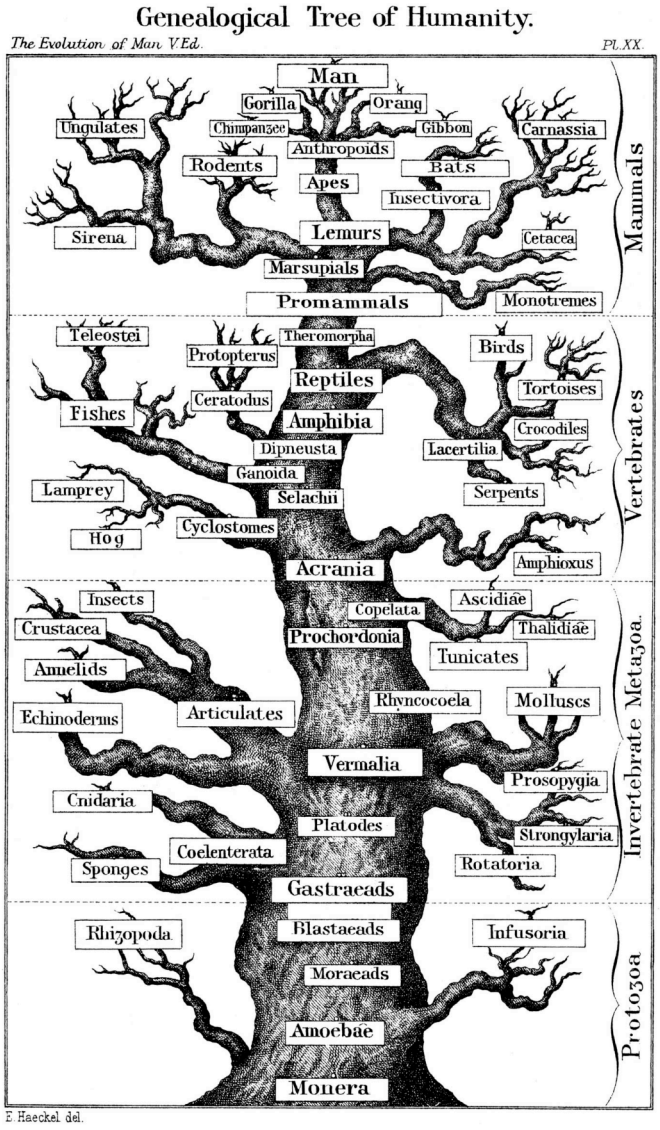
Macquarie University
Faculty of Arts
Department of Anthropology

2009



Anth 151

&

Human Evolution and Diversity

Unit Outline

Convenor: Dr. Greg Downey

www.anth.mq.edu.au/ug/151

Plagiarism is defined by the University Rules as 'using the work of another person and presenting it as one's own.' Plagiarism is a serious breach of University rules and carries significant penalties. You must read the University's practices on plagiarism either in the Handbook of Undergraduate studies or on the web at: http://www.student/mq.edu.au/plagiarism.

The policies and procedures explain what plagiarism is, how to avoid it, the procedures that will be taken in case of suspected plagiarism, and the penalties if you are found guilty. Penalties may include a deduction of marks, failure in the unit, and/or referral to the University Discipline Committee. All essays will be checked electronically for plagiarism.

The cover image:

The illustration on the cover of the study guide, 'Tree of Life,' is from Ernst Haeckel's *The Evolution of Man*, published in 1874. Haeckel was a naturalist, embryologist, philosopher, physician, and artist, and was one of the leading early advocates of evolutionary theory in Germany. He discovered and first documented thousands of species and invented many concepts still central to biology. He was responsible for the controversial 'recapitulation theory,' the idea that 'ontogeny recapitulates phylogeny' (or 'the development of the individual reenacts the emergence of a species'), building on the resemblances among embryos of different species. In addition, he preferred Lamark's theories of inheritance to Darwin's argument for 'natural selection.'

Haeckel theorized the existence of prehistoric forms of humans and dispatched students to the Dutch East Indies (now Indonesia) in search of the proof. So confident of his theories, he had already named the supposed species leaving those remains, *Pithecanthropus alalus*, before his students had even found the skull that would be called 'Java man' (now classified as *Homo erectus*).

Haeckel meticulously composed his 'Tree of Life,' but he included no single-celled organisms because scientists were only beginning to discover microscopic life. Some theorists, such as Stephen Jay Gould, have argued that the drawing of evolutionary trees, like Haeckel's, with humans 'at the top' or as the 'final product' tends to reinforce a basic misconception about evolution: that humans are the end goal of evolutionary processes rather than a fortunate accident (fortunate for us, that is—less so for some other species).

For more on Ernst Haeckel, *Slate* has a slideshow of his drawings and a discussion of his impact on evolutionary thought at: http://www.slate.com/id/2124625/.

MACQUARIE UNIVERSITY
DIVISION OF SOCIETY, CULTURE, MEDIA AND PHILOSOPHY

HUMAN EVOLUTION AND DIVERSITY
ANTH 151

Semester and Year:	Second Semester, 2009
Lecture meeting:	Weds. 12-2:00 PM, W5A T2
Unit convenor:	Dr. Greg Downey
Office location:	C3A, Room 623
Email:	greg.downey@mq.edu.au
Consultation:	Wed 5-6:00 PM, Thur 2-4:00 PM & by appt.
Unit webpage:	www.anth.mq.edu.au/ug/151

Study Guide

There are only limited copies of this study guide — do not lose it. An electronic version is posted on the Anth 151 Web Page, accessible through the Anthropology Home Page at **http://www.anth.mq.edu.au/**

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SUMMARY OF LECTURES

Week One: Introduction 5 August
1.1 Introduction to unit requirements
1.2 Basics of evolutionary biology

Week Two: Natural selection and genetics 12 August
2.1 Darwin on natural selection
2.2 Updating Darwin: neo-Darwinism and the genetics revolution

Week Three: Humans among primates 19 August
3.1 Primates: origin and distinctive niche
3.2 The perils of comparison: chimpanzees, for example…

Week Four: Early hominids and bipedalism 26 August
4.1 Bipedalism: why walk on two feet?
4.2 The evidence of human evolution in paleoarchaeology

Week Five: Genus *Homo*: brain and dietary change 2 September
5.1 Brains, human and others (Guest lecturer: Prof. Ken Cheung)
5.2 How diet affects the brain: evolution and development

Week Six: Sex and reproduction 9 September
6.1 Human sexuality in evolutionary perspective
6.2 Human reproduction: is anything natural?

Week Seven: The first technology 16 September
7.1 Lithic technology: Paleolithic innovations
7.2 Fire, clothes and other human tricks: what could Neandertals do?

Week Eight: Midterm exam 7 October

Week Nine: Language origins and development 14 October
9.1 The ability to communicate: do other animals talk?
9.2 Language change

Week Ten: The epic of humanity 21 October
10.1 The rise of anatomically modern humans
10.2 Getting out of Africa

Week Eleven: Food domestication and urbanization 28 October
11.1 The Neolithic Revolution: growing our own food
11.2 The social ape and the first cities

Week Twelve: Human variation: genes, races and cultures 4 November
12.1 Modern human variation: are we all that different?
12.2 Traces of human adaptation

Week Thirteen: Is evolution over? 11 November
13.1 Do culture and technology replace selection?: genetic evidence
13.2 Future humans

SUMMARY OF TUTORIAL PROGRAMME

Note: No meeting the first week!

Tutorial One: Evolutionary dynamics and genetics

Weiss, Kenneth M. 2008. 'All Roads Lead to… Everywhere?: Is the genetic basis of interesting traits so complex that it loses much of its traditional meaning?' *Evolutionary Anthropology* 17: 88-92.

Tutorial Two: Our nearest primate relatives

'A Guide to the Cultures of Chimpanzees.' From *Scientific American* 2001, Vol. 284.

Tutorial Three: Early hominids and bipedalism

Laetoli footprint materials.

Tutorial Four: Genus *Homo*, brain and dietary change

Leonard, William R. 2003. 'Food for Thought: Dietary Change Was a Driving Force in Human Evolution.' *Scientific American* (updated from December 2002): 62-71.

Shipman, Pat. 2002. 'A Worm's View of Human Evolution.' *American Scientist* 90(6): 508-510.

Tutorial Five: Sex and reproduction

Small, Meredith F. 1992. 'What's Love Got to Do With It?: Sex Among Our Closest Relatives Is a Rather Open Affair.' *Discover* (June): 46-51.

Small, Meredith F. 1997. 'Our Babies, Ourselves.' *Natural History Magazine* (October): 42-51 (reprinted in *Annual Editions: Anthropology 06/07*, pp. 100-106) together with accompanying sidebars by LeVine *et al.*).

Tutorial Six: The first technology

Ambrose, Stanley H. 2001. 'Paleolithic Technology and Human Evolution.' *Science* 291: 1748-1753.

Note: No meeting week eight!

Tutorial Seven: Language origins and development

Diamond, Jared M. 1991. 'Reinvention of Human Language.' *Natural History* 5/91: 22-28. Reprinted in *Through the Looking Glass: Readings in General Anthropology*. Second edition. 2000. Pp. 26-35.

Tutorial Eight: The epic of humanity

Jurmain, Robert, Lynn Kilgore, and Wenda Trevathan, with Russell L. Ciochon. 2008. The Origin and Dispersal of Modern Humans. In *Introduction to Physical Anthropology. Eleventh edition.* Pp. 352-377. Thomson-Wadsworth.

Tutorial Nine: Food domestication and urbanization

Mann, Charles. 2002. '1491.' *The Atlantic Monthly* (March): 1-13.

Tutorial Ten: Human variation: genes, races and cultures

George W. Gill and Jonathan Marks. 1998 and 1994. 'Issue 1: Is Race a Useful Concept for Anthropologists?' In *Taking Sides: Clashing Views on Controversial Issues in Anthropology. Third edition.* Kirk M. Endicott and Robert L. Welsch, eds. Pp. 2-15. Dubuque, Iowa: McGraw-Hill/Dushkin.

Tutorial Eleven: Is evolution over? The modern selective environment

Wade, Nicholas. 2006. Still Evolving, Human Genes Tell New Story. *The New York Times* (March 7).

'Darwin's Children.' *The Economist* (13 Dec. 2007).

INTRODUCTION: WHY STUDY EVOLUTION?

New findings in such fields as archaeology, genetics and evolutionary science have radically reshaped our understanding of our species' origins and contemporary diversity. This unit examines human evolution and such topics as major changes in our brains, bodies and habitats; humans' relations to other primates; the development of technology and language; human sexuality and child rearing; and diversity in our species, including both genetic and cultural factors. We will consider a range of exciting new discoveries, from 'the Hobbit' of Flores to Neandertal DNA, from ancient domesticated plants to genetic traces of humanity's spread around the globe.

The unit is offered in anthropology because the field traditionally examines human diversity in evolutionary and comparative perspective, considering both the wide range of human experience and even our relations with other living primates as well as extinct hominids. Lecture and tutorial materials include, not only the biological evolution of our species, but also the rise and development of human society, culture, language, agriculture, and technology. Ironically, the ability to transform our worlds, to create institutions and ways of life insulated from the natural world, arose from evolutionary processes and yet this distinctly human way of living subsequently affects our evolution as a species. Shaped by evolution, human culture, skill, intelligence and social life subsequently affect our evolution.

Lectures and discussions of human evolution might appear to be anything but contemporary: what could be more out-of-date than prehistory!? But, in fact, we find that much of our current understanding of human nature, debates about human health and sexuality, proper childrearing and the depth of our differences, draws from evolutionary theory and data, makes assertions about our evolutionary past, or assumes certain things about the way we developed as a species. What kind of animal we are—and what sort of people we might aspire to be—seems to be inextricably linked to the evolutionary processes that produced modern humans.

