Evolutionary Psychology

Comparative Cognition

Investigate cognitive abilities of different species

Evolutionary Psychology

How did the human mind evolve over time

Behavioral Economics

How evolution shaped decisions related to money

Evolutionary Psychology Theory of Natural Selection

Variance

Individuals in species differ in physical traits

Inheritance

Individuals inherit genes suited for survival in environment

Selection

Survivors have best genes suited for environment

Adaptation

Process by which species change to environment to succeed

What is a mind?

General Purpose (Computer)

Swiss Army Knife (Bag of Tricks designed by evolution)

Evolutionary Psychology Sexual Selection

Ability to attract a mate and reproduce



And as long as the gain in attracting the ladies outweighs any costs, the feature will survive,

Evolutionary Psychology Ecological Niche

Adaptation to a specific environment

Microbes in lava tube

Fish with electric field sensory information (electrical sonar)

Object permanence (Apes, monkeys, cats and dogs)

Memory expert birds (33,000 seeds in 6000 locations)

Transitive inference? (A>B, B>C, therefore A>C)

Good for social cognition

Evolutionary PsychologyCognitive Skills

New Caledonian Crows

Tool usage: Use stiff leaves to dig out insects

Baboons

Deception: Groom females when boyfriend can see

Chimpanzees

Aware of Self: Dots on head in mirror are touched

Evolutionary Psychology Brains and Intelligence: How are they related

Total Brain Size?

Elephants and Whales brains > 11 pounds

Cephalization index?

Brain to Body – Humans Win, then Dolphins, then Chimps

Proportion of neocortex?

Humans 80%, Chimp 50%, rodents 13%, Birds 0%

Von Economo Neurons

Fast transmission across large distances

Found in most smart animals

Evolutionary Psychology Comparing Humans and Non-Humans

Anthropomorhism

Over attribution of human qualities to animals

A guilty pooch

A deceptive monkey

Antrhopodenial

Under attribution of human qualities to animals

A Critical Time For Evolution?

Pleistocene Era: Begin 2 million years ago
Critical time for evolving human psychology
Difficulty in knowing for sure

Tools in Swiss army knife

Categorization

Typicality Effects

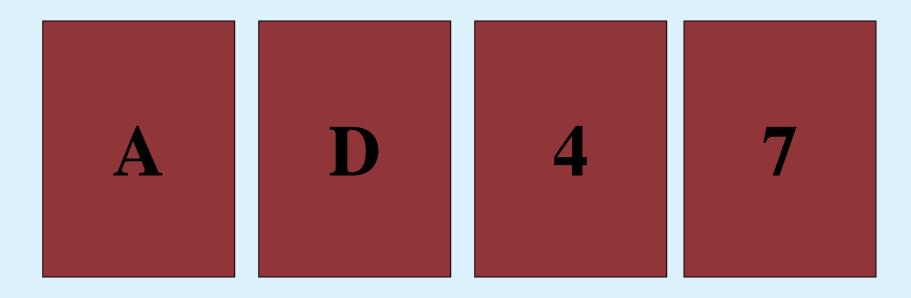
Adaptive advantage: Generalization

Memory

Frequent Items Remembered Better

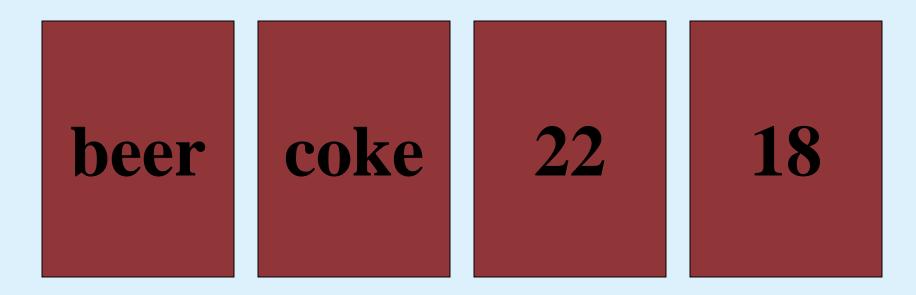
Adaptive advantage: Frequent Items more important to survival

Logical Reasoning tested with the Wason Selection Task



RULE: If a card has a vowel on one side, then it has an even number on the other side

Cheater Detection: Performance skyrockets



RULE: If a person is drinking beer, then that person must be 21 or over.

Cheater Detection: May begin as early as 2 years old

Representativeness Revisited

Tom W. is of high intelligence, although lacking in true creativity. He has a need for order and clarity, and for neat and tidy systems in which every detail finds its appropriate place. His writing is rather dull and mechanical, occasionally enlivened by somewhat corny puns and flashes of imagination of the sci-fi type. He has a strong drive for competence. He seems to have little feel and sympathy for people, and does not enjoy interacting with others. Self-centered, he nonetheless has a deep moral sense.

How Likely is Tom to be

- A) Majoring in Library Science (3%)?
- B) Majoring in Humanities(20%)?

People choose A by ignoring base rates of majors

Reframed with frequencies instead of percentages Many more people solved the problem

Gambler's fallacy

Flipped Coin just came out 5 heads in a row, What is p(Heads) an p(Tails)?

Evolutionary response: Random events not useful to survive

The annoying case of Steve Pinker and the weather

Evolved Psychological Mechanisms? Behavioral Economics

Ultimatum Game Video

https://www.youtube.com/watch?v=1wxprBuXKXE

Evolved Psychological Mechanisms?Loss Aversion

Framing Effects

There is an outbreak of a disease that's expected to kill 600 people. Two plans have been proposed to deal with the disease

*Plan A: 200 people will be saved

Plan B: 1/3 chance that 600 will be saved

2/3 chance that 0 will be saved

Plan A: 400 people will die

*Plan B: 1/3 chance that 0 will die

2/3 chance that 600 will die

Evolutionary Explanation: Don't lose stuff, it's scarce Sunk-Cost Fallacy

Gender Differences

Women

Better at verbal tasks (society organizers)

Better at object location memory (Gatherers)

Men

Better at certain spatial tasks (Hunting/Football)

Alternate idea

Men superior spatial ability to do mate-seeking behaviors Males of polygonous species have superior spatial ability Males of monogamous species have equal spatial ability

The Genes Have Hidden Power

Sweaty T shirts

https://www.youtube.com/watch?v=-drpViV5LSw

Mate Preferences of Women

Symmetry of body and face in men is genetic marker Fertile time of reproductive cycle = Other Symmetrical Infertile time = Long-term partners Moderated by partner symmetry