

UGB 250U / ANT 2810

Human Evolution



Dr Maximilian Holland, Anthropology Department
(☎ 9276 4977 max.holland@gmail.com)

Course Guide & Reading List

What does it mean to be human?

Where did we come from?

Where are we going?

This course investigates long-term evolutionary perspectives on the human species. We will discover those human characteristics that connect us to and make us different from other species and come to better understand ourselves and our place in the world.

We discuss the variety of relationships that human populations today have with other species and the natural environment. The course encourages us to ask: are these relationships always sustainable? Looking to the future; what are our responsibilities both to future generations of humans and towards other species with which we share our world?

Latest course information available on WebCT

Academic Honesty Statement:

Students are required to submit all papers to CUPIDE (the Chinese University Plagiarism Identification Engine System). No paper will be graded without a receipt from CUPIDE included by the student with his or her paper. Please check the website "[Honesty in Academic Work](http://www.cuhk.edu.hk/policy/academichonesty/)" for more information on plagiarism and on how to submit papers through CUPIDE.

Course Structure:

Each week will introduce a topic or set of concepts that will be covered by the lectures and by about 20-30 pages of key readings. **The lectures** will structure each topic in a simple way, providing explanations and examples so that the basic ideas are understood. Students will benefit by taking brief notes during the lectures. Questions are very welcome, both during the lectures and especially during the later tutorial.

All of the **reading material** will be readily available either in the U Li. reserve collection or online/on the webCT site. Each week, students are expected to read, think about, and mentally summarise the readings *before the tutorial*.

The **tutorial** provides an opportunity for students to discuss the readings, raise questions and debate the ideas, and consolidate their understanding. Normally, tutorials will open with a short (less than 10 minutes) informal summary of the readings covered that week, given by one or two students. Then one or two other students will 'examine' the summarizers. *All other tutorial members will be expected to contribute to the discussion.* The aims of the tutorials are

- to enable students to make summaries / examinations of the readings and topics of their choice;
- to raise and discuss questions, experience and perspectives about the concepts and the reading material;
- to enable students to make suggestions for the improvement of the course/ lectures/ readings etc.

Course Grading:

The Mid-term assignment will constitute 30% of the overall grade for the course. This take-home, essay-based assignment is due around week 8 of the semester, and should be approximately 2000 words in length.

The Final take home assignment will comprise 40% of the total grade.

Tutorial Involvement: You are encouraged to attend tutorials and participate by asking questions and discussing the reading and concepts. Each student, in rotation, will be called on to summarise the weekly readings at the beginning of the tutorial, and examine others on the topics. Everyone is expected to be able to contribute to the discussion. Participation in tutorial discussions over the duration of the course will count towards 30% of the grade.

Class Programme & Reading List:

The **date** of each tutorial will be arranged at the first meeting. The **Summarizer** is the tutorial member who will briefly summarise the readings at the beginning in order to start the discussion. Everyone else will be expected to join in the debate and to discuss or ask questions about the readings.

The written questions that appear under each week's heading are suggestions and indicate some of the important issues that might be considered. The checklist at the end of each topic provides a rough summary of some of the key ideas covered in the lectures and readings.

The reading list below lists all the compulsory readings as well as the recommended and deeper readings for each weekly topic. Library call marks are included in **bold**, and are intended to help you to locate materials in the library, usually the U Li. reserve collection. Other forms of access to materials are noted where available (such as online access). Contact the course instructor immediately if you have problems accessing any of the readings for any reason.

Many of the **compulsory readings** (indicated below) include pictures and photos – **the amount of pages of written text to read rarely exceeds thirty pages** – and you are therefore encouraged to read carefully and think about the ideas closely, noting any disagreements or questions you might have for discussion in class. **Please pay special attention to the page numbers indicated.** Often only a short section is marked as compulsory reading, *not the whole chapter or article*. Where this is the case you will see e.g. (Pages 10-22 **ONLY**).

The **recommended readings** are also quite straightforward and easy and are good for further understanding of the topic or concepts. These should definitely be read if you are considering writing an assignment on the topic.

The **deeper research** readings may be a bit more challenging and are intended mainly for those very interested in the topic. These may be helpful if you want to write a short dissertation on the topic. Please don't hesitate to contact the instructor if you want to learn/read more about any of these topics.

The following symbols are used to indicate the type of reading:



Key reading ****COMPULSORY****



Recommended Readings □



For Deeper Research

readings marked with an *asterisk like this:


 *Campbell & Loy, 2000

come from books/chapters which will be used again in later weeks – you may save time by photocopying all such readings in one go.

1 Introduction: (A) orientation and course overview (B) creation myths and evolution

What is a 'creation myth'? In what way might a culture's creation myth reflect/affect their attitudes? Historically, what creation narratives have been dominant in western European thinking? What are the key differences between the genesis view of the world and the view which grew during the 17th to 19th centuries? What is 'transmutation' and what other ideas is it connected to? What kinds of evidence supported these ideas historically and currently? What did Darwin bring to the debate? What are the similarities and differences between myths and scientific narratives?


