

OXFORD COLLEGE
Spring Semester 2016

**ANTHROPOLOGY 200Q
NBB 201**

Foundations of Behavior

ANTH_OX200Q 10J (5400) & ANTH_OX200Q-2A1 (5401)
Crosslisted as NBB201

**TuTh 10:00 am – 11:40 am
MoWe 2:30 pm – 4:10 pm
Pierce Hall 109**

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Office Hours: BY APPOINTMENT ONLY – times available MTuWTh

INQUIRY INTO FOUNDATIONS OF BEHAVIOR

This course introduces you to scientific inquiry into the biological bases of BEHAVIORAL ADAPTATIONS in humans.

LEARNING OBJECTIVES

- Define and understand the very very basic term “behavior”
- Explore how the biological processes of evolution shape human behavior
- Investigate how our behaviors constantly *shape and are shaped by* the interface between our bodies and our surroundings

ANTHROPOLOGY 200Q in the INQUIRY CURRICULUM AT OXFORD

The learning objectives in this course have something basic to do with *learning about learning*. How do we inquire scientifically into our bodies as part of the natural world? How do we *figure out* how our bodies got to be that way, via intergenerational changes unfolding over very long time periods?

With our learning goals focused on how to ask the right questions about the human body and human behavior—and how to identify and evaluate the right kinds of biological evidence—Anthro 200Q is part of Oxford College’s Learning through Inquiry curriculum.

By the end of this course, you should:

- ***Be able to understand and articulate in writing—***
 - ***what scientific theories are***
 - ***how they work as tools to develop new—yet relevant—research questions ...***
 - ***and how they help you to develop reliable observational methods for answering those questions***
- ***Be able to explain how biological adaptations work—***
 - ***together with other adaptations, in an interconnected bodily system***
 - ***which tends to keep the body in a dynamic equilibrium with its surroundings***
 - ***and which tends to keep the whole breeding population in dynamic equilibrium with its ecological surroundings ... or niche***
- ***Be able to explain specifically how—***
 - ***the human body has evolved as a highly resilient adaptive system, well fit to a wide range of terrestrial, omnivorous, extractive, and intensely social ecological settings ...***
 - ***but human consciousness, mental health, and decision-making can perturb our embodied, socially intense niche***
- ***Be able to raise new questions about ourselves and our environment as we become more aware of our embodied adaptations and embodied niche***

NBB 201 in the NBB CORE CURRICULUM

201 topics	301 topics	302 topics	Missing?
Basics of evolutionary theory	Basics of neurons and glia	nervous system evolution	specific methods? Are there a set that should be covered?
Evolution of primates, incl. humans	Ion channels	comparative cognition	reward mechanisms/systems
Evolution of nervous systems	passive membrane properties	hemispheric specialization	specific disorders?
Brain basics and development	action potentials	vision for action	NS repair & regeneration
	Synaptic transmission,		
Methods in ethology	neurotransmitters & receptors	vision for identification	sleep (versus arousal?)
Evolution of communication	intracellular signaling	arousal and attention	developmental mechanisms
Evolution of cognition & intelligence	Synaptic plasticity	action/motor systems	
	Somatosensory, auditory, and visual		
Learning and Memory	sensory systems	cognitive control	
Aggressive behavior and rage	Muscles, motor output & coordination	communication & language	Overlapping?
Sexual behavior and lust	Reflexes & central pattern generators	affect	language
Social behavior and attachment		memory	motor systems
			vision systems (how much beyond V1 does 301 go?)
Language		social cognition	social cognition v social perception is this overlap?
Fear and stress		embodied cognition	
Social perception		consciousness	
Cooperation		enhancement	
Empathy and theory of mind			
eating			
Methods in neuroscience	chemical senses		
comparative anatomy	sensory motor integration		
sex differentiation, org effects of			
hormones	cerebellum		
gender development	pain		
love and parenting	movement disorders		
behavioral modification and culture	basal ganglia		

We will use written essays, a multimedia project, and a capstone reflective essay to demonstrate and evaluate our joint progress toward these learning goals.

