  - Children learn words at a very fast rate

Word learning, continued

- Different theoretical approaches
  - Principles & Constraint theories
    - Whole object, taxonomic, mutual exclusivity
    - Some evidence that some biases are learned, and that failure to learn/generalize may delay vocabulary growth
  - Syntactic bootstrapping
    - especially critical for mental state verbs
  - Social-pragmatic accounts
    - Focus on joint attention; links between joint attention and word learning, and thus clinical predictions for autism
  - Associationist views
  - Emergentist coalition

Stuff since the last exam

A review for the noncumulative portion of the final

Note that we've already reviewed the first half once… these are NOT exact replications of those slides, so use both!

Semantics: First words

- Often don't mean the same thing that they would mean in adult speech
- May not have adult forms
- Majority tend to be nominals
  - This varies with child "style"
- Great variation in time course of lexical development across children

Semantics: word combinations

- May begin with transitional stage
- Tend to have specific orderings for specific functions
- Stress differences tend to signal meaning distinctions
- Longer utterances build upon these

Morphology

- Function morphemes have general patterns of acquisition (in terms of age) - blue are Brown's morphemes
  - -ing, do, have + V-en
  - In, on
  - Plural, can, will
  - Possessive, be as uncontractible copula
  - Irregular past tense, regular 3rd person verb
  - -ed, a, the
  - Irreg. 3rd person (has/does), be as uncontractible auxiliary, be as contractible copula, shall
  - be as contractible auxiliary
  - Could, -est
  - -er (as in more), -er as in one who does
- Overregularization

Syntax: MLU

- A gross measure of language development based on the number of morphemes per utterance
- Syntactic development tends to be tied in to when children reach different stages of MLU
  - Elaborating NP
  - Syntactic transformations
  - Embedding of phrases & clauses
  - Clausal conjoining
  - Development of negatives
  - Development of questions

Pragmatics

- Sociolinguistic knowledge
  - Adapting language for the listener
  - Nonverbal aspects (eye gaze, facial expression, distance)
- Discourse knowledge
  - Following rules for conversations & narratives
- Functional knowledge
  - Adjusting language for different purposes

Pragmatics: Development

- What does private speech imply about pragmatic competence?
- Development of other pragmatic skills
  - Taking the listener into account
  - Turn-taking
  - Contingency
  - Conversational repairs
  - Narratives

Individual differences

- In each of these domains of language, there is great variability in performance across children

MORE RECENT TOPICS

Stuff since the last review…

Reading

- Early experiences
- Types of writing systems
- Sources of difficulty with those systems
  - Abstract nature of phonemes
  - Lack of 1-1 mapping
- Processing
  - Accessing via phonology vs. not
  - Bottom-up vs. top-down
  - Parallel vs. Serial
- Teaching approaches & evidence for them
  - Whole language
  - Phonics
  - Whole word

Phonemic awareness

- What it is
- Tasks used to test it
- Different stages
  - Recognizing rhyme as entry point
  - Focus on larger units first (onset/rhyme before individual phonemes)

Writing & Spelling

- Semantic vs. phonological representation
- Importance of own name
- Dyslexia
  - What it is
  - Types
  - Causes

History of study on language development

- Introspection
  - What it is; its focus
  - Problems with it
- Behaviorism
  - What it is; its focus
    - Operant conditioning & shaping
  - Problems with it

History of study on language development

- Chomsky's transformational grammar
  - Division between deep & surface structures
    - Phrase structure rules
    - Transformations
  - Language acqusition device (LAD)
- Evidence for/against LAD
  - Chimp language studies (see upcoming slide)
  - Issues of learnability (see upcoming slide)
  - Language creation
    - Pidgins/Creoles
    - Twin languages
    - Sign languages
      - Nicuraguan Sign Language

Other approaches

- Government & Binding theory
- Cognitive approach
- Sociolinguistic approach

Learnability

- If a child was reasoning from example, they'd make lots of mistakes they don't seem to make
- Theoretically, language systems are not learnable without either negative evidence or innate constraints
  - Positive evidence (examples) are not enough

Negative evidence - early studies

- Does it exist?
  - Brown & Hanlon (1970)
    - approval/disapproval is not related to grammaticality
    - Signs of parental comprehension also does not appear to be a form of negative evidence
- Do kids use it?
  - Children often miss the main point of corrections even when present.
    - Zwicky; Braine

More subtle forms?

- Repetitions more likely for incorrect sentences, but only for 2-year-olds
  - Hirsh-Pasek, Treiman & Schneiderman, 1984
- Exact repetitions may be different than recasts
  - Demetras, Post & Snow, 1986
  - Bohannon & Stanowicz, 1988
- Complete vs. partial vs. noisy feedback

Debate on feedback

- Need to prove that feedback is
  - Present
  - Useful
  - Used
  - Necessary
- Is it really there in all cases, for all kids?
  - Morgan & Travis, 1989
- Is it too weak?
- Do kids use it?
  - Farrar, 1992

Bilingualism

- Code-switching
- Dual lexicon debate
- Patterns of acquisition
- Related issues
  - Complementary principle
  - Language mode

Atypical language acquisition

- Different types include:
  - Mental retardation (MR)
  - Autism Spectrum Disorder (ASD)
  - Specific Language Impairment (SLI)
  - Hearing impairment (HI)
- For each one:
  - Subtypes and/or causes
  - Linguistic strengths/weaknesses