In addition, new findings in paleoarchaeology, genetics, anthropology, psychology, primatology, and neurosciences have radically reshaped our vision of human evolution, filling in details that we could not have anticipated even twenty years ago. As new remains are found, the prehistory of modern humans is turning out to be even more interesting than we thought, confounding our expectations and teaching us to see our bodies, societies, and characteristics in a new light.

Although the Department of Anthropology at Macquarie University focuses primarily on contemporary human diversity, Anth 151: 'Human Evolution and Diversity' provides an excellent foundation for pursuing further study in medical anthropology, development studies, comparative perspectives on sexuality, and such topics as diet, language change, and the influence of technology on social life.

Please understand, too, that this is a new unit. The benefits of this include hearing lectures that weren't written in 1978, reading recent articles, and getting up-to-date information, but the downside is that some adjustment is almost inevitable. The lecture descriptions in this outline are the best attempt that can be made at this time to anticipate what will be covered; there may be some changes.

UNIT AIMS

The course as a whole is designed to convey the excitement, theoretical innovation, and new discoveries emerging in the study of human evolution. A clearer understanding of evolutionary processes not only allows students to appreciate the role of evolution in shaping humans and other organisms, but also to better evaluate contemporary arguments that make use of evolutionary theory or research.

By the end of the unit, students should have a greater appreciation of the diversity of methods used to study human evolution, some of the most important debates within the field, and the distinctiveness of human beings among animals. The course provides an excellent foundation for further, more specialized study in anthropology at the 200-level, but it also provides a robust understanding of human evolution that might contribute to students' continued study of such fields as health, psychology, politics, Aboriginal studies, and a host of other specialties.

Although each week focuses roughly on a different time period in human evolution, the issues brought up in each will be extended to contemporary human life. For example, although the discussion of Technology in Week Eight focuses on the emergence of complex stone tools, especially the contrast between Neandertal material culture and the technology of comparable archaic *Homo sapiens*, we will also discussing how technological innovation affects the evolutionary development of humans up until the present.

By examining how we came to be as a species, our ancestors and nearest relatives, we come to a deeper understanding of human nature itself, including the variation that exists within our species—both biological and cultural. Evolutionary theory is one of the most powerful explanatory mechanisms for understanding all life, but it is also prone to being abused; the thorough background provided in this unit may lead students to be more sceptical around certain types of evolutionary arguments without repudiating evolutionary theory itself.

In addition, this unit on evolution and diversity provides a foundation for thinking about the relationship of culture to biology, of nature to nurture, and of psychology to social life. The questions posed by the origins of humanity are too big and difficult to solve with only half the evidence at our disposal, so we will become better practiced at understanding human holistically, one of the most important characteristics of anthropology.

Summary of goals

Concretely, the unit has the following topical goals:

1) Introduce students to certain key concepts and theories in the study of human evolution including the most important debates and new developments in the field.

2) Provide a clear sense of how paleoanthropologists conduct research and draw conclusions about extinct species and ways of life from material evidence.

3) Help them to understand, evaluate, and employ evolution-based explanations for contemporary features of human life, anatomy, and behaviour, including the limits on those explanations.

4) Improve students' ability to employ theoretical concepts, evidence, and analysis in general by specifically exercising these abilities on the materials covered in this unit.

5) Actively participate in group discussions and examinations of material related to human evolution (such as facsimile remains, site surveys, and material culture).

6) Analyze and express your judgement about significant debates in the study of human evolution.

Generic skills

Generic Skills are those you can acquire in the context of a specific discipline but can use outside that context, in other areas of academia, or even outside academic settings, such as in professional life. They should more accurately be described as skills you can generalise. This course will educate you in the kind of essay writing skills you will need in order to succeed in the Humanities (History, Philosophy etc.), in the Social Sciences (Sociology, Anthropology), and in newer disciplines such as Cultural Studies and Women's Studies. These disciplines require a certain way of setting out arguments, using evidence and gathering and representing evidence. Your essay, which will receive comments from your marker, is designed to help you in gaining these skills, including skills in appropriate forms of referencing, constructing an argument, and editing your own writing. Each tutor is also available for one hour each week, so discuss your writing and other issues with tutors.

Please refer to the guidelines supplied in this study guide for essay writing to help in this process of learning. Your tutors will also encourage you in learning the skills of verbal discussion and debate based on close reading and understanding of texts and wider issues. Finally, the skills of taking notes from lectures are important generic skills: they train you in honing your attention to picking up what is significant in a lecture for the purposes of understanding the course. Attending lectures is obviously a basic prerequisite for acquiring this skill, as is attentive listening and writing.

In tutorials, we will try to engage in hands-on exercises that will give students some familiarity with the different methods used to study human evolution and diversity, including looking at (facsimile) human remains and other paleoarchaeological evidence. These material provide in-class opportunities to practice problem solving skills and the sorts of creativity that original research requires.

Anthropology also offers other, non-academic generic skills: it exposes you to questions of cross-cultural difference, explores the relation between biology and culture, and trains you to reflect more critically on your own social and cultural make-up. Studying evolution and human diversity focuses specifically on how we differ and the origins of some of our most salient traits as a species. In this way, the unit should give you a valuable orientation to deal with people from a wide variety of cultural backgrounds.

UNIT INFORMATION

Lectures:

Lectures are held every Wednesday from 12:00-2:00 pm. There are two 'lectures,' but they are held back to back, typically with a short break in the middle to help students (and the lecturer) to remain alert and awake. Because the material does not always neatly divide perfectly in half, so one topic may extend slightly into the other hour of our lecture period.

iLectures and slides

Lectures will be made available through iLecture, and slides will be made posted following lectures on the unit's Blackboard page in advance of the lecture. Students are free to make use of these resources; certainly, the slides may help with reviewing key concepts for the midterm and final, and students may print them out before lectures to use for note-taking.

The unit is offered externally, and students are welcome to make use of online resources, including a trial of audio-visual recordings in iLecture, but the unit convenor strongly recommends attending lectures in person if possible. Lectures accompany the readings, but the lectures cover material that is *not available* in the readings. There is simply no substitute for the material in the lecture.

The lecturer expects students to be respectful and keep distractions to a minimum during lecture. Although we are happy to take questions, the convenor reserves the right to refer longer discussions to tutorials, office hours, or outside the lecture time slot as we have limited time in which to cover the required material. Please, also, turn off mobile phones and other communication devices during all university lectures. Since you are not required to be in the lecture room, if you are distracting other students, the convenor reserves the right to ask a student to leave until he or she is longer a distraction.

If there are any students with specific learning problems, they should contact Equity and Disability Support, contactable on equity@mq.edu.au or visit www.sss.mq.edu.au/equity/ for more information about their services and contacts.

REQUIRED AND RECOMMENDED TEXTS

The essential readings for this unit are in the package of readings, *Anth 151 — 2009*, which must be purchased from the Macquarie University campus bookstore. This will be referred to as 'the reader' throughout this outline. The reader is *essential* for the unit as it contains all readings required for the tutorials as well as several other readings upon which students will be examined at the midterm and final.

The reader of photocopied texts was assembled as a cost-effective way to provide shared readings, including both the tutorial readings and additional resources. The unit convenor reviewed a number of excellent textbooks (some of which provided chapters in the reader), but no text was available at less than around $80.

A number of good books have recently become available that are directly relevant to the topics we will discuss. These can be ordered online for a very reasonable price or bought in local bookstores, some even in used editions. Among these are the following:

- Gibbons, Ann. 2007. *The First Human: The Race to Discover Our Earliest Ancestors.* Anchor.
- Marks, Jonathan. 2003. *What It Means to Be 98% Chimpanzee: Apes, People and Their Genes.* University of California Press.
- Stringer, Chris. 2005. *The Complete World of Human Evolution.* Thames and Hudson.
- Wade, Nicholas. 2006. *Before the Dawn: Recovering the Lost History of Our Ancestors.* Penguin. (Penguin paperback, 2007)
- Zimmer, Carl. 2005. *Smithsonian Intimate Guide to Human Origins.* Smithsonian Books/HarperCollins.

None of these texts is required reading, but students particularly interested in the subjects we cover may find these works very helpful.

Additional readings for each week's lecture topics are provided at the end of the unit outline. These include many of the materials that the lecturer has used to produce the lectures; if you are curious where the supporting material has been published and where you might read more about something discussed in lecture, you are likely to find it in these lists. The lists have also been assembled with an eye towards what is available in the Macquarie University Library.

Midterm and exam questions will only be drawn from lecture materials and from readings in the unit reader; students are not expected to read the supplementary materials. Students are expected to have read all the materials in the unit reader, however, even those which are not specifically discussed in tutorials.

TUTORIALS

Tutorials begin in the second week of the semester. Everyone must be enrolled in and attend a tutorial; your tutor assigns your mark for the tutorial and bears primary responsibility for marking your essay. You should have already enrolled in a tutorial when you enrolled in the course. If you need to enrol in a tutorial or have to change times, do so at Macquarie University's online student portal. Please notify the course convenor Dr. Greg Downey by email to let him know which one you were in formerly, and which one you are in now (greg.downey@mq.edu.au).

Tutorial leader: This year, as of the date that this outline was sent to the printery, we are still finalizing tutorial leaders.

Tutorial times and locations (may be subject to change); please see the online listings for these tutorials as I believe we already need to add at least one meeting.

Tutorial Attendance: 10% of the marks are for tutorial participation, and essay extensions are dependent on your tutor's assessment of your satisfactory attendance (see Assessment policy below). So be sure to attend, and to sign the roll sheet at each session. If you cannot attend your regular tutorial, try to attend at another time. Note the day, time and room of your usual tutorial group on the roll if you are attending a tutorial other than the one for which you enrolled. If you are sick or having a crisis, your tutor will give you credit for missed attendance in most circumstances.

The purpose of tutorials in this course is to foster informed discussion. Therefore, you should read the assigned material before your tutorial. Tutorials refer to material covered in lectures, either consolidating a concept or extending it in a specific direction. Many of the key terms in tutorial readings may be defined and discussed in the lecture—so attendance of lectures is vital to following tutorial readings and discussion. If you find the material difficult or there are things you don't understand in the readings, bring your questions to discuss. Make a note of the important issues that the readings and lectures pose for you and raise them at your tutorial.

ASSESSMENT

Policy on extensions:

Out of fairness to other students, extensions will not be given on the basis of experiencing the pressure of workload in other courses. Extensions are for sickness (with a doctor's certificate or counsellor's note) or emergency. However, extensions will also take into account your satisfactory attendance of the course until that point: tutorial attendance will be checked with the tutor. Students will lose twenty percentage points if their essays are late up to one week; fifty percentage points up to two weeks. Submissions made more than two weeks late will be marked failing.

Assessment profile:

Final assessment for the unit is based on a midterm and final exam, a short essay, and tutorial attendance and participation (see below).

Tutorials	10%
Midterm exam	25%
Essay	30%
Final exam	35%

See below for dates and descriptions of each assessment task. Failure to complete any of the assessment tasks will result in a 0 mark for that part of the assessment.

Assessment dates

Tutorials: Weekly attendance beginning in the second week of the semester.

Midterm exam: Wednesday 7 October, 12-2:00 pm (during the normal lecture location and time slot).

Essay due date: 15 October

Final exam: Held during the examination period from 16th Nov- 30 Nov. Precise date will be posted by the university eight weeks before the exam in draft form, and in final form approximately four weeks before the examinations commence. http://www.timetables.mq.edu.au/exam. Please do not schedule any out of town engagements during this entire period, as per the university's overall policy. As soon as the convenor receives notice of the date, time, and location of the final exam, he will announce and post the information.