REQUIRED TEXTS:

On Fertile Ground: A Natural History of Human Reproduction (2001), by Peter T. Ellison. Harvard University Press.

- Available at the Oxford College Bookstore

The Human Strategy: An Evolutionary Perspective on Human Anatomy (2005), by John H. Langdon. Oxford University Press.

- Available at the Oxford College Bookstore

REQUIRED E-COURSE PACK:

Additional REQUIRED Readings will be posted on Anthro 200Q's Blackboard page.

To access the Blackboard course packs:

- go to <http://classes.emory.edu>
- log in and select *Foundations of Behavior* in your course links
- click on the *Course Documents* button on the upper left
- open or right-click on assigned PDF file for download
- the articles are included as PDF files, numbered to correspond with the coursepack readings listed in the syllabus

COURSE GRADES

The exams and assignments will be weighted as follows:

In-Class Assignments/Attendance: 15%

INQ Essay 1: 10%

INQ Essay 2: 20%

INQ Essay 3: 20%

INQ Essay 4: 20%

Final Topic Portfolio: 15%

Final grades will be calculated on a percentage basis according to the weights shown above. They will then be converted to a +- letter scale.

Grades will be assigned as follows:

A	≥	93
A-	≥	91
B+	≥	89
B	≥	82
B-	≥	80
C+	≥	78
C	≥	72
C-	≥	70
D	≥	62
D-	≥	60
F	<	60

IMPORTANT: The INQ essays and the INQ final portfolio are MANDATORY. A failure to complete any one of these will result in a failing grade for the course.

JUST AS IMPORTANT: Unless you have a valid excuse that you present to me beforehand, *all exam and due dates must be strictly adhered to*. RARE EXCEPTIONS are granted under the following clear conditions: you have a valid, documented medical or family *emergency*. If you require special arrangements through Disability Services, or if you otherwise know ahead of time that you have a major schedule conflict, contact the professor as soon as possible to schedule an alternative exam. Be prepared to provide documentation.

ACADEMIC HONESTY:

All Oxford students are bound by the [Oxford College Honor Code](#). The two most relevant Honor Code violations are cheating on exams and assignments and plagiarism. The standard penalty for a first cheating or plagiarism violation is an F in the course. However, other violations, such as giving false information to an instructor, may also lead to penalties that are just as serious. The [Oxford College Honor Code](#) outlines the details of possible violations; how suspected violations are reported; the procedures of investigation; your rights and responsibilities if you are accused of a violation by the Honor Council investigators; and the consequences of the full Honor Council finding that you have committed an Honor violation.

Moreover, the Honor Code provides a detailed definition of plagiarism. Please read it.

In fewer words: Read the Honor Code, carry out and support honest work by yourself and your classmates, ask the instructor or Honor Council leaders when you are unsure, and do not cheat or plagiarize.

KEY DATES TO REMEMBER:

INQ Essay 1: Due *Mon Feb 1* @ 9 am (SafeAssign)

INQ Essay 2: Due *Wed Mar 2* @ 9 am (SafeAssign)

INQ Essay 3: Due *Mon Apr 4* @ 9 am (SafeAssign)

INQ Essay 4: Due *Fri Apr 29* @ 9 am (SafeAssign)

**FINAL INQ Portfolio – Presentation & Reflective Essay:
Due *Tue May 3* @ 9 am (Google, Prezi, or DropBox)**

THIS SYLLABUS IS SUBJECT TO CHANGE AT THE PROFESSOR'S DISCRETION; ANY CHANGES WILL BE ANNOUNCED IN CLASS.

PLEASE READ THROUGH THE READINGS ONCE BEFORE THE CLASS PERIOD FOR WHICH THEY ARE SCHEDULED.

Anthropology 200Q Spring 2016 Syllabus, Parts I & II

I. Introduction: The Biological Foundation of Behavior is Evolution

A. Tue January 12/Wed January 13 –
Introduction – *From Synapse to Species*

B. Thu January 14/Fri January 15 –
OPEN OFFICE HOURS 10–11:40 am Lang 211 – No Class

BLACKBOARD ONLINE LECTURE: EVOLUTIONARY THEORY –
Where do Adaptations Come From?

