

LINGUISTICS

THIRD YEAR

LECTURE (6): ANIMALS AND HUMAN LANGUAGE

COMMUNICATION

Communication: The main purpose of language is to communicate. Both animal and human use language for this purpose. Different forms of communication

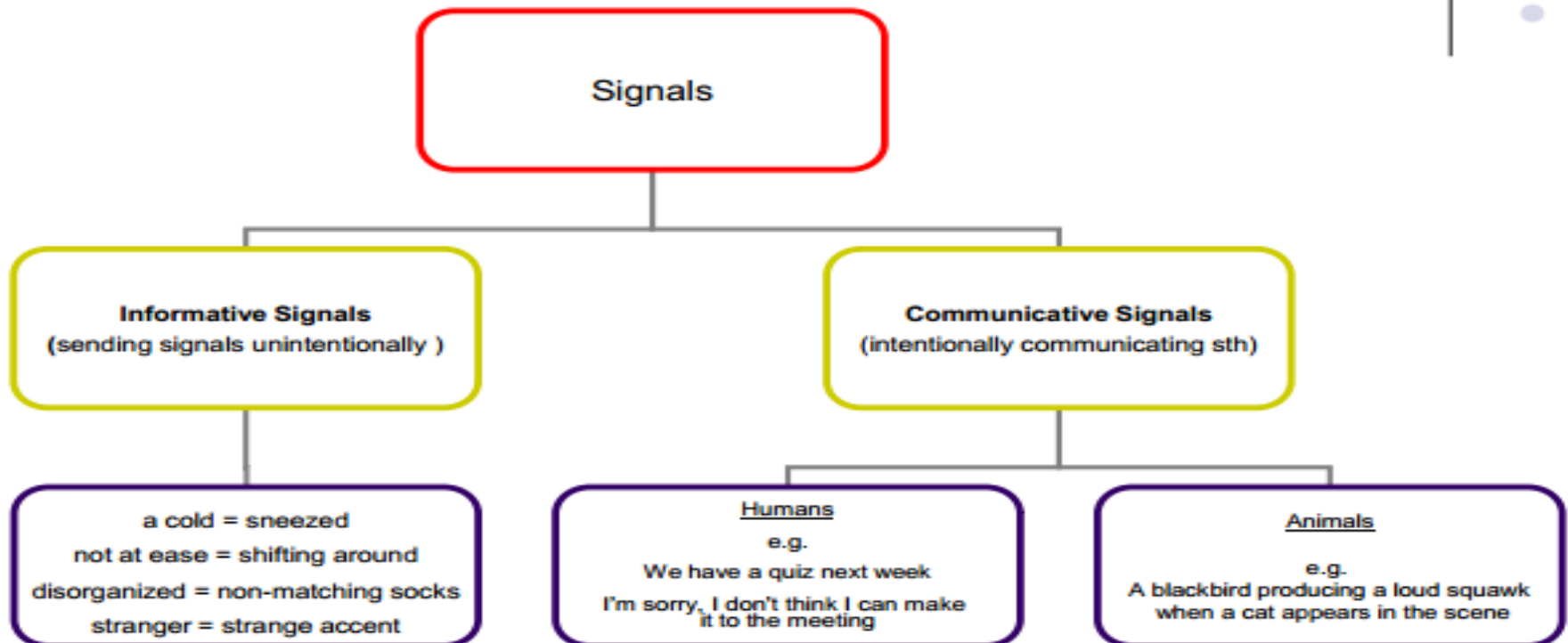
Informative signals

Someone listening to you may become informed about you through a number of signals that you have **not intentionally** sent.

- You have a cold (you sneezed)

Communicative signals

When someone uses language to tell other person “I have a cold”, he is normally considered to be **intentionally** communicating something



PROPERTIES OF HUMAN LANGUAGE

1. Reflexivity:

- ✓ humans are capable of thinking and talking about their language
- ✓ "He's using too many technical terms"
- X Animals are not reflecting.
- X Dog doesn't think about its barking.