Some helpful readings for these background topics:

 Leeming & Leeming, 1994 "Introduction" (pages vii-viii) in "Encyclopedia of Creation Myths" **BL 325 C7 L44 1994 or available on WebCT**

- quick and easy introduction to creation myths and some of their general features

 *Campbell & Loy, 2000 "The search for Human Origins" chapter one (pages 2-32) in "*Humankind Emerging*" **GN281 C36 2000 (KEY READING FOR WEEKS 1, 2 AND 3)**


- this week **read pages 2-15**: summarises beliefs in western Europe before evolutionary ideas, the growth in those ideas, and introduces Darwin

 *Jurmain et al., 2001 "The Development of Evolutionary Theory" chapter two, (pages 24-41) in "Essentials of Physical Anthropology" **GN60 N43 2001 (KEY READING FOR WEEKS 1 AND 2)**

- this week read **pages 38-40**: discusses scientific and religious views and the "Vatican Statement on Evolution"

 www.wikipedia.org (online encyclopedia) search for article on "Scientific method"

- gives a good overview of what science is all about; see especially last section on "philosophical issues"

 *Lewin, 1998 "Principles of Human Evolution" chapter 2 (pages 11-19) "*Human Evolution as Narrative*" **GN281 L489 1998**

- describes how biologists' stories of hominid / human evolution can sound like a story about the triumph of a hero

 Schick, 1997 "The End of Science?" (pages 36-39) in "Skeptical Enquirer" March/April 1997 – available online: <http://www.csicop.org/si/9703/end.html> (or do a web search)

- describes some of the difficulties of scientists' claims of objectivity

checklist: • creation narratives are widespread • creation narratives reflect and influence the attitudes of the culture • creation narratives from 'genesis' were dominant in western Europe prior to the rise of ideas about change over time • genesis suggests the world and species are *fixed* once created, and the world is around 6000 years old • in the 17th-19th centuries ideas of an ancient earth and processes of *change* became more common • Lamarck formally proposed 'transmutation' of species from common ancestors • Evidence that suggests change or common origins includes: fossils, comparative embryology, structural homologies and 'vestigial' structures • Modern evidence includes: shared genetic material (DNA, RNA), macromolecular homologies, anti-biotic resistance and viral evolution • Darwin removed ideas of direction and intention, pointing to random variations and differential reproduction in natural environments • in principle, scientific ideas are those which are open to questioning, testing against empirical evidence and then revision • scientific ideas also function as belief systems and can be dogmatic in practice

2 Environmental change, natural selection and species change

Tutorial date:

Summarizer:


Why did Darwin propose the theory of Natural selection? What experience got Darwin interested in these ideas? Who are Darwin's finches?

What commonly known example of 'descent with modification' did Darwin draw attention to? How does the 'selecting' happen in 'natural selection'? What is the role of the environment? Can organisms have 'properties' independent of an environment / context? Is change/evolution something that happens to individuals or between populations linked by ancestry?


Who/what is *Biston Betularia*? Is change necessarily progressive? Where did the concept of 'evolution' come from? Did Darwin support the idea of 'progress'? What are some of the implications of the idea that natural processes are random and undirected? What about 'goals'?

 *Campbell & Loy, 2000 "The search for Human Origins" chapter one (pages 2-32) in "*Humankind Emerging*" GN281 C36 2000 (KEY READING FOR WEEKS 1, 2 AND 3)


- this week read pages 12-19: introduces Darwin, his theory of natural selection, society's reaction and initial ideas about the ancestry of humans

 Gould, 1977 "Darwin's Dilemma" chapter three (pages 34-38) in "*Ever Since Darwin*" QH361 G65 1979


- the word 'evolution' was hardly used by Darwin, and it can give the mistaken idea of 'progress'

 *Jurmain et al., 2001 "The Development of Evolutionary Theory" chapter two (pages 24-41) in "Essentials of Physical Anthropology" GN60 N43 2001 (KEY READING FOR WEEKS 1 AND 2)

- this week read pages 36-37: a clear description of natural selection highlighting reproductive success

 *Leakey & Lewin, 1995 "Homo sapiens, the Pinnacle of Evolution?" chapter six (pages 77-98) in "The sixth extinction: patterns of life and the future of humankind" GF75 L425 1995

- Good on lack of progressiveness in biological evolution, including primates and humans

 D.Freeman, 1974 'The Evolutionary Theories of Charles Darwin and Herbert Spencer', *Current Anthropology*, 15, #3, Sept. 1974 pp. 211-23, GN1 C8 (also available online)

- like Gould (above), shows that many ideas attributed to Darwin (e.g. progress) came from others


checklist: • Darwin proposed natural selection as the mechanism for change and species' apparent 'tuning' to environments • Darwin became interested in these questions during his trip around the world as ship's naturalist • his related but distinct species of finches seemed 'tuned to' different food opportunities on the Galapagos Islands • Darwin pointed to transmutations under 'artificial selection' by animal breeders • natural selection arises as a result of relative reproductive success • reproductive success is always dependent on the environmental context • 'evolution' can only be suggested to have occurred in a population of organisms, relative to their ancestors, and so it is a claim about change over time • Peppered moths illustrate how natural selection is dependent on environment and is not necessarily 'progressive' • the idea of progressive 'evolution' came from Victorians such as Spencer, and was not supported by Darwin • natural processes may be blind and undirected, but humans have the ability to plan ahead and agree on worthwhile 'goals'!


