Psychology 4R03-Special Topics in Animal Behaviour

Time: Monday 14:30-17:20
January 9 - April 3, 2006

Location: Psych 204

Instructor: Dr. Sigal Balshine Ext - 23024

TA: Kevin Abbot, Ext 26042

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Course description and objectives: In this advanced 4th year seminar course we will explore the topic of cooperation. This is a discussion-based course drawing on foundations presented in Pysch 2TT3, 3S03, 3T03, and 3F03. The course assumes a working knowledge of animal behavior, evolution and the process of adaptation. Some of you will have additional background from advanced courses in other areas. In this course we will consider how cooperation exists in a competitive world and how individuals manage to get along with strangers and relatives. The topics that will be covered include altruism, inclusive fitness, direct versus indirect benefits, and reciprocity. We will explore the topic of cooperation by using the relevant theories and empirical research and integrating approaches from evolutionary biology, psychology, anthropology, and economics.

General Goals
We will examine several major topics in cooperation research with an emphasis on the interplay among theory, mechanism and the ways in which theory and hypotheses are tested. You will be provided with ample opportunities to read primary sources, contribute to class discussion, work in small groups, make presentations, and improve critical thinking and verbal communication skills. The seminar format demands a free, interactive exchange and evaluation of ideas -- your ideas, those of your colleagues, and those you find in readings. You will need to work on any inhibitions about (1) trying out your ideas in public, (2) arguing from varied perspectives and (3) critiquing the ideas of your peers and instructors. By the end of the course you ought to have gained an appreciation for how research is conducted and funded.

One goal of the course is to develop skills at evaluating the literature especially theory, models, and hypotheses and tests of them. A second goal is to expand your ability to develop your own ideas and ways to test them. A third goal is to improve your ability to present, defend and revise your ideas and those of others. Please read this handout periodically to remind yourself of these goals.
Special Topics in Animal Behaviour (PSYCH 4R03)

Lecture 1. January 9 Course Introduction
A historical perspective

Lecture 2. January 16 Kinship, Relatedness and Cooperation
Paper 1.
Guest lecturers: Kelly Stiver,
Danny Krupp
How do I write a grant proposal?

Lecture 3. January 23 Reciprocity in Cooperative Interactions
Paper 2.
Guest lecturer: TBA

Lecture 4. January 30 Other Benefits: Reputation, Punishment and Reward
Paper 3.
Guest lecturers: Greg Dingle, Toko Kiyonari

Lecture 5. February 6 Mechanisms of Cooperative Behaviour
Paper 4.
Guest lecturers: Julie Desjardins,
John Fitzpatrick, Greg Schmaltz

Lecture 6. February 13 Grant Proposal Question and Answers
Paper 5.
Guest lecturer: Kevin Abbott

Reading week February 20 No class

Lecture 7. February 27 Grant proposals are due
How to give a presentation?

Lecture 8. March 6 Group meetings in class
Lecture 9. March 13 Group meetings in class
Lecture 10 March 20 Group meeting in class

Lecture 11 March 27 Groups 1, 2 and 3 Presentations
Grades:
Your final grade will be based on a grant proposal 6-10 pages (40%), an in-class group presentation of a joint grant proposal (40%) and four critiques (worth 10%) and in-class discussion (worth 10%).

Each student will be assigned to one of five general topics and be asked to develop a grant proposal on that topic. You will have lots of scope to personalize your grant proposal within the broad topic. After everyone submits their grant proposal you will be asked to work together in groups with three other people who have been assigned the same topic for their grant proposal. Together you will create a presentation of a joint grant proposal and jointly present it in class.

Breakdown of marks

Written Grant Proposal (individual project) = 40%
Oral Grant Proposal Presentation (group project) = 40%
Written critiques of papers and presentations =10%
Participation and Contributions to class discussion = 10%
Total = 100%

Note. Extensions will not be offered. Late written reports will not be accepted.

It is your responsibility to ensure that you have met all prerequisites listed in the McMaster calendar for this course. If you lack any prerequisites for this course, the Department may cancel your registration at any time.

Course Organization
The organization of the course is as follows. The classes will consist of mini lectures 10 mins to 30 mins given by the course instructor, guest lecturers and discussion of papers on the topic of cooperation. A critique (1 paragraph to 1 page) of each paper will be submitted to the instructor. During our third meeting students will be divided into groups of four according to research topics. Each student will develop a 6-10 page research proposal on that topic. Then groups will come together and jointly organize a
new proposal that will be presented in class. Everyone in the class will evaluate each
other’s presentations and we will use these reviews to decide which of the projects would
get funded if we were a “real” science funding council like NSERC.

Oral presentations should communicate the content of the grant proposal but also need to
engage the viewers' attention without compromising the viewers' understanding when
space and time are limited. Group members must participate equally in the presentations.
Presentations will be reviewed by other students in the class and by the instructor/TA as
well.

**Papers and Critiques**
Five papers will be discussed in class. You should come to class each week prepared to
discuss the assigned paper. You could be called upon to explain to the class the point of
the paper, a graph, methods of investigation, etc. A 1 paragraph to 1 page critique of
each paper will be submitted to the instructor for each of these papers. Only the best two
will count for credit but all five must be submitted to ensure full participation marks.
You might choose to summarize the papers, discuss the weaknesses and strengths.

**Individual Grant Proposals**
During the third class, you will be broken into five groups of 4 students. The groups will
focus around the following topics: 1) Cooperation in Insects, 2) Cooperation in Fish, 3)
Cooperation in Birds, 4) Cooperation in Non-Human Mammals, 5) Cooperation in
Humans. You will be able to choose a particular species and question for your grant
proposal within this broad topic area. However you will be combining your efforts and
knowledge with your other group members to produce a joint grant proposal presentation.

Each person will be required to submit a written grant proposal based on his or her
chosen topic within the broader groups’ topics. The grant proposals for each member of
the group will only be similar with respect to the general area. The papers will vary
among group members as people vary in their study species, particular research
questions, their choice of literature review, in suggestions for proposed research and
methods. The written report should introduce the question, topic or area of study,
mention long and short term goals, scientific impact of the results, summarize the state of
knowledge to date using ample examples from the literature, and proposed methodology
to investigate this issue. Please be concise as possible; no more than ten pages of text is
permitted (including references).

**Group Presentations of a Grant Proposal**
The class will be divided into five topic groups see above. Each group will be given time
in class to combine individual knowledge in their topic area and to prepare a joint grant
proposal presentation on their topic. Each member of the focus group is expected to participate in the oral presentation. Each group’s presentation will be evaluated by the other class members and the instructor. Two classes have been put aside to make these presentations. Each group will receive 50 minutes for their presentation and a ten-minute question and discussion period will follow each presentation.

Each member of a class will be expected to write a 1 paragraph review of the presentations that provides this group with feedback, constructive criticism, suggestions for improvement etc. The groups will receive their feedback from other groups and from the instructor in the last class and we will all read over all the reviews based on these we will vote on which of the proposals will be funded.

**Assignments and Evaluation:** Final grades will be based on marks from critiques, grant proposals and grant proposal presentations and grant proposal reviews as well as class discussion. There will be no final exam in this course.

**Special Dates to Note:**
What: A Research Seminar; “Mating systems and the evolution of alternative mating tactics in bluegill sunfish”
Who: Bryan Neff, University of Western Ontario
When: Feb 9, 2006 3:00
Where: PC-155

Who: Steven Schoech, University of Memphis
When: Thursday March 23, 2006 4:00
Where: HS-1A04