2. Displacement

3. Arbitrariness

4. Productivity (Creativity)

5. Cultural Transmission (Need for learning)

6. Duality

TALKING TO ANIMALS

- Can animals understand our language?
- If the properties of human language make it such a **unique** communication system, quite different from the communication systems of other creatures, then it would seem extremely **unlikely** that other creatures would be able to understand it.
- The standard explanation is that the animal produces **a particular behavior** in response to a particular **sound-stimulus** or 'noise', but doesn't actually understand what the word in the noise mean.

CHIMPANZEES AND LANGUAGE

- Some researchers devoted their time to teach a chimpanzee how to use human language.

- **1930s:** two scientists (Luella and Winthrop Kellogg) raised an infant chimpanzee (called **Gua**) together with their baby son. Gua was able to understand **100 words** but did not say any of them.



- **1940s:** a chimpanzee named **Viki** was reared by another scientist couple (Catherine and Keith Hayes) in their own home, exactly as if she was a human child. These foster parents spent five years attempting to get Viki to “say” English words by trying to shape her mouth as she produced sounds. Viki eventually managed to produce some words, rather poorly articulated versions of **mama, papa and cup**.

- It was understood that non-human primates lack a physically structured vocal tract needed to produce speech sounds.



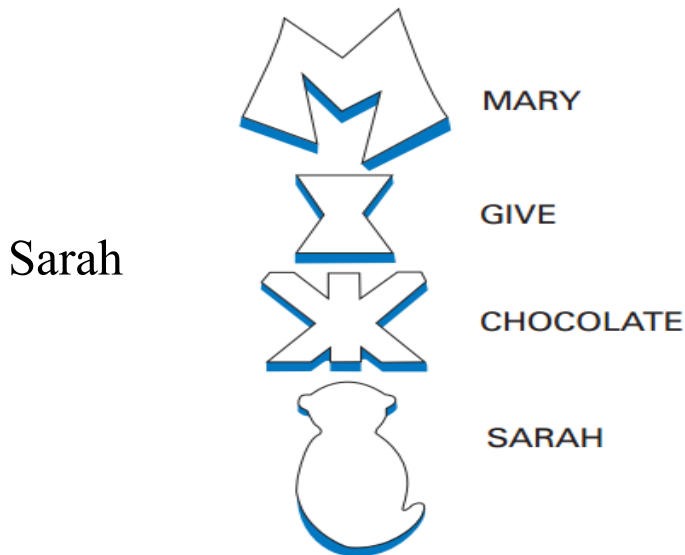
CHIMPANZEES AND LANGUAGE

- **1960s:** Scientist couple (Beatrix and Allen Gardner) believed that attempting to teach chimpanzees to imitate vocal languages (the Gua and Viki projects) were **flawed** because chimpanzees are physically **unable** to produce the voiced sounds required for oral language. Instead, they taught a chimp named **Washoe** American **sign language**, encouraging to use signs. In a period of three and a half years, Washoe came to use signs for more than **a hundred words** (airplane, baby, banana, window, woman and you) She was able to combine forms to produce **sentences** (e.g. more fruit/ open food drink). Some of the forms appear to have been **inventions** by Washoe, as in her novel sign for *bib* and in the combination *water bird* (referring to a *swan*), which would seem to indicate that her communication system had the potential for **productivity**.