3 Natural selection and species change (two): mechanisms and misunderstandings


Tutorial date:


Summarizer:


What ideas existed about inheritance in Darwin's time? Who was Mendel? How did his work suggest characteristics are inherited? What does the idea of 'mutation' involve? What complications to Mendel's ideas do more recent findings present? What was the 'modern synthesis'? How does changing gene frequency relate to reproductive success? Other than natural selection, what forces can lead to change in a population's characteristics? What is 'speciation' and how might it occur? What are the theories of 'gradualism' and 'punctuated equilibrium'? What are some of the common misunderstandings about evolution and natural selection? Why does the sickle-cell characteristic reproduce successfully in some populations?


-  *Campbell & Loy, 2000 "The search for Human Origins" chapter one (**Pages 2—32**) in "*Humankind Emerging* **GN281 C36 2000 (KEY READING FOR WEEKS 1, 2 AND 3)**
 - this week read **pages 19-32**: introduces Mendel, his ideas about inheritance, and the modern 'synthesis' of Mendelian genetics and Darwinian natural selection


-  *Lewin, 1998 "Modern Evolutionary Theory," chapter 4 (**pages 29-35 ONLY**) in "*Principles of Human Evolution*" **GN281 L489 1998**
 - emphasises the centrality of a species' environment in natural selection, and discusses the modern synthesis/population genetics

-  *Relethford, 2003 "The Birth and Death of Species" (**pages 98-104**) and "Misconceptions about evolution" (**pages 104-108**) in "The human species: an introduction to biological anthropology" **GN60 R39 2003**
 - explains how speciation can occur, explains the place of the random effects of genetic drift, discusses long term patterns of species change ('macroevolution') and common misconceptions about evolution and natural selection

-  Haviland, 1994 "Biology and Evolution" chapter 3 (**pages 56-77**) in "Anthropology" **GN25 H38 1994**
 - extra detail on mechanisms of inheritance: DNA and meiosis, genetic mutations and sickle-cell genetics

-  Gould and Lewontin, 1979 "The spandrels of San Marco and the Panglossian paradigm: a critique of the adaptationist program" (**pages 114-123**) in Ridley (Ed.) "Evolution" **QH366.2 R524 2004B**
 - they argue that it is a mistake to think that natural selection 'perfects' organisms and that all of an organism's characteristics are necessarily 'adaptations'

-  Ridley (Ed.), 2004 "Evolution" A collection of classic readings **QH366.2 R524 2004B**
 - here you will find letters by Darwin, and original work on inheritance and the modern synthesis

-  Carlson, 2004 "Mendel's legacy: the origin of classical genetics" **QH428 C248 2004**
 - this is a lengthy but accessible guide to the rise of Mendelian genetics


checklist: • the problematic idea of 'blending inheritance' dominated before Mendel • Mendel's work was about how inheritance works in peas, but produced some basic and general 'laws' • mutation is change in hereditary material (now considered to be DNA) which may result in changed properties of the organism • modern findings suggest inheritance is usually a lot more complicated than Mendel described • the modern synthesis united the ideas of Mendel and Darwin • evolution can be understood as the change in frequency of genes (and characteristics) of a population over time • genes often increase in frequency due to relative reproductive success • genetic drift and other forces can have a big influence on gene frequencies and population-typical characteristics • speciation is the process of a population becoming irreversibly reproductively isolated and typically occurs because of geographic isolation • 'gradualism' proposes change is steady over time; 'punctuated equilibrium' suggests shorter periods of rapid change and periods of stability • evolution is often misunderstood as a perfecting force • sickle cell has benefits as well as costs

4 Evolutionary History – Mammals, Food Resources and Social Life

Tutorial date:

Summarizer:


What kind of an animal are humans? In analysing what ‘causes’ (or influences) certain behaviours, what do we need to be aware of? Which basic aspects of our behaviour do we have in common with other animals? Group living is rare in mammals, so what conditions favour it? How can regularly occurring social behaviours which are ‘costly’ to the individual be selected for? What circumstances mediate the expression of social behaviours?

 *Park, 2002 “A Brief Evolutionary Timetable” Chapter six (**pages 114-126**) in “Biological Anthropology” **GN60 P35 2002**


- gives an overview of scientific ideas about history of the universe and life on earth, including major transitions, mass extinctions and ancestors of mammals. Helps us keep human life in perspective!

 Bernstein, 1999 “The Study of Behavior” (**pages 176-180**) in “The Nonhuman Primates” **QL737 P9 N597 1999**


- emphasises that understanding the ‘causes’ of organisms’ behaviour requires multiple perspectives

 Scott, 1996 “Mammals” (**page 718**) Concise Encyclopedia Biology **QH302.5 A2313 1996**
REFERENCE SECTION


- summarises the basic characteristics of mammals, including ‘modes of existence’

 Feldhamer et al., 2004 “Social Behavior” chapter 22 (**pages 357-365 only**) in “Mammology” **QL703 M36 2004**


- discuss features of social mammals, and ecological/selective pressures on group living and social behaviour

 Vaughan et al., 2000 “Behavior” chapter 23 (**pages 428-474**) in “Mammology” **QL703 V38 2000**

- give interesting examples of the way of life and patterns of behaviour of different mammals

 Bekoff, 2002 “Animal Emotions” chapter five (**pages 100-119**) in “Minding Animals” **QL751 B366 2002**