Anthropology assessment scale:

In accordance with University guidelines, Anthropology units use the following assessment scale for student's overall grades (all grades are a percentage):

HD = High Distinction = 85-100%
D = Distinction = 75-84%
P = Pass = 50-64%
PC = Pass Conceded= 45-49%

Cr = Credit = 65-74% F = Fail = 0-44%

Your essays will be given a numerical mark (0-100), a grade (e.g., HD, D, Cr), and comments from your marker.

If you think you have submitted work that has not been assessed, contact the tutor or convenor immediately with a copy of that work. For qualitative descriptions of the meaning of grades, see the 'Grades of Achievement' section in the *University Calendar*.

The Essay

One short essay (approximately 1500 words in length) will account for 30% of the unit assessment. Essay topics are available below. Topics are general guides; students are encouraged to refine them and make them more specific, as will be clear from the list of topics. In addition, if a student has a special interest in a topic not listed, that student is encouraged to propose the topic to the tutor or unit convenor. The only time that we will discourage a topic is if we think that it is unsuitable and will not provide an opportunity to produce a strong essay.

When submitting your essay, please pick up a cover form from and submit your essay to the **Faculty of Arts Student Centre, W6A Level 1, Foyer of Ground Floor**. The essay is due Wednesday 15 October during Week 9.

The essay must be submitted in the Student Centre, not given to your tutor or brought to the lecturers or the Anthropology Office. Remember to affix a Faculty of Arts cover sheet (available outside the Arts Student Centre or at http://www.arts.mq.edu.au/documents/Student_Assessment_Coversheet.pdf). The cover sheet must have your tutor's name on it and time of tutorial for marking and return. Also, for your protection in the event of a lost essay, YOU MUST KEEP A COPY (both electronic and hard copy) OF YOUR WORK! There is a tendency for late essays to get lost, so be warned.

Your tutor or the lecturer can grant an extension *only* on conditions outlined above under Assessment, and no later than 6 pm at the end of the week. Late essays without extensions (or, alternatively, a doctor's certificate or counsellor's letter) are penalised 20 percent if turned in the first week and 50 percent if turned in up to two weeks late. More than two weeks late, the essay will be marked as failing.

Please note that we cannot mark more than 100 essays instantly. If we spend only 20 minutes on each one (it often takes longer), 100 essays represents nearly 40 hours of continuous work, without interruption, and without fulfilling any other duties. In other 100-level units, students are only guaranteed that they will receive marked essays by the last tutorial. Our submission date is later than many, and we will strive very hard to return them more quickly than this maximum, but student's can rest assured that we will announce very clearly when we have finished marking all the essays.

For the six assessment criteria, see the last section of this outline, Writing Anthropology Essays, and the assessment rubric attached.

Midterm and final exams

Both the midterm and the final exam will be similar in format, although the final is slightly longer and more involved. Both exams are multiple choice and other closed-format questions (such as matching tasks).

Although the exams will require some original thought, exams are generally an evaluation device which focuses greatest attention on assuring that students have become sufficiently familiar with key concepts from the unit. Although the exams are not easy, they do not focus on trivia or facts simply for the sake of demonstrating superior memory; most questions will focus on key issues that are highlighted in the texts, lectures, and discussions. In other words, students will find it is most important to focus on the most important ideas, discoveries, concepts, and skills that they have learned.

Students will receive review guides prior to the exams, but these will not replace notes taken during lectures and tutorial discussions, nor will they replace reading the assignments or attending the lecture. It is the responsibility of the convenor and tutors to provide rigorous evaluation processes so that those students doing the best work might receive acknowledgement and recognition.

The exam will be held during the University's examination period after the semester. You must be available for any date scheduled by the University in this period, as only those absent for reasons beyond their control can qualify for a late exam. The precise date will be posted by the university eight weeks before the exam in draft form, and in final form approximately four weeks before the examinations commence. See http://www.timetables.mq.edu.au/exam. If illness or other unavoidable disruption prevents your attendance at the exam, you must submit the yellow Special Consideration and Professional Authority forms to the Student Centre (see Bachelor Degree Rule 8 in the Macquarie University Calendar for details). You will need a copy of the Professional Authority form before you see your doctor. (Forms available from the Student Centre.)

If illness or unavoidable disruption affects your performance in the exam, or any other part of your work for the unit, you should likewise see the Student Centre. Check out the sections on Unavoidable Disruption and Special Consideration in the Calendar. Remember, too, that the University's formal system must be followed should you decide to appeal against a final grade (see the Calendar section on Appeals by Students against Grades). Should you receive an Incomplete ('I') result, it is your responsibility to contact Dr. Greg Downey or the Anthropology Administrator Ms. Payel Ray (6th floor of C3A, 9850-8077), to determine the date by which your incomplete work must be submitted (see Rule 10(2) in the Bachelor Degree Rules).

STAFF

The Anthropology Department is located in a different building from the one you hand in your essays. It is on the 6th level in building C3A. There is a 100-level notice board in the foyer by the elevators. Tutorial lists for all 100-level Arts units are posted here, and occasional notices of interest to first year students are also posted. The course coordinator, Dr. Greg Downey has his office there (Room 624, Level 6), and so do the tutors.

Your tutors are your first port of call when you have any questions or other issues. If your tutor cannot answer your questions or fix your problems, the course convenor Dr. Greg Downey can be contacted (greg.downey@mq.edu.au).

Detailed Lecture and Tutorial Programme

The unit outline includes a short description of each lecture and tutorial followed by a listing of the readings for each week; these readings are included in the reader or available online. The end of the unit outline contains a much longer bibliography of additional resources on the topic for the week. Please do not be confused by the doubling listing.

Week One: Introduction to evolution

5 August 2009

1.1 Introduction to unit requirements

The first lecture will briefly explain why this unit has been created and what anthropology offers to the study of human origins, development, and diversity. Anthropology is the holistic social science of human diversity. In some traditions of the discipline (like the one the convenor trained within), the field includes four subdivisions: archaeological, biological, linguistic, and socio-cultural anthropology. Because of the inherent social and cultural complexity of human beings, we cannot understand human evolution without including more than just human biology; one of our primary modes of adaptation and advantages in natural selection is our ability to create, cooperate, and change ourselves to a degree that few other species can.

We will also cover unit requirements, procedures, resources, and related practical issues.

1.2 Basics of evolutionary biology

In order to understand evolutionary theory, we need to grasp some of the basics of human biology, and organismal biology more generally, especially how the anatomical traces of evolution can be seen in contemporary bodies. We will discuss how paleoanthropologists learn about life long before historical records were being left. Specifically, we will discuss three sources of information: the archaeological record, comparison with related species, and the study of modern biology, especially the traces of the past that our bodies carry around. In this lecture, we will specifically explore the biological traces of our evolution that we carry with us, including our 'inner fish' and the 'design flaws' in the human body, how it differs from a 'perfect' body, and what that might tell us about our origins.

Note: No tutorial meeting in the first week because students will not have done any reading.

Week Two: Natural selection and genetics

12 August

2.1 Darwin on natural selection

Some would argue that the Western world is still reeling from the impact of Charles Darwin's original work, that his concepts are still revolutionary 150 years after they were first announced. Darwin's work (and others') on natural selection laid the foundation for

modern evolutionary theory, even though Darwin did not initially like the term 'evolution' because he thought it implied progress. This lecture explores the basic dynamics of natural selection, including how it might produce diverse species. We will have to carefully distinguish the theory of natural selection from the popular understandings of both evolution and the 'survival of the fittest.' The lecture explores the context of Darwin's *On the Origin of Species*, including the perspectives he was arguing against, not just the way that his theories have come to be understand in the century and a half that followed. The greatest effect of *Origin*, and Darwin's theories, for our purposes, is that his framework undermined the assumption of human exceptionalism, the idea that humans were separated from other animals but an unbridgeable gulf. We will also discuss some archetypal examples of natural selection, such as Galápagos finches, artificial evolution, and examples of recent evolutionary changes in species.

2.2 Updating Darwin: neo-Darwinism and the genetics revolution

Although Darwinism is the core of modern evolutionary theory, the intervening century and a half since *On the Origin of Species* have required that his theory be expanded and updated, not only to include findings in genetics, but also the consideration of other forces in addition to natural selection and sexual selection that might produce species change, such as niche creation, phenotypic plasticity, genetic drift, and relatively rapid environmental change. In Darwin's time, he argued that offspring inherited traits from their parents, but he had no information about genetics to explain how this transfer took place, nor a good way to explain how variation might arise to generate new species. Contemporary evolutionary theory has expanded, and many theorists now call for an integration of evolutionary and developmental theory (some call it 'evo-devo') to draw together the study of change on both the individual and species time scale. Examples we will discuss include zebra's stripes, whether or not we have a gene for height or skin colour, if genetic disorders help us to understand how mutation might work, how selection works inside an ant hill, and why chimpanzees don't get AIDS even though they can carry a virus like HIV.

Required readings:

Boyd, Robert, and Joan B. Silk. 2006. 'Adaptation by Natural Selection.' In *How Humans Evolved. Fourth Edition.* Pp. 1-23. New York and London: W. W. Norton & Co.

Weiss, Kenneth M. 2008. 'All Roads Lead to… Everywhere?: Is the genetic basis of interesting traits so complex that it loses much of its traditional meaning?' *Evolutionary Anthropology* 17: 88-92.

Tutorial discussion: Is it all in our genes?
Organizational meeting to discuss expectations; review of key terms from readings and lecture. How might we update Darwin's theory of natural selection given what we now know about genes, non-selective processes, and other factors affecting evolution? Please note: There are many difficult concepts this week, so please bring questions from the readings or lectures to the tutorial meeting.

Week Three: Humans among primates

19 August

3.1 Primates: origin and distinctive niche

How did primates first arise millions of years ago and what distinctive traits did they have that allowed them to succeed in their niche? Although primates share many traits with other mammals, they also have their own distinct hallmarks, in spite of significant variation among the various types of primates. We explore the genetic evidence for relations among modern primates and what we might learn from comparisons among them as well as the fossil evidence for extinct species of primates that predate the division of the modern species we now know. Specifically, we will talk about fruit eating, the effects of our ancestors swinging from branches, and why 'you look like a monkey' is hardly an insult.

3.2 The perils of comparison: chimpanzees, for example…

Although we can learn a great deal about ourselves from comparison to other species, this method also poses some dangers. The field of evolutionary psychology offers some cautionary tales about jumping to conclusions about things like violence, sexuality, aggression, and social structure. For example, early comparisons of humans to chimpanzees were undermined both by incomplete observations of chimpanzees and by assumptions about which sorts of species we might resemble; recent, more comprehensive research has revised our understanding of chimpanzees, and comparisons to other primates like bonobos, baboons, and orang-utans, have widened our understanding of primate social life. In particular, we will examine the challenges of accounting for behaviour or psychology through evolution. We will discuss getting ahead in chimpanzee society, their social life, and patterns of cultural behaviour in primates, including monkey invention.

Required readings:

Fuentes, Agustín. 2007. 'Primate Behavioral Ecology.' In *Core Concepts in Biological Anthropology*. Pp. 122-167. Boston: McGraw Hill.

'A Guide to the Cultures of Chimpanzees.' From *Scientific American* 2001, Vol. 284.

Tutorial discussion: Our nearest relatives: skulls

What makes humans distinctive among primates? Are our differences from other species a matter of degree or of kind? During the tutorial, the group will discuss evidence of chimpanzee 'cultures' and its significance for thinking about what makes humans distinct, as well as compare casts of primate skulls.

