Animal Vocal Communication

Final Year Module, Spring term (C8600)

Module convenor: Prof Karen McComb
Module credits: 15
Contact: karenm@sussex.ac.uk (Tel: 678610)
Office hours: Tues 10.00am-11.00pm & 11.30 -12.30pm, Pev1 2B9
Module Overview

Animal vocal communication is an advanced level module that explores mechanisms and functions of vocal communication in animals, comparing and contrasting vocal communication in the most conspicuously vocal vertebrates (particularly birds and mammals) and humans. It is research based, combining lectures with research talk and interactive workshop sessions and practical demonstrations.

The initial lectures introduce the module and examine the principles of how vocalisations are produced. We then explore vocal communication in particular animal taxa in depth – progressing through frogs and toads, birds and mammals. We end by examining and evaluating language-like abilities in animals and comparing and contrasting animal communication with human speech.

In parallel with the lectures, practical demonstrations will give you the opportunity to take a hands-on approach to analysing animal vocalisations using computer software packages. Interactive workshop sessions on particular topics in vocal communication will expose you to research methods and results in more depth. The rest of the handbook describes what we hope you will achieve by taking the module, and details its content.

Aims of Module

The three main components of the module (the lectures, the practical demonstrations and the workshop sessions) have complementary aims. In the lectures I aim to give you a good grounding in the subject area and introduce you to the research methods used. The practical demonstrations introduce you to the methodology used in studies of animal communication, and enable you to see how spectral analysis can be used to examine the acoustic structure of animal vocalisations, compare the different animal groups with an understanding of the underlying reasons for the differences, and make comparisons between animal vocalisations and human speech. The research talk and workshop sessions are designed to teach you how the research you’ve been hearing about in lectures is actually done. These will tackle research problems from first principles such that you will learn where the questions come from in the first place, and see how hypotheses are formulated and tested. In the workshop sessions you will also be given the opportunity to formulate and test your own hypotheses. As well as the formal teaching sessions that I provide above, you will be giving your own oral presentations on key research papers and listening to your classmates doing the same. This is an extra opportunity to learn about new studies and research methods and has become a very stimulating and enjoyable part of the module.
Specific Objectives
By the end of the module you should have an in depth knowledge of the topics listed in the module schedule and a good grasp of how to go about doing research on animal vocal communication. You will be asked to do a significant amount of independent reading to explore the issues raised in lectures and I emphasise the importance of consulting original journal articles when doing this. Learning to sift through papers and extract the main points is an important study skill. In your reading you will be expected to critically evaluate the information you are exposed to, and to formulate your own reasoned opinions in subject areas where controversies exist. The research talk and workshop sessions will give you further opportunities to develop skills for abstracting and evaluating information but here you will also be given experience of presenting your ideas orally to your class-mates and of discussing them. In these sessions you will also learn how to problem-solve. While I will focus on teaching you to approach research problems by systematically formulating hypotheses and conducting well-designed experiments, problem solving and working as part of a co-ordinated group are general skills that will help you in whatever career you choose. In the oral presentations that you will give as part of the formal assessment you will develop your evaluation and communication skills further and learn from your classmates as they do the same. Finally, the practical demonstrations will teach you how to use some of the techniques that are basic to research on vocal communication in animals (& human speech).

Learning outcomes
By the end of the module, a successful student should be able to:
1. Explain how animal vocalisations are produced, what information they contain, and how they function in mediating sexual and social behaviour.
2. Report differences between animal and human vocal communication.
3. Critically assess empirical evidence, core concepts and current controversies in the field of animal vocal communication.
4. Illustrate a practical knowledge of how to undertake research on animal communication

Generic outcomes
Additional outcomes and transferable skills that you may gain from the course include:
1. General transferable skills in scholarship and evaluating scientific arguments.
2. Problem solving skills, developed as an individual and as part of a group (in workshops).
3. Experience in oral presentation of arguments at the workshops / during your own presentations, and in formulating questions through the laboratory sessions and research talk
4. Practical skills in computer based acoustic analysis and designing playback experiments.
Assessment of your performance (Module Assessment)

In assessing your performance on the module we are trying to determine both whether you have grasped the essential subject matter and whether you can think about and synthesise it in an original way. Your marks will be based on:

1) A short oral presentation that is delivered in week 9, counting for 20% of the course mark.
2) An extended essay of 3,000 words in length that will count for 80% of the course mark.

