

Language

Language

- Unique Human Ability
- Productive
 - Allows possibility of representing infinite number of meaningful states of affairs
- Displacement
 - Present, past, & future
 - Alternatives to reality, false states of affairs
 - Ability to talk about things that haven't happened makes language medium for persuasion, coercion, and bargaining

Birds

- Communicate simple & fixed set of messages about important life events
- “Let’s mate!”
- “Get out of my territory!”



Alex the Parrot



Bees

- Communicate messages about the location, quality, and amount of pollen available
- Gravitational field = position of sun (azimuth)
 - if waggle run is straight up: Fly toward sun's azimuth
 - if waggle run is straight down: Fly 180° from azimuth
 - if waggle is 45° to right of vertical: Fly 45° to right of azimuth

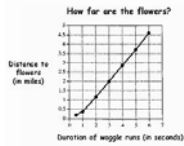


Waggle Dance

- Dancers make a straight run during which they vibrate their bodies rapidly
- Complete a half circle loop and repeat the waggle run portion of the dance
- Complete a half circle loop in the opposite direction



Interpreting the waggle...

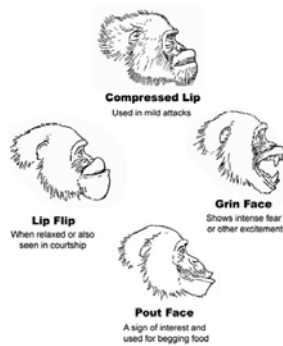


- Heading given by waggle angle
- Distance given by duration of dance

Nonhuman Primates

- Use signals to indicate social relations, territorial claims, and threats

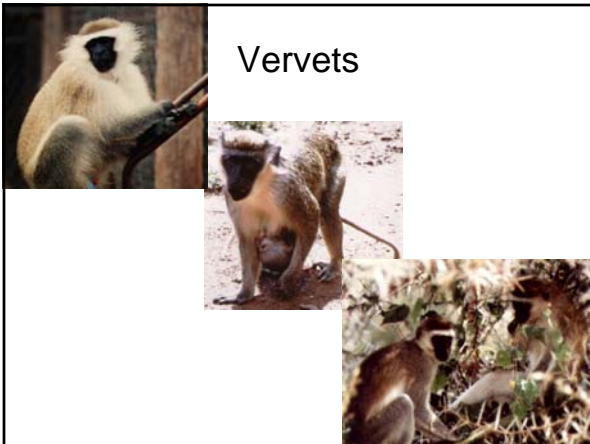
Chimpanzee Facial Expressions



Rhesus Macaque



Vervets



Vervet Alarm Calls

- Different calls for different threats
 - Snakes
 - Eagles
 - Leopards
 - Other vervets

Snake Alarm

- Chutter sound
- Only given to the species of snakes in area that are dangerous
 - Python
 - Poisonous mamba
 - Cobras
- In response to a snake call, monkeys cluster together about 5 feet from the snake and stare at it

Eagle Alarm

- Short cough-cough sounds
- Given only to the 2 large eagle species that prey on them
 - Martial eagles
 - Crowned eagles
- In response, vervets
 - drop from trees into tall grass or bushes for cover;
 - or, they look up to try and see where it is coming from and run in another direction!

Leopard Alarm

- Bark or chirp
 - One for female leopards
 - One for male leopards
- Made to leopards and other terrestrial cat predators
- Vervets run for trees and go to ends of branches (where heavy cats can't get them)

Similarities to Language

- Appears meaning-based rather than sound-based
 - Chaney & Seyfarth habituated vervets to one leopard call, then presented *other leopard call* or *eagle call*
 - Vervets remained habituated to 2nd leopard call
 - Vervets responded to eagle call
- Appears intentional, not automatic response
 - Vervets do not give call if no one else is around
 - Vervets give call more often when kin are around

Different from Language

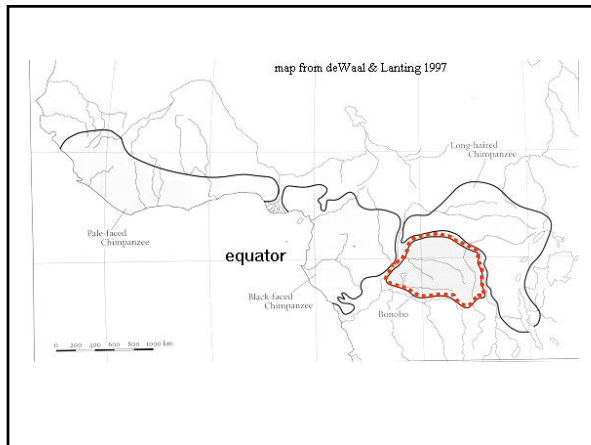
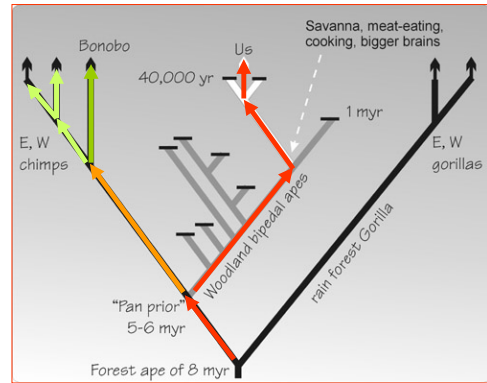
- Not really productive...

Koko the Gorilla



Bonobos ("pygmy chimps")

- Identified as separate species in 1926



Bonobos ("pygmy chimps")

- Identified as separate species in 1926
- Very rare (5,000 – 20,000 left)
- Democratic Republic of Congo (Zaire)
- Live 50 years; sexually mature at 10
- More social, less aggressive than chimpanzees
- 98% overlap in genome with humans – our closest relative

Kanzi