Week Four: Early hominids and bipedalism

26 August

4.1 Bipedalism: why walk on two feet?

One of the most distinctive traits of human beings is our bipedal posture and fluid two-legged gait; although we share two-legged locomotion with other species, such as kangaroos, bears, chimpanzees, gibbons, even some lizards and insects when they run, we are uniquely adapted to walking and running on two feet. In this lecture, we will explore some of the changes in our skeleton that make bipedalism possible, the explanations suggested for human bipedalism and recent evidence that pushes back the

likely date at which hominins were walking on two feet, suggesting that our ancestors were still living in forest when they became more adept at walking on two feet. Recent arguments about human endurance running and hunting will also be explored, comparing humans with such adept runners as dogs and horses, and asking if some people are 'genetically predisposed' to be good endurance athletes.

4.2 The evidence of human evolution in paleoarchaeology

Bipedalism raises interesting questions about how paleoanthropologists could perceive past behaviour in the material remains left by our ancestors. The challenges of reconstructing skeletons from degraded remains will be examined especially in relation to the remains of Australopithecenes, such as 'Lucy.' In particular, we will explore the tendencies to 'lump' together diverse remains or to 'split' them into distinctive species and genus, and the immense challenges of reconstructing anatomy from fragments of ancient bones and other traces. The diversity of hominin remains suggests that the current human situation—being the lone hominid on the planet, and one of only four great ape species—is remarkable, unprecedented and relatively recent to arise. The change suggests that the current climate is hard times for hominids.

Required readings:

Haviland, William A., Dana Walrath, Harald E. L. Prins, and Bunny McBride. 2008. 'The First Bipeds.' In *Evolution and Prehistory: The Human Challenge. Eighth edition.* Pp. 124-147. Thomson-Wadsworth.

Laetoli footprint materials.

Tutorial discussion: Traces in the ash: the Laetoli footprints
During this tutorial we will explore the Laetoli footprints in detail, exploring what footprints can tell us about human anatomy and locomotion. The groups will do a range of in-class activities designed to highlight how the adaptation for bipedal locomotion affected the entire hominid skeleton.

Week Five: Genus *Homo*: brain and dietary change

2 September

5.1 Brains, human and others (Guest lecturer: Prof. Ken Cheung)

Guest speaker, Assoc. Prof. Ken Cheung, Centre for the Integrative Study of Animal Behaviour (Macquarie), a world-renowned researcher on navigation in a variety of animal species (including humans), will be talking about brains, what they're good for and how they get used. Prof. Cheung will draw on the example of simple brains, such as that in a bee, to help us understand why organisms have brains. Recent research on evolutionary brain development has suggested that selection affects different structures in distinctive fashion—not just enlarging every part of the brain equally; this 'mosaic' approach to the brain highlight what makes primate brains distinctive. In addition, he will explore some of the quirks of the human and other primate neural architecture, such as the existence of 'mirror neurons' that relate actions we see to actions we do. More abstract functions, such as language or planning, build upon these motor and perceptual abilities. This evolutionary perspective on the human brain helps us to move beyond the idea that the

brain is like 'a computer' to understand how our brains help us to get around in the world.

5.2 How diet affects the brain: evolution and development

Brains and diet, skull and jaw, have long been linked in the development of primates. Big brains are hungry, demanding more energy than other bodily tissue, so growing a big brain can be expensive in nutritional terms. In addition, the cerebral dome and the jaw are linked structurally and in terms of how the skull grows in primates. The growth of the brain, then, is also a story about the shrinking of the jaw and changes in the structure of teeth. In this lecture (and in the following tutorial), we will look at the importance of skulls in the archaeological record, helping us to understand how the modern human brain emerged in a series of stages, and the implications for human life, including how our ancestors ate. We will discuss steak tartare and other raw food, some of the pitfalls of having a really big head, and the evolutionary importance of fast bowling to the brain.

Required readings:

White, Daniel D. 2008. 'Evolution of the Brain: Neuroanatomy, Development, and Paleontology.' Pp. 1-20 and 26-40. Belmont, CA: Thomson Higher Education.

Leonard, William R. 2003. 'Food for Thought: Dietary Change Was a Driving Force in Human Evolution.' *Scientific American* (updated from December 2002): 62-71.

Shipman, Pat. 2002. 'A Worm's View of Human Evolution.' *American Scientist* 90(6): 508-510.

Tutorial discussion: Food for thought: the evolution of diet
This tutorial discussion will be split between examining the effects of evolutionary change on replica skulls and discussing the two readings on the change in hominid diet, especially the introduction of larger quantities of meat. Students are encouraged to consider the effects of modern diet upon human development, both in individuals' lives and in the trajectory of our species.

Week Six: Sex and reproduction

9 September

6.1 Human sexuality in evolutionary perspective

Like all species that reproduce sexually, humans come in male and female, and we need both sperm and egg in order to create a new human being (at least for the time being). Aside from this, however, what are the key differences between men and women? Theories of sexual selection suggest that the differing demands placed upon the two sexes by reproduction might lead to distinct reproductive strategies, even opposed interests between men and women. In this lecture, we examine the anatomical differences between men and women, including such traits as endocrine differences, penis and testicle size, enlarged breasts in women, menstruation, and other keys to understanding the evolutionary significance of sexual difference. We will use the 'Evolutionary Dating Game' and whether or not the Y chromosome might become extinct as specific ways of thinking about human sexuality.

6.2 Human reproduction: is anything natural?

Without reproduction, a species would quickly become extinct. Human reproduction, like other species', depends upon our species biology, but the extraordinary dependence of human infants makes them uniquely susceptible to environmental influences. The human reproductive environment is biologically conducive, we will argue, for generating cultural differences, traits that become so ingrained in the young human that they are, for all practical purposes, physiological in the end. In addition, social institutions such as 'the family' and 'marriage' affect human reproduction, influencing the way sexuality is expressed and the social supports for children in important ways. We will look at fertility, pregnancy, breast-feeding, mother-baby interaction, sleeping patterns, and the role of fathers (and sisters and grandmothers) in child-rearing. In addition, we will discuss the prevalence of homosexual and non-reproductive sexual activity in humans (and other animals) and whether or not this behaviour is consistent with evolutionary pressures or is 'unnatural.' The question—'Is it natural?'—permeates our lectures this day as, so often, evolutionary discussions about reproduction and sex are also debates about normative gender roles, correct parenting and sexual morality, carried out in another language.

Required readings:

Small, Meredith F. 1992. 'What's Love Got to Do With It?: Sex Among Our Closest Relatives Is a Rather Open Affair.' *Discover* (June): 46-51.

Small, Meredith F. 1997. 'Our Babies, Ourselves.' *Natural History Magazine* (October): 42-51 (reprinted in *Annual Editions: Anthropology 06/07*, pp. 100-106) together with accompanying sidebars by LeVine *et al.*).

Tutorial discussion: Mating strategies: the evolution dating game

What can we learn from observing the sexual behaviour of other primates? Is it helpful to compare human sexuality or is the comparison spurious, more likely to mislead us? Can we determine what is natural in human sexuality, reproduction, and child rearing? How might 'human nature' look different to people depending on the ways that gender roles, social institutions (such as marriage), and reproductive practices develop in different societies? For example, what are the most recent changes in 'human nature' in contemporary societies that might affect what we assume 'human nature' to be? This discussion will include a class reflection on how evolutionary pressures in sexual selection might affect contemporary behaviour.

Week Seven: The first technology

16 September

8.1 Lithic technology: Paleolithic innovations

Surrounded as we are by modern technology—computers, airplanes, mobile phones—it can be easy to underestimate the importance of sharpened stones, wood, bone, and other materials in the survival of our species. Stones may not have been the only primitive tools, but they are some of the best known, best preserved evidence we have of how our ancestors lived in addition to their intellectual abilities and manual dexterity. From the remains of tools, we can learn a lot about the people who used them. This lecture

explores the earliest stages in the development of stone tools, what species made them, how they were used, and what they can tell us about the people who used them, such as the food they ate, how they prepared it, how long they lived in a single place, and what sorts of skills they could develop. The lecture will touch on such topics as how to eat termites, Stone Age surgery, what makes a good stone tool, the importance of flakes, and when a small tool is better than a big one.

8.2 Fire, clothes and other human tricks: what could Neandertals do?

Neandertals were likely the most closely related species to modern *Homo sapiens*, perhaps even a subspecies (this is subject of debate). Neandertals possessed large brains, even larger than modern humans in some specimens, and they made sophisticated tools, hunted well, apparently engaged in symbolic thought, and even had rituals, judging from the way they buried their dead. So why did they become extinct when modern humans survived to the present? This lecture explores the development of Paleolithic material culture, including evidence for such things as clothing, fire, religion, ritual, ornamentation, art and other complex technology. What sort of adaptive abilities did both Neandertals and archaic *Homo sapiens* develop, and does this explain why the former became extinct? We will take a look at cave paintings, the importance of Venus, the first jewellery, life in an Ice Age, and the changing ways we buried the dead.

Required reading:

Ambrose, Stanley H. 2001. 'Paleolithic Technology and Human Evolution.' *Science* 291: 1748-1753.

Tutorial discussion: Stone tools
How hard would it be to make each type of toolkit discussed in the article by Ambrose? What are the crucial changes in perception, planning, and physical technique that allowed each successive type of tool to be made? This tutorial will also include a review of concepts for the midterm.

Week Eight: Midterm exam

7 October

The midterm exam will be held in the lecture period this day. There is no additional reading for the week. Tutorials will not meet in Week Seven.

Week Nine: Language origins and development

14 October

9.1 The ability to communicate: do other animals talk?

Virtually all animals communicate, but we would not typically call their forms of communication 'language.' In this lecture, we will discuss the distinctive characteristics of language, what it allows humans to do, and how linguistic capacity might have arisen in evolution. Do our brains have a special 'module' for language ability? If not, how

does learning to speak and understand language affect our brain development? Recent research with teaching sign language or token languages to chimpanzees and gorillas have helped us to understand the gulf between human abilities and those of other primates, including the central role of physical traits, such as the shape of the throat, the ability to control breathing, and rapid sound sequencing and perception. This lecture will explore the question of whether chimpanzees or parrots can 'speak,' the importance of 'baby talk,' and whether the first languages might have been sign languages.

9.2 Language change

Over times, languages change, but can we say they 'evolve'? Are there more and less sophisticated languages, languages that might be better or worse at expressing abstract thought or logic? How do new languages arise, and are languages like English, Chinese and Spanish making other languages become extinct? Are there any universal traits of grammar or all languages? This lecture examines the current linguistic diversity on the planet, examining evidence of how modern languages are related, how they change, and what the future of language diversity might be, especially with so many indigenous languages apparently in danger of disappearing. Special cases to consider will include the first speakers of Creoles, recently invented languages, whether or not relativity makes sense in Hopi, what gets lost when the last speaker of a language passes away, and, like, the development of SMS, like, as a language, like.

Required readings:

Cartmill, Matt. 1998. 'The Gift of Gab.' *Discover* (November 1998): 56-64.

Diamond, Jared M. 1991. 'Reinvention of Human Language.' *Natural History* 5/91: 22-28. Reprinted in *Through the Looking Glass: Readings in General Anthropology*. Second edition. 2000. Pp. 26-35.

Tutorial discussion: Reinventing language

What are the rules of modern speech in your own peer groups, that is, do you and your peers have distinctive ways of talking, distinctive slang, or speech patterns that you might not share with everyone else (such as your parents)? What influences the introduction of new words and expressions into your language? Do these introductions bear any resemblance to the creation of pidgins or Creoles? What can we learn about language origins from the rise of new languages, like sign languages that deaf children create?

