

1-2011

PSYC 270.01: Fundamentals of Learning

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Fundamentals of Learning

Psychology 270

Contact Information

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Office Hours

By appointment only

Webpages

- Psychology Department URL
 - www.umt.edu/psych

Required Materials

**Learning & Behavior,
(6th edition) by Paul
Chance**

Sniffy Pro Version 2.0



Course Goals

- Acquaint students with current knowledge about learning processes, both elementary and complex
- Expose students to the logic of carrying out empirical investigations of important psychological phenomenon
- Provide simulations of classic learning processes

Topics

- Habituation/sensitization
- Pavlovian conditioning & Theory
- Instrumental conditioning & Reinforcement Theory
- Vicarious learning
- Stimulus control
- Schedules of reinforcement
- Limits of learning
- Basic animal cognition

Assessment

- 1 Midterm Exam + 1 Final
- Each exam (worth 50 points) is composed of 30 multiple choice questions and 2 short answer essay questions
- Exam questions will come from the readings and lecture
- 4 Lab Assignments using Sniffy the Rat (40 points each)
- Requests for reevaluation/rescoring of test items (essays in particular) will be accepted until the date of the next exam.
- Makeup exams will only be given under unusual circumstances and only with prior approval (when appropriate)

Attendance

- While attendance is not required it is **HIGHLY** recommended.
- Note that any changes in the reading or exam schedule will be announced in class and all students, attending or otherwise, will be required to conform to any modifications in the schedule.

General Classroom Behavior

- It is your responsibility to meet the requirements of this course. You may expect me to be in the classroom on time, prepared & organized, and open to discussion/questions pertaining to the day's subject material.
- I will expect you to be in the classroom on time, to be awake and attentive, to participate in demonstrations/discussions, and to be respectful toward the instructor and other students.
- I understand there will be circumstances beyond your control that, on occasion, will require you to leave class early. Please plan accordingly by notifying me at the beginning of class and choose seating that will result in minimal disruption.
- You should feel free to ask any questions in class. Also, please feel free to see the instructor about any classroom issue during office hours.
- Qualified students with disabilities will receive appropriate accommodations in this course. Please speak with me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator.

Electronic Devices

(cell phones/computers/PDAs/MP3 players)

- For what should be blatantly obvious reasons, the use of wireless communications devices during class is prohibited. This specifically includes such activities as 1) placing or receiving phone calls, 2) sending or receiving text messages, and 3) internet searching, game playing, etc.
- If you are an emergency professional (physician/nurse, counselor/therapist, EMT, etc) or you are expecting an **EMERGENCY** communication please set your wireless device to its silent alarm mode and quietly exit the classroom to respond.

Academic Misconduct

- All students must practice academic honesty.
- Academic misconduct is subject to an academic penalty by the course instructor and/or disciplinary sanction by the University.
- All students need to be familiar with the Student Conduct Code. The Code is available for review online at:

<http://www.umd.edu/SA/VPSA/index.cfm/page/1321>

Grading Scale

Percentage

Grade

90-100%

A

80-89.9%

B

70-79.9%

C

60-69.9%

D

0-59.9%

F

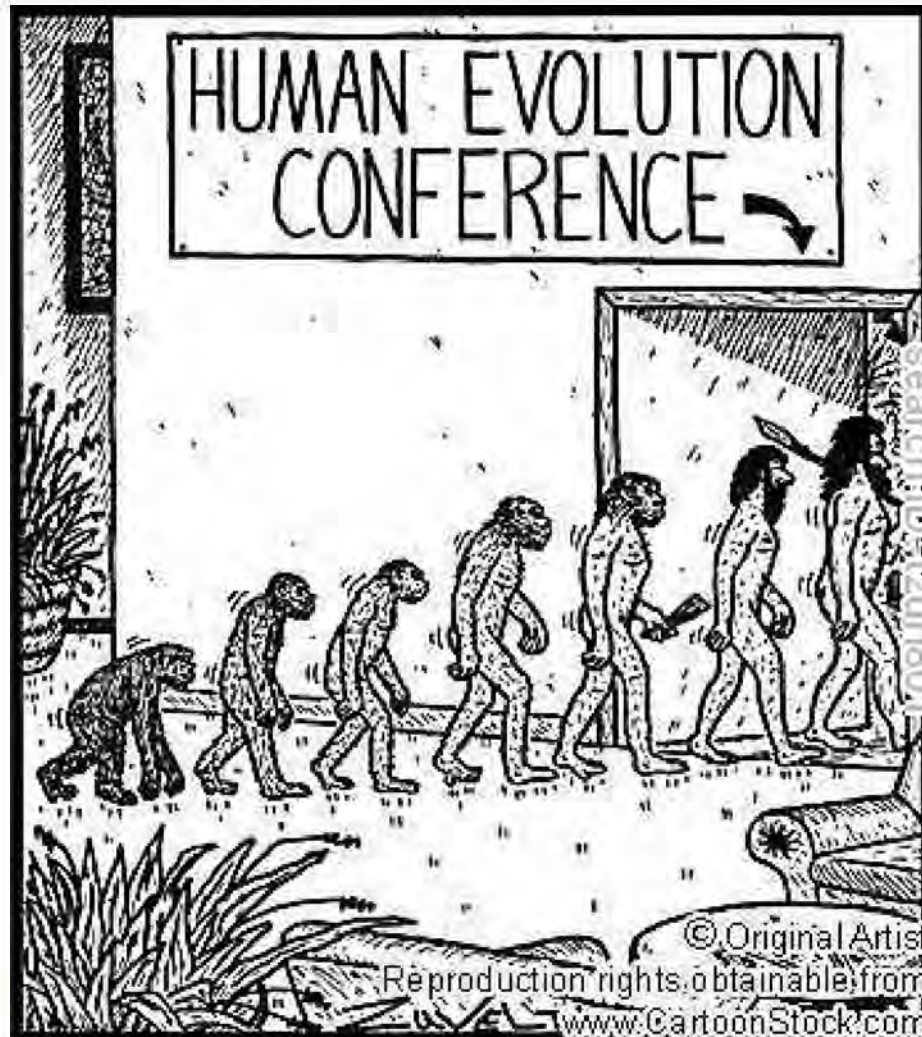
Chapter 1:

Learning to Change

Learning to Change

- “Change is the only constant” – Lucretius-
- “Lifetime of a human” v. “Lifetime of the Earth”
- How do organisms cope with the changes in their environment in order to survive?

