Our Origins
Discovering Physical Anthropology
Second Edition
by Clark Spencer Larsen
Primate Societies

- Diversity of primate societies
- Social behavior: enhancing survival and reproduction
  - Social signals establish and maintain social relationships.
  - Primate societies are organized.
  - Primates form long-term social relationships.
  - Social behaviors in primates enhance survival and reproduction and are thought to be maintained by natural selection.
In Harlow’s Lab, a Macaque Infant Clings to its Warm, Cloth-Covered Surrogate Mother
Primate Societies

♦ Primate residence patterns
  – Primates have a wide variety of residence patterns
  – Divided according to the number of adult males and females present in the group.
Figure 7.2 Primate Residence Patterns
Primate Societies

- Primate reproductive strategies: males differ from females
  - Males compete for access to females.
    - Affects male body and canine size
  - Females compete with each other for resources to support young.
    - Affects social behaviors
Figure 7.10 Hand Clasp Grooming
Primate Societies

♦ Cooperation in Primates
  – Cooperative levels in primates are also high.
  – Altruistic behaviors
    • Alarm calls
    • Grooming
    • Food sharing
    • Caregiving
Figure 7.4a Grooming-Chimpanzees
Figure 7.4b Grooming-Humans
Cooperation in Primates

- Altruistic behaviors
  - Part of kin selection, or behaviors related to living with relatives who share genetic material
  - Seen most in cercopithecoids and chimpanzees
Getting Food

- Food resources and the search for them occupy over 50% of a primate’s waking hours.
- Especially high are the nutritional needs of females with offspring.
- Quality, distribution, and availability all affect a female’s success at foraging.
The Chimps are omnivores, they eat everything including eating meat. Their Diet includes Other Primates such as Baboons & Red Colobus monkeys, and Nonprimates, such as Bushpigs and Bushbucks.
Culture: Acquiring Resources and Transmitting Knowledge

- Notion of nonhuman primate culture can be controversial.
- Jane Goodall was the first to assert that chimpanzees possessed material culture.
- They learn from their mothers and other members of their social group how to make and use these tools as well as how to behave properly in their ranked societies.
Chimpanzees are curious and sociable.
Habituate Refers to the Process of Animals Becoming Accustomed to Human Observers
Culture: Acquiring Resources and Transmitting Knowledge

- Other researchers have now also seen related behaviors
  - Use and alteration of natural objects as a form of material culture
  - These include wood spears, rocks & hard wood clubs to open nuts, leaves to wipe dirt off, certain plants used as herbal remedies, wads of chewed vegetation as sponges, etc.
  - Objects used in captivity to problem solve or to communicate via technology with human researchers
Figure 7.6 Chimpanzee Tool Use
Figure 7.7a Chimpanzee Spears
Figure 7.7b Chimpanzees Who Make Spears Use them to Thrust into the Hollows of Trees and Kill Bushbabies
They Appear to Prefer and have the Most Success Catching Red Colobus Monkeys, Particularly Juveniles
Vocal Communication

- All primates produce vocalizations serving different functions.
- Researchers study primate vocalizations to understand how different sounds function.
  - Playback experiments are utilized to determine how primates respond to the vocalizations of group members.
Figure 7.8 Recording Alarm Calls
Vocal Communication

◊ Vocalizations can range from very soft to very loud.
  – Information transmission over short (soft) and long (loud) distances

◊ Vocalizations may:
  – Indicate a primate’s emotional state
  – Give listeners information about the world around the caller
Figure 7.9a Primate Vocalizations-Male Howler Monkey
Figure 7.9b Primate Vocalizations—This Chimpanzee is Presenting a Series of Grunts, Perhaps Characterizing a Food Source
Vocal Communication

- Vocalizations have clear patterns, similar to human language.
  - Primate vocalizations are largely preprogrammed (genetic).
  - Some innovations in sounds can occur and be learned by the group.
Vocal Communication

◊ Vocalizations also serve to:
  – name resources
  – monitor political landscapes within a group
Vocal Communication

- Great apes lack the capability to produce human speech.
  - Their voice box (larynx) is too high up to form speech sounds; they lack our pharynx which is located above the lower position of the human larynx.
  - However, they do possess rudimentary cognitive abilities and brain structures necessary to understand human speech.
Chapter 7: Clicker Questions

The key factor(s) that contribute to a female primate’s success at feeding include:

a) food quality.
b) distribution of food.
c) food availability.
d) All of the above
Chapter 7: Clicker Questions

Which of the following is true about chimpanzee tool use?

a) Chimpanzees interact with the environment using only their bodies.

b) Chimpanzee material culture is not useful for understanding past humans.

c) Chimpanzees use tools mostly for acquiring food.

d) Chimpanzees do not make tools.
Chapter 7: Clicker Questions

When there is competition among primates for mates,

a) females may form an all-female residence pattern.

b) males may learn to use tools.

c) females may produce more offspring.

d) males may become larger.
Chapter 7: Clicker Questions

Female primates with good nutrition have:

a) offspring at later ages.
b) shorter intervals between birth of offspring.
c) less healthy offspring.
d) a shorter life span.
Chapter 7: Clicker Questions

The average life span of humans is about:

a) twice as long as other primates’.
b) 90 years.
c) one-third as long as lemurs’.
d) three times as long as chimpanzees’.
Chapter 7: Clicker Questions

A polygynous primate society will tend to have a residence pattern of:

a) one-female, multimale.
b) one-male, multifemale.
c) one-male, one-female.
d) all-female.
Art Presentation Slides
Chapter 7
Figure 7.1 Competition and Dimorphism

- Sexual dimorphism
  - Pair living or monogamous
  - Single-male
  - Multimale

- Body size dimorphism
- Relative canine size

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Figure 7.3 Female Dominance Hierarchy
Figure 7.5a Predation on Primates-Large Eagles
Figure 7.5b Predation on Primates—the Eagles’ Nests, Fewer Bones
http://www.wwnorton.com/college/anthro/our-origins2
This concludes the slide set for Chapter 7

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