

3YY3 - Evolution in Communication

Psychology Neuroscience, & Behaviour 3YY3

Evolution in Communication

Location: MDCL 1009

Time: Mon & Wed 8:30am-9:20am, Fri 10:30-11:20

Instructor: David Feinberg

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Office hours by appointment only.

Course website: www.voiceresearch.org/students/psych/3YY3

Communication is a fundamental adaptation for individuals within and between species to socially interact. Topics will include how and why different animal species have evolved different communication systems, honest and dishonest signalling, sexual signalling, deception, and a special focus on the evolution of human speech and language.

Course description and objectives: This 3rd year 3YY3 lecture course will focus on the adaptive design of communication. In this course we will explore selection pressures that lead to different communication systems across the animal kingdom. We will examine communication in systems from genetics to language in order to gain an appreciation for the complexities of the evolutionary design of animal communication systems. While there will be a special emphasis on primate communication (including *Homo sapiens*), we will also study communication systems among a variety of species including certain bees, bats, and birds.

Registrants are expected to be familiar with the basic principals underlying evolutionary biology. The course will be lecture based with three in-class tests and one officiated final exam.

Grading

Final grades are based upon the three in class tests (each worth 20%, totalling 60% of your grade) and the final exam (worth 40%). In-class exams will occur on Oct 03, Oct 29, and Nov 26. Grades will be computed out of 100 points and converted to a letter grade as follows:

90-100 = A+ 85-89 = A 80-84 = A- 77-79 = B+ 73-76 = B 70-72 = B-

67-69 = C+ 63-66 = C 60-62 = C- 57-59 = D+ 53-56 = D 50-52 = D-

< 50 = F

Any portion of the course could be an exam or test question. This includes, but is not limited to lecture material, reading, any audiovisual media, and student questions and comments. In-class tests will not be cumulative, but the final exam will be. As the course material unfolds, we will be building upon knowledge learned from earlier parts of the course. Therefore, although the in-class tests are not technically cumulative, you must understand the earlier concepts in order to understand the later concepts.

There are no make-up tests. If the proper documentation for missed work from your faculty's Dean of Studies is provided then you will be assigned a writing task to make up the evaluation.

For further information about missed work, medical exemptions (including the McMaster medical certificate), exam conflicts, and deferred exams, see <http://www.science.mcmaster.ca/~associatedean/services/services.html>.

If you do not have the proper documentation, do not contact us to ask for an exemption or to make-up the work. We will not provide lecture notes for students who miss class and do not have the appropriate documentation. All university policies on academic integrity will be followed explicitly.

The instructor reserves the right to adjust final marks up or down, on an individual basis, in light of special circumstances and/or the student's total performance in the course.

Schedule of topics (subject to change upon instructor's discretion).

Week 1 – Introduction to the Course

09/05/08 - An adaptationist account of communication

Scott-Phillips T.C. (2008) Defining biological communication. *Journal of Evolutionary Biology*. 21, 387-395

Week 2 – Cues and Signals

09/08/08 – What is the difference between a cue and a signal?

09/10/08 – Cues in the animal kingdom

09/12/09 – Signals in the animal kingdom

Week 3 – Natural selection and communication

09/15/08 – Hunting

09/17/08 – Predator avoidance

09/19/08 - Foraging behaviour

Week 4 – Sexual selection and communication

09/22/08 – Sexual displays

09/24/08 – Dominance

09/26/08 – Human sexual communication

Week 5 – Parent-offspring communication

09/29/08 – Parent-offspring communication

10/01/08 – Exam review

10/03/08 – Test 1

Week 6 – Language I

10/06/08 – Is language special?

10/08/08 – Animal semantics

10/10/08 – Animal grammar

Week 7 – Gestural communication

10/13/08 – No Class – Thanksgiving

10/15/08 – Ape sign language

10/17/08 – Faces and gazes

Week 8 – Speech

10/20/08 – Anatomy of speech production

10/22/08 – Laryngeal production

10/24/08 – Vocal-tract filtering

Week 9 – Mixed bag

10/27/08 – Exam review

10/29/08 – Test II

10/31/08 – Surprise Halloween Lecture

Week 10 – Theory of mind

11/03/08 – Theory of mind

11/05/08 – Cooperation and deception

11/07/08 – Mirror neurons

Week 11 – Music

11/10/08 – Is music special?

11/12/08 – Vocal imitation

11/14/08 – Archaeological evidence for music evolution

Week 12 – Other forms of communication

11/17/08 – Intercellular communication

11/19/08 – Electrical communication

11/21/08 – Echolocation and sonar

Week 13 – Other forms of communication II and Review

11/24/08 – Test III

11/26/08 – Extraterrestrial communication

11/28/08 – Exam review I

Week 14 – Review

12/01/08 – Exam review II