ANTH 3745
E.O. Wilson
Sociobiology (1974)

Social behavior

Framed specific social behaviors as the products of evolutionary adaptations

Extended implications to humans
Altruism?
Haplodiploids
ANT COLONY AS AN EMERGENT FEATURE

SELECTION OCCURS AT THE LEVEL OF THE COLONY
the round-tailed ground squirrel
Most species-wide features appear to benefit the species, but...
But....
do features really evolve for the good of the species?
Group selection illusion
Mind game:

1. Think of a feature that benefits the individual BUT NOT THE SPECIES

2. Think of a feature that benefits the species but NOT THE INDIVIDUAL
This mind game becomes very important when you start thinking about psychological adaptations
Aristotle’s “Tabula Rasa”

blank slate

Human nature is to have no nature
Steven Pinker: Chalking it up to the blank slate

http://www.youtube.com/watch?v=CuQHSKLLXu2c
Freud (late 1800’s)

Gelled concept of unconscious mind

early thoughts: Instinctual system composed of life-preservative instincts and sexual instincts.
William James

List of instincts (1890)

Sucking
Biting
Clasping
Pointing
Carrying object to mouth
Crying
Turning head to one side
Holding head erect
Sitting up
Standing
Locomotion
Vocalization
Imitation

Emulation/Rivalry
Anger/resentment
Sympathy
Hunting
Fear
Fear of strange men or animals
Fear of dark, confined places
Fear of heights
Appropriation (begging)
Kleptomania
Constructiveness
Play
Curiosity
Sociability/shyness
Cleanliness
Modesty/shame
Love
Jealousy
Parental love

It will be observed that no other mammal, not even the monkey, shows so large an array (of instincts).
Behaviorism (1920’s and 30’s)

Reinforcement of behavior:
The only innate thing is the general ability to learn.

How Dog Training Works

1. Before Conditioning
   - Food → Response
   - Unconditioned Stimulus → Unconditioned Response

2. Before Conditioning
   - Bell → Response
   - Neutral Stimulus → No Salivation
   - No Conditioned Response

3. During Conditioning
   - Bell + Food → Response
   - Unconditioned Stimulus + Food → Unconditioned Response

4. After Conditioning
   - Bell → Response
   - Conditioned Stimulus → Conditioned Response
   - Salivation → Conditioned Response
Exaggerated claims of cultural diversity (20-30’s)

Margaret Mead: *Coming of Age in Samoa* 1928

The myth of infinite cultural variability
Radical behaviorism

Belief that ALL behavior is learned.
The decline of radical behaviorism
Harlow’s monkey experiments (1960’s)
Cognitive psychology (late 1960’s)

- Decline of behaviorism
- Acceptance of a “Language Acquisition Device”
- The rise of computers

View of the brain as organized group of individual information processing mechanisms. Focuses on internal mental processes.

Pre Darwinian*!
Psychological mechanisms as adaptations

The rise of *Evolutionary Psychology* (latest 1970’s and 1980’s)

*Evolutionary Psychology*: the synthesis of cognitive psychology, adaptationism, and human behavioral ecology; an adaptationist approach to cognitive mechanisms.
Evolutionary psychology vs. behavior genetics

**evolutionary psychology**
What is the universal, evolved architecture that we all share by virtue of being humans?

**behavior genetics**
Given a large population of people in a *specific* environment, to what extent can *differences* between these people be accounted for by *differences* in their genes?
Innate is **not** the opposite of learned

Learning *requires* a mechanism
Specialized or general purpose?

Any behavior has 3 possible options:

1. It is the product of a general purpose device.

2. It is the product of cognitive programs that are specialized for producing that particular behavior.

3. It is a by-product of cognitive programs that evolved to solve different problems.
Principle 1: the brain is a physical system

Electrical and chemical circuits generate behavior that is appropriate to your environmental circumstances.
Principle 2: our neural circuits were shaped by natural selection

They evolved to solve problems faced by our ancestors
Principle 3: consciousness is just the tip of the iceberg

Conscious experience makes it seem like what is going on is simpler than it actually is
Instinct blindness
Principle 4: Different neural circuits are specialized to solve different adaptive problems
Autism

Child with autism may have normal IQ but is incapable of inferring the mental states of others

William’s syndrome

Child with William’s syndrome is profoundly retarded, but does fine inferring the mental states of others
Principal 5: Our modern brains house stone-age minds
Evolved psychological mechanism

Exists because it solved a recurring evolutionary problem.

Domain specific

Domain general
Psychological feature vs. morphological feature
Evolved psychological mechanisms

Must function as a unit with the rest of the mind

Evolved is NOT the opposite of learned (Language, learned food aversions)

Most shared by all humans
The environment of evolutionary adaptedness

Human minds did not evolve to solve modern problems
How far back do we look?

Human minds evolved their differences from apes in the Pliocene and Pleistocene. Major changes in the brain occurred at this time.
Challenges of survival
Many similarities between males and females

Challenges of mating
Many differences between males and females
How can you study evolved psychological mechanisms?

compare different species
How can you study evolved psychological mechanisms? Compare males and female.
How can you study evolved psychological mechanisms?

Hunter gatherer societies
How can you study evolved psychological mechanisms?

Life history and public records
Some criticisms of evolutionary psychology

EP is overzealous - Everything is an adaptation.

EP is deterministic - Where is free will in all of this?

EP is reductionistic - EP spends all of its time on the on the lowest levels of causation.

EP is politically incorrect - EP spends a lot of time of differences between males and females.