BAN1. HUMANS IN BIOLOGICAL PERSPECTIVE

Paper aims and objectives:
This paper provides a broad introduction to biological anthropology and covers major subject areas such as primate biology and behaviour, human evolution, human health, adaptation to different environments and life history theory. Through studying this course, students will gain a strong foundation in the field of biological anthropology and an understanding of how different approaches can be used to address specific questions about human origins and diversity. The paper begins with an introduction to non-human primates, highlighting the importance of the comparative approach for understanding evolutionary processes. We then go on to discuss human evolution, diversity and adaptation, including introductory lectures on human genetics and health. The paper concludes with a module on human growth and ecology.

Paper Coordinator: Prof. Martin Jones (mkj12@cam.ac.uk)

General Reading:
Thames & Hudson

Lecture Rooms:
Michaelmas term:
Lecture Room 7 (Tuesdays), 2 (Wednesdays) Mill Lane, Cambridge, CB3 1RX
Map: [http://map.cam.ac.uk/Mill+Lane+Lecture+Rooms#52.201606,0.117313,18](http://map.cam.ac.uk/Mill_Lecture_Rooms#52.201606,0.117313,18)
Lent term:
Hopkinson Lecture Theatre (Tuesdays)
Map: [http://map.cam.ac.uk/Hopkinson+Lecture+Theatre#52.203036,0.119635,17](http://map.cam.ac.uk/Hopkinson+Lecture+Theatre#52.203036,0.119635,17)
Biffen Lecture Theatre (Wednesdays)
Map: [http://map.cam.ac.uk/Biffen+Lecture+Theatre#52.202579,0.121545,18](http://map.cam.ac.uk/Biffen+Lecture+Theatre#52.202579,0.121545,18)
Easter term:
Lecture Room 4 Mill Lane, Cambridge, CB3 1RX
[http://map.cam.ac.uk/Mill+Lane+Lecture+Rooms#52.201606,0.117313,18](http://map.cam.ac.uk/Mill+Lane+Lecture+Rooms#52.201606,0.117313,18)

Lecture Times:
Michaelmas, Lent and Easter Terms (Tuesday 9am, Wednesday 11am)
First Lecture Tuesday 11th October

Syllabus:
This paper is about the relationships between the biology, ecology and behaviour of our own species. The paper first places humans in a broad evolutionary framework by exploring the order Primates. During these lectures, we highlight the importance of the comparative method advocated by Charles Darwin (comparing homologous traits across a wide range of different species to draw general inferences about their
evolution) for understanding evolutionary processes. The paper then explores our more recent evolutionary history in more detail. Firstly, we ask what it means to be human from a genetic point of view. Principles and evolutionary mechanisms that generate and shape genetic variation are presented, explaining how inferences from observed patterns of diversity within and among human populations are made. In the following lectures, hominin evolutionary history is discussed in more detail, with a focus on the evolution of human diversity. Then, human adaptation is introduced more broadly, with reference to the interactions between our biology and our behaviour. Finally, growth, ecology and disease are discussed, with a focus on modern human populations.

**Michaelmas Term**

**The Scope of Biological Anthropology**  
Dr Peter Walsh  
An introduction to the breadth and scope of research in the field of biological anthropology  
One lecture, 11 Oct

**Primate Biology, Behaviour and Ecology**  
Dr Jake Dunn  
In the first part of this series, we will explore the origin, evolution, diversity, anatomy and reproductive biology of non-human primates. In the second part, will discuss reproductive behaviour and rearing offspring, growing up and survival, the regulation of social relationships, and communication  
Eight lectures, beginning 19 October

*Readings:*  

**Primate Cognition and Social Networks**  
Dr Peter Walsh  
Shakespeare? Calculus? Facebook? Surely complex cognitive skills must be uniquely humans? And must not unique cognitive skills translate into uniquely human social network dynamics? Well, maybe not. In this module we investigate the evolutionary roots of human cognition and the role of evolutionary ancient cognitive mechanisms in structuring human social systems.  
Five lectures, beginning 12, 18 October and recommencing on 16 November

*Readings:*  


### Primate Conservation

Dr Peter Walsh

Our closest relatives (gorillas, chimpanzees, and orangutans) are rapidly disappearing from the wild. This module reviews the state of the apes and gives a first person account of what and who has worked in ape conservation; from Jane Goodall and Dian Fossey to current private sector conservation programs and high tech solutions.

Two lectures, beginning 29 November

Readings:
A critical analysis of three approaches to tropical forest conservation based on experiences in the Sangha region: [http://www.yale.edu/sangha/PDF_FILES/ENGLISH_.PDF/SEC._3/BLOM.PDF](http://www.yale.edu/sangha/PDF_FILES/ENGLISH_.PDF/SEC._3/BLOM.PDF)

### Lent Term

#### Evolutionary Genetics

Dr Charlotte Houldcroft

Humans share many phenotypic and genetic traits with other primates and have retained largely the ancestral primate synteny in their chromosomes with only minor modifications. But we also differ from closest primate relatives in many phenotypic traits and millions of single nucleotide changes. These changes defining human uniqueness can be partitioned into two lists: a shorter list of strictly human specific and a longer list of changes that are shared by other extinct hominins. The distinction of these two lists of changes is not always clear because of incomplete fossil record and the lack of genetic data from most of the extinct hominins.

Four lectures, beginning 24 Jan

Readings:
**Human Evolution**  
Prof. Robert Foley  
These lectures explore humans in evolutionary perspective. The module will cover the evolutionary and comparative context of humans, the features that make us human and how they evolved, the history of the hominin lineage from its African origins more than five million years ago to the present day, and the evolution of human cognition, behaviour and culture.

Eight lectures, beginning 7 Feb  
Readings:  
Useful textbooks include:  

**Nature versus Nurture**  
Prof. Nicholas Mascie-Taylor  
These lectures will consider a range of core human traits, and how the influences of heredity and environment have been approached in research.

Three Lectures, beginning 7 March  
Reading  

**Easter Term**

**The Double Burden of Malnutrition**  
Prof. Nicholas Mascie-Taylor  
The relationship between malnutrition and poverty is explored, with specific reference to socioeconomic factors in the developing world.

Five Lectures, beginning 2 April

Revision Sessions
T.B.C
Two sessions, beginning 17 April

Assessment:
This paper is assessed by a three-hour written examination. All topics are covered in a single undivided paper, and candidates must answer three questions from a choice of ten.

Supplementary Teaching:
Students are expected to have supervisions arranged by their Director of Studies. Four supervisions per term are usual, and three to four essays are typically expected.

A copy of the Part II Archaeology and Biological Anthropology Handbook is available from the Part II Administrator, Archaeology and Anthropology Office, Downing Street.