Week Ten: The epic of humanity

21 October

10.1 The rise of anatomically modern humans

No other species of hominid has been as evolutionary 'successful' as modern *Homo sapiens*, spreading further and achieving higher population levels than any previous ape (although it remains to be seen how long we will last and whether or not we will be superseded, and by what). Where and when did people like us first appear, and what allowed them to survive when every other hominid species eventually disappeared? This lecture will examine the differences between our species and its predecessors, evidence of

the early social life of *Homo sapiens*, how humans foraged and cared for their children, and whether or not there was a 'Great Leap Forward' in human technology and development. This lecture includes a discussion of Mitochondrial Eve, would we notice a 'Cro-magnon man' on a bus, did *Homo sapiens* and Neandertals interbreed, and how our species compares with other colonizing species.

10.2 Getting out of Africa

For a young species, humans have spread far and wide, coming to cover virtually the entire globe. With the rise of anatomically modern humans in Africa, our species spread widely through Asia, Europe, Australia, to the Americas and throughout the Pacific. For a mammal, especially a large one, we have few rivals in our range, mobility, and versatility (well, maybe rats and dogs). How did we come to cover the world, what places did we settle first, and why did we ever leave Africa in the first place? We will discuss the best current accounts for the spread of humans, including how they managed to circumvent obstacles that prevented the spread of other species to different parts of the globe. We will ask a number of questions this week including, 'Okay, we left Africa—which way do we go now?', how 'The Great Race' might have looked in 70,000 BP, why Neolithic tailors were so important, and how anyone got to Hawai'i (and the Americas and Australia…) in the first place.

Required reading:

Jurmain, Robert, Lynn Kilgore, and Wenda Trevathan, with Russell L. Ciochon. 2008. The Origin and Dispersal of Modern Humans. In *Introduction to Physical Anthropology. Eleventh edition.* Pp. 352-377. Thomson-Wadsworth.

Tutorial discussion: Out of Africa
How has the spread of humanity affected our species and our understandings of ourselves? What were the most important adaptations and traits that allowed our species to expand further than any previous hominid and to enter into environments that repelled them? Are we 'the fittest' hominid, and how should we understand that term?

Week Eleven: Food domestication and urbanization

28 October

11.1 The Neolithic Revolution: growing our own food

In the last 10,000 years, humans innovated and began to produce their own food, transforming wild animals, trees, vegetables, and grasses into domesticated sources of nutrition, labour, even decoration and companionship. Humans selectively bred domesticated species until they scarcely resembled ancestor species that appeared in nature. In Africa, Asia, the Middle East, and the Americas, groups of humans independently discovered how to control food-producing plants and animals indigenous to those areas. What are the long-term effects of domesticated food and animals on humans? The lecture will explore the almost miraculous potato, the first gardeners, the importance of dogs' sense of smell, Neolithic horsepower, whether the Amazon has been shaped by humans, and how our ancestors turned grass into grain.

11.2 The social ape and the first cities

The largest troops of apes, other than humans, include at most around 150 members. As groups grow larger than this, invariably dividing because of internal tensions or their weight on the environment. Sometime after the emergence of modern humans, our species began to create social groups far larger than anything seen before, with enormous organizational demands, division of labour, and a wholesale transformation of the lived environment to make it support increasing population density. Domesticating food sources not only shaped the food species; it transformed our species, allowing humans to multiply far beyond what naturally-occurring food sources could support. This lecture asks where cities first arose, what they would have looked like, what forms social organization first took, and the effects of urban life, including the creation of hierarchy, written language, and sedentary life. We will specifically discuss the walls under Jericho, the role of flood management in the rise of Western 'civilization,' what it was like to live outside the cities in the Andes, how many Egyptians does it take to build a pyramid, and whether or not taxes really are inevitable.

Required readings:

Olson, Steve. 2002. 'Agriculture, Civilization, and the Emergence of Ethnicity.' From *Mapping Human History: Unravelling the Mystery of Adam and Eve.* Pp. 90-105.

Mann, Charles. 2002. '1491.' *The Atlantic Monthly* (March): 1-13.

Tutorial discussion: Our modern ecological niche

Is human inequality an inevitable by-product of living in larger and larger groups? Is ethnicity or race an inevitable result of living alongside alien groups of people? Some would argue that traits like hierarchy and division are 'human nature.' Are they, in fact, the products of the ways we live socially? If so, what are the implications for issues like social discord and justice?

Week Twelve: Human variation: genes, races and cultures

4 November

12.1 Modern human variation: are we all that different?

Anthropologists, like many other scientists, have struggled for centuries with the obvious differences among human beings. Just how different are human beings from each other? Are all humans of a single species or are the 'races' that some societies believe in different in significant ways, ways that might suggest our species has important biological subdivisions? This lecture explores the evidence for human races and the patterns of human diversity, including new evidence from research on the human genome. The cases we will cover will include Columbus meeting his first Indians, racing and difference at the Olympics (and in footy), racial medicine, and Prof. Andrew Fraser's (Macquarie Law) case for a return to 'whites only' immigration in Australia.

12.2 Traces of human adaptation

Some theorists, arguing for a variety of different theories, have suggested that human variation, like variation in any species, creates a situation of 'survival of the fittest' among groups of humans. Although frequently labelled 'Social Darwinism,' these sorts of

arguments come in a variety of different forms, some of them arguing for competititon between different geographical and genetic 'races,' in other cases within each society, among families for status and resources (and thus creating natural 'classes'). Are such processes consistent with evolutionary theory or with the data we have about human variation?

In fact, some human physiological and genetic variation follows patterns that suggest the variety is linked to adaptation; in this lecture, we will look at various forms of variation, such as skin colour, that appear to offer advantages in different ecological niches. Why are people coloured differently, and how deep do the differences go? What other forms of adaptation lie hidden in the body, such as resistance to endemic diseases, adaptation to diet or alcohol, variations in size, psychological traits, or even intelligence. We will specifically examine the examples of sickle-cell anaemia and malaria resistance, lactose tolerance, the 'tallest (and shortest) people on Earth,' why any humans turned white, IQ scores across cultures, and whether or not globalization led to the 'survival of the sickest.'

Required readings:

Kottak, Conrad Phillip. 2006. 'Human Variation and Adaptation.' In *Physical Anthropology and Archaeology. Second edition.* Pp. 82-96. Boston: McGraw Hill.

George W. Gill and Jonathan Marks. 1998 and 1994. 'Issue 1: Is Race a Useful Concept for Anthropologists?' In *Taking Sides: Clashing Views on Controversial Issues in Anthropology. Third edition.* Kirk M. Endicott and Robert L. Welsch, eds. Pp. 2-15. Dubuque, Iowa: McGraw-Hill/Dushkin.

Tutorial discussion: Is race a useful concept?
Having heard all the evidence about the dangers and inaccuracies of thinking with 'race,' what sorts of policies might we advocate for labelling people's appearance? Under what circumstances, and in what way, does it make sense to talk about 'race'? Which evidence is most persuasive in support of the position that humans are inherently very different? Which evidence is most persuasive in convincing you that humans are more alike than different?

Week Thirteen: Is evolution over?

11 November

13.1 Do culture and technology replace selection?: genetic evidence

Many people believe that humans are finished evolving. For a while, for example, some anthropologists argued that the advent of language, culture and technology meant that humans had escaped the driving demands of natural selection; instead of adapting to their environment through physiological change, these theorists argued, humans adapted through culture. They even called it 'extra-somatic adaptation': that is, 'non-bodily' adaptation. This lecture explores whether or not we are still evolving, or whether we have stopped evolving because our technology now does our evolving for us. We will discuss the 'Baldwin effect,' the way in which learning allows acquired skills to be passed on (a kind of Lamarckian, non-Darwinian evolution), various theories about how to

explain the relation of technology to evolution, and the genetic evidence of whether or not humans are undergoing evolutionary change. This lecture specifically explores the case of HIV and other diseases as a potential selective pressure, the genetic effects of global integration, and the 'evolution' of computers.

13.2 Future humans

What will humans look like? We will develop bigger brains, lose our body hair, gain air pollution filters in our throats, lose all excess muscle as we play more videogames and stop walking, doing everything from a computer console in our homes? In this shortened lecture, we will review key principles from the semester by asking how they can help us to hypothesize about the future of our species. What have we learned about the rise of humans that may help us to predict their future?

Required readings:

Wade, Nicholas. 2006. Still Evolving, Human Genes Tell New Story. *The New York Times* (March 7).

'Darwin's Children.' *The Economist* (13 Dec. 2007).

Tutorial discussion: Current selective pressures

The tutorial sections will be split, with the first half to discuss the future of human evolution—what are the most significant pressures acting on human development right now? To ask more specifically, what forces might decrease individuals' ability to successfully survive to reproduce or pass on their genes to a future generation? The tutorial will also review key concepts for the final exam.

SUPPLEMENTARY MATERIALS

The material available on human evolution and diversity is vast and constantly growing. The Macquarie University Library has extensive holdings, including periodicals, books, and videos, on a number of the subjects that we discuss during the semester. Although this outline cannot possibly provide you with a complete listing, the following are additional resources selected because for their quality, availability and variety. Certain well known sources are not included if they are too widely criticized or inadequate, no matter how popular, as this bibliography seeks to provide students with a high quality list of resources for additional reading.

General Resources in Macquarie University Library

Eckhardt, Robert B. 2000. *Human Paleobiology.* Cambridge: Cambridge University Press.

Johanson, Donald, and Blake Edgar. 2001. *From Lucy to Language.* London: Cassell. (Also a 2006 edition, revised and expanded.)

Lewin, Roger. 2005. *Human Evolution: An Illustrated Introduction.* Fifth edition. Malden, MA: Blackwell.

Salkind, Neil J., ed. 2006. *Encyclopedia of Human Development.* Thousand Oaks, CA: Sage Publications. (electronic resource)

Tattersall, Ian. 1995. *The Fossil Trail: How We Know What We Think We Know about Human Evolution.* New York: Oxford University Press.

Week Two: Natural selection and genetics

Avise, John C. 2006. *Evolutionary Pathways in Nature: A Phylogenetic Approach.* Cambridge: Cambridge University Press.

Boyd, Robert, and Peter J. Richerson. 1985. *Culture and the Evolutionary Process.* Chicago: University of Chicago Press.

Darwin, Charles. 1868. *On the Origin of Species by Means of Natural Selection; or, The Preservation of Favoured Races in the Struggle for Life.* New York: Appleton. [Note: There are multiple editions.]

_____. 1901. *Descent of Man, and Selection in Relation to Sex.* London: Murray.

Eldredge, Niles, and Ian Tattersall. 1982. *The Myths of Human Evolution.* New York: Columbia University Press.

Gould, Stephen Jay. 2002. *The Structure of Evolutionary Theory.* Cambridge, MA: Belknap Press/Harvard University Press..

Jablonka, Eva, and Marion J. Lamb. 2005. *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life.* Cambridge, MA.: MIT Press.

Kirschner, Marc W., and John C. Gerhart. 2005. *The Plausibility of Life: Resolving Darwin's Dilemma.* New Haven, CT: Yale University Press.

McKinnon, Susan, and Sydel Silverman. 2005. *Complexities: Beyond Nature and Nurture.* Chicago: University of Chicago Press.

Mills, Cynthia. 2004. *The Theory of Evolution: What It Is, Where It Came From, and Why It Works.* Hoboken, NJ: J. Wiley.

Morris, Richard. 2001. *The Evolutionists: The Struggle for Darwin's Soul.* New York: W. H. Freeman.

Odling-Smee, F. John, Kevin N. Laland, and Marcus W. Feldman. 2003. *Niche Construction: The Neglected Process in Evolution.* Princeton: Princeton University Press.

Riddley, Matt. 2003. *Nature via Nurture: Genes, Experience, and What Makes Us Human.* New York: HarperCollins.

Ridley, Mark, ed. 2004. *Evolution.* Oxford: Oxford University Press.

Templeton, Alan R. 2006. *Population Genetics and Microevolutionary Theory.* Hoboken, NJ: Wiley-Liss, John Wiley and Sons.

