

FUNDAMENTALS OF PSYCHOLOGY

Session 1

Introduction

Rules & Game Play

1. At all time you must have
 - A pen/pencil
 - A notebook
 - Water Bottle

2. Deep-Shallow Game

3. Expect Breaks, feel free to take a break

4. Brownie points for application based questions

Course contents

Day 1

1. **Neurotransmitters** A view into biology of Psychology
 2. **Evolution** The boundary of psychology
-

Day 2

3. **Social Psychology** How we interact with the world
 4. **Cognitive psychology**
-

Day 3

5. **Personality Psychology** Who am I and what is me
6. **Spiritual Psychology** What is my relationship w/ myself

Additional Discussions

1. How experiments are done
2. How to read a scientific paper



Simplicity to Complexity

A Chess Analogy

Neurotransmitters

(Chemical Messengers)

1. Dopamine

2. Serotonin

3. Oxytocin

4. Endorphins

5. Adrenaline

6. Cortisol

Dopamine

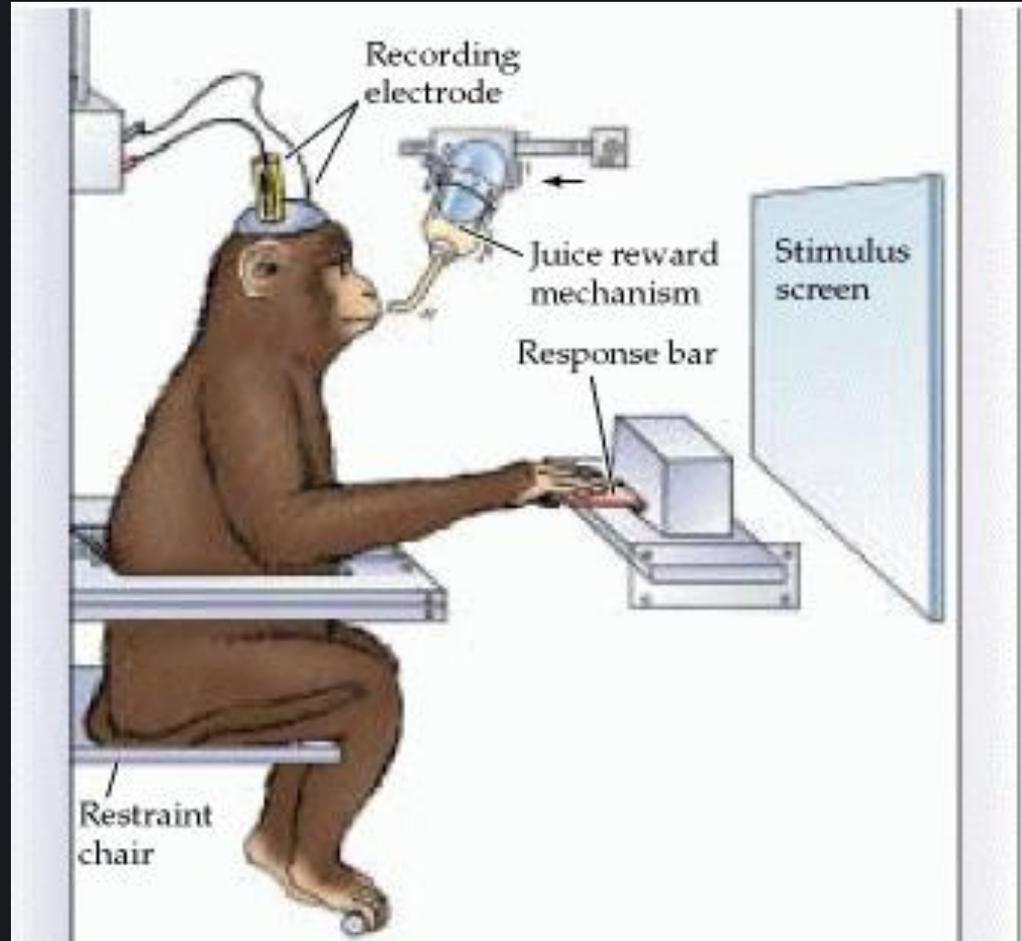


The Bright Side
[youtube.com](https://www.youtube.com)



Dopamine

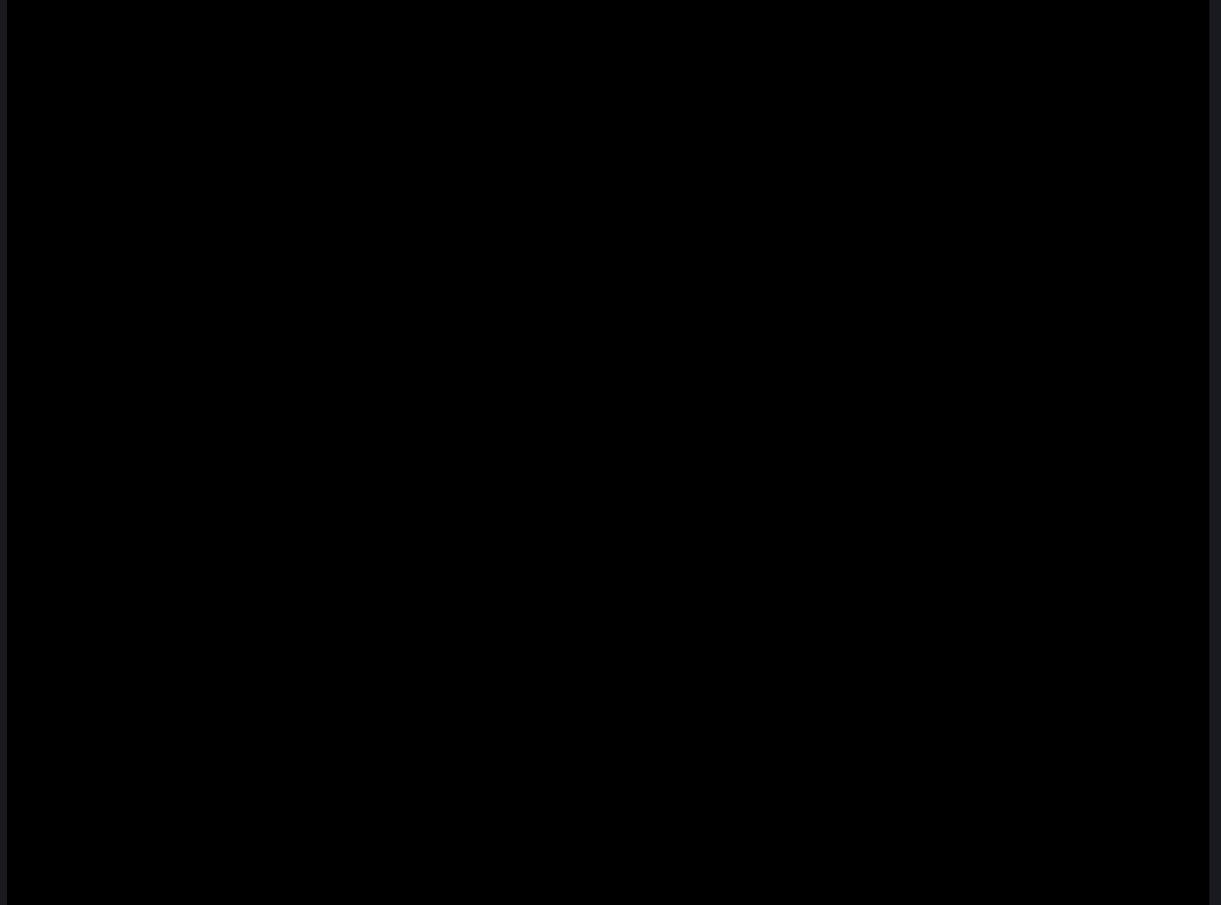
Rhesus Monkeys and
Biological Addiction
Biology 342 Fall 2012 by
Chrissy Schmidt and Liz
Pekarskaya



