

### EXAM 3

*Multiple choice* (3 points each).

1. What is an evolutionary tradeoff?
  - A. When two species compete and neither can be optimal because of the other
  - B. When two traits cannot both be perfect, so an individual must compromise
  - C. When two individuals exchange benefits in the context of cooperation
  - D. When an individual loses one trait but gains another
  - E. When populations in two different geographical locations differ in a way predicted by natural selection
  
2. In Darwin's finches, what important interaction between traits has been observed? (from Jeff Podos' lecture)
  - A. Body size is related both to size of mate and the size of food that can be eaten
  - B. Beak size is related both to size of the mate's beak and to egg size
  - C. Body size is related both to the distance traveled in a season and to beak size
  - D. Beak size is related both to the rate at which birds can sing and food size
  - E. Food type is related both to the sex of the individual and the pitch of its song
  
3. When, according to recent research, does a woman most prefer low voice pitch in men?
  - A. When she is menstruating
  - B. When she is interested in a long-term relationship
  - C. When she is ovulating
  - D. When she has children
  - E. When she already has a long-term mate
  
4. Why do ravens give specific yells advertizing the location of dead animals?
  - A. The individuals they call tend to be close kin
  - B. The yells attract other animals that rip open the carcasses for them
  - C. They need other ravens to defend themselves from the resident raven pair
  - D. They need other ravens around to ward off predators
  - E. They are required by federal law to keep careful records of all carcasses found
  
5. What hormone has been found to vary correlated with genetic differences, and to affect the way people react to new and risky situations?
  - A. Acetylcholine
  - B. Serotonin
  - C. Dopamine
  - D. Adrenaline
  - E. Testosterone

*Matching: Concepts in learning (3 points each).  
(Each answer should be a different letter).*

- A. Learning
- B. Sensory adaptation
- C. Fatigue
- D. Habituation
- E. Physiological maturation
- F. Consolidation
- G. Classical conditioning
- H. Operant conditioning
- I. Equipotentiality

- \_\_\_\_\_ 6. A decline in the ability to continue a behavior because of past muscular contractions
- \_\_\_\_\_ 7. Conversion of short-term to long-term memory
- \_\_\_\_\_ 8. A change in behavior as a result of acquiring information
- \_\_\_\_\_ 9. A decline in the brain's tendency to pay attention to a particular stimulus because of past experience with that stimulus
- \_\_\_\_\_ 10. The pairing of an unconditioned stimulus with a conditioned stimulus such that the first will eventually produce the same behavioral effect as the second
- \_\_\_\_\_ 11. A decline in responsiveness of receptors with repeated stimuli
- \_\_\_\_\_ 12. Development of behavior that does not require learning

*Matching: Evolutionary history of human behavior (2 points each).  
(Enter the letter for the time period when the behavior is most likely to have first arisen in humans: some letters may be correct for more than one question, but each question has only one letter for an answer).*

- A. Before 2 million years ago
- B. 2 million – 100,000 years ago
- C. 100,000 – 35,000 years ago
- D. 35,000 – 12,000 years ago
- E. Last 12,000 years

- \_\_\_\_\_ 13. Use of fire
- \_\_\_\_\_ 14. Personal adornment
- \_\_\_\_\_ 15. Domestication of animals
- \_\_\_\_\_ 16. Codes of morality and organized religion
- \_\_\_\_\_ 17. Major migration out of Africa, throughout Eurasia and into Australia
- \_\_\_\_\_ 18. Ritualized burial of the dead
- \_\_\_\_\_ 19. Art
- \_\_\_\_\_ 20. Bipedalism
- \_\_\_\_\_ 21. Helpless infants and a long juvenile period

*Short answer.* (3 points each).

22. Describe an example (invent one, if you like) of an animal learning something by Type II learning, otherwise known as operant conditioning.

23. There is no such thing as equipotentiality in learning. What does this statement mean, and give an example.

24. How do song dialects arise in birds?

25. What is the difference between an ordinary learned behavior and a cultural trait?

26. What are the two main functions of birdsong?

27. Give one of the two main benefits birds might get by learning their songs instead of automatically knowing them as many other birds do.

28. Why are humans so smart? How does the following graph of nonhuman primates support this hypothesis?

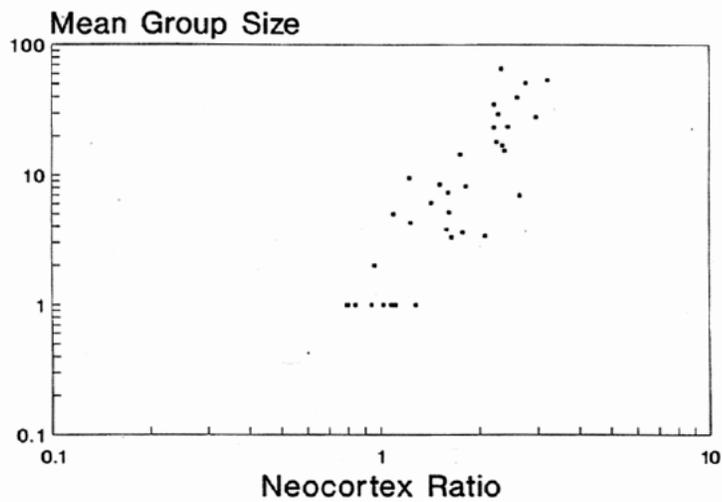


Figure 1. Group size plotted against neocortex ratio for nonhuman primates (redrawn from Dunbar 1992a).

29-30. *Short essay. Please choose 2 of the following 4. (10 points each).*

(1 of 4) Describe the social system of the naked mole-rat. Be sure to mention a recent discovery of two different morphs.

(2 of 4). Describe the general tendencies that have been observed in human mate choice, and why they would be predicted from the typical roles of males and females in our evolutionary history.

(3 of 4). Describe three unique features of the human female and their likely function from an evolutionary perspective.

(4 of 4). Explain three (of four provided in class) distinctive features of rhesus monkey communication that show a greater subtlety and complexity of communication than is found outside of primates (monkeys, apes, and humans).

*Cool stuff* (5 free points).

31. Describe your favorite behavioral example from the semester.