


Functional Assessment of Behavior:
Introduction to Behaviorism

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Course Overview

- * Course Objectives
- * Texts/Readings
- * Assignments/Grading
- * Schedule
- * Fieldwork Timeline
- * Letter to supervisors
- * Portfolio
- * Go to the course materials webpage download/print all Assessment Tools:
http://www.csus.edu/indiv/b/brocks/courses/eds%20240/student_materials.htm

Behaviorism

- * A collection of theories (explaining why certain factors have specific effects) that focus on external observable events (occurring outside of the organism).
 - ◆ Emphasizes the role of the environment in learning.
- * Principles of behaviorism are essential to the understanding and application of functional assessment.

Basic Assumptions of Classic Behaviorism

- ✧ Equipotentiality.
 - ◆ Principles of learning apply equally to different behaviors and different species.
 - ◆ What is learned about the learning of one species can be generalized
 - Much behavioral research is done with animals.
- ✧ Emphasizes Stimulus (cause) – Response (effect) relationships.
 - ◆ Study of learning must employ same methods used in physical sciences.
 - ◆ The introduction of an IV (cause or stimulus) should be studied to determine its effect on a DV (specific effect or response).

Basic Assumptions of Classic Behaviorism

- ✧ Defines learning as an observable behavioral change.
 - ◆ Study of learning is a science. Focuses on the observable/measurable. Stimulus from the environment and response from the organism fits this requirement.
- ✧ Tabula Rasa
 - ◆ Besides specific instincts, organisms are not born to behave in any particular way.

Basic Assumptions of Classic Behaviorism

- ✧ Excludes from study internal processes.
 - ◆ Internal processes cannot be directly observed, thus they cannot be studied.

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graph LR; Stimulus --> BlackBox["Black Box  
Thoughts, Emotions,  
Motivations"]; BlackBox --> Response;
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- ◆ However, neo-behaviorists believe that factors operating within the individual are important, and are thus often referred to as S-O-R theorists.

Basic Assumptions of Classic Behaviorism

- ✦ Learning is documented by observable behavior change.
 - ◆ Learning has occurred only when behavior change is observed.
- ✦ Conditioning is often used instead of “learning.”
 - ◆ Behavior is conditioned by environmental events.
 - ◆ The things we learn – the results of experience – are often beyond our control.
- ✦ Parsimony.
 - ◆ Explain learning in as few principles as possible.

Modern Behaviorism

- ✦ Has begun to focus on internal factors (e.g., motivations or “functions of behavior”).
- ✦ Pays more attention to the role of aversive stimuli as being important to learning.
- ✦ Learning (ability) and performance (choice) are related, but not necessarily one in the same.

Educational Implications of Modern (or Neo) Behaviorism

- ✦ Learning is behavior change.
 - ◆ Students as active respondents
 - ◆ Assessment. Need to document learning has occurred.
 - ◆ Practice needed to learn
- ✦ Drill and practice.
 - ◆ Repetition strengthens/makes more automatic habits
- ✦ Rewards (or consequences) are very important.
 - ◆ Behaviors have certain consequences.
 - ◆ If a behavior is rewarding, then...

Educational Implications of Modern (or Neo) Behaviorism

- ✦ Functional Assessment
 - ◆ Focus on the *function* of the behavior (not the form or topography). For example, consider the following...
 - Chris, a 7-year-old student diagnosed with an emotional disability engages in shoving, swearing, and throwing of materials when asked to complete science lab worksheets
 - Arlene, a 12-year-old student with a diagnosis of mild mental retardation, displays high-pitched vocalizations, as well as throwing work materials, when teachers work directly with her peers within the classroom.
 - Felix, a 14-year-old with a diagnosis of autistic disorder, exhibits inappropriate verbalizations and throwing of objects in a variety of settings, at different times of day, and with various peers and staff members.