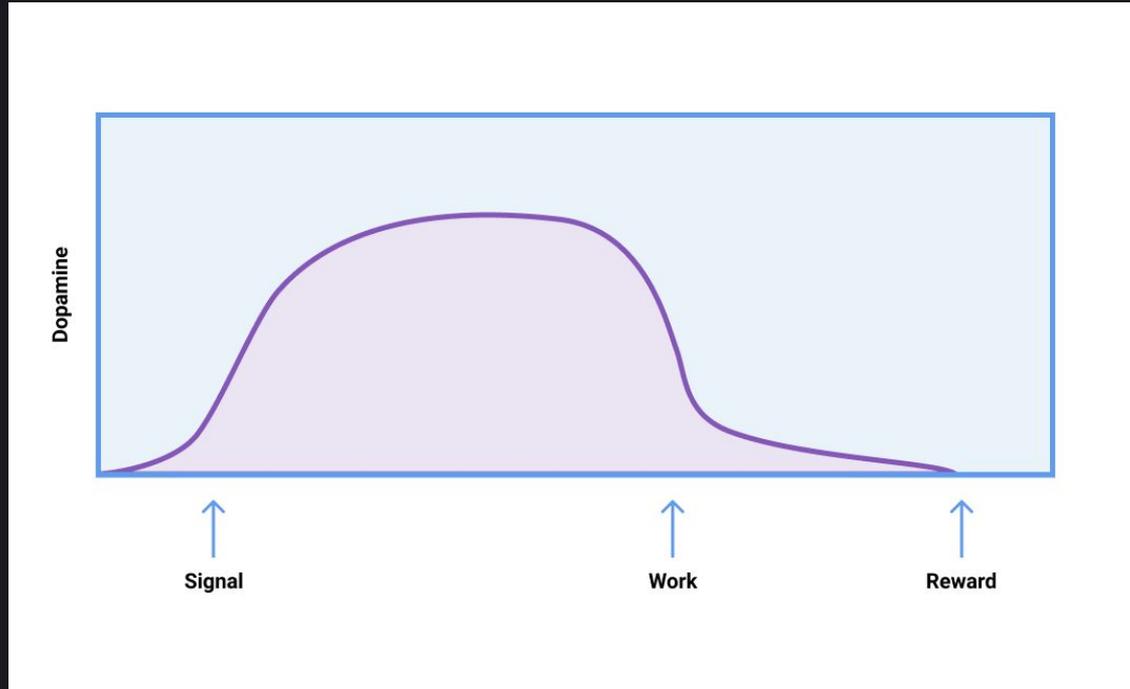
Dopamine Sapolsky's Experiment



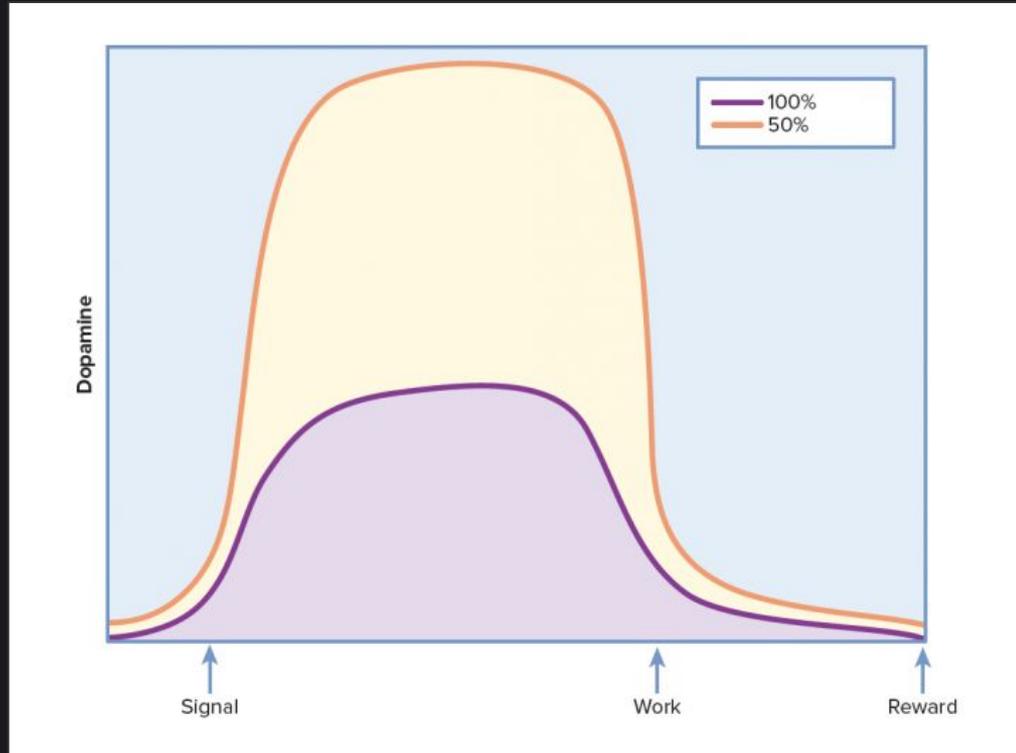
Source: YouTube



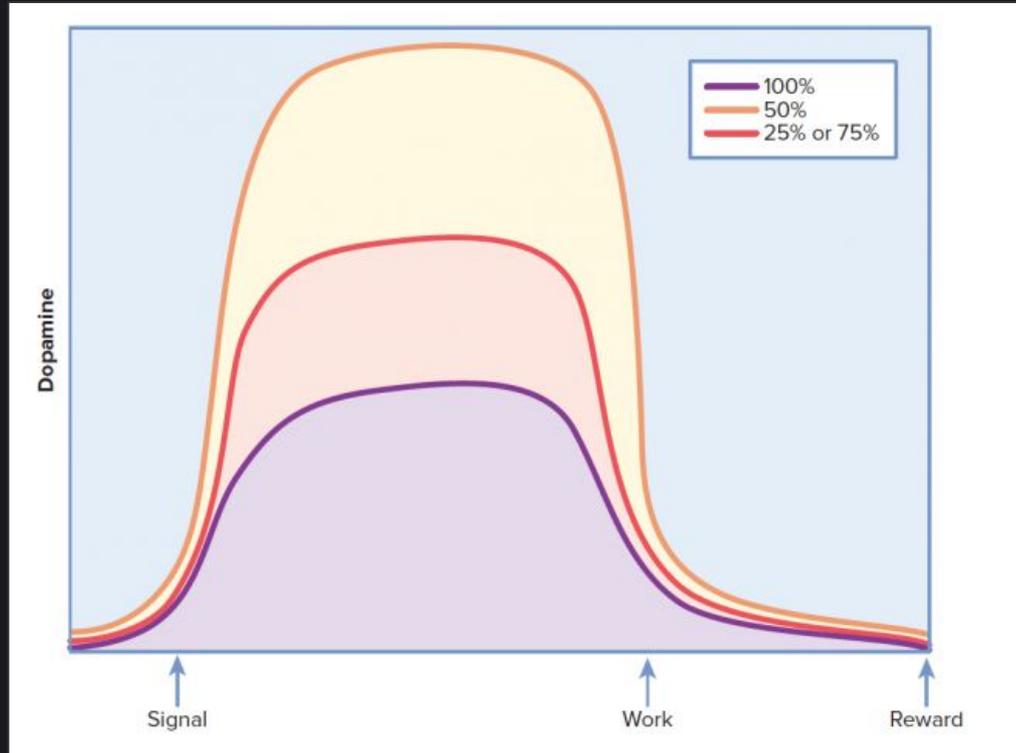
Scenario 1 dopamine response



Scenario 2 dopamine response



Scenario 3 dopamine response



Importance of Dopamine

Dopamine plays an important part in

1. Learning
2. Motivation
3. Mood
4. Attention
5. Movement

Serotonin



The Bright Side
[youtube.com](https://www.youtube.com)

