

CBH 5255--COMPARATIVE BEHAVIOR AND COGNITION

Course Syllabus Summer 2004 Term D, (June 7 - July 28)

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Required Textbook

Dugatkin, L.A. (2004). *Principles of Animal behavior*. New York: W.W. Norton & Co.

Recommended Materials

See "Suggested Additional Reading List" near the end of this syllabus. These books are available in the Library Reserve Room on 2-hr loan for the first week, and then they will be available for extended checkout.

Course Description

This is a course in *comparative psychology*, which is the branch of psychology concerned with the comparison of behavior and cognition, as well as motivation and emotion, among different animal species. A fundamental goal of such investigations is to determine the general principles and mechanisms of behavior, cognition, etc. Science recognizes that humans are a product of *evolution*. Therefore, the study of non-human animals enhances the understanding we have of our own species.

Behavior, cognition, motivation, and emotion in *non-human animals* are also very interesting and serious topics of study in and of themselves. In fact, it is extremely important for humans since we interact with, are influenced by, and also are dependent

upon a great variety of other species--especially those that we have domesticated. This interrelationship has often been referred to as the *web of life*.

An increased understanding of other animals allows humans to better ensure the survival of those species in the wild, and thereby most likely the survival of our own species as well. Moreover, this understanding helps us to provide superior conditions and care for animals in captivity--such as on farms, in laboratories, and in zoos--where they provide us with labor and materials, as well as opportunities for research, education, and entertainment. A greater understanding of non-human animals also often leads to the pleasure of feeling a greater sense of interaction, and even a *oneness*, with nature.

Being in the company of animals has additionally been shown to provide health benefits, apparently at least in part through the stress reduction that results from the opportunity to demonstrate concern for other beings, as well as through the non-judgmental affection that animals return to us. They also serve as mediators for increased *human* interaction. This is true not only for healthy individuals taking a pet out for a daily walk, but also for people with psychological problems such as depression, who therefore are only minimally interacting with other individuals.

In addition to the *evolutionary/biological bases of behavior*, we shall be interested in the *cognitive issues* of *how* and *why* as well as *what* and *when* animals acquire, process, store, and use knowledge about their world in the production of adaptive behaviors. Examples of topics to be covered in this course are: the theory of evolution by natural selection and the principles of genetics; environmental influences, e.g., social learning and cultural transmission; sexual selection and mating systems, kinship and cooperation; foraging and antipredator behavior; communication, habitat selection, territoriality, and migration; aggression and play; and animal personalities.

Student-Learning Outcome Objectives

Objectives of this course are that as a result of careful study of the textbook and other materials, and execution of the course assignments, students should be able to (among other things):

1. Describe and explain the phenomena, principles, mechanisms, and theories of behavior, cognition, motivation, and emotion across a broad range of animal species, including non-human as well as human primates.
2. Conduct observational research on captive animals in zoo settings, as well as potentially on animals in their natural field environments.

Mechanisms

Objectives of this course can be achieved through:

1. Careful study of the Textbook;
2. Active participation in class meetings and field trips;
3. Conscientious execution of the report assignments (explained below).

Functions of the class meetings are to:

1. Discuss, clarify, and expand upon material in the required readings, as well as any additional information provided;
2. Answer questions raised by students.
3. Evaluate students' mastery of the course material through oral and written questions and assignments.

When studying the readings, please write down questions about material that you do not understand, or about what you want to know more about. It will be helpful if you indicate the relevant chapter, section, and page(s). Also write down questions and comments about any additional readings, indicating the source. The questions and comments should be given to the instructor at the beginning of each class. Remember, I will depend on you to let me know what parts of the course material you want to spend the most time discussing.

Don't be afraid to ask questions and make comments! If you don't understand something, it is very likely others in the class are having similar problems. And if something interests you, it is almost certainly of interest to others as well.

Learning is facilitated by an active, dynamic involvement in the instructional process: i.e., learning is not a spectator sport! Therefore, rather than primarily lecturing, we will try as much as possible to use the *Socratic Method* of teaching by asking questions. This includes asking students to try to answer the questions raised by their classmates before the instructor contributes any additional insights. In other words, *I want you to learn through actively thinking about, discussing, and contributing to the course material.* This means that the class will be run more along the lines of a *seminar*.

A seminar is a course where advanced students discuss the information they are learning under the supervision and direction of a professor. The advantage of a seminar is that during a given semester a greater variety of material usually can be covered than in the typical lecture course, and new ideas and new approaches are formed as the class (not just the professor) analyzes, synthesizes and discusses the course content in a format that is more open and less formal.

