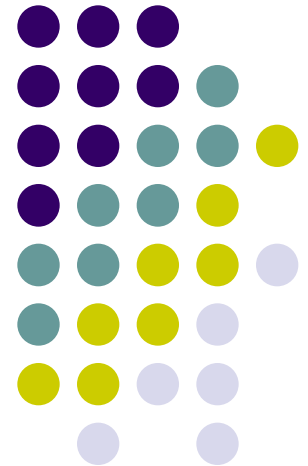LANE 321 – Introduction to Linguistics

Chapter 2:
Animal & Human Language

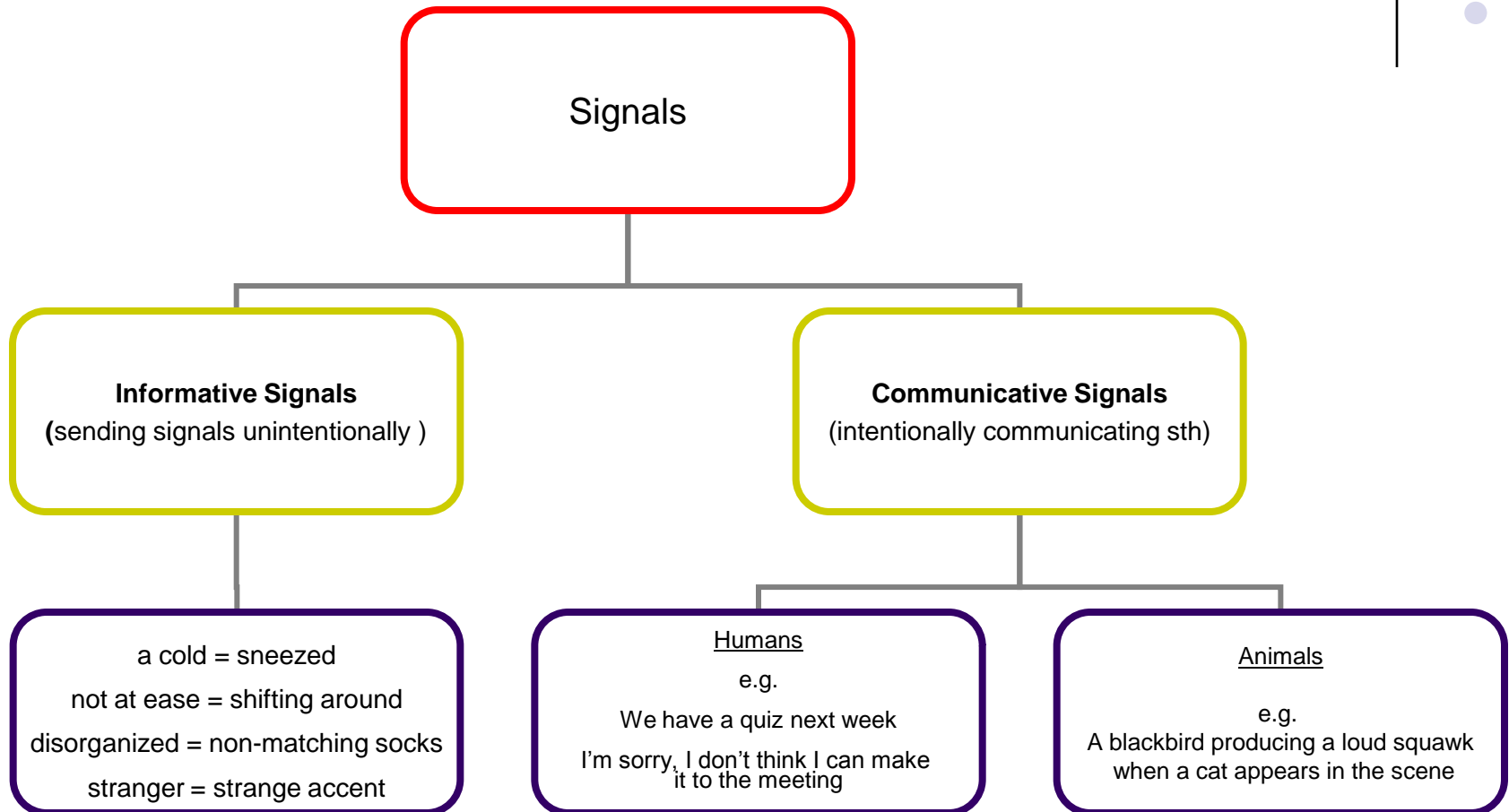**Lecture 2**

Lecturer: Haifa Alroqi

Things to remember

- Linguistics is the scientific study of language-what we know when we know a language.

- Main areas: phonetics, phonology, morphology, syntax, semantics, pragmatics.

- Other areas: sociolinguistics, applied linguistics, historical linguistics, language acquisition, psycholinguistics, computational linguistics.

Important questions

- Is it possible that a creature may learn to communicate with humans using language?

- Does human language have <u>special properties</u> that make it unique and different than any other communication systems found in nature?

Communicative & informative signals

Signals

Informative Signals
(sending signals unintentionally)

Communicative Signals
(intentionally communicating sth)

a cold = sneezed

not at ease = shifting around

disorganized = non-matching socks

stranger = strange accent

Humans

e.g.

We have a quiz next week

I'm sorry, I don't think I can make it to the meeting

Animals

e.g.
A blackbird producing a loud squawk when a cat appears in the scene

Properties of human language

1. Displacement

- Animal communication is designed for the immediate place and time (here and now)

- Humans can use language to refer to the past, present and future

  e.g. last night, now, next week

- We can even talk about things and places *whose existence we cannot be sure of.*

  e.g. angels, fairies, *Superman, Santa Claus, heaven, hell*

Properties of human language

Displacements:

Displacement is the property of human language that allows language users to talk about things and events not present in the immediate moment.

* Animal communication is generally considered to <u>lack</u> this property

Properties of human language

2. Arbitrariness (in human language)

- Generally, there is no 'natural' connection between a linguistic form and its meaning.