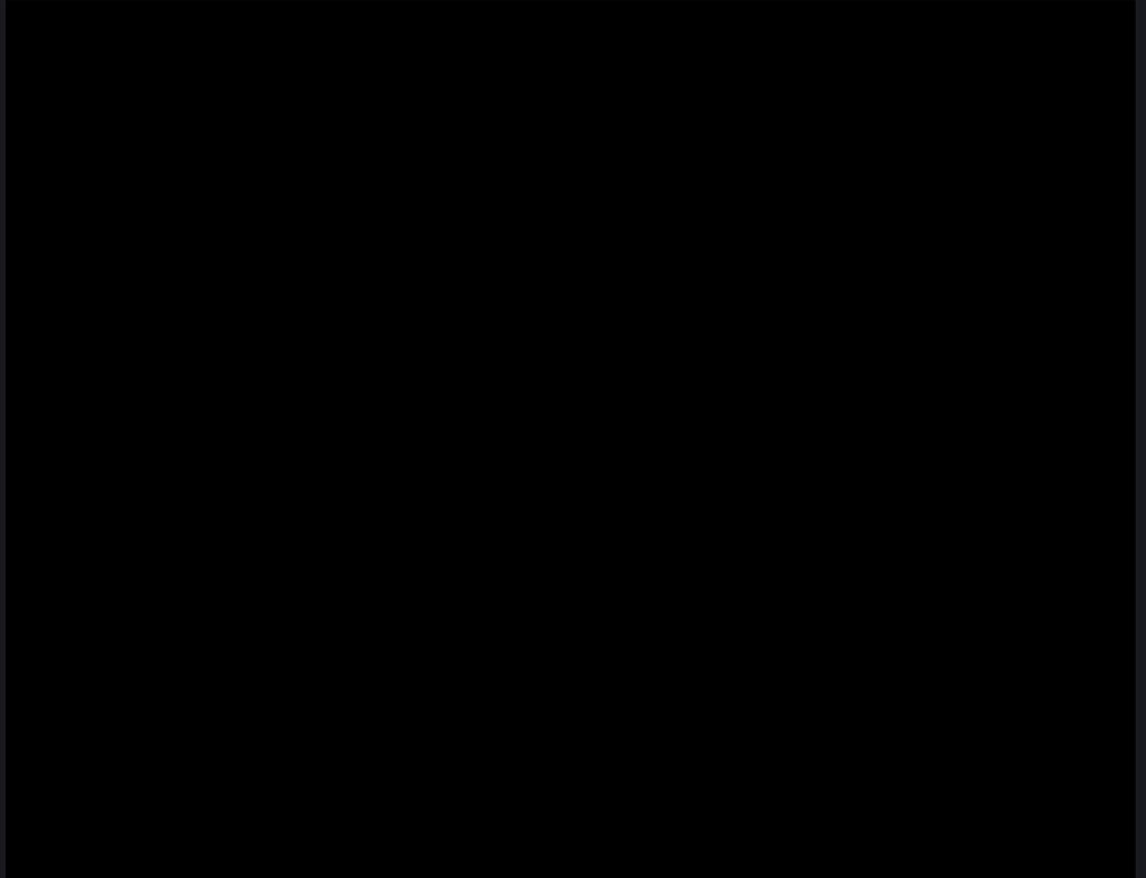


Serotonin as Victory and Confidence hormone



Serotonin

Mood &
Dominance



Importance of Serotonin

Serotonin plays an important part in

1. Regulating mood, happiness and anxiety
2. For stimulating the parts of the brain that control sleep and waking
3. Low levels of serotonin are associated with increased libido, while increased serotonin levels are associated with reduced libido.

Oxytocin

Love hormone



The Bright Side
[youtube.com](https://www.youtube.com)



Oxytocin and Dogs



Oxytocin-gaze positive loop and the coevolution of human-dog bonds,
Science, Vol 348, Issue 6232, 17 April 2015

Importance of Oxytocin

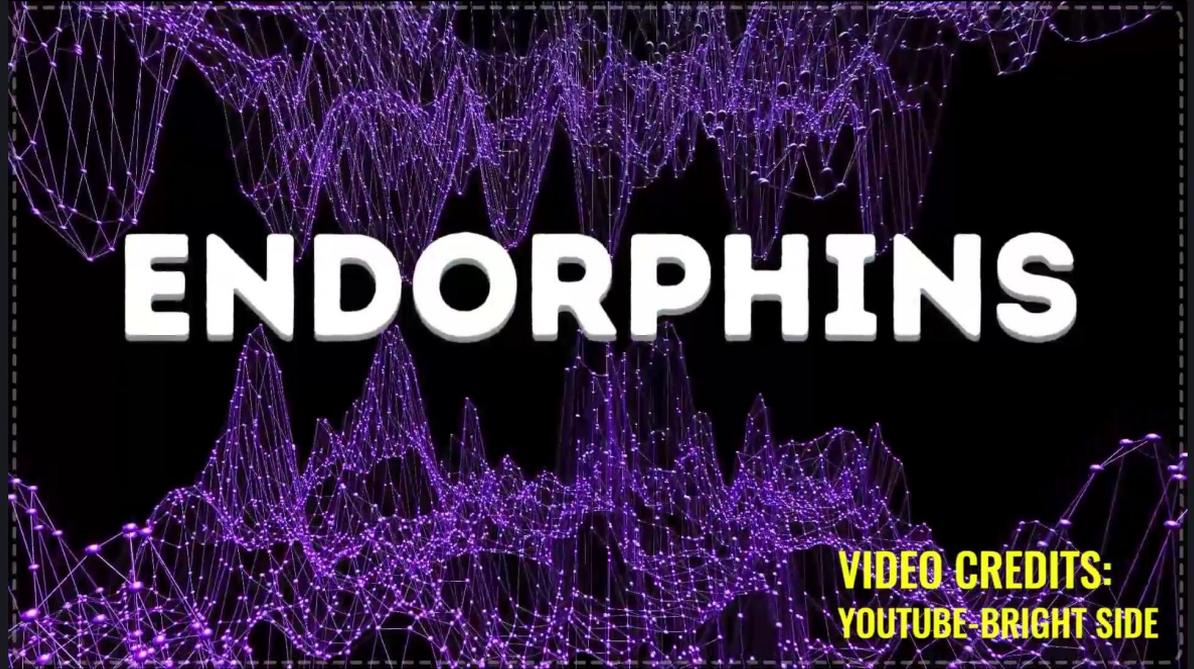
Oxytocin plays an important part in

1. Sexual arousal
2. Recognition
3. Trust
4. Romantic attachment
5. Mother–infant bonding

Endorphine



The Bright Side
[youtube.com](https://www.youtube.com)



Endorphins and physical labor/ pain



Importance of Endorphine

Endorphine plays an important part in

1. Body's natural pain relievers
2. Exercise-induced euphoria (runner's high)
3. Endorphins have been found to be associated with states of pleasure, including such emotions brought upon by laughter, love, sex, and even appetizing food.

Adrenaline

The Bright Side
[youtube.com](https://www.youtube.com)

ADRENALINE



**VIDEO CREDITS:
YOUTUBE-BRIGHT SIDE**

Adrenaline

Fight Flight Freeze



Importance of Adrenaline

1. Adrenaline enriches your blood and gets it where it's needed
2. Adrenaline gives you superhuman pain resistance. It helps knock down your body's ability to sense pain
3. Adrenaline unlocks your absolute maximum strength (for a few moments, at least)

Cortisol

Stress/
Wakefulness



Importance of Cortisol

1. Manages how your body uses carbohydrates, fats, and proteins
2. Regulates your blood pressure
3. Increases your blood sugar (glucose)
4. Controlling your sleep/wake cycle
- 5.
6. Boosts energy, so you can handle stress and restores balance afterward

Positive and Negatives of Neurotransmitters

Neurotransmitters	Positive	Negative
Dopamin	Motivation to do good things	Motivation to open Instagram
Serotonin	Victory	Public Perception
Oxytocin	Love	Violence to protect relationship
Endorphine	Exercise	Self harm
Adrenaline	Fight threats	Makes you nervous talking to girls
Cortisol	Wakefulness	Stress