- a friend of Jane Goodall, Bekoff provides a thought provoking discussion of emotions in animals

 Shukla, 2001 chapters in “Encyclopaedia of mammals” **QL703 S48 2001**

- lots of further information about the way of life of different species of mammals


checklist: • Evidence suggests life on earth has been around for 3.5 billion years • humans and other primates are mammals • behaviour has ‘causes’ (or influences) on different levels, including ‘evolutionary’ influences and ‘proximate’ influences • some behaviours can be copied from others via social learning • ‘exaptations’ are characteristics that now have effects different from those they were originally selected for • early social dependence on a carer is a fundamental mammalian condition • group living throughout the lifespan occurs in some species, and is influenced by feeding opportunities and predation patterns • costly social behaviour can evolve if the benefits usually fall on those who themselves may reproduce the behaviour (e.g. genetic relatives) • however, such social behaviour is usually ‘proximately’ influenced (mediated) by familiarity, not genetic relationship • social behaviours which are later reciprocated can also evolve under the right circumstances, regardless of genetic relationship


5 Understanding Humans (1) – Characteristics of Primates


Tutorial date:


Summarizer:


What kind of a primate are humans? What are some of the key characteristics of primates? How many offspring will a primate parent usually have and how are they treated? What happens in the typical day of a chimpanzee? What kinds of social support occur between adults? What kinds of physical contact accompany social bonds in these species?

-  Mcfarland, 1993 sections from “Primate Social Behaviour” chapter 11 (**pages 165-183 only**) in “Animal Behaviour: psychobiology, ethology, and evolution” **QL751 M393 1993**
- gives further details on selective pressures on group living, with illustrations from primate life

-  *Park, 2002 sections from “Primate Behaviour and Human Evolution” Chapter eight (**pages 172-183 only**) in “Biological Anthropology” **GN60 P35 2002**
- gives a well illustrated account of how chimpanzees and bonobos live

-  *Dolhinow and Fuentes, 1999 chapters in “The nonhuman primates” **QL737 P9 N597 1999**
- has excellent short introductions to the life history and behaviour of many primate species

-  Smuts et al., 1987 chapters in “Primate Societies” **QL737 P9 P6744**
- discusses several common features of primate life with illustrations from different species

-  Goodall, 1986 chapters in “The chimpanzees of Gombe: patterns of behavior” **QL737 P96 G585**
- fascinating details on the life-style and behaviour of our closest relatives from Jane Goodall


checklist: • humans and other African apes are ‘hominoid’ primates • humans and chimpanzees/bonobos are the most closely related of all apes • primates have a particularly long period of child-care, few offspring and life-long social relationships • mother-offspring and sibling relationships are often important in these species • social hierarchy is often seen in primate groups • close contact and grooming are important in maintaining social bonds • many primate species have (non-reproductive) social sexual interaction, also for social bonding


6 Understanding Humans (2) – African Apes


Tutorial date:


Summarizer:


How recent is our knowledge of the life of other primates and which of our perspectives on humans might need 'updating'? Who was Imo? What traditions did she start? How many different cultural behaviours have been documented in chimps so far? Who is Kanzi? How many symbols does she understand? What is a 'lexigram'? What are the implications for how we understand language ability in humans?


-  Dugatkin, 2004 sections from “Social learning and cultural transmission” chapter five (**pages 146-149 only**) in *Principles of Animal Behavior* **QL751 D748 2004**
 - tells how Imo taught her macaque friends some new tricks

-  Whiten & Boesch, 2001 “The cultures of Chimpanzees” (**pages 48-55**) in *Scientific American* January 2001 **T1.S5 (also available online)**
 - describes how researchers have recently documented many forms of ‘local culture’ in chimpanzees

-  Hillix & Rumbaugh, 2004 sections from “Where do we stand and where are we going?” chapter 16 (**pages 269-273**) in *Animal Bodies, Human Minds* **QL776 H55 2004**
 - briefly reviews language, symbolic and comprehension abilities in other animals

-  *Rumbaugh and Savage-Rumbaugh, 1996 “Biobehavioral roots of language: words, apes and a child” chapter 10 (**pages 257-274**) in Velichkovsky and Rumbaugh (Eds.) “Communicating meaning: the evolution and development of language” **P116 C66 1996**
 - more detailed review of work on primate language ability

-  McGrew, 1991 “Chimpanzee material culture: what are its limits and why?” chapter one (**pages 13-24**) in Foley (Ed.) “The origins of human behaviour” **GN281.4 O75**
 - discusses the possible insights chimpanzee behaviour can give us into early human behaviour

-  Dolhinow and Fuentes, 1999 “The nonhuman primates” **QL737 P9 N597 1999**
 - has excellent short introductions to the life history and behaviour of many primate species

checklist: • chimpanzee tool use has only been clearly observed since 1960 • many theories about uniquely human behaviours may need updating, given what we know about other primates • chimpanzee populations have their own distinct local cultures • at least 39 different cultural behaviours had been documented up to the year 2000 • apes have been documented to have language production and comprehension abilities comparable to 3 year old humans • Kanzi understands over 500 symbols • apes can distinguish word-order ('syntax') • human linguistic ability seems likely to be influenced by intensive exposure and training


7 Human Ancestors

Tutorial date:


Summarizer:

Why are human evolution stories often told as if 'we, the final outcome, were always predestined'? What is usually considered the first significant change in ancestral species of all hominids? About how long ago is this thought to have occurred? Why might this have occurred? What characteristics were mistakenly attributed to the species of the 'Taung child' and why? What seems the more likely picture of what happened?


