Announcements

Final 8:00, Friday, May 11.
(A-L here; M-Z 100 MSEB)
(Edward O. Wilson, Sociobiology)
Memetics

• **Meme:** an information pattern, held in an individual's memory, which is capable of being copied to another individual's memory.

• **Memetics:** the theoretical and empirical science that studies the replication, spread and evolution of memes

Susan Blackmore
Richard Dawkins is credited with the concept of the meme in his 1976 book *The Selfish Gene.*

Much as genes are the unit of evolution, memes are the unit of cultural evolution.
Cultural transmission common in animals?

**tool use**

**song dialects**
Humans societies have same characteristics of animal societies

Altruism (indiscriminate)

Overlapping generations
(helpers at the nest)

Cooperative brood care

Division of labor
(castes)
Can we study human behavior from an evolutionary perspective?

“entertainment caste”
Evolutionary Psychology
Definitions of Evolutionary Psychology

“Evolutionary Psychology is the study of the adaptive significance of behavior” (p. xiii)

“Evolutionary Psychology integrates evolutionary biology with cognitive science [and] views the mind as a [structure] designed by natural selection to solve adaptive problems faced by our hunter-gatherer ancestors” (p. 16)

Environment of Evolutionary Adaptedness

The EEA concept provides a much needed tool for determining, *a priori*, what kinds of functions, or mechanisms, the human brain is likely to have: the human brain solves the reproductive problems posed by past environments; it allows us to do all the things we needed to do to survive and reproduce in ancestral environments--find food, find mates, detect and avoid predators and other dangerous animals, etc. We can understand the functional organization of human bodies and brains precisely to the extent that we can understand the human EEA.

Edward H. Hagen, Institute for Theoretical Biology, Berlin
Levels of Analysis

• Proximate
  – Mechanisms
  – Ontogeny

• Ultimate
  – Adaptive Significance
  – Evolutionary History
Is there a biological basis for rape?
If so, by understanding it can we reduce it?
Hypotheses for Rape

- Male dominance over women is adaptive (leads to violence).

- Specific adaptation - alternate reproductive strategy

- By-product of selection on aggression for other reasons (including sexual behavior)
Evolutionary psychology can be a bit like London's Millennium Dome. From the outside it affords an impressive structure, constructed with the help of cutting edge science and technology. But take a peek inside, and you often find an alarming scarcity of real content. So it is with *A Natural History of Rape*, the latest attempt to apply Darwinian theory to human behaviour.

Review by Kenan Malik
Males Limited by Access to Sexually Receptive Females

Females Limited by Access to Resources (& Good Genes)
Personal Advertisements

- Personal advertisements are a popular method for meeting potential short- or long-term mating partners.

- Around 80% of major newspapers have a personal section; huge number of online sites.
Predictions

• Based on sexual selection / parental investment we predict that:
  – Females seek males who demonstrate their ability and willingness to contribute to a relationship or on their genetic quality.
  – Males place a higher emphasis on female fertility and thus seek information concerning youth, attractiveness, parental skills, and fertility.
Results

• In an analysis of more than 1000 advertisements, females were shown to seek resources 11 times more often than males.
• Males were more likely than women to offer resources and sought youth, attractiveness, and sexual availability.
• Males who mentioned resources were significantly more likely to receive a reply.

From Wiederman 1993; Greenless & McGrew 1993
Results

From Thiessen et al., 1993
Cross-Cultural Results

- 37 cultures investigated (involving more than 10,000 participants)
- In 36 out of 37 cultures females preferred 'good financial prospects' and ‘industriousness’ over physical attributes.
- In all cultures males preferred females who were younger than them, while females preferred males who were slightly older.
- In all cultures males valued physical attractiveness more than females.

From Buss 1987
Facial Symmetry and Attractiveness

From Koehler et al. 2002
Facial Symmetry and Attractiveness

- Evaluating original images and computer-generated composite images, participants rated faces in terms of attractiveness, dominance, sexiness and health.
- More symmetrical faces were given higher ratings.
- Male faces with larger features demonstrating male secondary sexual characteristics (large square jaw) were preferred by females.

From Grammer & Thornhill 1994
Facial Symmetry and Aggression

"the most symmetrical boys showed highest aggression"

Manning and Wood 1998. Fluctuating asymmetry and aggression in boys.
Human Nature: An Interdisciplinary Biosocial Perspective 9: 53-65

“Among males, but not females, fluctuating asymmetry [declined] significantly with the participants' number of fights and propensity to escalate agonistic encounters to physical violence.”

Furlow, B. et al. 1998. Developmental stability and human violence. PRSLB
Attraction may be related to perceived health and can vary relative to fertility.

Females more likely to prefer “healthy looking” males when pregnant, or on the pill.

Jones et al. 2005 PRSLB
Is beauty in the eye of the beholder? (Yu and Sheppard 1996)

Matsigenka - indigenous culture in Peru

“unwesternized”?

Increasing exposure to “western values”
A man from Yomybato defined the classes as follows: O9, healthy; O7, had diarrhoea/was skinny in the waist; N9, pallid; N7, had fever, lost weight, especially in the waist; U7, had diarrhoea a few days ago, not skinny but pallid, almost better; U9, pale, almost dead. This figure was adapted with permission from the American Psychological Association (1993).