Neurotransmitters and Psychology

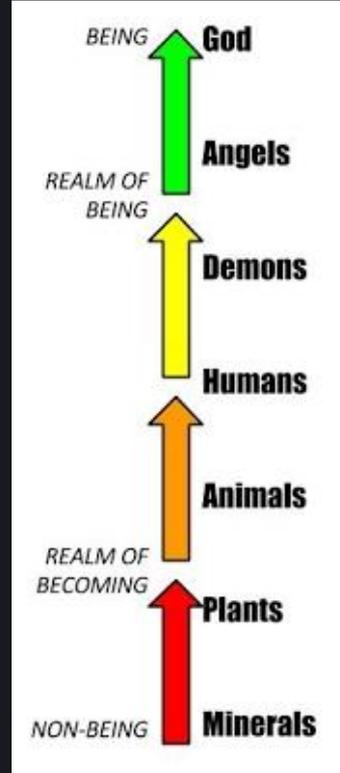
A Philosophical Discussion

Darwin & the Creationists

Scala Naturae

A: medieval Great Chain of Being

B: 1579 drawing of the Great Chain of Being from Didacus Valades [es], *Rhetorica Christiana*

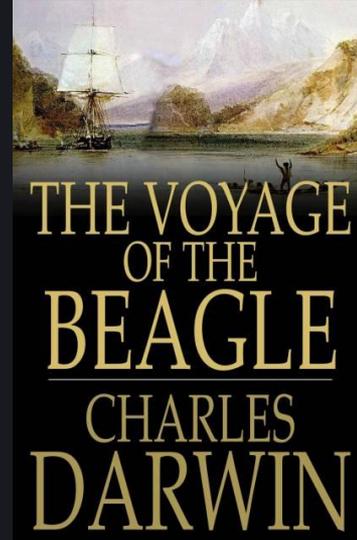
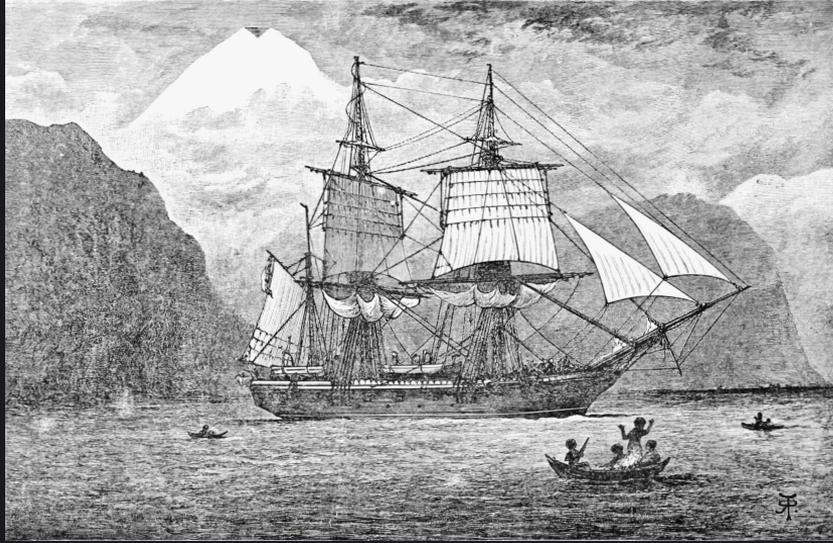


A



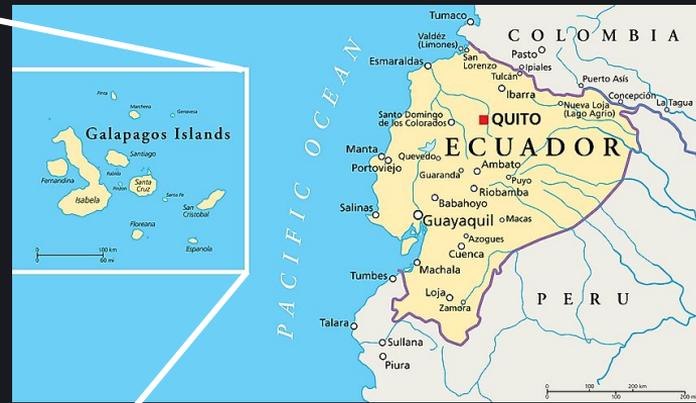
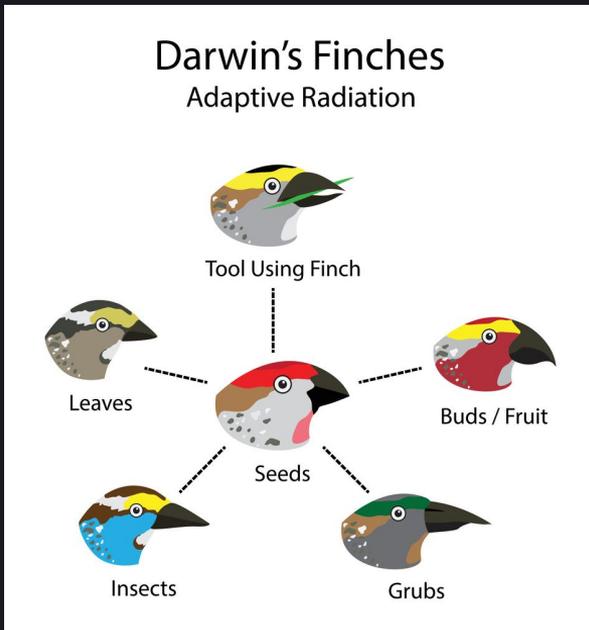
B

Evolution: Darwin



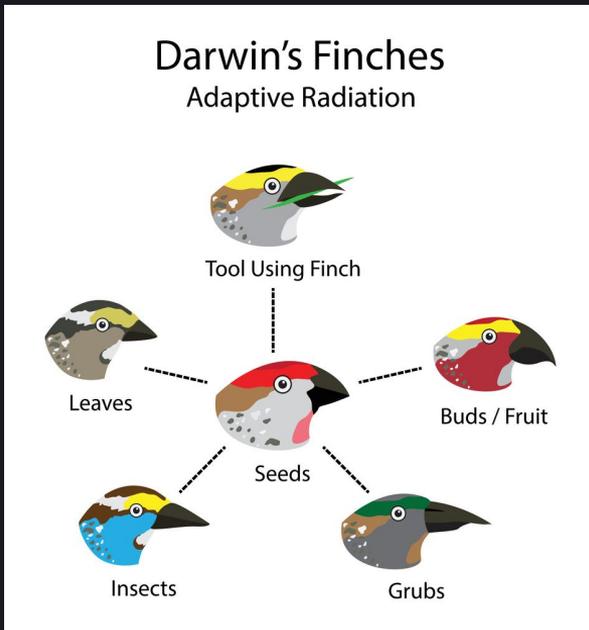
Evolutionary Mechanisms

1. Natural Selection



Evolutionary Mechanisms

1. Natural Selection

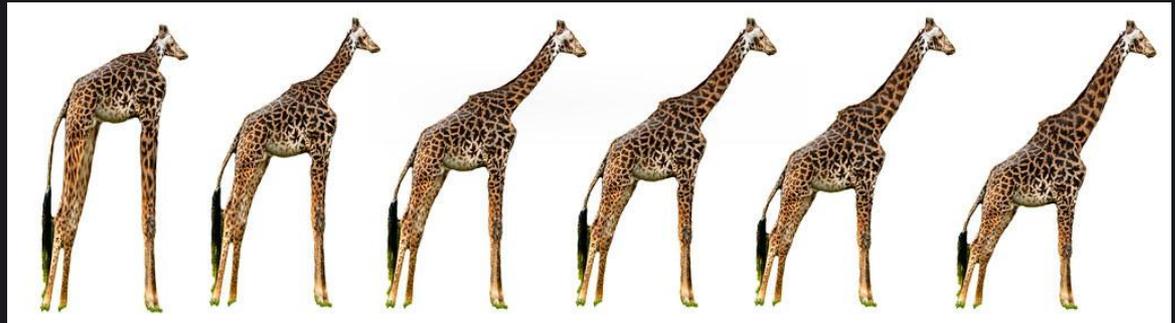
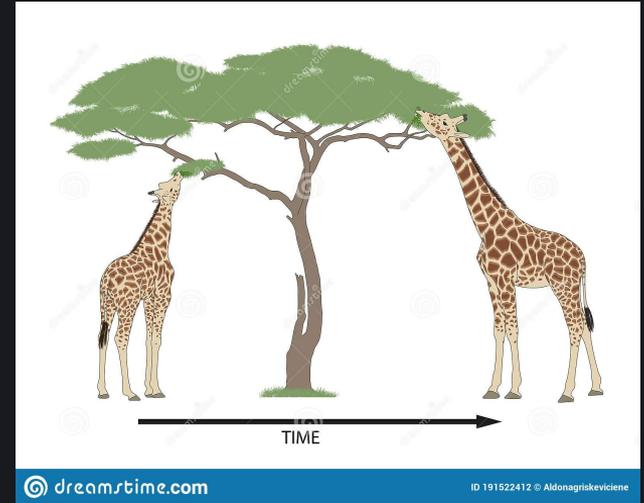


