What Makes Humans Unique?

- Ability to laugh & smile
- Ability to lie effectively
- Cook food
- Use and manipulate symbols

Culture—A Definition

Acquired knowledge by a social group
Symbols

- Humans are dependent upon symbols
- Primates use symbols but do not depend upon them
- Humans use symbols to adapt to various environments

Evolution—Two Types

- Somatic—Physical Evolution
  - Physical changes in body structure
- Extrasomatic—Cultural Evolution
  - Methods and Techniques
  - i.e., “Technologies”

Through culture, we do not have to wait for somatic change
Australopithecine

- Family (7 types)
- 5 to 1.2 million years
  - Lower Paleolithic period
- “Ape-man” — Man Apes
  - 3-4 feet (1-1.3 meters) tall
- Tool Making capabilities:
  - chopping & pounding tools
  - Ostodontic-caradic (Bone/tooth/horn)

Homo Erectus

- 1.5 million years
  - Africa/Europe/S.E. Asia
- Sophisticated tool maker/user
  - Acheulean (identified by flaked tools)

Homo Erectus

- First conclusive evidence of:
  - Housing structures
  - Use of fire
  - Cooperative hunting

KNM-WT 15000, "Turkana Boy"
Homo Neanderthalensis

- Europe/Middle East regions
- Slightly more advanced tool making and usage
- Different tool types: Bone, tooth, horned, wooden

Evidence of:
- Clothing
- Religion
  - Belief in an afterlife
  - Buried their dead

Homo Sapien

- Major advancements
- Great diversity of tools
- Agriculture and domestication of animals
- Neolithic (new stone age)
Homo Sapien

◆ High energy usage
  – Heat (wood, coal, oil, nuclear)
  – Power (animal, water, steam, electric)
  – Transportation (ships, trains, autos, airplanes)

Law of Cultural Evolution

Culture at large evolves as the amount of energy harnessed per capita per year increases or as the methods of harnessing energy are made more efficient or as both factors work together.

Leslie White (Univ. of Michigan)

Cultural Materialism

◆ Leslie White
  – “technological determinist”
    i.e., technology-led theory of social change
◆ No one “great man” theory
  – Individuals are insignificant to cultural change
Cultural Materialism

◆ Technologies
  – help to shape and define culture
  – fundamental condition underlying the pattern of social organization.
  – technical developments, are the sole or prime antecedent causes of changes in society

from Chandler, D. “Technological or Media Determinism”

Cultural Evolution is:

◆ Logical
◆ Inextricable
  – Complex or interwoven
◆ Stupid

Culture: 3 Components

◆ Ideological
  – Belief system
◆ Social
◆ Technological
Role of Ideology

- Ideology always subordinates technology
- Example: The Ancient Greeks
  - Hero of Alexandria (200 B.C.)
    - or was it Cestesibus???
    - Rotary Steam Engine & Temple Door Opening System

Hero’s *Spiritalia seu Pneumatica*

Ideological systems prevent technological systems from fulfilling their true efficiencies
Evolution of Cultural Systems

- Bands
  - 90% of all the people who ever lived were hunter/gatherers
- Tribes
- Chiefdoms
- States (up to nations)

Two Important Points...

- Culture is manifested symbolic knowledge
- Artifacts are not culture

Western Cultures

- Outstripping biology
  - Ecological problems & disasters
- People are surrounded by their own creations
- The natural environment is alien
Western Cultures

- Technologically and cultural “incestuous”
- Positive feedback system
- Unstable, prone to extremism

Web Links of Interest:

- Physical Anthropology: http://www2.lib.udel.edu/subj/anth/phys/internet.htm
- Paleanthropology Links http://www.talkorigins.org/faqs/homs/links.html
- Hominid Species: http://www.talkorigins.org/faqs/homs/species.html
- “Technological or Media Determinism” by Daniel Chandler http://www.aber.ac.uk/media/Documents/tecdet/tecdet.html

Content & Image Credits:

- Information content based in part upon lectures given in June, 1993, by: Dr. Anthony Cavender, ETSU Dept. of Sociology and Anthropology & Dr. John Ephriam, ETSU Department of Technology
- Hero’s Steam Engine and Temple Door Opening Images from: The Growth of the Steam-Engine, Chapter I by R. H. Thurston, AM,CE; http://www.history.rochester.edu/steam/thurston/1878/Chapter1.html