Language Acquisition and Phonology

Linguistics 100
2/17/06
Christian DiCanio

I. What does the child have to learn ? Sounds first!

(1) Production of all the sounds in their language, in different contexts
(2) Perception of all the sounds in their language, in different contexts
(3) The connection between both the articulation and the perception of these sounds.
(4) Where the word boundaries are, where phrase boundaries are. There are no "spaces" between words in speech.
(5) What they should pay attention to: meaning of words, the important words in a sentence, overall sentential meaning, and discourse.
(6) What is *not* important to pay attention to.

II. Innate or Emergent? (MacNeilage, 1997)

(7) Since there is *so* much to learn and such a messy environment in which the child hears it, perhaps certain linguistic abilities are innately pre-specified (genetically).
→ Poverty of the stimulus argument
(8) Presence of critical periods: evidence for innateness?
(9) Natural biological processes have certain critical periods of acquisition: i.e. kittens will be blind if they don't see in first month of life.

_____fence_____

(9) Input of the environment *does* play a role in development: evidence for emergence of language.
(10) Deaf infants begin to babble months later than hearing children (Oller & Steffens, 1993).
(11) Yoruba infants babble with 50 % more vowels than Japanese infants
→ all nouns begin with vowels in Yoruba!

III. Perception Abilities of Infants

(12) Pre-natal infants auditory system functions at about 7 months gestation and the infant can hear *rhythmic patterns* of voices, most from mother.
(13) Infants can discriminate all types of sounds from a very early age (Juscyk, 2000), even weeks old.
(14) "Use it or lose it" : Infants lose the ability to discriminate sounds not heard in surrounding environment, but retain those that are produced.
e.g. /r/ vs. /l/ contrast in English and Japanese infants
(15) Categorial perception: Phonemic categories of sounds (/b/ and /p/)

IV. <u>Stages of Acquisition</u>

(16) Several stages mark the production of children's phonology.

(17) Stage I: Reflexive and Nonreflexive Vocalizations (MacNeilage, 1997)

→ 1-3 months: laughter, makes speech-like sounds in response to speech
→ Open-close mandibular "frame" in speech has its origin in ingestive mandibular cyclicities, the origin of syllable-sized units?

(18) Stage II: Babbling Stage

→ 4-6 months: plays with single syllable sounds; vocal play
6-8 months: Babbles with duplicated sounds, attempts to imitate some sounds; 'mama' 'dada'
8-12 months: babbles with consonant or vowel changes, sentence-like intonation, protowords.
→ Allows the child to practice making phonologically diverse patterns and helps in the mapping of articulation to perception.

(19) Stage III: 50 word stage (12-18 months)

→ Child produces babbling & some speech
→ Pronunciation of first words is based on the possible sound sequences of the child's babbling repertoire at that point in time (Vihman et al, 1985).
→ "Gestalt" pronunciation

(20) Stage IV: Word stage (18+ months)

→ Rapid acquisition of words (several per day!)
→ Gestalt pronunciations become re-analyzed. Why?
→ Acquisition of general phonological patterns begins.

V. <u>Production Abilities of Infants:</u>

(21) Stops are acquired/produced first (oral/nasal); usually only bilabial and alveolar.
(22) Vowels produced first: [a], [i]; [u] is rarer.
(23) Glides and [l] produced a bit later, followed by fricatives (except [h] (early)).

(24) Articulatory constraints on production of certain sounds:
[s] is often produced [ç], i.e. [dçuç] 'juice' ([dʒus])

(25) Patterns observed:

cluster reduction:	[ht]	for	[st]
truncation:	[nænə]	for	[bənænə]
simplified syllables:	(CV) [çæta]	for	[sæn.tə]
But rule-based!	e.g.	Giacomo's Italian/Spanish	

References & Further Reading:

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Vihman, M., Macken, M., Miller, R., Simmons, H., and Miller, J. (1985) From Babbling to speech: Common Tendencies and individual differences. *Applied Psycholinguistics,* 7, 3-40.