Evolutionary Mechanisms

1. Natural Selection

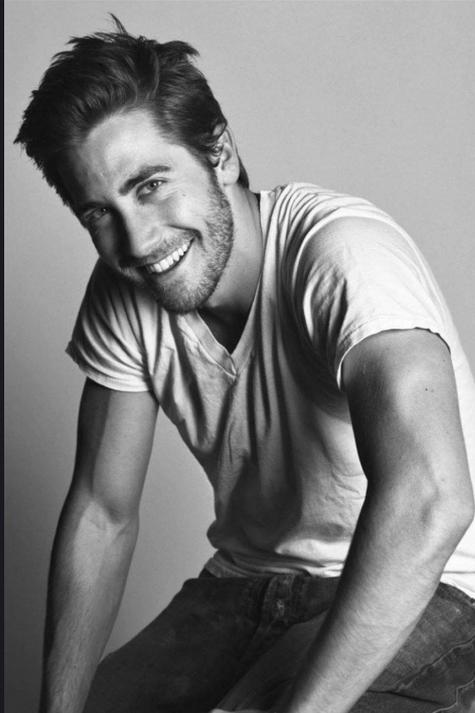
Tools:

1. Natural Pressure to Survive
2. Variation
3. Adaptation fit



Evolutionary Mechanisms

2. Sexual Selection



Evolutionary Mechanisms

2. Sexual Selection

Tools:

1. Selection Criteria
(generally female driven)
2. Behavioral or
Phenotypical adaptation
3. Selection

Phenotype: A phenotype is an individual's observable traits, such as height, eye color, and blood type.

Genotype: the genetic constitution of an individual organism.



Evolutionary Mechanisms

3. Genetic Drift - Isolation

Tools:

1. Isolation
2. New Pressures or Isolated Genes
3. New adaptations and variations

Natural Selection



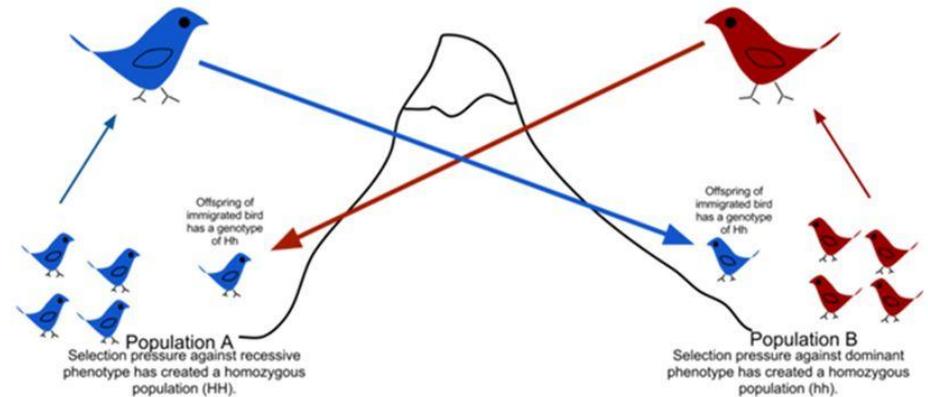
Evolutionary Mechanisms

4. Gene Mixing

Tools

1. Transfer of genotype to new population
2. New Variations
3. Pressures
4. Adaptation Fit

Gene flow and speciation

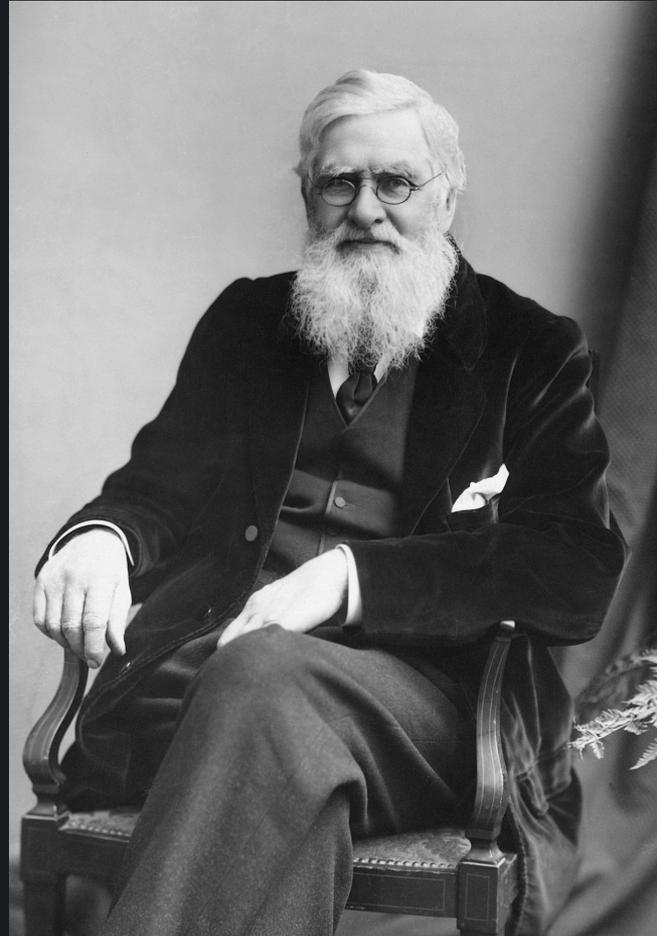


Evolution & Psychology

1. Boundary Condition/ Base code
2. Predispositions
3. Underlying logic- Survival and Sex
(but is it really?)

Evolutionary
Mechanisms

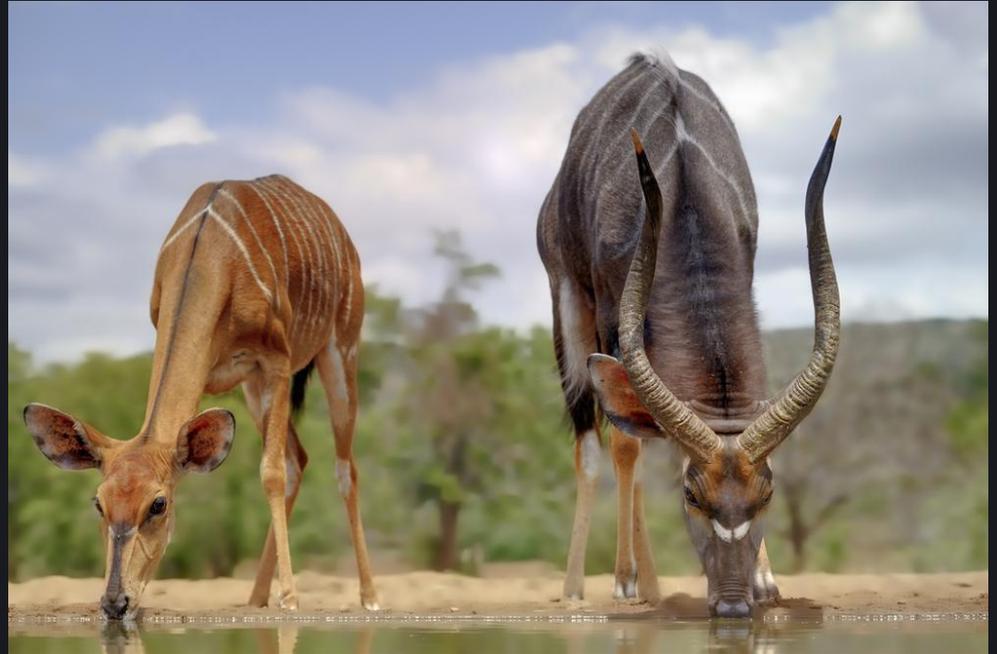
Wallace's dilemma



Sexual Selection

Sexual Dimorphism

Systematic difference in form between individuals of different sex in the same species



Sexual Selection Beauty

Hotness vs Beauty



Sexual studies in Evolution

1. Choosiness
2. Symmetry as an Indicator of Parasite/Pathogen Resistance
3. Major Histocompatibility Complex (MHC)
4. Waist-to-hip ratio
5. Selectivity

Sexual studies in Evolution

1. Choosiness

In an experiment, attractive men and women were paid to approach strangers of the opposite sex and, after a brief conversation, asked one of three questions:

- “Would you go out with me tonight?”
- “Would you come over to my apartment tonight?”
- “Would you go to bed with me tonight?”