West-Eberhard, Mary Jane. 2003. *Developmental Plasticity and Evolution.* New York: Oxford University Press.

Week Three: Humans among primates

Anapol, Fred, Rebecca Z. German, and Nina G. Jablonski, eds. 2004. *Shaping Primate Evolution.* Cambridge: Cambridge University Press.

Bakewell, Margaret A., Peng Shi and Jianzhi Zhang. 2007. More genes underwent positive selection in chimpanzee evolution than in human evolution. *Proceedings of the National Academy of Sciences* (USA) 104(18):7489-7494.

Buss, David M., ed. 2005. *Handbook of Evolutionary Psychology*. Hoboken, NJ: John Wiley & Sons.

Cheney, Dorothy L., and Robert M. Seyfarth. 1990. *How Monkeys See the World: Inside the Mind of Another Species.* Chicago: University of Chicago Press.

_____. 2007. *Baboon Metaphysics: The Evolution of a Social Mind.* Chicago: University of Chicago Press.

Corbey, Raymond. 2005. *The Metaphysics of Apes: Negotiating the Animal-Human Boundary.* Cambridge: Cambridge University Press.

deWaal, Frans B. M., ed. 2002. *Tree of Origin: What Primate Behavior Can Tell Us about Human Social Evolution.* Cambridge, MA: Harvard University Press.

Kimbel, William H., and Lawrence B. Martin, eds. 1993. *Species, Species Concepts, and Primate Evolution.* New York: Plenum Press.

Laland, Kevin N., and Gillian R. Brown. 2002. *Sense and Nonsense: Evolutionary Perspectives on Human Behavior.* Oxford: Oxford University Press.

Perry, Susan E. 2006. What Cultural Primatology can Tell Anthropologists about the Evolution of Culture. *Annual Review of Anthropology* 35: 10.1-10.20.

Varki, Ajit, and Tasha K. Altheide. 2005. Comparing the human and chimpanzee genomes: Searching for needles in a haystack. *Genome Research* 15(12):1746-1758.

Uddin, Monica, Morris Goodman, Offer Erez, *et al.* 2008. Distinct genomic signatures of adaptation in pre- and postnatal environments during human evolution. *Proceedings of the National Academy of Sciences* (USA) 105(9):3215-3220.

Whiten, Andrew W., and Richard W. Byrne, eds. 1997. *Machiavellian Intelligence II: Extensions and Evaluations.* Cambridge and New York: Cambridge University Press.

Week Four: Early hominids and bipedalism

Cameron, David W. 2004. *Hominid: Adaptations and Extinctions.* Sydney: UNSW Press.

Isbell, Lynne A., and Truman P. Young. 1996. The evolution of bipedalism in hominids and reduced group size in chimpanzees: alternative responses to decreasing resource availability. *Journal of Human Evolution* 30(5):389-397

Kingdon, Jonathan. 2003. *Lowly Origin: Where, When, and Why Our Ancestors First Stood Up.* Princeton, NJ: Princeton University Press.

Palmer, Douglas. 2006. *Seven Million Years: The Story of Human Evolution.* London: Phoenix.

Pickering, Travis Rayne, and Henry T. Bunn. 2007. The Endurance Running Hypothesis and Hunting and Scavenging in Savanna-Woodlands. *Journal of Human Evolution* 53(4):434-438.

Raichlen, David A., Herman Pontzer, and Michael D. Sockol. 2007. The Laetoli footprints and early hominin locomotor kinematics. *Journal of Human Evolution* 54: 112-117.

Rosenberg, Karen, and Wenda Trevathan. 1995. Bipedalism and human birth: The obstetrical dilemma revisited. *Evolutionary Anthropology* 4(5):161-168.

Sawyer, G. J., Viktor Deak, Esteban Sarmiento, and Richard Milner. 2007. *The Last Human: A Guide to Twenty-Two Species of Extinct Humans.* New Haven, CT: Yale University Press.

Tattersall, Ian. 1998. *Becoming Human: Evolution and Human Uniqueness.* New York: Harcourt Brace.

Watson, J.C., R.C. Payne, A.T. Chamberlain, *et al.* 2008. The energetic costs of load-carrying and the evolution of bipedalism. *Journal of Human Evolution* 54(5):675-683.

Week Five: Genus *Homo*: brain and dietary change

Bradshaw, John L. 1997. *Human Evolution: A Neuropsychological Perspective.* Hove: Psychology Press.

Calvin, William H. 2004. *A Brief History of the Mind: From Apes to Intellect and Beyond.* New York: Oxford University Press.

Donald, Merlin. 1991. *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition.* Cambridge, MA.: Harvard University.

Dunbar, R. I. M., and Susanne Shultz. 2007. Evolution in the Social Brain. *Science* 317:1344-1347.

Geary, David C. 2005. *The Origin of Mind: Evolution of Brain, Cognition, and General Intelligence.* Washington, DC: American Psychological Association.

Herrmann, Esther, Josep Call, María Victoria Hernández-Lloreda et al. 2007. Humans Have Evolved Specialized Skills of Social Cognition: The Cultural Intelligence Hypothesis. *Science* 317:1360-1366.

Rilling, James K. 2006. Human and NonHuman Primate Brains: Are They Allometrically Scaled Versions of the Same Design? *Evolutionary Anthropology* 15(2):65-77.

Russon, Anne E., and David R. Begun, eds. 2004. *The Evolution of Thought: Evolutionary Origins of Great Ape Intelligence.* Cambridge: Cambridge University.

Somel M, Creely H, Franz H, Mueller U, Lachmann M, et al. 2008. Human and Chimpanzee Gene Expression Differences Replicated in Mice Fed Different Diets. *PLoS ONE* 3(1): e1504. doi:10.1371/journal.pone.0001504

Tomasello, Michael. 1999. *The Cultural Origins of Human Cognition.* Cambridge, MA: Harvard University Press.

Wynn, Thomas, and Frederick L. Coolidge. 2004. The expert Neandertal mind. *Journal of Human Evolution* 46:467-487.

Week Six: Sex and reproduction

Bruce Bagemihl. 1999. *Biological Exuberance: Animal Homosexuality and Natural Diversity,* New York: St. Martin's Press.

Bogin, Barry, and B. Holly Smith. 1996. Evolution of the Human Life Cycle. *American Journal of Human Biology* 8(6): 703-716.

Fisher, Helen E. 2004. *Why We Love: The Nature and Chemistry of Romantic Love.* New York: Holt.

Jolly, Alison. 1999. *Lucy's Legacy: Sex and Intelligence in Human Evolution.* Cambridge, MA: Harvard University Press.

Leavitt, Gregory C. 2005. *Incest and Inbreeding Avoidance: A Critique of Darwinian Social Science.* Lewiston, NY: Edwin Mellen.

LeCroy, Dori, and Peter Moller, eds. 2000. *Evolutionary Perspectives on Human Reproductive Behavior.* New York: New York Academy of Sciences.

Martin, Robert D. 2007. The Evolution of Human Reproduction: A Primatological Perspective. *Yearbook of Physical Anthropology* 50:59-84.

Miller, Geoffrey. 2001. *The Mating Mind: How Sexual Choice Shaped the Evolution of Human Nature.* London: Vintage.

Ridley, Matt. 2003. *The Red Queen: Sex and the Evolution of Human Nature.* Harper Perennial.

Smith, B. Holly, and Robert L. Tompkins. Toward a Life History of the Hominidae. *Annual Review of Anthropology* (1995), 257-79.

Sykes, Bryan. 2003. *Adam's Curse: A Future Without Men.* London: Bantam.

Week Seven: The first technology

Andrefsky, William, Jr. 2005. *Lithics: Macroscopic Approaches to Analysis.* Second edition. Cambridge: Cambridge University Press.

Berger, Thomas D., and Erik Trinkaus. 1995. Patterns of Trauma among the Neandertals. *Journal of Archaeological Science* 22: 841-852.

Clarkson, Christopher, and Lara Lomb. 2005. *Lithics 'Down Under': Australian Perspectives on Lithic Reduction, Use, and Classification.* Oxford: Archaeopress.

Davidson, Iain, and William C. McGrew. 2005. Stone Tools and the Uniqueness of Human Culture. *Journal of the Royal Anthropological Institute* 11:793-817.

Elston, Robert G., and Steven Kuhn, eds. 2002. *Thinking Small: Global Perspectives on Microlithization. Archeological Papers of the American Anthropological Association* 12(1).

Foley, Robert, and Marta Mirazón Lahr. 2003. On Stony Ground: Lithic Technology, Human Evolution, and the Emergence of Culture. *Evolutionary Anthropology* 12(3):109-122.

Gibson, Kathleen R., and Tim Ingold, eds. 1993. *Tools, Language and Cognition in Human Evolution.* Cambridge: Cambridge University Press.

Henshilwood, Christopher S., Francesco D'errico, Curtis W. Marean, *et al.* 2001. An early bone tool industry from the Middle Stone Age at Blombos Cave, South Africa: Implications for the origins of modern human behaviour, symbolism and language. *Journal of Human Evolution* 41(6):631-678.

Marean, C.W., M. Bar-Matthews, J. Bernatchez, J. *et al.* 2007. Early human use of marine resources and pigment in South Africa during the Middle Pleistocene. *Nature* 449 (7164):905-908.

Panger, Melissa A., Alison S. Brooks, Brian G. Richmond, and Bernard Wood. 2002. Older Than the Olduwan?: Rethinking the Emergence of Hominin Tool Use. *Evolutionary Anthropology* 11(6):235-245.

Plummer, Thomas. 2004. Flaked Stones and Old Bones: Biological and Cultural Evolution at the Dawn of Technology. *American Journal of Physical Anthropology* 125(S39):118-164.

Week Nine: Language origins and development

Burling, Robbins. 2005. *Talking Ape: How Language Evolved.* Oxford: Oxford University Press.

Christiansen, Morten H., and Simon Kirby, eds. 2003. *Language Evolution.* Oxford: Oxford University Press.

Corballis, Michael C. 2002. *From Hand to Mouth: The Origins of Language.* Princeton: Princeton University Press.

Deacon, Terrence W. 1997. *The Symbolic Species: The Co-Evolution of Language and the Brain.* New York: Norton and Company.

Givoín, T., and Bertram F. Malle, eds. 2002. *The Evolution of Language from Pre-Language.* Amsterdam and Philadelphia: J. Benjamins.

Hauser, Marc D., Noam Chomsky, and W. Tecumseh Fitch. 2002. The Faculty of Language: What Is It, Who Has It, and How Did It Evolve? *Science* 298:1569-1579.

Hurford, James R. 2007. *The Origins of Meaning.* Oxford: Oxford University Press.

Jackendoff, Ray. 1999. Possible stages in the evolution of the language capacity. *Trends in Cognitive Sciences* 3(7):272-279.

Kenneally, Christine. 2007. *The First Word: The Search for the Origins of Language.* Viking.

Knight, Chris, Michael Studdert-Kennedy, and James R. Hurford, eds. 2000. *The Evolutionary Emergence of Language: Social Function and the Origins of Linguistic Form.* Cambridge: Cambridge University Press.

Kojima, Shozo. 2003. *A Search for the Origins of Human Speech: Auditory and Vocal Functions of the Chimpanzee.* Kyoto: Kyoto University and Trans Pacific.

Loritz, Donald. 1999. *How the Brain Evolved Language.* New York: Oxford University Press.

MacLarnon, A., and G. Hewitt. 2004. Increased breathing control: Another factor in the evolution of human language. *Evolutionary Anthropology* 13(5):282-297.

Martín-Loeches, Manuel. 2006. On the uniqueness of humankind: Is language working memory the final piece that made us human? *Journal of Human Evolution* 50(2):226-229.