Before coming to class, you should carefully study the textbook material and any additional readings that will be covered that day. This is very important, given the method used for evaluation in this course (see later). Moreover, you won't find yourself spending valuable class time reading, or taking detailed, redundant notes.

With regard to in-class use of the textbook, while students should bring their book to class, I do not think it is the best use of time, or polite, to be reading during class meeting--unless asked to do so. Rather than trying to follow along or ahead in the book, it would be far better to carefully pay attention and outline the major additional points that are discussed. Most importantly, it is not proper for a student to read an answer from the textbook when asked a question in class.

What you should be doing in class:

1. *Analyzing, synthesizing, and critically evaluating* the information being discussed, and then *theorizing* about the implications;
2. *Outlining and/or diagramming* the major points being made;
3. *Asking questions* for clarification on what is not completely understood;
4. *Responding to questions* raised by the instructor and other students;
5. *Sharing additional information or insights* when you have something to contribute.

All of this should make the class far more interesting and informative for everyone. *I sincerely want you to find this course both rewarding and productive.* Feel free to let me know ways in which the course mechanics might be improved, and please don't wait until the end of the term. I'm open to all suggestions--even in the form of anonymous notes left with a secretary to be placed in my mailbox.

A Field Trip to The Zoo in Gulf Breeze will likely be scheduled for a Saturday morning around the middle of the semester. The purpose of the field trip will be to study animal behavior and cognition first hand, and thereby gain research experience in objective observation, data analysis, and drawing conclusions. There will be handouts provided for the field trip experiences and required written report.

Assignments

Chapters of the Textbook: These will be covered in the order in which they occur, at the rate of about one chapter for every 2.5 hours of class. If there is not enough time to cover all the chapters, then we will discuss skipping one or more.

Oral and Written Reports: The Textbook will provide a solid base of knowledge, particularly regarding *animal behavior and motivation*. In addition, we will learn more, particularly about *animal cognition and emotion (which along with motivation make up the so-called MENTAL TRILOGY)*, through analysis, synthesis, and discussion of other contemporary as well as notable historical publications in the scientific and sophisticated layperson literature.

For ideas, see the Suggested Additional Reading List of books at the end of the syllabus (they are on reserve for this course in the UWF Library). This list contains a number of fascinating, relevant, books on interesting topics of animal cognition and emotion that relate to humans. Computer database search engines such as *PsychInfo* can also be used to find other relevant articles and books. Useful references to relevant scientific research can additionally be found in the course Textbook (e.g., the “Suggested Reading” list at the end of each chapter), as well as in other books and journals.

After covering the first five foundation chapters (1-5) of the Textbook, **EACH STUDENT WILL BE RESPONSIBLE FOR DELIVERING AT LEAST ONE ORAL REPORT OF 25-30 MINUTES DURATION (NOT LONGER)** dealing with publications on non-human animal cognition, emotion, and/or motivation. This will complement the Textbook's focus on behavior. *The reports should compare and contrast the capacities of non-human animals with those of humans, and indicate how what is learned from non-human species, such as other primates, helps us to better understand human behavior, cognition, emotion, and motivation.* One possible focus for reports is the use of enriched environments for captive animals in order to enhance their physical and psychological well-being. During and following each report there will be open discussion by the entire class. Students should **TURN IN BEFOREHAND A TYPED OUTLINE OF THE REPORT TO THE INSTRUCTOR** (see below for details).

Two approaches are possible for the reports. In either case, reports are to be an integrative synthesis and critical analysis of the literature. The student should try to find research for the report that is **innovative, interesting, and of significant theoretical or applied importance/value**. This will be taken into account for grading. Whenever appropriate, the *purpose and methods* (including research design and statistical analyses), as well as the *findings and implications* of the primary research reported on should also be integrated (compared and contrasted), as well as critically evaluated, with respect to the related Textbook material.

IN ONE APPROACH, the report would be based primarily on *one recent journal article* (published within the last decade), or perhaps two or three closely related articles by the same investigator(s). In addition, the student must make reference to and integrate one or more additional contemporary or historical studies on the subject.

AN ALTERNATIVE APPROACH to using journal articles is to present a report that integrates, summarizes, and critically evaluates a significant portion of one or more *books* about animal cognition, emotion, and/or motivation.