Did men and women respond similarly?

Sexual studies in Evolution

1. Choosiness

Some results...

Date?

???

Apartment?

???

Bed?

???

Sexual studies in Evolution

1. Choosiness

Some results...

Date?

50% Men,
50% Women agreed

Apartment?

69% Men,
6% Women agreed

Bed?

75% Men,
No women agreed

Sexual studies in Evolution

1. Choosiness

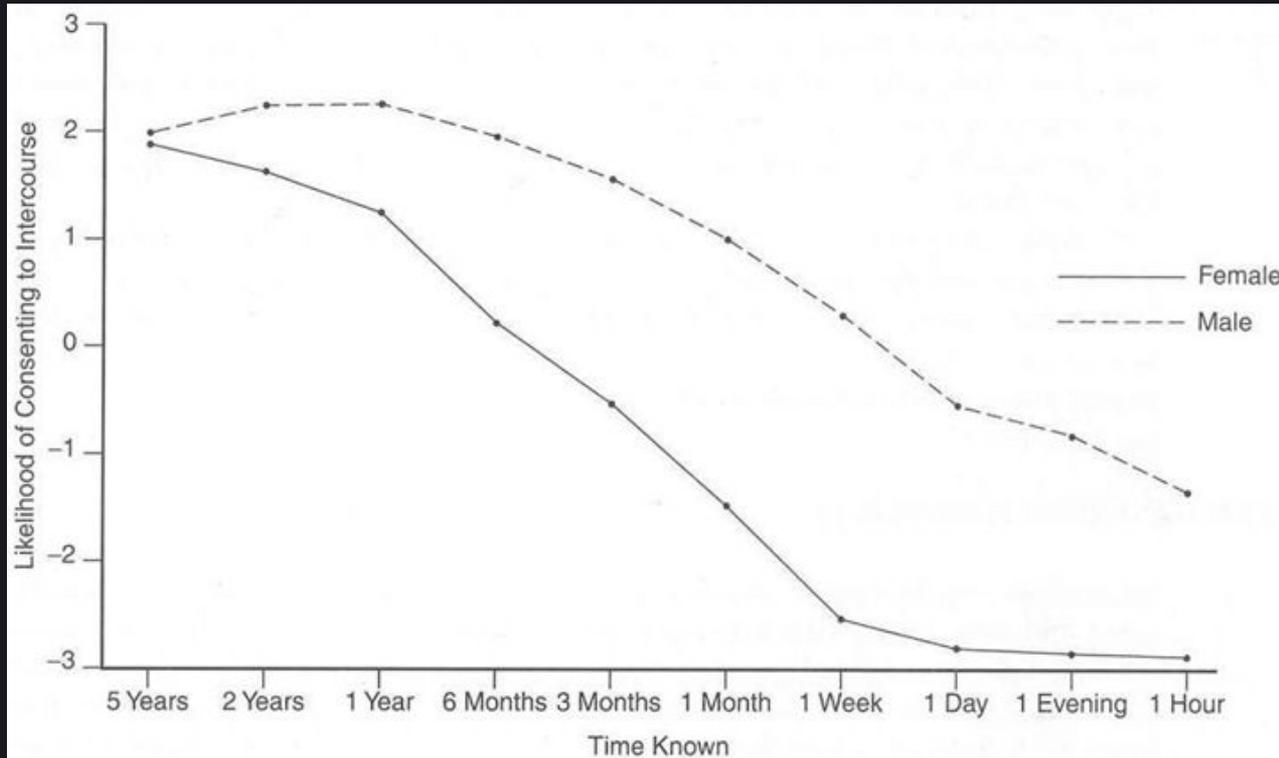
Buss and Schmidt (1993), asked men and women to rate how likely they would be to consent to sexual intercourse with someone they viewed as desirable, given that they had known the person for various periods of time.

Participants rated their willingness on a scale from -3 (definitely not) to +3 (definitely yes)

What do you think they found?

Likelihood of Consenting to intercourse

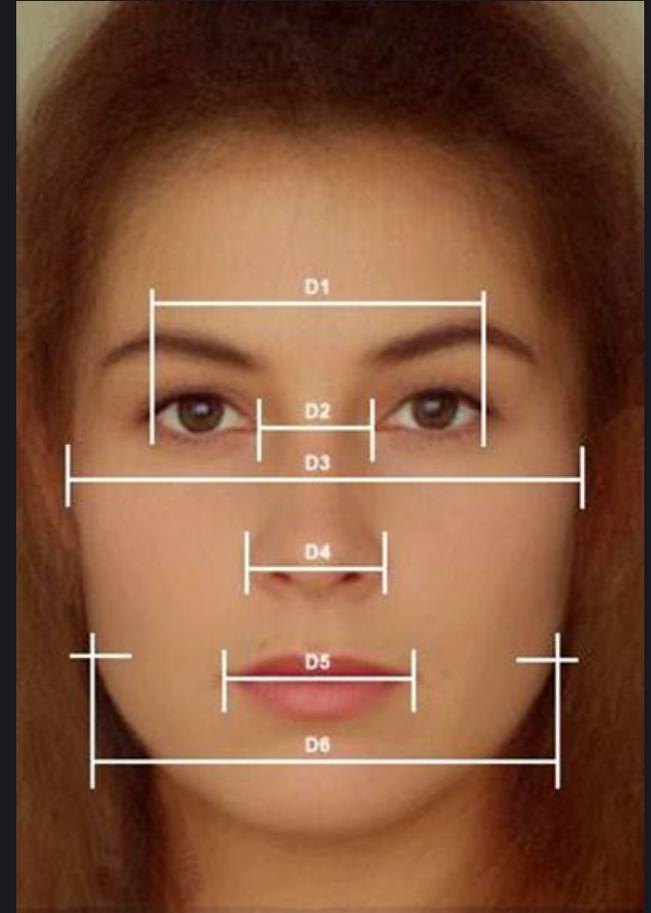
Men consistently indicate a greater willingness to engage in sexual intercourse than women