Who were the *Homo habilis* species and what were some of their unusual characteristics? Although early hominids are often portrayed as 'hunters', in what other ways might they have accessed meat? What other changes might a higher-protein diet have influenced? Which appear to have been the first hominids to have spread out to regions far from Africa? Who are 'Java man' and 'Peking man'? What were some of the early ideas put forward, in contrast to evolutionary accounts, to account for Neanderthal remains?

 Stringer & McKie, 1997 "East Side Story" chapter two (**pages 17-52**) in "African Exodus" **GN281 S87 1997**


- easy overview of evidence about initial split with common ancestral species, through bipedalism and early stone tool manufacture - with illustrations, charts and photos

 *Park, 2002 "Evolution of the Hominids" chapter ten (**pages 223-241 only**) in "Biological Anthropology" **GN60 P35 2002**


- good discussion on origins of bipedalism, pages **234-241**

 Mithen, 1998 "The drama of our past" chapter two (**pages 14-30**) in "The prehistory of the mind" **GN281.4 M57 1998**

- simple short overview concentrating on the hominid sequence and their accompanying technologies, with good charts

 Tanner, 1988 "Becoming human, our links with our past" chapter ten (**pages 127-140**) in Ingold (Ed.) "What is an Animal?" **GN280.7 W43**

- de-emphasises "man the hunter" models and points to women and food gathering as important in human evolution

 Boas, 1997 "Eco Homo" (Whole Book) **GN281 B618 1997**

- Very thorough discussion of the various ideas surrounding the origins of bipedalism and hominid ancestors

checklist: • human evolution is often told as a hero myth • a significant early change is considered to have been the transition to bipedalism which occurred around 4-5mya • this is likely to have been influenced by changing climate • the 'Taung child' was said to be of an aggressive, 'bloodthirsty' species, fitting the ideas of the time (1920s) • In fact the 'Taung child' was probably a victim of a leopard • *Homo habilis* appear to be the first species with brain size larger than the ape average • early access to meat may have been through scavenging • high protein diet may have allowed larger brain size • *Homo erectus* was probably the first human species to leave Africa • 'Java man' and 'Peking man' may be members of the *erectus* species • discoveries of Neanderthal remains were first explained as being injured soldiers from recent European wars!


8 Modern Humans: Debates about Emergence and Origin {midterm - no lecture}

Tutorial date:


Summarizer:

Can we clearly define 'modern humans'? What is the 'multiregional hypothesis'? What is the 'out of Africa' hypothesis? What key evidence does each side point to? Are these positions necessarily mutually exclusive ('either/or')? What might an intermediate position be?


Who are Neanderthals? Are they a distinct species to *Homo sapiens*? What happened to them? When did the concept of 'race' start being used to describe humans? Are there biological 'races' of humans? Are 'races' culturally constructed?

 Jurmain et al., 2001 "Homo Sapiens Sapiens" chapter eleven, (pages 271-294) in "Essentials of Physical Anthropology" GN60 N43 2001


- Give a balanced review of the evidence and the debates around the evolution of modern humans

 Park, 2002 "Is there a connection between modern human origins and race?" two page text box (pages 334-335 only) in "Biological Anthropology" GN60 P35 2002

- Clarifies that race is a cultural concept

 Fish, 2000 "Mixed Blood" chapter 23 (pages 250-260) in "Conformity and conflict: readings in cultural anthropology" GN325 C69 2000

- Excellent demonstration that racial categories are culturally constructed, with good examples.

 Clark, 2000 "The selecting of *Homo Sapiens*" chapter three (pages 98-125) in "In search of human nature" GN281 C524 2002

- Good cautionary commentary on the various debates in human evolution










checklist: • defining 'modern humans' requires an artificial category which has no clear biological distinctions
• humans today are very little different from our ancestors 100,000 years ago • the multiregional hypothesis suggests that modern human populations are descended from earlier *Homo erectus* populations that had distinct characteristics in each region, but with regular gene-flow between populations • they point to continuities in distinct regional characteristics between erectus fossils and modern populations • the 'out of Africa' theory suggests that earlier regional populations of *Homo erectus* were replaced by migrations of more 'recent' humans migrating out of Africa, last occurring around 100-200,000 years ago • they point to molecular genetic evidence for recent common ancestry • an intermediate position accepting genetic influence from both ancient regional ancestors and recent common ancestors, via gene flow, is possible • Neanderthals inhabited Europe until around 30,000 years ago • there is debate about just how different from other humans Neanderthals were, and whether they may have interbred with other humans or been 'replaced' by them • evidence of Neanderthals seems to fade from the fossil record after 30kya • the concept of 'race' is a social construct • there are continuous variations between human populations and no distinct barriers • socially constructed racial categories, and the value placed on them can be completely different, depending on what culture you are in, demonstrating that they are indeed socially constructed

9 Language, Symbolism and Culture

Tutorial date:

Summarizer:

What is our 'symbolic capacity'? Why is this ability crucial to current 'human nature'? How does our symbolic capacity work? How is this connected to our language ability? According to the evidence, when might our language ability have evolved? Why might it have evolved? What implications does our symbolic ability, and the importance of 'meaning,' have for trying to understand and explain human behaviour? What evidence have we got for the emergence of material symbolism in humans?