Ostler, Nicholas. 2005. *Empires of the Word: A Language History of the World.* New York: HarperCollins.

Week Ten: The epic of humanity

Arnold, Jeanne E. 1995. Transportation Innovation and Social Complexity among Maritime Hunter-Gatherer Societies. *American Anthropologist* 97(4):733-747.

Boyd, Robert, and Peter J. Richerson. 2005. *The Origin and Evolution of Cultures.* Oxford and New York: Oxford University Press.

Cavalli-Sforza, Luigi Luca. 2000. *Genes, Peoples and Languages.* Mark Seilelstad, trans. London: Allen Lane.

Crow, Tim J., ed. 2002. *The Speciation of Modern* Homo sapiens. Oxford: Oxford University.

Dillehay, Tom D. 2000. *The Settlement of the Americas: A New Prehistory.* New York: Basic Books.

Erlandson, J. M. 2001. The Archaeology of Aquatic Adaptations: Paradigms for a New Millennium. *Journal of Archaeological Research* 9(4):287-350.

Irwin, Geoffrey. 1992. *Prehistoric Exploration and Colonisation of the Pacific.* Cambridge: Cambridge University Press.

Hiscock, Peter. 2008. *Archaeology of Ancient Australia.* London: Routledge.

Klein, Richard G., and Blake Edgar. 2002. *The Dawn of Human Culture.* New York: Wiley.

Lewis-Willliams, J. David. 2002. *The Mind in the Cave: Consciousness and the Origins of Art.* London: Thames and Hudson.

McBrearty, Sally, and Alison S. Brooks. 2000. The revolution that wasn't: a new interpretation of the origin of modern human behavior. *Journal of Human Evolution* (2000) 39, 453–563.

Mithen, Steven J. 2003. *After the Ice: A Global Human History, 20,000-5000 BC.* London: Weidenfeld & Nicolson.

Richerson, Peter J., and Robert Boyd. 2005. *Not By Genes Alone: How Culture Transformed Human Evolution.* Chicago: University of Chicago Press.

Wells, Jonathan C. K., and Jay T. Stock. 2007. The Biology of the Colonizing Ape. *Yearbook of Physical Anthropology* 50:191-222.

Week Eleven: Food domestication and urbanization

Alcock, Joan B. 2006. *Food in the Ancient World.* Westport, CT: Greenwood.

Allen, Robert C. 1997. Agriculture and the Origins of the State in Ancient Egypt. *Explorations in Economic History* 34(2): 135–154.

Armelagos, George J. and Kristin N. Harper. 2005. Genomics at the Origin of Agriculture, Part One. *Evolutionary Anthropology* 14:68-77.

Bellwood, Peter S. 2005. *First Farmers: The Origins of Agricultural Societies.* Malden, MA, and Oxford: Blackwell.

Boyden, Stephen. 2004. *The Biology of Civilisation: Understanding Human Culture as a Force in Nature.* Sydney: UNSW Press.

Clutton-Brock, Juliet. 1999. *A Natural History of Domesticated Mammals.* Cambridge: Cambridge University Press.

Curtis, Robert I. 2000. *Ancient Food Technology.* Leidon and Boston: Brill.

Fernández-Armesto, Felipe. 2001. *Civilizations: Culture, Ambition, and the Transformation of Nature.* New York: Free Press.

Kelly, Robert L. 1995. *The Foraging Spectrum: Diversity in Hunter-Gatherer Lifeways.* Washington: Smithsonian Institute.

Kiple, Kenneth F. 2007. *A Movable Feast: Ten Millennia of Food Globalization.* New York and Cambridge: Cambridge University Press.

Marlowe, Frank W. 2005. Hunter-Gatherers and Human Evolution. *Evolutionary Anthropology* 14(2):54-67.

Mason, Ian L., ed. 1984. *Evolution of Domesticated Animals.* London: Longman.

Smith, Bruce D. 1998. *The Emergence of Agriculture.* New York: Scientific American Library.

_____. 2007. Niche Construction and the Behavioral Context of Plant and Animal Domestication. *Evolutionary Anthropology* 16:188-199.

Stanford, Craig B. 1999. *The Hunting Apes: Meat Eating and the Origins of Human Behavior.* Princeton: Princeton University Press.

Zeder, Melinda A. 2006. Central Questions in the Domestication of Plants and Animals. *Evolutionary Anthropology* 15:105-117.

Zeder, Melinda A., Daniel G. Bradley, Eve Emshwiller, and Bruce D. Smith. 2006. *Documenting Domestication: New Genetic and Archaeological Paradigms.* Berkeley: University of California Press.

Week Twelve: Human variation: genes, races and cultures

Balaresque, Patricia L., Stéphane J. Ballereau and Mark A. Jobling. 2007. Challenges in human genetic diversity: demographic history and adaptation. *Human Molecular Genetics* 16(2):134-139.

Cavalli-Sforza, Luigi Luca. 1995. *The Great Human Diasporas: The History of Diversity and Evolution.* Reading, MA: Perseus Books.

Cavalli-Sforza, Luigi Luca, Paolo Menozzi, and Alberto Piazza. 1996. *The History and Geography of Human Genes.* Princeton: Princeton University Press.

Feinman, Gary M., and Linda Manzanilla, eds. 2000. *Cultural Evolution: Contemporary Viewpoints.* New York: Kluwer Academic.

Mukhopadhyay, Carol C., Rosemary Henze, Yolanda T. Moses. 2007. *How Real Is Race?: A Sourcebook on Human Race, Culture and Biology.* Lanham, MD: Rowman & Littlefield.

Olson, Steve. 2002. *Mapping Human History: Discovering the Past Through Our Genes.* Boston: Houghton Mifflin.

Sykes, Bryan. 2001. *The Seven Daughters of Eve.* London: Bantam.

Wells, Spencer. 2002. *The Journey of Man: A Genetic Odyssey.* Princeton, NJ: Princeton University Press.

_____. 2007. *Deep Ancestry: Inside the Genographic Project.* National Geographic.

Week Thirteen: Is evolution over?

Baldi, Pierre. 2001. *The Shattered Self: The End of Natural Evolution.* Cambride, MA: MIT Press.

Cochrane, 2007. *Proceedings of the National Academy of Sciences* (USA)

Hawks, John, Eric T. Wang, Gregory M. Cochran et al. 2007. Recent acceleration of human adaptive evolution. *Proceedings of the National Academy of Sciences* (USA) 104(52): 20753-20758.

Mekel-Bobrov, Nitzan, Sandra L. Gilbert, Patrick D. Evans, *et al.* 2005. Ongoing Adaptive Evolution of ASPM, a Brain Size Determinant in *Homo sapiens*. *Science* 309 (5741):1720-1722.

Palumbi, Stephen R. 2001. *The Evolution Explosion: How Humans Cause Rapid Evolutionary Change.* New York: Norton.

Smith, Alison J. 2007. Century-scale Holocene processes as a source of natural selection pressure in human evolution: Holocene climate and the Human Genome Project. *The Holocene* 17(5):689-695.

Smith, E. O. 2002. *When Culture and Biology Collide: Why We Are Stressed, Depressed and Self-Obsessed.* New Brunswick, NJ: Rutgers University Press.

WRITING ANTHROPOLOGY ESSAYS

Writing an anthropology essay can be a challenge, especially for those students who have little experience of the social sciences in their secondary education. Students are encouraged to think of their essay as an attempt to persuade a rational reader to agree with the essay's argument. The same things that would persuade you—evidence, clear logical statements, a reasonable tone (rather than an overly aggressive one)—will likely make your essay effective. Demonstrating a fuller knowledge of a topic, even if that means acknowledging facts that don't support your case, can better establish your credibility as an author than simply ignoring anything that doesn't support your position.

No one expects students in this unit to conduct original research on human evolution. Rather, your essay is an exercise in thinking, analysing, examining and criticising arguments, and, I hope, developing arguments of your own. You will read different perspectives, become more familiar with the relevant data, evaluate which arguments you find most compelling, and in turn try to convince a reader. Your essay should contain both specific facts (evidence) and over-arching arguments that both help you to decide which information is most crucial and depend upon your presentation of evidence.

Although there seems to be no web site as yet devoted to writing anthropology essays, the University of Toronto maintains an excellent site on writing skills, although it focuses on philosophy students in particular. Studying the material on these sites is probably the best way to initially approach writing anthropology:

University of Toronto Advice on Academic Writing, overview and links:
http://ut12.1ibrary.utoronto.ca/www/writing/advise.html

Uof T General Advice on Academic Essay-Writing:
http://ut12.1ibrary.utoronto.ca/www/writing/essay.html

Uof T, Understanding Essay Topics: A Checklist
http://utl2.library.utoronto.ca/www/writing/top ics.html

UofT, Critical Reading Towards Critical Writing:
http://ut12.1ibrary.utoronto.ca/www/writing/critrdg.html

UofT, Taking Notes from Research Reading:
http:/ / utl2.library.utoronto.ca/www/writing/not es.html

UofT, Using Thesis Statements:
http: //ut12.library.utoronto.ca/www/writing/thesis.html

UofT, Guide for Writing Critical Summaries:
http://www.chass.utoronto.ca:8080/philosophy/phlwrite/sousa.html

UofT, The Book Review or Article Critique: General Guidelines:
http://ut12.1ibrary.utoronto.ca/www/writing/bkrev.html

UofT, Writing a Philosophical Essay:
http://www.chass.utoronto.ca/philosophy/phlwrite/sousa.html

Anthropological arguments:

As in other social science fields, students in anthropology are expected to read critically and not simply accept as 'Truth' what you read. You will soon discover that much of anthropology, and some of the key debates in evolutionary theory, are not disputes about facts; rather, the arguments are about how to interpret facts and which accounts of cause and effect are most plausible given the evidence at hand. Rather than detective work, evolutionary theory and anthropology can often resemble legal or political arguments, with the facts not in dispute, but the interpretation unclear and open to diverse readings. For example, bones found in Indonesia recently of a very small hominid (the so-called 'Hobit' of Flores) have been interpreted in diverse ways, with various scientists pointing to different characteristics of the remains that make one account more or less convincing than another.

Our understanding has often advanced through opposition of contrary viewpoints and shifting emphases. As in related disciplines, an internal tension generated by the opposition of arguments gives anthropology and evolutionary science much of their vitality and interest. The arguments with those who deny evolution are much less interesting and important to the development of the field than the debates within it, among scientists who may agree about many things but disagree on key issues. Students may find it impossible to write, 'Evolutionary theory says…' or 'Anthropology has shown…' Instead, recognition of other arguments, even when one disagrees with their perspective. is an essential ingredient in this type of collective endeavour.

Sometimes in evolutionary theory and anthropology, it appears that research generates as many questions as it does answers; few issues seem to be completely resolved, and new discoveries often make us uncertain about things that we hadn't even realized were open to debate. The point is that even the most important thinkers' ideas are not the 'final word'; for example, although no evolutionary theorist would dispute the importance of Charles Darwin, no reputable scientist would treat his writings as the definitive, final statements on evolution.

This openness to debate means that we expect your essays to demonstrate not just factual knowledge but also some ability to present and assess arguments and counter-arguments about particular problems. A good explanation of a disagreement is a better demonstration of a complete understanding of an issue than a one-sided, imbalanced account that ignores crucial reservations. Remember: debates haven't been settled for a reason in scientific fields—we don't expect you to be able to settle them definitively in 1500 words.

The criteria by which we assess research essays are:

1. Argument (20%): Make sure that your essay makes a clear argument—ask yourself, 'What do I want my reader to be persuaded to think?' And then, somewhere in your essay, make sure you state this clearly and build the case for this point. Essays are not unified by a topic or a subject; they are unified when you make a statement about the topic. You may find that you will need to write a bit before your argument becomes clear to you; once it is, make sure that you put it in your introduction and edit your essay to make it consistent with your argument.