Sexual studies in Evolution

2. Symmetry as an Indicator of Parasite/Pathogen Resistance

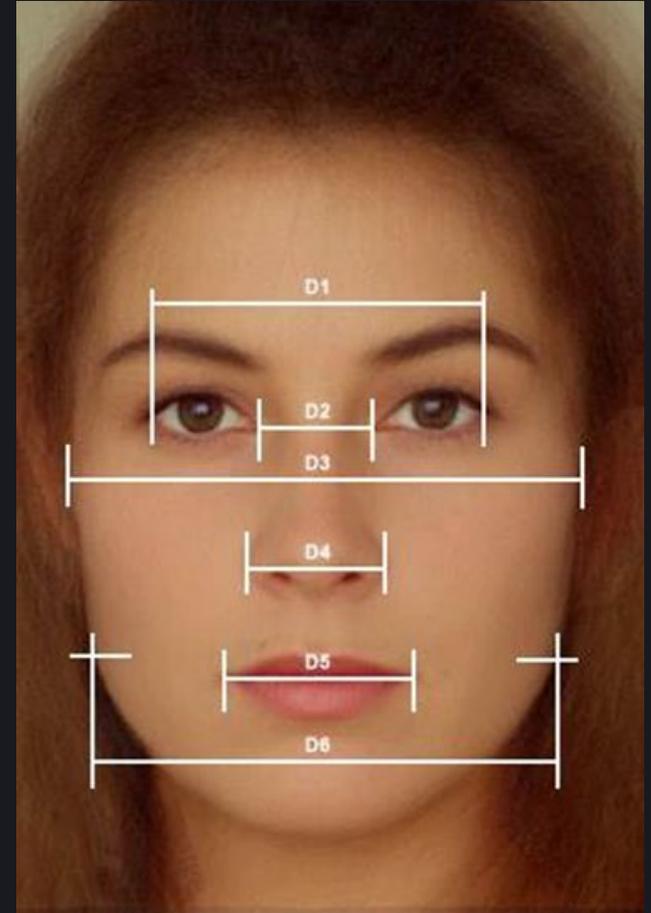
- Faces constitute a life-long “medical record”
- Parasites and pathogens drain the bodies resources and disturb normal processes of growth and development
- These disturbances leave small but permanent traces



Sexual studies in Evolution

2. Symmetry as an Indicator of Parasite/Pathogen Resistance

- No face is perfectly symmetrical
- It has been found that the smaller the deviation from perfect symmetry, the more attractive the face is judged to be
- Found in research using computer morphing techniques
- True for both men and women



Sexual studies in Evolution

3. Major Histocompatibility Complex (MHC)

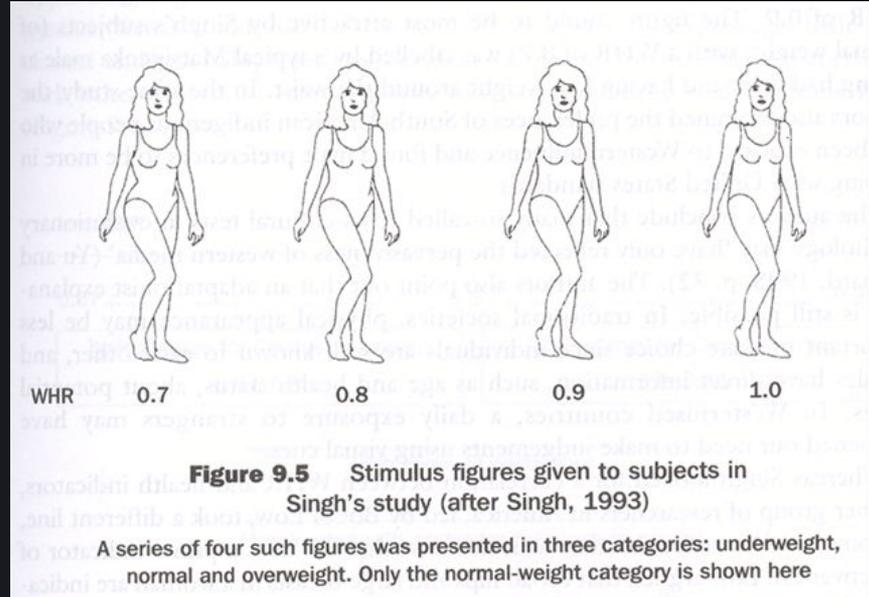
The preference for MHC discordant mates is based on odor.
T-shirt studies

- Men are given a clean t-shirt and asked to wear it without showering or using scented products for two days.
- At the end of this period
- They contribute the shirt to be used as a stimulus in scent preference tests
- Research confirms that women rate odor as a more important criterion than men do
- Women rate odor as the most important physical characteristic of a potential mate.

Sexual studies in Evolution

4. Waist-to-hip ratio

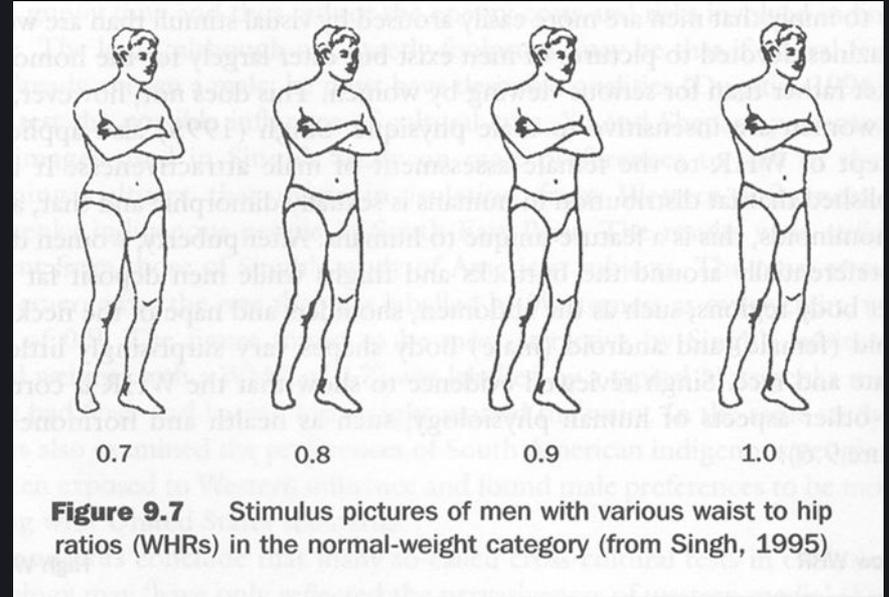
- Men prefer partners with a low waist-to-hip ratio
- This effect is not dependent on weight



Sexual studies in Evolution

4. Waist-to-hip ratio

- Women prefer men with higher waist-to-hip ratios around 1.0



Sexual studies in Evolution

5. Selectivity

Kenrick (1993)

Asked people to specify the minimum ranking of an acceptable partner on a series of characteristics

Status, agreeableness, emotional stability, attractiveness

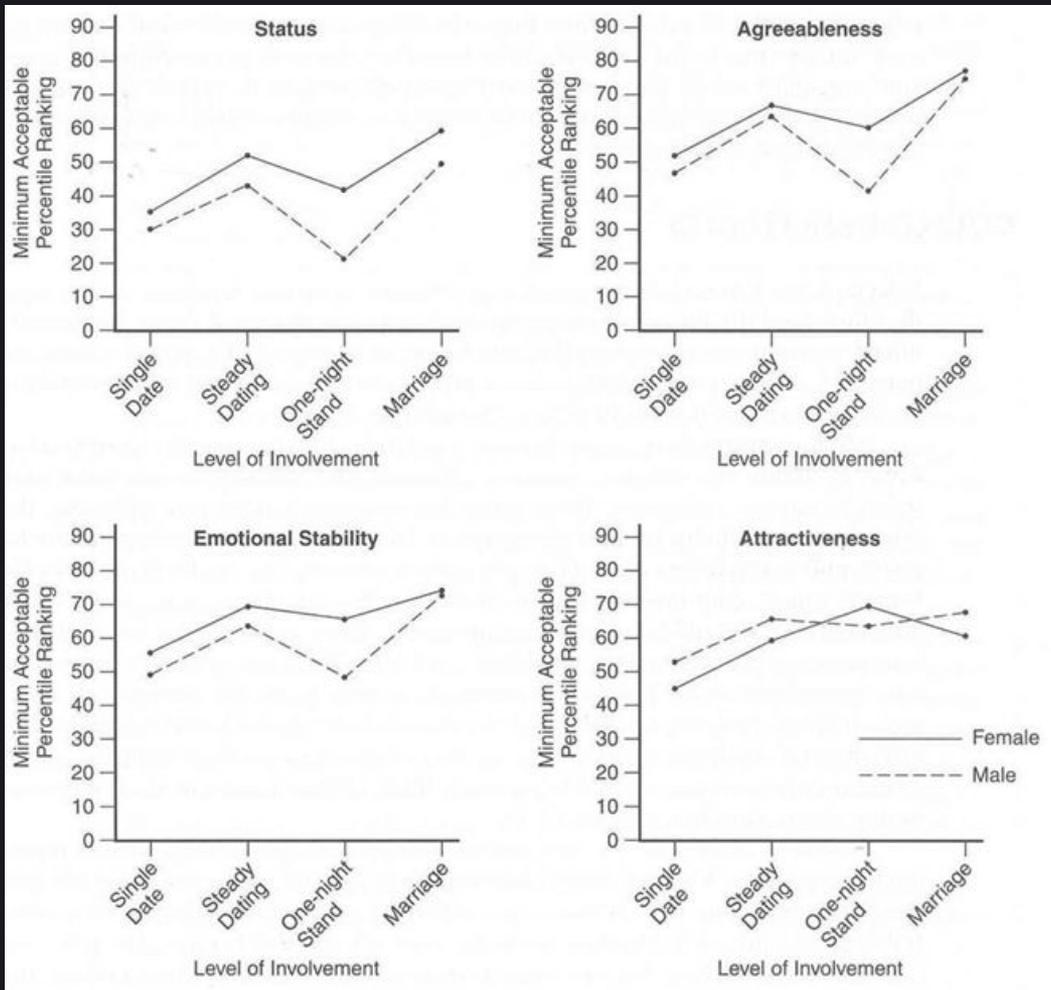
Asked about these minimum percentile rankings for several levels of involvement