A brief written proposal should be given to the instructor on 8.5" X 11" paper by the end of the *second or third class meeting of the term*. Below the name of the individual, the proposal should list a first, second, and third choice indicating for each choice the Textbook chapter most relevant to the report, the specific topic of the report, and if possible the primary book or journal article that will be used. After reviewing the proposals the instructor will make the assignments, giving preference of choice to those who turn in proposals earliest.

Before the class meeting of the a report, the student must give to the instructor:

1. *A good photocopy* of the primary journal article(s) upon which the report is based, or in the case of a book a photocopy of several important summary pages as well as the cover pages.
2. *A concise outline* of the report to be presented, covering at least all sections of the primary article(s), or the relevant portions of the book(s). Note: copies of summary and/or illustrative materials might also be distributed to classmates.
3. *A quiz of least five, typed, multiple-choice questions* based on major points presented in the report, with each question having four alternative answers to choose from, and with the correct answer for each question being clearly indicated on a separate page. Note that the alternative potential answers to each question should be written in as parallel and clear a fashion as possible to avoid giving away the answer and to avoid ambiguity. Developing the quiz will be a useful learning exercise, and the quizzes might actually be used to test classmates' mastery of the discussed material.

At the class meeting when the discussion will be led, the student should bring:

1. Copies for everyone of any useful *handouts*, such as summaries and/or illustrative materials;
2. Copies for everyone of the *quiz* (*without* the answers indicated), which might be take-home exams or administered after the presentation. These will be graded in class and turned in to the instructor.

When giving an oral report, the student should:

1. *State the thesis*, or hypothetical proposition, that is being presented;
2. *Briefly review* (but not lecture on) *any related material in the course Textbook* so as to set the stage for the research or theoretical writings presented;
3. *Support the thesis presented* with information from the primary article(s) or book(s), which should be critically evaluated/analyzed, compared and contrasted, and synthesized with respect to any relevant material in the course textbook and to some other research on the topic;
4. *Conclude with a take-home summary message* and a *proposal* for further research or theoretical work.

Evaluation

Oral Report (30% of course grade)

Each oral report will be evaluated at its conclusion by the instructor using a special form (see example attached at end of the syllabus). The instructor will take into account the quality of the submitted written material for the report, including the outline and quiz.

Test Questions (50% of course grade)

Ordinarily, three formal written exams would be administered during the term, each covering 4-5 chapters. The last exam would be given during the final exam period, and therefore might be comprehensive and thus include some questions relating to material covered on earlier exams. However, as noted earlier, I want to encourage the *dynamic involvement of students* in discussions of the course material, and therefore I will be frequently asking questions during regular class meetings. Hence, I will use a *different approach for examining students* on their understanding of the course material.

IN LIEU OF TRADITIONAL COURSE EXAMS, I WILL BE GRADING STUDENTS ON THE QUALITY OF THEIR ORAL AND/OR WRITTEN ANSWERS TO INDIVIDUAL QUESTIONS THAT I ASK DURING CLASS MEETINGS (which will include any “final exam” period). Typically the questions will focus on *major points* from the required readings, as well as instructor handouts (or web postings that are referred to), and any videos or films that are shown. It is intended that the questions will focus primarily on significant conceptual or problem-solving issues. For example, many of the questions asked by the instructor will be taken from the *Discussion Questions* at the end of the Textbook chapters. This should reduce student anxiety about what questions might be asked, and should encourage students to *actively and creatively think about the material being studied*, rather than simply trying to commit it to memory. However, students will also be expected to be able to provide clear, concise *definitions and/or explanations* of key concepts/terms discussed in the textbook. In addition, students might be asked to *discuss/explain*, for a given major section of a chapter, the points that they found to be most interesting, important, or controversial. Students will also sometimes be asked to answer questions raised by their classmates before the instructor expands on (clarifies) the responses, if necessary.

Before answering questions, students might be allowed to *briefly refer to their notes*, but they must not look at the material in the textbook, unless told to do so by the instructor. Note that in order to illustrate their answers, students might be asked to draw on the board and/or interpret figures, tables, or possibly concept maps. Alternatively, students might be shown transparencies of textbook figures, and then asked to explain and elaborate without looking at the textbook.

In addition to making the class meetings very interactive, and no doubt much more interesting, if not exciting, the *active, dynamic approach to learning and evaluation* used

in this course will also encourage--make that require--students to continuously keep up with the course material, rather than cramming. Most importantly, as a result of this approach there should be greater mastery, superior retention, and more likely application of the important information covered during the semester.