A good creative argument can make use of other authors' work, but it applies it in a way, or expands it so that we can really see the insight of the paper's author. The point is not to always argue that everyone else is wrong about everything. Often a good argument says that an idea created in one area might be fruitfully applied to another area that the original author did not consider. This may lead us to say that the idea would need to be modified or expanded to take into account new details.

The bottom line is that having a good argument does not mean being argumentative. It means that, if someone asks you what your essay is about, you can say, 'My essay shows that …' If all you can say is 'My essay is about…' some topic, than you likely don't have a strong argument yet. Once you have an argument, you will be able to say that you have more than a topic; you have something you want to persuade the reader about that topic.

2. Use of evidence (20%): The content of your essay should be relevant to the question or problem you've selected. Don't include details or information not directly related to your argument. We will be looking at how you use evidence to advance your argument, for example, how well you integrate authoritative sources or passages from the resources that you reference. Make sure that your evidence actually supports your argument and that you explain how it fits into your overall essay.

Often, topical essays have a lot of extraneous information. Having a good, clear argument can help you to decide which information is really relevant and needs to be there for your argument to work. If information can be removed without undermining the argument, ask yourself if you really need it. Even if it's interesting, it can be tangential and unhelpful to your essay.

3. Research skills (30%): Your essay should be well-informed, reflecting your reading, research, and learning in the unit. Read as widely as possible and make use of what you read (but only if it is relevant—not everything you read this semester will be used in your essay). As a rule of thumb, a research essay should cite at least a dozen items, and they should *not*, under any circumstances, be unreviewed sources of unclear validity (for example, most webpages are not reviewed). Higher marks than 'Pass' will need to make greater use of appropriate resources.

4. Communication (10%): Your essay should be constructed in a way that shows the logical steps in your argument, with data from various sources being brought in as appropriate, and it should be easy to read. Being well written does not mean using a lot of big words, complicated grammatical structures, or purposefully opaque jargon. Good communication is clear.

Remember that paragraphs are the organisational 'building blocks' of an essay and that each paragraph should have a main idea or theme. Good organisation and effective writing can only be achieved by careful planning and frequent re-reading and revision of your writing as you proceed. Essays whose authors have not taken the trouble to review and edit them before submitting seldom succeed and will score low on Communication.

Begin with an introduction that foreshadows your argument. You may, if you wish, write a formal synopsis or use subheadings in the body of the essay, but this is not essential. It is more important to go back to the introduction after you have finished the body of the paper to see, for certain, that it actually represents what you have written. Too often, students write the introduction first and never bother to update it as their ideas change

and develop. An overly vague introduction does not help you; if you find yourself padding the introduction with sentences that don't work toward your argument, or that talk in overly broad terms (e.g., 'Since time immemorial, people have traded…'), just delete them.

Develop your discussion progressively and coherently. This means ensuring that sentences and paragraphs follow logically from one another. A common fault is leaving out connecting thoughts that (in your mind) link the sentences you write. In addition, read what you write *out loud*; what may look fine on the screen may sound terrible to you if you read it out loud. An unfamiliar reader's experience is more like reading out loud than seeing the text on a computer screen.

Your conclusion should draw together the threads of your argument into a summary and present a final answer to or assessment of the problem.

If there seems to be disagreement in the literature about the meaning of certain terms, mention this and state how you intend to use the term(s). Choose an appropriate place to define terms—usually where the particular term is first mentioned. Dictionary definitions are often inadequate when it comes to specialist concepts, and including a dictionary definition in an essay is usually a sign things are not going well. Instead, use a definition from the literature by preference.

Take special care to express your ideas as clearly and concisely as possible. Do not use note or bullet point form. Write complete sentences and keep them as short and succinct as possible. Often students appear to think that ideas will sound more impressive if they are difficult to understand or make use of the largest possible words; this is never the case. Carelessly constructed sentences, poor choice of words and errors in punctuation and spelling obscure your meaning. We are interested in what you know and think, and will not penalise occasional errors in expression. But an essay is an attempt to communicate on paper in a formally structured way, and to succeed in this you must use writing skills. An essay with many faults in written expression rarely gains a good mark, not because we value grammar for grammar's sake, but because the cumulative effect of such errors obscures your meaning and argument. Some would even say that if you can't express your ideas clearly, then you can't think them clearly.

The best way to find out whether your essay is well-written is to have someone read it. This can be painful, since people are likely to have the effrontery to say that parts of it aren't clear! An alternative is to read it aloud to yourself. This can help you to recognise the syntactically awkward bits, but it may not help you to see the mis-spellings and other errors that only a fresh eye can notice. Nevertheless, a careful reading will pay dividends. Failing that, run it through the spell-checker, but don't be surprised if the computer doesn't tell you not to use 'effected' instead of 'affected'.

N.B. The Vice-Chancellor has asked that writing skills be taken into account in the overall assessment of work, and particularly that "Markers should insist that ideas and facts should be expressed accurately and adequately, and should penalise the sort of writing which calls on them to provide a charitable interpretation of notions which have been vaguely or misleadingly expressed."

5. Integration of cited material (10%): Learn from how other veteran authors integrate text into their writing. Some students drop in quotes from what they have read,

but they don't integrate the material well: either it doesn't really say what they want it to, they don't explain it or tie it into their own discussion, or they just put it in as chunks, never again discussing it or using a term from the passage or making reference to it.

Material from other people's writing is often essential to what we write. We get good ideas from other authors, want to disagree with them, think of a good example of a concept they discuss, or see a way that their ideas can be expanded. This is the heart and soul of learning, of building on each other's ideas rather than having to invent everything for ourselves.

In order to do so, though, we have to learn to stitch what they say into what we write, integrating it so that the ideas flow together. In general – and more practically – this means that a paragraph or section should seldom, if ever, end with someone else's words. A quote should never be stranded by itself without transitions into and out of it.

Your essay must be based on your own thinking. Only a small part of your essay should be direct quotations or material that is merely a modified or condensed version of another author's work. Extensive quotation or paraphrasing is not acceptable as it doesn't evidence your thinking about your reading (any more than 10% in long quotes is a really bad idea). Quotations and paraphrasing have value only in so far as you use them, sparingly, to strengthen your discussion.

We do not expect you to come up with original insights at this stage of your studies. But we do expect a serious effort to evaluate how the readings bear on the problem. One way to proceed is by comparing and contrasting the work of different writers. Consider the implications of the arguments and data used by one author for other works you are also referring to in your essay. One author may raise questions or make points that others do not consider. Indicate this in your discussion, and try to examine the other material in the light of these points. A statement by one writer may be in conflict with those of others. Which do you think is the most plausible? Is there enough data available to you from which you could decide between the different positions? If not, what sort of additional data is needed? Try also to anticipate possible objections to your arguments and say how you might deal with then.

Think for yourself and say what you think. By this we don't mean to encourage rash, unconsidered, one-sided statements. Rather, we hope you will be stimulated by your reading and that you will make the effort to think through the issues raised. Use your readings to substantiate your arguments, and to juxtapose (place side-by-side) different emphases, different points of view, and to highlight tensions you might find in the material. Essays that are simply a series of verbatim extracts or paraphrases from the literature are not acceptable, even if their sources are properly acknowledged. A poorly expressed essay that nonetheless shows that the writer has made some attempt to think about her or his reading has some value. One that is mainly a cut-and-paste job of undigested quote has little value and may be plagiarism.

6. Referencing and ethics (10%): Never quote or use an author's work in any way without acknowledging it. You must always indicate where in the literature you obtained the facts, concepts and points of view which you discuss in your essay. When quoting an author verbatim, always show this with quotation marks and a citation. You must also indicate where a summary of someone else's work or ideas ends and your own discussion is resumed.

To quote or paraphrase another person's work without acknowledgement is plagiarism, that is, the presentation of the words and ideas of another writer as your own. Plagiarism demonstrates that the writer has failed to think independently, and it is unjust to writers who do honest work. To the extent that work is plagiarised it loses value, and depending on the amount plagiarised, may receive no marks at all.

Moreover, good authors use citation to reinforce their arguments, to suggest which lines of thinking influence the essay, and to share their awareness of the field of debate. In other words, good citation isn't just ethical, it makes an essay stronger and more persuasive. Good citation locates you, making your reader aware that you know more even than the essay itself includes.

There are many different ways of referencing essays, but most of them are variants of either the footnote/endnote system (sometimes called the 'Oxford system') or the author and date system of in-text citations (sometimes called the 'Harvard system'). In this and other anthropology units you are expected to use the Harvard system, since it is the system employed in almost all anthropology publications. Footnote/endnote citations will not be accepted. Remember that with the Harvard system you can still use notes (preferably endnotes) for additional comments, which may in turn include further Harvard-style citations within the note.

Harvard-style citations are placed in round brackets within the text of the essay. Three different variants can be used, depending on contexts. Thus:

- 'Fox (1967) made the point that …' or;
- 'Fox argues that incest is "not so much prevented as avoided" (1967: 72)' or;
- 'Several authors have studied somatic factors in social behaviour (e.g. Tiger 1975, Tiger & Fox 1986).'

Note that you must cite a page number whenever you quote directly. When you paraphrase or otherwise refer to or make use of a source without quoting it, the author's name and year of publication alone are sufficient.

Every citation in your essay should have a matching bibliographic entry in a 'References' list at the end. Every entry in your list should match a citation in the essay; don't include sources that you don't actually use. If you really want to include references that you have not cited, you should put them in a separate 'Additional References Consulted' list, but this is not necessary.

The References list should be alphabetised by surnames. Do not number the references (as is commonly done in Psychology, e.g.). Use italics or underline the titles of books and serials. When quoting from a chapter in an edited collection, always cite the author of the chapter together with the year the collection was published, and include the editor(s) name(s) with the title of the collection in the bibliographic entry (see the Tiger reference in the following example):

References

Fox, R. 1967. *Kinship and Marriage*. Harmondsworth: Penguin

Peacock, J.L. 1969. Mystics and merchants in fourteenth century. *Journal for the Scientific Study of Religion* 8(1): 47-59.

Tiger, L. 1975. Somatic factors and social behaviour. In R. Fox (ed.), *Biosocial Anthropology*. London: Malaby.

Tiger, L. & Fox, R. 1986. The zoological perspective in social science. *Man* 1: 75-81.
Wolf, E. 1969. On peasant rebellions. *International Social Science Journal* 21: 286-294.
_____. 1982. *Europe and the People Without History*. Berkeley: University of California Press.

If you have read about someone's work in another publication, e.g. Fox (1967) mentions Leach (1961), but you haven't read the original Leach article, make this clear, e.g. 'Leach's 1961 paper (cited in Fox 1967)...' If you want to quote from a secondary source, you should indicate both the original author and the secondary source, e.g. 'Fox (1967: 32) quotes Leach's point that ". . ."'

When quoting from a particular book or article for a second or further time in your essay when in the meantime you have not cited any other item, simply reference by the abbreviation 'ibid.', which means 'in the same place'. If you are quoting from a different page in the same work, include the page number, e.g. '… blah, blah' (ibid.: 32).

When referring again to this author's work but where citations to other works have intervened since you last cited it, revert to the standard citation form, e.g. (Fox 1967) or 'Fox (1967: 118) argues that "…"'

When referring more than once to a work by several authors there is no need to repeat all their names every time. E.g., first reference: (Tiger, Fox & Pike 1975); subsequent references: (Tiger *et al.*). 'Et al.' means 'and others'.

If there are two authors of the same surname in your bibliography, distinguish them in references by initials. If there are two items by the same author and published in the same year, distinguish both citations and bibliographic entries as, e.g., (Lyons 1981a) and (Lyons 1981b).

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