Natural Selection

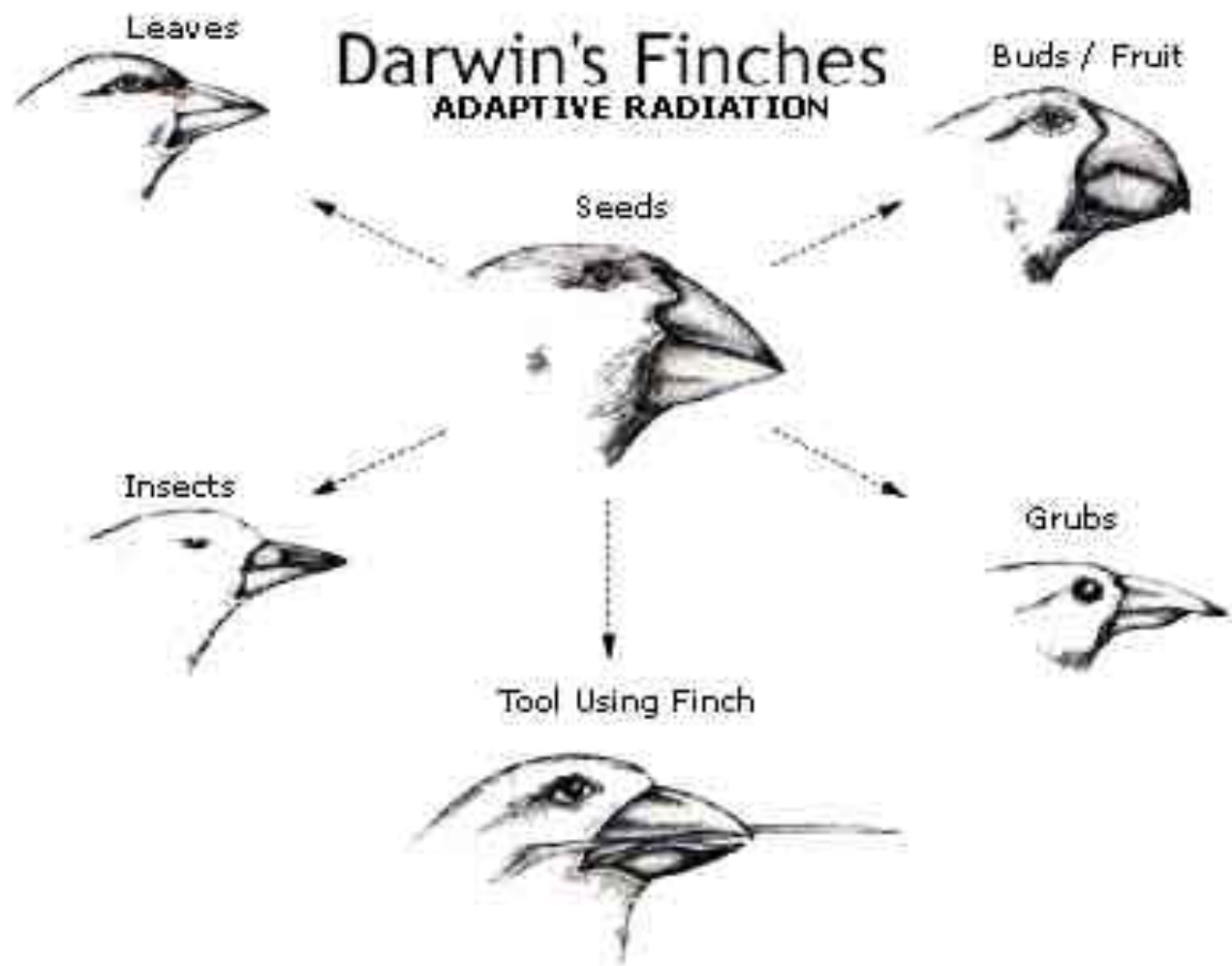


Natural Selection

- *On the Origin of Species* (Darwin, 1859)
- **Natural selection:** adaptations, “survival of the fittest”
- Favorable v. unfavorable traits

Natural Selection

- What makes a trait “favorable”? Can this change?
- Effect of predation: Peppered moths & tree color, rock pocket mice & rock color
- Survival need: Skin color in humans, beak differences in finches
- “What a trifling difference must often determine which shall survive, and which perish!” – Darwin-





NATURAL SELECTION

It can be tampered with.

Natural Selection

- **Mutations:** abrupt changes in genes
- Passed on to future generations, even if they do not appear in “current” offspring
- Neutral (eye color)
- Harmful (two-headed snake)
- Helpful (resistance against diseases)

Reflexes

- **Reflex:** relationship between a specific event and a simple response to that event

Ex: Someone throws something at you → you duck

Purpose: Protection from injury

Reflexes

- Reflex failure: alcohol poisoning, allergic reactions, etc.
- **Sensitization:** increased likelihood of responding to a stimulus (e.g. startle reflex)
- **Habituation:** decreased likelihood of responding to a stimulus (e.g. car alarms)

Modal Action Patterns

- *Series of interrelated acts found in all or nearly all members of a species*
- Unlike reflexes, MAPs:
 - (1) involve the entire organism and/or
 - (2) are more complex (series of acts)

Modal Action Patterns

- **Protection from predators:** cat “attack posture”, opossum “plays dead”
- **Protection from environment:** bird migration- “flying V”
- **Courtship and mating:** Mating “dances”, male rival “battles”

Modal Action Patterns

- <http://www.youtube.com/watch?v=vUNZv-ByPkU> (**Grelag goose**)

Modal Action Patterns

- Are modal action patterns “thoughtful” ?
- Do humans have any modal action patterns?

General Behavior Traits

- *General behavior tendencies* (e.g. activity level, aggression, anxiety, sexual practices)
- Can be controlled through selective breeding (e.g. fearfulness, aggressiveness, intelligence)
- **Different from MAPs because:**
 - (1) Occur in variety of situations
 - (2) Plasticity of the behavior (more variable)

General Behavior Traits

- Genetic basis of: some psychiatric disorders, gender identity, sexual orientation, group affiliation (need for belongingness v. “hermits”)
- Traits are “selected” based on usefulness, survival value

Limits of Natural Selection

- Slow
- Does not help currently existing individuals cope with change within their lifetime
- Some traits still exist even though they are no longer as favorable (e.g. Human preference for sweet and salty foods → abundance in our society)

Learning

- *Change in behavior due to experience*
 - (1) *change*: includes acquisitions and reductions in behaviors
 - (2) *behavior*: anything an organism does that can be measured (Reber, 1995)
 - (3) *experience*: exposure to events that affect behavior

Nature v. Nurture

- **Question:** Are we “born that way” or are we “taught that way”?
- **Answer:** Both
- **Examples:** Are humans naturally aggressive? Are sexual practices “inborn”? What makes an organism a good parent”?

Humans: The Superior Animal?

- Are humans superior to other animal species?
- What traits do we now see exist in other species just as much as humans?
- Are there traits that humans still seem to have that other species do not?