-  Scupin, 1995 "Culture is learned" (pages 34-35) and "Language" chapter five (**pages 76-94 only**) in "Cultural anthropology" 2nd edition **GN316 S39 1995**
 - Describes culture's dependence on human symbolic ability, and gives an overview of human language
-  Lewin, 1998 sections from "the evolution of language" chapter 32 (**pages 457-461 only**) in "Principles of Human evolution" **GN281 L489 1998**
 - gives an overview of the paleoanthropological evidence on the evolution of language
-  Lieberman, 1994 "The Origins and Evolution of Language" chapter five (**pages 108-132**) in Ingold (Ed.) "Companion encyclopedia of anthropology" **GN25 C65 1994**
 - A detailed discussion of the evidence and debates surrounding the evolution of language
-  Bickerton, 2000 "Foraging versus Social Intelligence in the Evolution of Protolanguage" chapter ten (**pages 207-225**) in Wray (Ed.) "The Transition to Language" **P116 I64 2000**
 - Discusses the selection pressure on and pre-adaptations for the evolution of language
-  Lewin, 1998 "Art in Prehistory" (**pages 469-481**) in "Principles of Human evolution" **GN281 L489 1998**
 - ♦ Lewin summarizes the evidence of the emergence of human material symbolism
-  Velichkovsky, 1996 "Language development at the crossroads of biological and cultural interactions" chapter 1 (**pages 1-26**) in "Communicating meaning: the evolution..." **P116 C66 1996**
 - Difficult but thorough review of ideas surrounding the evolution of language from across disciplines
-  Geertz, 1973 "The Impact of the Concept of Culture on the Concept of Man" chapter two (**pages 33-54**) in "*The interpretation of cultures; selected essays*" **GN315 G36**
 - Ideas from this influential anthropologist on the significance of 'culture' to understanding humans
-  Lindly and Clark, 1990 "Symbolism and Modern Human Origins" (**pages 233-261**) in "*Current Anthropology*" volume 31 number 3, June 1990 **GN315 G36**
 - More detailed debate about the evolution of our capacity for symbolism
-  Foster, 1994 "Symbolism: The foundation of Culture" chapter fourteen (**pages 366-395**) in Ingold (Ed.) "Companion encyclopedia of anthropology" **GN25 C65 1994**
 - Challenging discussion of the symbolism and culture, anthropological theories and evolutionary debates








checklist: • our symbolic capacity is what allows us to have language, share thoughts, impressions and ideas, recall and share past events and have an impression of the past and the future • symbolic capacity requires classification of sensory experience of the world, memory, associations between experiences or memories and a way of communicating experiences and associations to others • complex language requires symbolic capacity, and is a 'subset' of it • evidence suggests *Homo sapiens* may be the only human species to have complex language ability • because we can communicate shared ideas and associations, actions have 'meanings,' which in turn motivate behaviour • this makes some forms of behaviour more than simply 'functional' • carvings and cave paintings are evidence of material symbolism in ancestral humans

10 Varieties of Human Subsistence

Tutorial date:

Summarizer:

In terms of subsistence pattern, how could we describe apes such as ancestral humans, chimpanzees and bonobos? What significant change did some human populations begin to adopt around 10,000 years ago? Why might they have done this? What are some of the consequences this has had? Today, what varieties of subsistence practices do we see across human populations? Do more 'intensive' subsistence practices necessarily create an 'easier life'? Do people choose their subsistence practice? Why might subsistence practices change?

-  Diamond, 1994 "The worst mistake in the history of the human race" (**pages 100-103**) in Podolefsky & Brown "Applying Anthropology" **GN397.5 A67 1994**
 - Diamond wonders why people began farming at all, given all the problems associated with it
-  Miller, 2002 "Economies and their Modes of Production" chapter three (**pages 51-76**) in Miller "Cultural Anthropology" **GN316 M49 2002**
 - Miller gives a straightforward overview of the varieties of subsistence practice societies follow today
-  Sahlins, 1998 "The Original Affluent Society" reprinted as chapter one (**Pages 5-42**) in Gowdy, "Limited wants, unlimited means: a reader on hunter-gatherer economics and the environment" **GN388 L55 1998**
 - Sahlins provides some surprising findings about lifestyles associated with modes of production
-  Redford, 1993 "The Ecologically Noble Savage" (**pages 11-13**) in Haviland "Talking about people: Readings in Contemporary cultural Anthropology" **1993 Edition GN316 T34 1993**
 - Redford notes that foragers can adopt unsustainable practices under pressure from Market forces
-  Biesele, 1993 "The Bushmen of Today" (**pages 289-295**) in Haviland "Talking about people: Readings in Contemporary cultural Anthropology" **1993 Edition GN316 T34 1993**
 - Biesele describes changes to the Ju/'hoan foragers' world in recent years
-  Stiles, 2002 "Nomads on Notice" (**pages 80-86**) in Haviland "Talking about people: Readings in Contemporary cultural Anthropology" **2002 Edition GN316 T34 2002**
 - Stiles describes the external pressures on nomadic pastoralists to become sedentary
-  Diamond, 1997 "To Farm or Not to Farm: Causes of the spread of food production" chapter six (**pages 104-113**) in Diamond "Guns, Germs and Steel: The fates of human societies" **HM626 D48 1997**
 - Diamond describes some of the trends surrounding the adoption of agriculture