CHIMPANZEES AND LANGUAGE

- Sarah: is a chimp that learned (by Ann and David Premack) to use a set of **plastic shapes** (word symbols) for communication with humans. The plastic shapes represented ‘words’ and Sarah put them one after another to build ‘sentences’. The symbol is arbitrary (a blue triangle for an apple). Sarah was able to produce "sentences" and understand complex structures, such as *If Sarah put red on green, Mary give Sarah chocolate. Sarah got the chocolate.*
- Lana: learned (by Duane Rumbaugh) a language that consisted of a set of **symbols** on a large keyboard linked to a computer. She had to press symbols in the correct sequence to produce a message.
- For water = press 4 symbols in the correct sequence = please machine give water

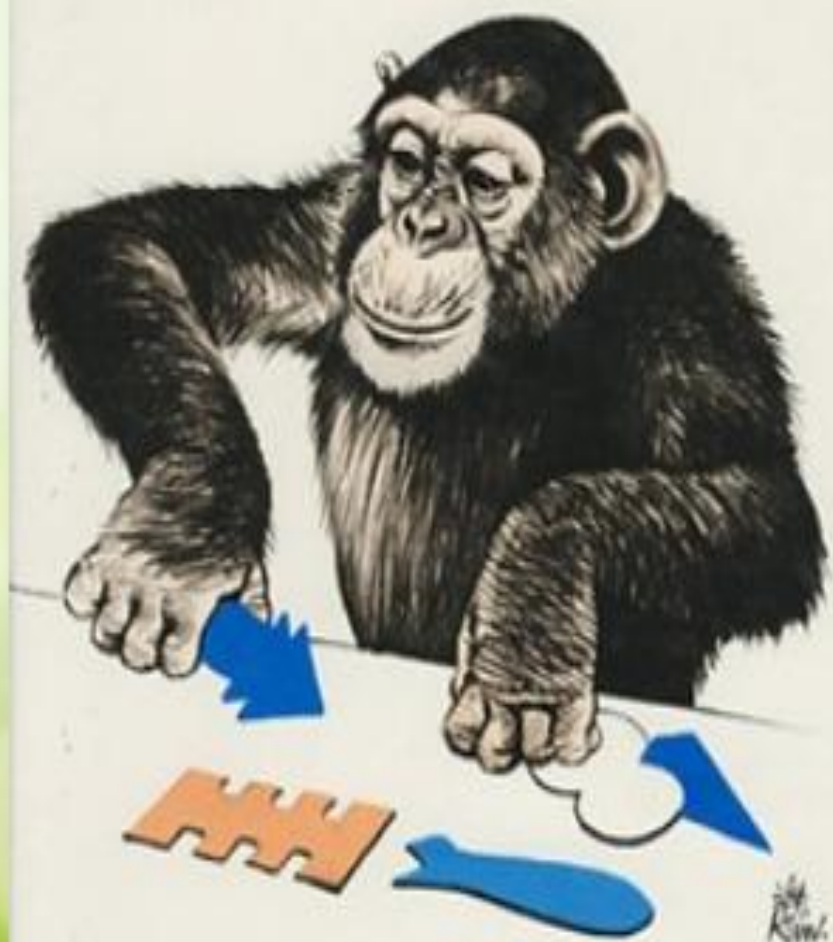


Lana



チンパンジー読み書きを習う

A.J.プリマック
中野尚彦訳



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CHIMPANZEES AND LANGUAGE

- **Nim:** is a chimpanzee who might show that Noam Chomsky is mistaken in his claim that language is an innate ability and unique to the human species. Nim was taught American Sign language under controlled conditions. Over a two-year period, Nim produced a large number of **single-word signs**, developed two-word combinations such as *more drink* and *give banana*, and used in appropriate circumstances. The initial impression was that Nim, like Washoe, was developing an ability to use language in much the same way as human children.
- Herbert's conclusion was that chimpanzees are clever creatures who learn to produce a certain type of behavior (signing or symbol selection) in order to get rewards and are essentially performing sophisticated "tricks."



CHIMPANZEES AND LANGUAGE

- After close inspection of the videotaped records of Nim and Washoe, **the psychologist Herbert Terrace** argued that both Nim and Washoe only appeared to use signs as language. They were simply producing prompted repetitions of their teachers' sign.
- His conclusion was that chimpanzees are clever creatures who learn to produce a certain type of behavior in order to get rewards. Consequently, their signing is not linguistic behavior at all.



THANK YOU