FOR EXACT DETAILS OF SUBMISSION DEADLINES PLEASE REFER TO SUSSEX DIRECT.

V&E Assessment

Please contact the Psychology Office for details regarding alternative assessment if you are leaving before the end of the year.

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Two copies of your essay must be submitted to the Psychology School Office, Pevensey 1 2A13 before the deadline.

Late Submissions and Mitigating Evidence

What happens if I miss an assessment deadline?

Where applicable you may still submit the assessment within 7 days of the published deadline. This will incur a penalty, as follows:

- Work submitted up to 24 hours late shall incur a penalty deduction of 5 percentage points (not 5% of the actual mark).
- Work submitted after 24 hours and up to 7 days late shall incur a penalty deduction of 10 percentage points (not 10% of the actual mark).
- No work shall be accepted after the 7 day penalty period has elapsed.

For any piece of late work where the student wishes to claim mitigating circumstances or impairment a MEC claim needs to be completed and submitted to the Student Life Centre.

Please access the links for further information.

- [http://www.sussex.ac.uk/studentlifecentre/mitigation](http://www.sussex.ac.uk/studentlifecentre/mitigation)
- [http://www.sussex.ac.uk/academicoffice/documentsandpolicies/examinationandassessmenthandbooks](http://www.sussex.ac.uk/academicoffice/documentsandpolicies/examinationandassessmenthandbooks)

Plagiarism and Collusion

Plagiarism is the use, without acknowledgement, of the intellectual work of other people and the act of representing the ideas or discoveries of another as one’s own written work submitted for assessment.

Collusion is the preparation or production of work for assessment jointly with another person or persons unless explicitly permitted by the examiners. An act of collusion is understood to encompass those who actively assist others as well as those who derive benefit from others.

Information on how to avoid plagiarism and collusion can be found here;

[http://www.sussex.ac.uk/s3/?id=33](http://www.sussex.ac.uk/s3/?id=33)

[http://www.sussex.ac.uk/academicoffice/documentsandpolicies/examinationandassessmenthandbooks](http://www.sussex.ac.uk/academicoffice/documentsandpolicies/examinationandassessmenthandbooks)
Assessment of our performance (Module Evaluation Questionnaires)

We will ask you for your opinion of the module and its component parts in an online questionnaire, which will open towards the end of term. Please do participate in this module evaluation. We do take notice of what you say and your comments provide an important sounding board for how the module is going. In this way we can evaluate which aspects of the module to preserve and which might benefit from change. Your ratings and comments provide the basis for these sorts of decisions, and affect whether the module will continue into the future.
OUTLINE TIMETABLE

Please refer to Sussex Direct for up to date lecture, lab and workshop times and venues.

OUTLINE LECTURE SCHEDULE

Week 1
Introduction and overview of the course

Week 2
Understanding animal vocalisations through source-filter theory

Week 3
Vocal communication in frogs and toads

Week 4
Vocal communication in birds I

Week 5
Vocal communication in birds II

Week 6
Vocal communication in mammals I

Week 7
Vocal communication in mammals II

Week 8
Preparation for presentations

Week 9
Oral presentations

Week 10
Language-like abilities in animals

Week 11
Research talk: Playback as a tool for exploring cognitive abilities

Week 13 (after Easter break)
Discussion session

PRACTICAL, WORKSHOP & FILM SCHEDULE

Week 4
Lab session on bird song & frog/toad vocalisations

Week 5
Problem solving WORKSHOP 1: Primate sexual calls

Week 7
Lab session on mammal vocalisations

Week 9
Oral presentations occur in workshop slot

Week 10
Problem solving WORKSHOP 2: Gulls
Film session on language learning in captive chimpanzees
READING MATERIAL FOR THE MODULE

Recommended textbooks (in approximate order in which they will appear in the module):


Supplementary texts that may be useful for comparisons with human speech:


More specialised texts / original journal articles will be recommended for specific topics in lectures and these form the core reading.