- The relation between linguistic forms and the objects they refer to is arbitrary
- *Dog* in English and كلب in Arabic.
- There are some words (onomatopoeic) in language with sounds that seems to 'echo' the sounds of objects or actions (less arbitrary)
- Onomatopoeia: the use of words that sound like the thing they are describing, (e.g. 'hiss' or 'boom')
- Onomatopoeic words are relatively rare in human language.

Properties of human language
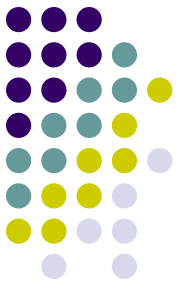
Arbitrariness (in animal communication)

- there is a connection between the conveyed message and the signal used to convey it.

- Consists of a fixed and limited set of vocal or gestural forms. (many are only used in specific situations or at particular times)

Properties of human language

3. Productivity (in humans)

Productivity (creativity/ open-endlessness):
The capability of humans to continually create new expressions
and utterances to describe new objects and situations

o The number of utterance in any human language is infinite.

Properties of human language

Productivity (in animals)

o The communication systems of other creatures don't have this flexibility.

o They have a limited set of signals to choose from (*fixed reference*)

o Each signal in the system is fixed as relating to a particular object or occasion.

o They cannot produce any new signals to describe novel experiences.

o The worker bee example (p. 11)

Properties of human language

4. Cultural transmission (in humans)

o Humans inherit physical features from their parents but not language.

o We acquire a language in a culture with other speakers (not from parental genes)

Cultural transmission

The process whereby a language is passed on from one generation to the next.

o We are born with a predisposition to acquire language (but not with the ability to produce utterances in a specific language)

o We acquire our 1st language as children in a culture.

Properties of human language

Cultural transmission (in animals)

- Animal are born with a set of specific signals that are produced instinctively.