TEXT – Langdon – Chapters 1 & 2
e-Coursepack: 01-Washburn – *The New Physical Anthropology*

* Mon January 18 – **No Class** – *Dr. Martin Luther King, Jr., Holiday*

C. Tue January 19/Wed January 20 –
Defining Adaptive Systems – *Is it adaptation yet?*

e-Coursepack: 02-Gould & Lewontin – *the Spandrels of San Marco*
03-Mayr – *How to Carry Out an Adaptationist Program*

IN-CLASS EXERCISE: What is a system? Why should we call adaptations “systems”?

D. Thu January 21/Mon January 25 -
***Adaptation and Niche - How do Niches and Adaptations
Co-Evolve?***

e-Coursepack: 04-Hutchinson - Homage to Santa Rosalia
05-Whittaker et al - Niche, Habitat, Ecotope
web reading: Niche Construction Theory (NCT)
<http://www.nicheconstruction.com>
/Niche Construction/Rethinking Adaptation
/Niche Construction/Evolution
/More Information/Criticisms of NCT

IN-CLASS EXERCISE: How do Adaptations and Niches Co-evolve?

E. Tue January 26/Wed January 27 -
Behavior as Adaptation: Theory and Method

e-Coursepack: 06-Alcock - An Evolutionary Approach to Animal
Behavior
07-Jurmain et al. - Chapter 6 - Survey of Living
Primates
08-Jurmain et al. - Chapter 7 - Primate Behavior
09-Leonard - Food for Thought

DUE: MONDAY FEB 1 (SafeAssign) - INQ ESSAY #1 -

***Describe the human niche and present a hypothesis to
explain a system of behaviors that adapt human
populations to that niche. Conclude by introducing a
hypothesis to explain how niche and adaptive system
could have co-evolved.***

Key NBB Learning Goals:

- **Foundations of Evolutionary Theory**
 - **Methods in Ethology & Anthropology**
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II. Evolutionary Foundations of Behavior: Life History, Anatomy, and Physiology in Apes and Humans

A. Thu January 28/Mon February 1 -

Beyond Ethology: Interdisciplinary Theory and Method in Learning about the Human Adaptation and Niche

web resources: The genetics of human and chimpanzee relatedness
<http://humanorigins.si.edu/evidence/genetics>

The basics of genetics and whole-genome research
<http://ghr.nlm.nih.gov/handbook>

Further reading on the latest research
<http://dx.doi.org/10.1126/science.344.6189.1272>

B. Tue February 2/Wed February 3 -

Evolutionary Foundations of the Anatomy of Behavior:
The Brain in Vertebrate, Mammal, and Primate Perspective

TEXT: Langdon Chapter 10 – Organization of the Brain
e-coursepack: 10 – Breedlove and Watson – Chapter 2

C. Thu February 4/Mon February 8 -

The Genetics of Adaptations: *The Complex Genetic Basis of Development, Maintenance, Reproduction, and Senescence*

Text: Ellison Preface – Two Births
Ellison Chapter 1 – Surviving the First Cut
Ellison Chapter 6 – The Arc of Life
e-coursepack: 11 – Konner – Chapter 6 – Genetics of Psychosocial Growth

Further reading: 12 – Weiss – The Genetic Basis of Evolution

D. Tue February 9/Wed February 10 -
The Neuroendocrine System as Complex Transducer System:
Introduction to Dynamic Embodied Cognition

e-coursepack: 13 - Clark - The Active Body
14 - Barrett - Small Brains, Smart Behavior

IN-CLASS EXERCISE: What is Embodied and Grounded Cognition

E. Thu February 11/Mon February 15 -
Ethological Investigations into Our Ape Relatives:
Chimpanzee Foraging, Learning, Culture, and Sociality

e-coursepack: 15 - Whiten & Boesch - Chimpanzee Cultures
16 - Mitani - Cooperation and Competition in Wild Chimpanzees

F. Tue February 16/Wed February 17 -
Ethological Investigations into Human Foraging Societies, Part I: Family Formation, Parenting, and Social Networks

e-coursepack: 17 - Konner - Chapter 15 - The Mother-Infant Bond
18 - Konner - Chapter 16 - Cooperative Breeding and the Extended Family

Further reading: 19 - Kramer & Ellison - Evolution of Cooperative Breeding in Humans

IN-CLASS EXERCISE: What are intergenerational transfers and why are they so important?