checklist: • Apes and ancestral humans all find food by 'foraging' in their local environments, and may do some hunting also • foraging is also known as 'hunting and gathering' • staying in one place to farm plants and animals began around 10,000 years ago • this was initially concentrated in areas around rivers with good soils • farming requires more time/effort than foraging but produces more food for a given area of land • farming tends to lead to 'unnatural' population growth such that a return to foraging is almost impossible • farming changes natural environments, and creates a conflict with other species • farming populations/societies tend to grow larger and force other nearby populations to move out into more marginal areas • today only a few populations subsist by foraging; others have pastoralism, horticulture or intensive farming • more intensive subsistence requires more work and thus does not create an 'easier life' for most of the population • people tend to follow the traditional subsistence practices of the society they live in, and don't tend to consider other possibilities • our own culture may be invisible to us • subsistence practices may change due to outside forces

11 The Human Impact: Societal Collapse

Tutorial date:

Summarizer:

What kinds of impact have human populations had on other species and the environment? What has been the pattern of population growth in the past 10,000 years? Is this sustainable? Who were the Easter Islanders? What happened to them and what might have caused this? Who were the Maya? What happened to their society? Are there other examples of the collapse of societies due to an unsustainable relationship with the environment? What are the relative sustainability levels of different forms of agriculture? Can 'progress' be measured in terms of productive output?

-  Tickell, 1997 "The human species: A suicidal success?" section from chapter 39 (**pages 450-453 ONLY**) in Goudie "The Human impact reader" **GF75 G685 1997**
 - Tickell gives a useful overview of the impact humans have had on the environment
-  Marten, 2001 "Human Population" chapter three (**pages 26-40**) in "Human Ecology" **GF75 M37 2001**
 - ♦ Marten describes the massive human population growth since the adoption of farming
-  Ponting, 1992 "The Lessons of Easter Island" chapter one (**pages 1-6**) in "A green history of the world" **NOT AVAILABLE IN CUHK LIBRARY - please print the article off from one of these websites:** <http://www.eco-action.org/dt/eisland.html> or <http://www.primitivism.com/easter-island.htm> or http://www.mnforsustain.org/ponting_c_the_lessons_of_easter_island.htm or use google
 - Ponting describes how the Easter Islanders' pursuit of short term status gains led to their ultimate self-destruction
-  Diamond, 2003 "The Last Americans: Environmental Collapse and the end of Civilization" magazine article (**15 pages**) in "Harper's Magazine" June 2003 **AP2 H3 Also available on the web** use google
 - Diamond discusses the collapse of Mayan civilization due to overpopulation and environmental misuse
-  Redman, 1992 "The impact of food production: Short-term and Long-term consequences" chapter two (**pages 35-49**) in Jacobsen and Firor "Human impact on the environment" **GF75 H86**
 - Redman gives further examples of environmentally induced civilization collapse from around the world
-  Hughes, 2001 "Primal Harmony," & "The Great divorce of culture and nature" chapters two and three (**pages 12-51**) in "An environmental history of the world" **GF13 H83 2001**
 - Further thought provoking reflections on the environment and humans
-  Ehrlich & Ehrlich, 1994 "Unsustainable Agriculture" chapter seven (**pages 193-215**) in "Healing the Planet" **GF75 E4**
 - A discussion of the sustainability of different kinds of Agriculture from these highly respected authors


checklist: • amongst other impacts, human populations have taken over the environments of other species, leading to their extinction; polluted natural environments; and created global environmental change • population growth has increased steadily over the past few thousand years, and more rapidly following industrialization in the past 100 years • continued population growth cannot be sustained at current levels • the Easter Islanders desire for social prestige led to their unsustainable cropping of trees, and eventually created societal collapse • the Maya also had an unsustainable relationship with their environment • intensive forms of agriculture prevent other species from living in an area, weaken soils and lead to erosion • high output that is based on an unsustainable relationship with the environment cannot be considered 'progress' by any measure


12 The Human Impact: Species Extinction and Climate Change


Tutorial date:


Summarizer:


What are some of the ways in which humans are causing the rapid extinction of other species? At what rate are species-rich rainforest areas being destroyed by humans? What is the estimated rate of species loss caused by humans? Which humans are responsible for species extinction? What is the current status of the Tiger in China? What is being done to help this species and avoid extinction? What are some of the other species under threat in China? What can we do?