Oral questions from the instructor will be rotated among students in a quasi-random sequence. Most questions will be scored on a 10-point scale, with 9.0 to 10.0 representing the range of A- to A, 8.0 to 8.99 the range of B- to B+, etc. If an answer is not entirely accurate or complete, other students might be given an opportunity to provide additional information and receive extra credit points accordingly. Therefore, it is very important to pay careful attention to what classmates are saying. Moreover, the instructor will provide feedback and elaboration, when appropriate, and subsequent questions may be based in part on this additional information.

Short, written, pop quizzes may periodically be administered to everyone when it is desirable to test all students on some important point, or to see how well students can respond in writing, or to ensure that sufficient questions are asked of everyone. Such quizzes might require generating figures and/or tables.

Long, formal, written examinations are expected to be used only if students do not demonstrate mastery of the course material through the above mechanisms. Naturally, we would all very much prefer that this not be necessary.

Field Trip and Take-Home Assignments (20% of course grade)

There will be separate handouts for the Zoo Field Trip Project and other assignments.

Exceptional Class Participation

In assigning the course grade, the instructor will consider, when exceptional, the quality and quantity of contributions that students make to heighten the learning experiences of the class, such as enlightening discussions of information being presented by the instructor or classmates.

Attendance

Coming to class for every meeting is obviously critical in a seminar course. Therefore, please be forewarned that having exams in other courses, work conflicts, or more pleasant things to do on the same day as class are not sufficient justification for missing class. On the other hand, illness is of course sufficient justification. If you are unable to come to class, do not call the instructor. Instead, submit a printed statement (e-mail is fine), no later than the next class meeting, which documents the reason for missing class. Missing class without sufficient justification will adversely affect your grade.

Special Arrangements for Assistance

Students with special needs who require specific examination-related or other course-related accommodations should contact Barbara Fitzpatrick, Director of Disabled Student Services (DSS), at (850) 474-2387. DSS will provide the student with a letter for the instructor that will specify any *recommended accommodations*. Students should attend to this as early as possible. The instructor is not obligated to accommodate a student's needs unless presented with an official letter from the Office of Disabled Student Services.

UWF Expectations for Academic Conduct/Plagiarism Policy

“As members of the University of West Florida, we commit ourselves to honesty. As we strive for excellence in performance, integrity—personal and institutional—is our most precious asset. Honesty in our academic work is vital, and we will not knowingly act in ways which erode that integrity. Accordingly, we pledge not to cheat, nor to tolerate cheating, nor to plagiarize the work of others. We pledge to share community resources in ways that are responsible and that comply with established policies of fairness. Cooperation and competition are means to high achievement and are encouraged. Indeed, cooperation is expected unless our directive is to individual performance. We will compete constructively and professionally for the purpose of stimulating high performance standards. Finally, we accept adherence to this set of expectations for academic conduct as a condition of membership in the UWF academic community.”

SUGGESTED ADDITIONAL READING LIST

THESE BOOKS ARE ON RESERVE AND CAN BE CHECKOUT FROM THE LIBRARY'S CIRCULATION DESK.

Bekoff, M. (2002) Minding animals. New York: Oxford University Press.

Bekoff, M. & Allen, C. (2002). The cognitive animal. Cambridge, MA: MIT Press. (This is a collection of 57 original essays.)

Bekoff, M. & Jamieson, D. (1996). Readings in animal cognition. Cambridge, MA: MIT Press.

Byrne, R. (1995). The thinking ape: Evolutionary origins of intelligence. New York: Oxford University Press.

Budiansky, S. (1998). If a lion could talk: Animal Intelligence and the evolution of consciousness. New York: The Free Press.

Griffin, D. R. (2001). Animal minds: Beyond cognition to consciousness. Chicago: University of Chicago Press.

Griffin, D. R. (1992). Animal minds. Chicago: University of Chicago Press.

Hauser, M. D. (2000). Wild minds: What animals really think. New York: Henry Holt & Company.

Parker, S. T. & McKinney, M. L. (1999). Origins of intelligence: the evolution of cognitive development in monkeys, apes, and humans. Baltimore: Johns Hopkins University Press.

Parker, S. T., Mitchell, R. W., & Miles, H. L. (1999). The mentalities of gorillas and orangutans: Comparative perspectives. Cambridge, UK: Cambridge Univ. Press.

