The Origin of Language

Chapter 2
(pp. 9-21 + 31-35)

Dr. Morten H. Christiansen

© Morten H. Christiansen 2017
Genetic Map of Human Migration
Theories of Language Evolution (I)

- The Continuity Hypothesis:
  - Gradual evolution of language.
  - Some language ability in existing non-human primates.
  - Overlap between language and other cognitive abilities.
  - A large part of language is learned.
Theories of Language Evolution (II)

- The Discontinuity Hypothesis:
  - Punctuated evolution of language.
  - No language ability in existing non-human primates.
  - Language is a module separate from other cognitive abilities.
  - A large part of language is innate.
Comparing Human and Non-Human Communication

Hockett’s Universal Characteristics of Human Language (I):

- **Semanticity:** The signal means something.
  - Words have meaning.
- **Arbitrariness:** The signal doesn’t look like what it stands for.
  - The word *cat* doesn’t look like a
Hockett’s Universal Characteristics of Human Language (II)

- **Discreteness:** The vocabulary is made out of discrete units.
  - Basic units of sound: Phonemes.
    - About 40 distinct sounds - phonemes - in English.
  - Basic units of meaning: Morphemes.
- **Duality of Patterning:** Only combinations of otherwise meaningless units are meaningful.
  - Combinations of meaningless phonemes form meaningful morphemes.
Hockett’s Universal Characteristics of Human Language (III)

- **Productivity:** The ability to invent new messages.
  - We can keep on inventing new words and new sentences.

- **Displacement:** Language can be used to refer to things remote in time and space.
  - We can talk about things in the past or in the future.
  - We can talk about things that do not exist.
Teaching Language to Non-Human Primates

• Early Experiments:
  • The cross-fostering of Gua (Kellogg & Kellogg, 1933).
  • The home rearing of Vicki (Hayes & Hayes, 1950)

• Sign-Language Experiments:
  • The cross-nurturing of Washoe (Gardner & Gardner, 1969) and Koko (Patterson, 1978).

• Artificial Language Experiments:
  • Cross-generational transmission: Kanzi’s acquisition of Yerkish (Savage-Rumbaugh, Shanker & Taylor, 1998).
Problems with the Ape Language Learning Studies

- Over-interpretation
  - Reading too much into the behavior.
- Indirect cueing
  - Indirectly indicating the required response.
- Unknown context
  - Is “water-bird” a combined sign for a swan or two separate signs for water and bird?
- Imitation vs. productivity
  - Many responses are imitative.
- Instrumental vs. communicative behavior
  - Many responses are instrumental (“more food”).
Kanzi’s Accomplishments

• Spoken language comprehension test: 660 sentences.
  - Kanzi responded properly to 72% of the requests.
  - Alia, a two-and-a-half-year-old child, got 66% correct.

• Kanzi uses about 500 different lexigrams.
Next Class

Cultural Evolution of Language

Chapter 2
(pp. 24-31 + 45-55)

• Language and biological evolution
• Cultural evolution in the lab