G. Thu February 18/Mon February 22 -

Ethological Investigations into Human Foraging Societies, Part II: Routine, Ritual, Belief, and Leadership

e-coursepack: 20 - Marlowe - Hunter-Gatherers & Human Evolution
21 - Thomas - The Harmless People
22 - Lee - Eating Christmas in the Kalahari

H. Tue February 23/Wed February 24 -

Paleontological and Archaeological Investigations: The Biocultural Evolution of the Hominins

e-coursepack: 23 - Konner - Chapter 3 - The Crucible
24 - Lieberman - The Evolution of Human Brains & Bodies
25 - Schick & Toth - Chapter 3

Further reading: 26 - Harmand et al. - Lomekwian Stone Tools

I. Thu February 25/Mon February 29 -

Demographic and Life History Analysis: Chimpanzees and Early Hominins

TEXT: Ellison - Chapter 4 - Why Grow Up
Ellison - Chapter 5 - Balancing Act
e-coursepack: 27 - Ross - Primate Life Histories

IN-CLASS EXERCISE: How do we keep on feeding our needy big brains?

DUE: WEDNESDAY MARCH 2 (SafeAssign)* - INQ ESSAY #2 - Present and defend a hypothesis to explain how and why—through the interconnected processes of population adaptation and niche construction—biological evolution modified the hominin brain. Be sure to consider how our brains evolved via descent from the common ancestor we share with chimpanzees and bonobos.

KEY NBB LEARNING GOALS:

- **Evolution of Primates, Including Humans**
- **Evolution of Nervous Systems**

- Brain Basics and Development
- Evolution of Communication, Part I
- Evolution of Cognition and Intelligence, Part I
- Comparative Anatomy
- Learning and Memory, Part I
- Aggressive Behavior and Rage, Part I
- Sexual Behavior and Lust, Part I
- Social Behavior and Attachment, Part I

* Tue March 1/Wed March 2 - No Class - Work on INQ
Essays

III. Neuroscience Investigations into Human Adaptation and Niche

A. Thu March 3/Mon March 15★ –

Sensing and Moving: Interacting with the Terrestrial Habitat

TEXT: Langdon – Chapter 12 – The Special Senses
e-coursepack: 28 – Groh – Chapter 2 – The Ways of Light
29 – Groh – Chapter 3 – Sensing our Own Shape

*** Tue March 8 – Thu March 10 – NO CLASS – SPRING BREAK**

B. Tue March 15/Wed March 16 –

Feeling, Selective Attention, Concentration, and Alertness: Enduring the Terrestrial, Omnivorous, Extractive Niche

e-coursepack: 30 – Damasio – Of Appetites and Emotions
31 – Tomasello – Primate Intentional Communication

C. Thu March 17/Mon March 21 –

Social Monitoring, Emotion, Affect, and Judgment: Managing the Terrestrial, Omnivorous, Extractive, and Intensely Social Niche

e-coursepack: 32 – Damasio – Feelings
33 – Tomasello – Human Cooperative Communication

D. Tue March 22/Wed March 23 -

Social Motivation in Evolutionary Perspective: Emotion, Behavior, and Adaptation in the Embodied Socially Intense Niche

e-coursepack: 35 - Rilling et al - Neurobiology of Decision-Making

E. Thu March 24/Mon March 28 -

Cognition: Quick and Sustained: Brains, Language, Memory, and Tools

e-coursepack: 36 - Stout et al - Language and Tool-Making
37 - Goren-Inbar - Archaeology and the Evolution of Cognition

F. Tue March 29/Wed March 30 -

The Co-Constitution of Self and Other: Theory of Mind, Intersubjectivity, and Cooperation

e-coursepack: 38 - Heyes & Frith - Cultural Evolution of Mind Reading
39 - Konner - The Well of Feeling

DUE: MONDAY APRIL 4 (SafeAssign)* - INQ ESSAY #3 -

Explain how the human brain has evolved as part of an embodied system for interacting with social and material surroundings. Be sure to clarify what is unique about human cognitive adaptations, and use this comparative insight to explain what is unique about the human niche.

