

9.20

Classes #14-15: Communication

Wednesday Oct 12; Friday Oct 14, 2005.

Reading: Scott ch 5, pp 93-118.

Study questions:

A. Introduction, pp 93-96

1. Discuss with examples: adaptive and maladaptive effects of signals intended for communication.

B. Evolution and design of signals, pp 96-109

2. Most species of frog and toad communicate by auditory signals. However, one species of frog in Panama does not. How does the Panamanian golden frog communicate with its own kind, and why did this method evolve?
3. Explain why the courtship display of the male water mite *Neumania pupillator* probably evolved. It involves his creating vibrations that resemble those of a prey animal.
4. Why do female swordtail fish prefer males with a long tail extension? (See box on pp 99-100.) Try to give at least one example of the same kind of thing in human behavior. (There are many.)
5. Why have a great many species evolved ritualized fighting behavior? The author, Graham Scott, has studied this in the birds called blue tits.
6. What are the distinct advantages of auditory communication in the case of whales, song birds, and marmoset monkeys? For each species, explain at least one advantage over visual communication.
7. What are two distinct functions of birdsong?
8. In what situation does communication by electrical signals have a clear advantage? It is used by African mormyrid fishes and South American gymnotid fishes.
9. Describe advantages and disadvantages of olfactory communication. Olfaction appears to have been of major importance in early mammalian evolution, and remains so for many mammals.

C. Alarm calls, pp 109-115.

10. What are two functions of alarm calls: one obvious, and the other not so obvious?

11. Why do some foraging birds sometimes emit a fake alarm call?
12. Explain how ground squirrels and vervet monkeys convey specific information about predators to other members of their species (conspecifics).

D. Individual recognition, pp 115-117

13. Describe at least two functions of individual recognition.
14. In what species other than humans may “names” for individuals be used?