Pearce, J.M. (1997). Animal learning and cognition: An introduction (2nd Ed.). East Sussex, UK: Psychology Press.

Rogers, L. J. (1997). Mind of their own: Thinking and awareness in animals. Boulder: Westview Press.

Stanford, C. (2001). Significant others: the ape-human continuum and the quest for human nature. New York: Basic Books.

Tomasello, M. & Call, J. (1997). Primate cognition. New York: Oxford University Press.

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Altmann, J. (1980). Baboon mothers and infants. Cambridge, MA: Harvard University Press.

Strum, S. C. (1987). Almost human: A journey into the world of baboons. New York: Random House.

Cheney, D. L. & Seyfarth, R. M. (1990). How monkeys see the world. Chicago: University of Chicago Press.

Fossey, D. (1983). Gorillas in the midst. Boston: Houghton Mifflin Company.

Goodall, J. (1990). Through a window: Thirty years with the chimpanzees of Gombe. London: Weidenfeld and Nicolson.

Bonner, J. T. (1980). The evolution of culture in animals. Princeton, NJ: Princeton University Press.

Byrne, R. & Whiten, A. (Eds.) (1988). Machiavellian intelligence: Social expertise and the evolution of intellect in monkeys, apes, and humans. Oxford, UK: Oxford University Press.

Dugatkin, L. (1999). Cheating monkeys and citizen bees: The nature of cooperation in animals and humans. Cambridge, MA: Harvard University Press.

Mitchell, R. W. & Thompson, N. S. (Eds.) (1986). Deception: Perspectives on human and nonhuman deceit. Albany, NY: State University of New York Press.

de Waal, F. (1998). Chimpanzee politics: Power and sex among apes (2nd edition). Baltimore, MD: Johns Hopkins University Press.

de Waal, F. (1996). Good natured: The origins of right and wrong in humans and other animals. Cambridge, MA: Harvard University Press.

de Waal, F. (1989). Peacemaking among primates. Cambridge, MA: Harvard University Press.

Whiten, A. & Byrne, R. (Eds.) (1997). Machiavellian intelligence II: Extensions and evaluations. Cambridge, UK: Cambridge University Press.

Wright, R. (1994). The moral animal. New York: Random House.

Bekoff, M. (Ed.). (2000). The smile of a dolphin: Remarkable accounts of animal emotions. New York: Random House. (This is a collection of writings.)

Barber, T. X. (1993). The human nature of birds. New York: St. Martin's Press.

Moss, C. (1988). Elephant memories: Thirteen years in the life of an elephant family. New York: Ballantine Books.

Moussaieff-Masson, J. & McCarthy, S. (1995). When elephants weep: The emotional lives of animals. New York: Dell Publishing.

Pepperberg, I. M. (2000). The Alex studies: Cognitive and communicative abilities of grey parrots. Cambridge, MA: Harvard University Press.

St. John. (1991). The secret language of Dolphins. New York: Summit Books.

FOR FIELD AND CAPTIVE ENVIRONMENT (ZOO) RESEARCH METHODOLOGY SEE:

Lehner, P. N. (1996). Handbook of ethological methods (2nd. ed.). Cambridge, UK: Cambridge University Press.

Martin, P. & Bateson, P. (1993). Measuring behavior: An introductory guide (2nd. ed.). New York: Cambridge University Press.

IN THE REFERENCE SECTION OF THE LIBRARY YOU WILL FIND A USEFUL 914 PAGE RESOURCE:

Greenberg, G. & Haraway, M. (Eds.) (1998). Comparative psychology: A handbook. Levittown, PA: Garland Publishing.

REPORT EVALUATION FORM

| | A 100-90 EXCELLENT | B 89-80 GOOD | C 79-70 FAIR | D 69-60 POOR | F 59-0 FAIL |
|---|--------------------------|--------------------|--------------------|--------------------|-------------------|
| 1. Understanding of material | | | | | |
| 2. Clarity and Organization of Material | | | | | |
| 3. Depth of Information | | | | | |
| 4. Breadth of information | | | | | |
| 5. Integration of Research | | | | | |
| 6. Evaluation of Research | | | | | |
| 7. Theoretical or Applied Value of Research | | | | | |
| 8. Poise During Presentation | | | | | |
| 9. Articulation | | | | | |
| 10. Enthusiasm for Subject | | | | | |
| OVERALL (Numeric Value) | | | | | |

CONSTRUCTIVE COMMENTS:

PRESENTER: _____

DATE: _____

EVALUATOR: _____