

# Misconceptions Concerning Evolution

## 1. Genetic Determinism – Behaviors controlled exclusively by genes

Dynamic Interact between:

(1) Evolved Adaptations & (2) Environmental Triggers

E.G. Callus formation:

Ability to respond to friction evolved

Calluses induced by present stimuli

E.G. Substance Abuse:

Lower levels of MAO & Childhood Abuse

“Stress-Diathesis”

Monozygotic Twins raised apart?

# Misconceptions Continued

## 2. Impact is Unalterable:

- Knowledge of Mechanisms and Triggers can be used to Manipulate the Outcome
- Study of EP can Increase Degrees of Freedom in Human Behavior

# Misconceptions Continued

## 3. Individual must be Conscious of and Able to Compute

Complex relationships which Describe behaviors

- Individual can Respond to cues in Environment  
Rules of Thumb  
Similarity of looks to gage genetic distance
- Humans use Grammar competently without being  
Able to state Rules of Grammar

# Misconceptions Continued

## 4. Current Mechanisms Optimal

Adaptations are Sub-Optimal

A) Time Lag – Optimizations for Previous environment

- Desire for Fat, Salt reflect scarcity
- Greater fat retention for Native Americans  
“Thrifty Gene”
- Inability to synthesize Vitamin C reflects prevalence  
Of fruits in Primate Diet

B) All Adaptations bear Costs

Optimizing/Maximizing Fear of Snakes Impedes

Adaptations of such as Food Acquisition

Progression ends with  $\text{Cost/Benefit} > 1$

E.G., Frequency of Medical Visits

# Misconceptions Continued

## 5. Implied Conscious Motivation to Maximize Gene Replication

“**Strategy**” does not imply conscious motivation

- a) Strategies cannot be tracked in one’s lifetime
- b) Strategies are situation/gender/age specific

No general course of action

E.G.: A rock rolling down stream becomes smoother and  
Thereby rolls faster which increases the rate at which it  
Becomes smooth and the rate of acceleration.

This does not reflect consciousness, intention,  
or learning

# Relationship To History

## Darwinian Influences

Freudian Instincts:

Life Preserving -- Natural Selection

Sexual Instincts – Sexual Selection

William James:

Behavioral, Social, & Emotional Instincts:

“Faculty of acting in such a way as to produce certain ends:

- a) Without foresight of the ends
- b) Without previous education in performance”
- c) Modifiable by experience
- d) Overridden by other instincts when contradictory

# William James, cont.

Instincts emerge with Developmental Stages

Fear Instinct – Strange men -- Emotional

Walking -- Behavioral

Imitation -- Social

Vocalization

Correspond to Modern Psychological concept of Reflexes

# Behaviorism – Determined by Environment

Watson – Classical Conditioning:

Rejected Instincts & other Internal Mechanisms

Text: **Fear**, Desire, Consciousness

Observable Behavior – Only Legitimate Inquiry

Internal entities Unscientific



# Radical Behaviorism

Skinner: All behaviors maintained by contingencies  
Reinforcement histories

Irony I: With the emergence of the ability to learn comes flexibility of behavior, yet behavior was considered to **Be determined** by reinforcement histories, “Selection by Consequences”

Tabula Rasa

The only innate propensity is the general ability to learn

Irony II: Skinner considered **Selection by Consequence** to Be analogous to **Natural Selection** except for behavioral Propensities.

# Radical Behaviorism cont.

Equipotentiality:

Mechanisms and Ability to learn are the same, regardless of  
Stimuli  
Responses  
Reinforcers

Any Stimulus can be paired with any Response or Reinforcer

# Radical Behaviorism cont.

Equipotentiality implies that Humans have not “Nature”

Evidenced by Cultural Variation:

Margaret Mead:

No murder or word for murder

No sexual jealousy or Rape

Conclusion: Culture is **Acquired**, no human **Universals**

Leon Kamen: “**Not In Our Genes**”

**Love** as a newly acquired cultural pattern

# Tabula Rasa: The Erased Slate

Intelligence, Mental Illness, Personality as Acquired attributes

- Maze Bright rats
- Cannot condition an animal to approach a danger signal
- Defensive Burying
- Isolation “Peep”
- Psychoneuroimmunology
- Greater Homozygous Concordance, even if raised apart
  - Mental Illness
  - IQ
  - Personality traits -- **As great** as Homozygous raised together
- Family Therapy Networker

# Is Love Learned?

- Harlow
- Mirasmus

# Equipotentiality?

Laws of Conditioning:

- Contingency
- Temporal Contiguity

The **Garcia Effect** (Could not publish):

- Conditioned Avoidance of Tastes paired with nausea
  - Single Trial
  - 24 hour latency
- Illness** easy to condition to **Taste**,  
But not **Light** – even contiguously
- Shock** easy to condition to **Light**, but not **Taste**
- “**Preparedness & Selective Association**”

# Equipotentiality cont.

Seligman: Conditioned “Phobias”

- Easy for old threat – E.G. Snakes, Insects
- Difficult for new threats – E.G. Electrical Outlets
- WHY?

Mineka: Modeling (Bandura) in Primates

- Video of Monkey displaying fear of snakes increased avoidance
- Spliced display of flowers had no effect on future avoidance
- Per Garcia

# Cognition

Eric Lenniberg:

Linguistic capabilities emerge at same time across all cultures

- Irrespective of:

- Linguistic Complexity -- Grammar
- Reinforcement
- Parental Correction
- Cultural Values per Desirability

Noam Chomsky:

Universal Deep Structure



# Cognition cont.

“Domain-Generality”

Similar to Equipotentiality

Faces:

- Face Cells
- Prosopo-Agnosia, Prosopo-Affective Agnosia
- Inversion
  
- Preparedness?
  - Survival & Reproduction per EP?