- Human infants, growing up in isolation, produce no 'instinctive' language.

- So, cultural transmission of a specific language is crucial in the human language acquisition process.

Properties of human language

5. Duality (double-articulation) – in humans

In speech production:

- At a physical level, individual discrete sounds (e.g. *g, d,& o)* mean nothing separately.
- At another level, they take on meaning only when they are combined together in various ways (e.g. god/ dog)

Human language is organized at 2 levels or layers simultaneously:

- At one level - distinct sounds
- At another level - distinct meanings

Duality is one of the most economical features of human language (with a limited set of discrete sounds, we are capable of producing a very large number of sound combinations (e.g. words))
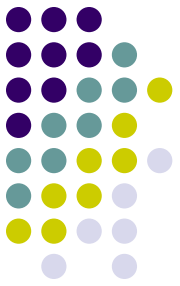
Properties of human language

Duality (double-articulation) – in animals

o Animals' communicative signals are fixed and cannot be broken down into separate parts

meow is not *m + e + o + w*

Properties of human language

- Vocal-auditory channel
- Specialization
- Non-directionality
- Rapid fade
- Reciprocity
- Prevarication

pp. 17-18

Talking to animals

- Can animals understand our language?

- Under the impression that animals follow what is being said… (horses, pets, circus animals!)

- Is this an evidence that non-humans can understand human language?

- 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.

- Can animals of one species learn to produce the signals of another species? (horse – cows/ puppy- baby) (p. 13)

Chimpanzees and language

Some researchers devoted their time to teach a chimpanzee how to use human language- not successful

Luella & Winthrop Kellogg – 1930s:

o Raised an infant chimpanzee (Gua) with their baby son.

o Gua- was able to understand 100 words but did not produce any.

Catherine & Keith Hayes – 1940s:

o raised (Viki) as a human child.

o Spent 5 years attempting to get her to 'say' English words by trying to shape her mouth as she produces sounds.

o Eventually, she managed to produce poorly articulated versions of *mama*, *papa*, and *cup.*

● This was a remarkable achievement: it has become clear that non-humans don't actually have a physically structures vocal tract which is suitable for articulating the sounds used in speech.

● Apes & gorillas, like chimpanzees, communicate with a wide range of vocal calls (but they just can't make human speech sounds)

Beatrix & Allen Gardner:

- raised Washoe as a human child.

- taught her to use ASL (learned by many deaf children as their natural 1st lang.)

- Sign language was always used when she's around + she was encouraged to use signs.

- In 3 ½ years, she came to use signs for more than a 100 words. (e.g. baby, banana, window, woman, you, etc)

- She was able to combine forms to produce sentences (e.g. more fruit/ open food drink)

- She invented some forms (e.g. water bird = swan) – productivity.
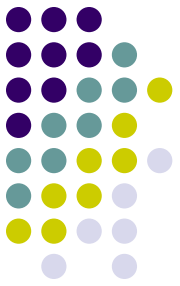
Ann & David Premack

- Taught Sara to use a set of plastic shapes (represented 'words' and could be arranged in sequence to build 'sentences')

- She was systematically trained to associate these shapes with objects or actions.

- Food rewards

- She was capable of:
  - getting an apple by selecting the correct plastic shape (a blue triangle)
  - Producing 'sentences' (e.g. Mary give chocolate Sarah)
  - Understanding complex structures (e.g. If Sarah put red on green, Mary give Sarah chocolate.)

Duane Rumbaugh

- Trained Lana using a similar training technique (artificial language – Yerkish)

- Yerkish consisted of a set of symbols on a large keyboard linked to a computer

- For water = press 4 symbols in the correct sequence = *please machine give water*

- Both Sara & Lana demonstrated an ability to use (word symbols + basic structure)

The controversy

Can animals speak human-like languages?

Can animals perform linguistically on a level comparable to a human child at the same age?

Thanks

Homework: p. 17/ Q. 1, 2, & 3

Next class: Please read Ch 4