-  Leakey and Lewin, 1995 “The Sixth Extinction” and “Does it matter?” chapters 13 and 14 (**pages 232-254**) in “The sixth extinction: patterns of life and the future of humankind” **GF75 L425 1995**
 - document extinction of other species by humans through direct exploitation, habitat destruction and other means. They argue that it is our duty to protect other species, not to destroy them

-  Intergovernmental Panel on Climate Change, 2001 “Wildlife in Ecosystems” chapter five, section four (**pages 271-280 ONLY**) in “Climate Change 2001: Working Group II: Impacts, Adaptation and Vulnerability” **PDF FILE AVAILABLE ONLINE**
http://www.grida.no/climate/ipcc_tar/wg2/pdf/wg2TARchap5.pdf
 - this authoritative document from the world’s top scientists reviews the impact of climate change on different species

-  Laidler and Laidler, 1996 “Manchurian Tiger” (**pages 37-41**) in “China’s threatened wildlife” **QH77 C6 L35 1996**
 - describe how Tigers in south China and other regions are facing extinction - only a few dozen individuals still exist

-  Laidler and Laidler, 1996 “China’s threatened wildlife” read some of the case-studies **QH77 C6 L35 1996**
 - other sections of this book have very interesting and accessible accounts of China’s threatened species

-  Coggins 2003 “Lord of the Hundred Beasts” chapter three (**pages 51-86**) in “The Tiger and the pangolin: nature, culture, and conservation in China” **QH77 C6 C64 2003**
 - reviews historical aspects of the relationship between humans and tigers (and other species) in southeastern China, including myth and folklore

-  Stearns and Stearns 1999 “The Echo of their Song” chapter eleven (**pages 227-238**) in “Watching, from the edge of Extinction” **QH78 S734 1999**
 - reviews historical perspectives on the gibbon species in Chinese culture and documents how this species has in fact mostly disappeared from China

checklist: • habitat destruction, the introduction of alien species, direct exploitation and the effects of climate change on local environments are leading to species extinction • rainforests and other biologically rich areas are important to preserve because they are home to so many diverse species • rainforests are being destroyed at the rate of around 80,000 square miles each year, and will be a tiny fraction of their original size within a few years • species are being destroyed at the rate of tens of thousands per year • *we are all responsible for species extinction* • the tiger is almost extinct in south China, with only a few dozen individuals remaining • this is due to both habitat loss (due to human population growth and land use) and also because of direct exploitation (hunting etc) • dedicated areas of undisturbed habitat may help the tiger survive but public awareness and support are essential to prevent exploitation • other species under threat in China include the giant panda, the red panda, the Yangtze river dolphin and many others


13 The Future: Sustainability and Survival

Tutorial date:


Summarizer:

What is meant by 'sustainability'? Why is it important? How sustainable are the living patterns of populations in 'developed' countries? What is an 'ecological footprint'? What is meant by 'development'? By what standards is 'development' usually judged by politicians and economists? What are the four 'types' of sustainable development as described by Auty and Brown? How would you classify your own priorities according to this scale?


According to Diamond, on average, has technology lessened human's impact on natural environments or increased it? Why should we pay any attention to patterns of living in traditional societies that haven't changed for hundreds of years? What sort of farming techniques do the people of the Andes practice? What lessons can we learn from cultures that have a sustainable relationship with the other species and the environment?

 Auty and Brown, 1997 "An Overview of Approaches to Sustainable Development" chapter one (**Pages 3-13 ONLY**) in "Approaches to Sustainable Development" **HC79 E5 A658**


- give an easy overview of different interpretations of 'sustainable development' by different groups, from economic perspectives through to ecological perspectives

 Valladolid and Apffel-Marglin, 2001 "Andean Cosmivision and the Nurturing of Biodiversity" (**pages 639-667**) in Grim (Ed.) "Indigenous traditions and ecology: the interbeing of cosmology and community" **GN470.2 I53 2001**


- after trying to apply 'development' ideas to their own society, these native Andean writers consider the idea of 'development' itself might be a problem when applied to traditional, sustainable farming practices in the Andes mountains of South America. They describe this culture's traditional respect for the natural environment, and sustainable farming practices

 Kabuye, 1999 "Am I my Brother's keeper?" chapter fifteen (**pages 263-270**) in Nazarea (Ed.) "Ethnoecology: situated knowledge/located lives" **GN476.7 E77 1999**

- discusses the loss of traditional sustainable techniques and 'ethnobotanical' knowledge that occurs when outside market forces and commercial pressures are placed on local communities

 Coggins, 2003 "White Tigers and Azure Dragons" chapter Eight (**pages 195-215**) and "Vital Connection" chapter ten (**pages 249-283**) in "The Tiger and the Pangolin: nature, culture, and conservation in China" **QH77.C6 C64 2003**

- describes how properly managed conservation projects and sustainable farming practices can lead to protection of threatened species in China

 Minnis 2000 "Ethnobotany: a Reader" see particularly "Californian Indian Horticulture" chapter two (**pages 29-39**) and "Choice of Fuel for Bagaco Stills" chapter fourteen (**pages 307-320**) **GN476.73 E83 2000**

- these two case studies (and others in the book) describe how traditional farming and subsistence practices achieve a sustainable relationship with the environment

checklist: • if a practice is sustainable, its environmental outputs balance its inputs, and it can continue for indefinitely long periods • the way of living of most people in most developed nations is unsustainable • US society has a large 'ecological footprint' • development is similar to the idea of 'progress' applied to nations and societies and is usually measured in monetary terms • historically, technology has increased the human impact on the environment • the people of the Andes have great respect for the natural environment • traditional societies may practice subsistence techniques which are sustainable, and therefore provide role-models for currently unsustainable lifestyles in other societies