KEY NBB LEARNING GOALS:

- Evolution of Communication, Part II
- Evolution of Cognition and Intelligence, Part II
- Learning and Memory, Part II
- Sexual Behavior and Lust, Part II
- Social Behavior and Attachment, Part II

- Eating
- Fear and Stress, Part I
- Cooperation, Part I
- Empathy and Theory of Mind, Part I
- Social Perception, Part I

* *Thu March 31 - No Class - Work on INQ Essays*

IV. Childhood, Family Formation, Social Networks, Health, and Aging

Mon April 4/Tue April 5 -

Investing in Embodied Capital: Early Life History, From Inception to Sexual Maturity

TEXT: Ellison - Chapter 2 - A Time To Be Born
Ellison - Chapter 4 - Why Grow Up?

Wed April 6/Thu April 7 -

Language Acquisition and Development: Managing Joint Attention, Forming Associated Neural Representations, Bootstrapping Memory

e-coursepack: 40 - Konner - Chapter 8 - Logos
41 - Barrett - Chapter 10 - Babies and Bodies
42 - Ochs & Schieffelin - Language Acquisition

Mon Apr 11/Tue April 12 -

NO REGULAR CLASS - PALEOANTHROPOLOGY SOCIETY ANNUAL MEETINGS

ONLINE LECTURE: Language, Thought, and Social Networking

e-coursepack: 43 - Dunbar - Brains and Group Life

Optional Lyceum Lecture @ 7 pm by Dr. John J. Shea on *The Handaxe's Tale*

Wed Apr 13/Thu April 14 -

NO REGULAR CLASS - AMERICAN ASSOCIATION FOR PHYSICAL ANTHROPOLOGY ANNUAL MEETINGS

ONLINE LECTURE: Engendering Identity - Gender Development, Coming of Age, and Family Formation

e-coursepack: 44 - Dunbar - Brains and Group Life

Mon April 18/Tue April 19 -

Parenting, Grandparenting, and Networking: Transferring Material, Transferring Knowledge Across Generations

e-coursepack: 45 - Konner - Cooperative Breeding in the Extended Family
46 - Konner - Male Parental Care

Wed April 20/Thu April 21 -

Individual Lives and Cultural Evolution: Why is Human Biocultural Evolution so Unstable?

TEXT: Langdon - Chapter 11 - The Human Strategy - Brain Size
Langdon - Chapter 18 - The Human Strategy - Energy Flow, Homeostasis, and Endurance

Langdon - Chapter 21 - The Human Strategy - Life History
e-coursepack: 47 - Hill et al - Cooperation, Culture, and Human Impact

STUDY/OUTLINING SESSIONS TBA

DUE: FRIDAY APRIL 29 (SafeAssign)* - INQ ESSAY #4 -
Explain how language, our extended life histories, social networks, and technological systems co-evolved, and discuss how the cultural environment impacts our biological identity.

KEY NBB LEARNING GOALS:

- Evolution of Communication, Part III
 - Evolution of Cognition and Intelligence, Part III
 - Learning and Memory, Part III
 - Sexual Behavior and Lust, Part III
 - Social Behavior and Attachment, Part III
 - Fear and Stress, Part II
 - Cooperation, Part II
 - Empathy and Theory of Mind, Part II
 - Social Perception, Part II
 - Sex Differentiation and Organizing Effects of Hormones
 - Gender Development
 - Love and Parenting
 - Behavioral Modification and Culture
-

Tue May 3 - Turn in Final INQ Portfolio by 5 pm