DRAFT ONLY

MODULE PS5236

EVOLUTIONARY AND COMPARATIVE PSYCHOLOGY

CAT HOBAITER

TUESDAYS 9 – 11 / 2 - 5

Module Controller: Cat Hobaiter

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1. Provisional Timetable Information; Class Location To Be Confirmed; note: no class week 6

Week	Date	Morning session (9-11)	Afternoon session (2-5)
7	10.3.20	Principles of evolution	Basic concepts and issues in behavioural evolution
8	31.3.20	Sexual selection	Mini research project on human mate choice:
9	7.4.20	Social evolution	Social intelligence in our closest relatives
10	14.4.20	Evolution of language	What it means to be human
11	21.4.20	Primate communication	How to do comparative research
12	28.4.20	Optional revision help session	

NB. Afternoon sessions are split into 2 slots (2-3.30 and 3.30-5pm), surnames A-L are assigned to slot 1, surnames M-Z are assigned to slot 2. These classes are shared with the JH PS3036 group.

Weekly MSc only 1-hour tutorial; time and day TBC in week-7 morning-session on 10th March 2019. Content will focus on revision of basic concepts covered in class and guidance and feedback on the project report sections.

2. Aim of the Module

The aim of this module is to gain a deep understanding of the principles of natural and sexual selection and how these processes have shaped the mind and behaviour of humans and other animals. This requires integration of a variety of methods, ranging from archaeology to anthropology, but the principal methodological tool is the comparative approach. We will compare the behaviour and cognitive capacities of primates and other species to draw conclusions about the evolution of our own mind, brain and behaviour. This module will take into account that students have a non-standard background in Psychology. Morning lectures will cover theoretical material, afternoon workshops will focus on the practical application of these ideas in research: both aspects will be assessed at the end of the module in a take-home format exam.

2. Course Reading

A weekly reading list will be provided on Moodle, along with basic outlines of the class slides one week before each class. See section 4 below for further suggestions.

Background reading: Workman, L. & Reader, W. 2004. Evolutionary Psychology. Cambridge: Cambridge University Press.

3. Evaluation: Continuous Assessment 100%

Project report on mate choice in online dating. The assessment will take the form of a report in the style of a scientific paper based on the data collected in the practical session in week 8. The report will include an abstract, introduction, methods, results and discussion sections: total word count 3000 words (excluding references). The report is broken down into three sections; feedback will be given before the next section is submitted, and can be discussed in tutorials.

1. Introduction: in the form of a short literature review (max. 750 words)
   Due end week 8 (weighting 20% grade)
2. Abstract (max. 250 words) & Method and Results sections (max. 1000 words)
   Due end week 11 (weighting 40% grade)
3. Discussion section (max. 1000 words)
   Due end week 12 (weighting 40% grade)

Please note that written feedback will be provided several days before your grade is made available.

4. Course Outline

Week 7

Morning: Principles of evolution

This session provides an introduction to the key concepts of natural selection. To this end, we will discuss on a number of empirical examples and explore to what degree these findings are relevant for understanding the evolution of human behaviour.

Afternoon: Evolutionary theory and behaviour

This session focuses on key notions in evolutionary theory when applied to questions of behaviour and cognition.

Suggested reading:

Carroll, S. B. 2003. Genetics and the making of Homo sapiens. Nature, 422, 849-857. http://dx.doi.org/10.1038/nature01495

Hollén, L., Bell, M. & Radford, A. 2008. Cooperative Sentinel Calling? Foragers Gain Increased Biomass Intake. Current Biology, 18, 576-579. http://dx.doi.org/10.1016/j.cub.2008.02.078

Janmaat, K. R. L., Byrne, R. W. & Zuberbühler, K. 2006. Primates take weather into account when searching for fruits. Current Biology, 16, 1232-1237. http://dx.doi.org/10.1016/j.cub.2006.04.031

Week 8

Morning: Sexual selection

This session introduces the principles of sexual selection theory and how this has advanced our understanding of animal and human behaviour.

Afternoon: Human mate choice

We will try to apply some of the main principles of sexual selection theory to one particular aspect of human behaviour, mate choice. To this end, we will collect empirical data in the context of personal advertisements and evaluate results in light of sexual selection theory.

Suggested reading:

Buston, P. M. & Emlen, S. T. 2003. Cognitive processes underlying human mate choice: The relationship between self-perception and mate preference in Western society. Proceedings of the National Academy of Sciences of the United States of America, 100, 8805-8810.

Pawlowski, B. & Koziel, S. 2002. The impact of traits offered in personal advertisements on response rates. Evolution and Human Behavior, 23, 139-149.

Week 9

Morning: Evolution of social behaviour

This session will provide an overview of some key concepts underlying the evolutionary approach to social behaviour.

Afternoon: Primate social cognition

The session will focus on how findings in animal behaviour can increase our understanding of human social intelligence. We will focus on and critically evaluate recent findings in research on non-primate cognition and compare the

social intelligence of some of our closest relatives in the animal kingdom.

Suggested reading:

Bergman TJ, Beehner JC, Cheney DL & Seyfarth RM (2003) Hierarchical classification by rank and kinship in baboons. Science 302:1234-1236

Crockford C, Wittig RM, Seyfarth RM & Cheney DL (2007) Baboons eavesdrop to deduce mating opportunities. Animal Behaviour 73:885-890

Madden JR & Clutton-Brock TM (2011) Experimental peripheral administration of oxytocin elevates a suite of cooperative behaviours in a wild social mammal. Proceedings of the Royal Society B 278: 1189-1194

Seltzer LJ, Ziegler TE & Pollak SD (2010) Social vocalisation can release oxytocin in humans. Proceedings of the Royal Society B 277:2661-2666

Gonçalves et al. (2011) Modeling User's Activity on Twitter Networks: Validation of Dunbar's Number. PLoS One.

Week 10

Morning: Evolution of language

This session will give an overview of key evidence that has shaped our understanding of how human language has emerged.

Afternoon:

Using video material we will address the eternal question of what is means to be human, especially with regards to our language and communication abilities.

Suggested reading:

Fitch, W. T., L. Huber, et al. (2010). "Social Cognition and the Evolution of Language: Constructing Cognitive Phylogenies." Neuron **65**(6): 795-814.

Kako, E. (1999). "Elements of syntax in the systems of three language-trained animals." Animal learning & behavior **27**(1): 1-14.

Kuhl, P. K. (2004). "Early language acquisition: Cracking the speech code." Nature Reviews Neuroscience **5**(11): 831-843.

Vargha-Khadem, F. et al. (2005). "FOXP2 and the neuroanatomy of speech and language." Nature Reviews Neuroscience **6**(2): 131-138.

Week 11

Morning: Primate communication

This session will give an overview of recent advances in the study of primate communication and discuss some key issues in the relation between animal and human communication.

Afternoon:

In this session we will discuss recent empirical advances made by St Andrews researchers in the area of primate communication and cognition. We will specifically try to evaluate in what ways research on animals can be relevant for understanding the evolution of the human mind.

Suggested reading:

Arnold, K. and K. Zuberbuhler (2006). "Semantic combinations in primate calls." Nature **441**(7091): 303-303.

Clay, Z. and K. Zuberbuhler (2011). “Bonobos extract meaning from call sequences.” PLoS One **6:4** 318786.

Hobaiter, C. & Byrne, R.W. (2011). “The gestural repertoire of the wild chimpanzee.” Animal Cognition. DOI: 10.1007/s10071-011-0409-2

Schel, A., et al. (2013). “Chimpanzee alarm call production meets key criteria for intentionality.” PLoS One **8:10** e76674