Single date, steady dating, one-night stands, marriage

Sexual studies in Evolution

5. Selectivity

Kenrick, D. T., Groth, G. E., Trost, M. R., & Sadalla, E. K. (1993). Integrating evolutionary and social exchange perspectives on relationships: Effects of gender, self-appraisal, and involvement level on mate selection criteria. *Journal of Personality and Social Psychology*, 64(6), 951-969.



Nature & Culture

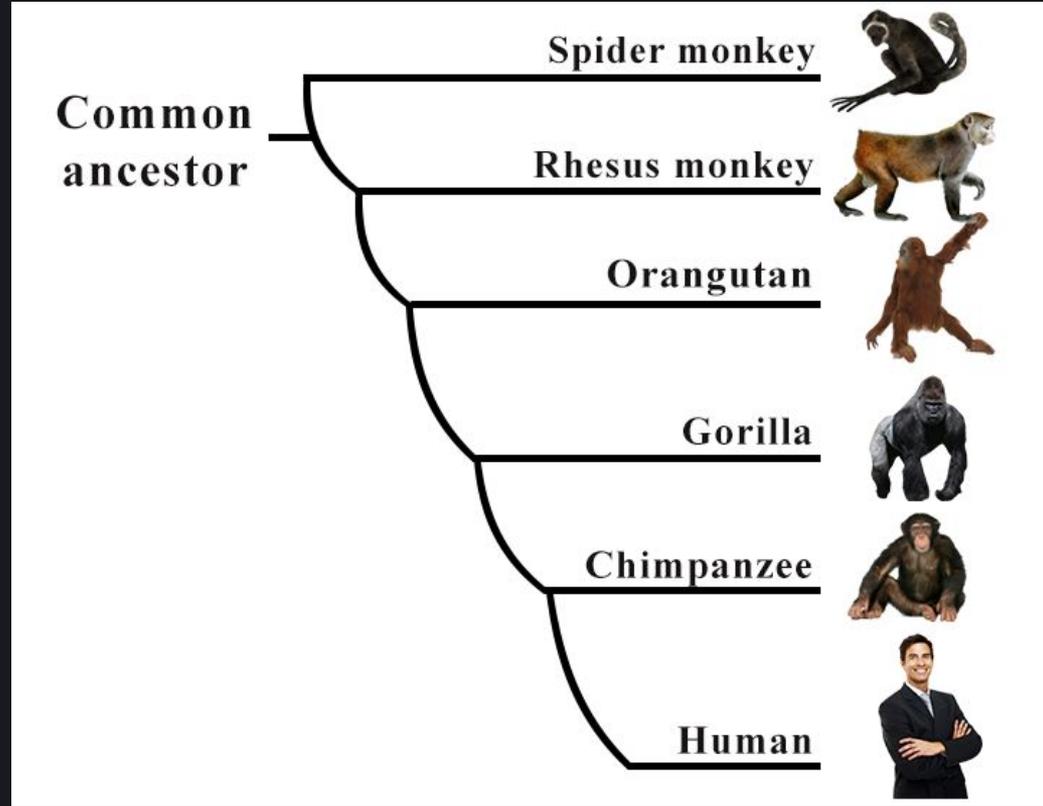


How Evolutionary Thinkers Think



1. Similarity with animals with common parentage

Compare behaviours

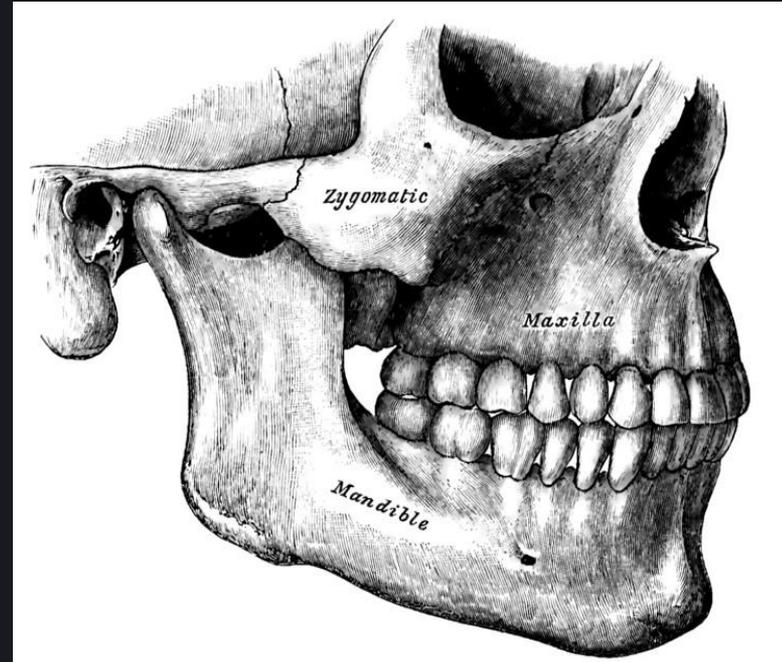
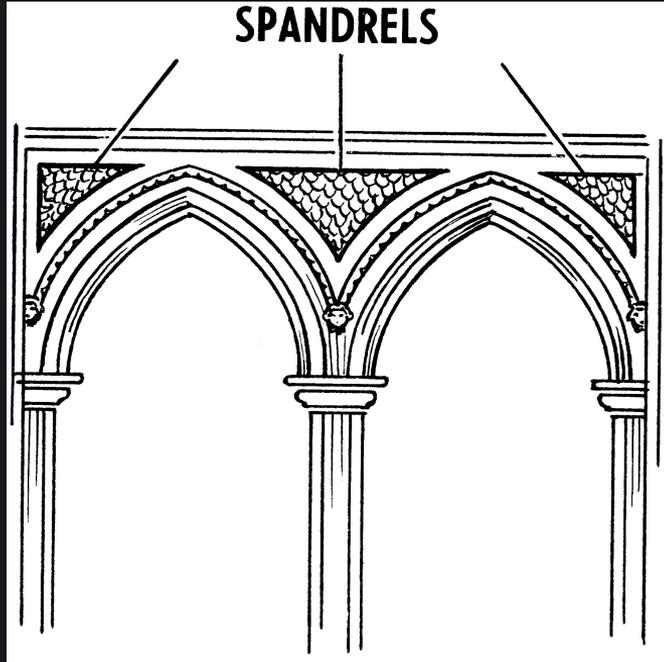


2. Compare other data

- Genetic
- Cellular
- Anthropological
- Paleontological
- Behavioral.

Circular Logic and Forced Explanations (Philosophical Take)

Spandrel



Exaptation

As a trait evolved for other usages, and later co-opted for its current function.

➤ feather



Gould & Vrba(1982)

End.