Steege & Watson (2009, p. 5)

Functional Assessment in School

- ✦ IDEA '97 (PL 105-17)
- ✦ IDEA '04 (PL 108-446)

Origins of Functional Assessment

- ✦ Law of Effect
 - ◆ Thondike (1898)
- ✦ Classical Conditioning (Stimulus-Response)
 - ◆ Watson (1920s)
- ✦ Operant conditioning
 - ◆ Skinner (1930s)
- ✦ ABC analysis
 - ◆ Bijou et al. (1960s)
- ✦ Function of behavior
 - ◆ Carr (1970s) and Iwata et al (1980s)

Law of Effect

❖ Law of Effect

- Briefly, the law of effect states that behaviors that result in satisfying consequences are “stamped in” or tend to recur and those that result in “annoying” consequences are “stamped out” and tend not to recur.

Steege & Watson (2009, p. 19)

Types of Punishers & Reinforcers

Reinforcers	Increase the frequency of behavior
Primary	Primary satisfy basic physical needs.
Secondary	Secondary become reinforcing via learned associations (classical conditioning) with primary reinforcers.
Punishers	Decrease the frequency of behavior
Punishment I	PI (or positive punishment) = presentation of an aversive.
Punishment II	PII (or negative punishment) = removal of a pleasant stimulus

Types of Punishers & Reinforcers

Positive Reinforcement	Obtaining desirable stimuli.
Negative Reinforcement	Escape - terminating an aversive stimuli Avoidance - learning to stay away from an aversive stimuli

Types of Punishers & Reinforcers

	Primary Automatic reinforcers	Secondary Learned reinforcers
Positive Obtaining desired stimuli	•Physical pleasure	•Money
Negative Escape/avoid undesired stimuli	•Physical pain	•School

- ### Factors Affecting Reinforcement Effectiveness
- ✦ Timing of reinforcement
 - ✦ Magnitude and appeal
 - ✦ Consistency

Types of Reinforcement Schedules

“Continuous reinforcement is clearly the most effective way of *teaching a new response*. Once the terminal behavior has been reached, however, ... intermittent reinforcement schedules – ratio, interval, and differential – can be beneficial both in *preventing extinction* (the DRO schedule excepted) and in controlling the frequency and pattern of that response” (Ormrod, 1999, p. 56).

Eliminating Undesired Behaviors

Extinguishing Responses	Removal of the reinforcer.
Reinforcing Other Behaviors	Reinforcement for not displaying a behavior/response.
Reinforcing Incompatible Behaviors	Reinforcement for displaying a behavior that is incompatible with the target behavior.

When these prove ineffective a form of punishment will need to be considered.

Explaining the Failure of a Reinforcement System

1. The “reinforcer” is not reinforcing.
2. Reinforcement is inconsistent.
3. The response (new behavior or behavioral change) is not worthwhile.
4. Shaping takes place too rapidly.

Punishment Options

1. Time out
2. Response cost
3. Verbal Reprimand
4. Restitution and
5. Overcorrection

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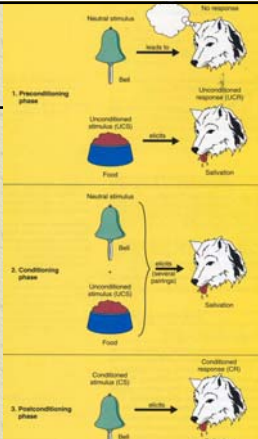
Classical Conditioning: Stimulus > Response SR Theory

Classical conditioning is based on the premise that certain stimuli automatically trigger certain (typically physical) responses.

UCS	UCR
<i>(Possible triggers of the UCR)</i>	<i>(Involuntary, automatic, reflexive reactions)</i>
Food, food smells	Salivation
Exercise, intoxication, sex	Pleasure
Injury	Pain
Load noise	Startle
Strenuous exercise	Exhaustion
Fatigue	Sleep
Nausea	Displeasure

Classical Conditioning:

1. A neutral stimulus (NS) is paired with an unconditioned stimulus (UCS).
2. Overtime this association changes the NS to a conditioned stimulus (CS).
3. This occurs when the CS elicits the same response as the UCS [a conditioned response (CR)]



Classical Conditioning

Bunny		Loud Noise		Startle
NS	+	UCS	=	UCR
▼				▼
cS			=	cR
Bunny				Startle

Classical Conditioning

School office		Punished		Anxiety
NS	+	UCS	=	UCR
▼				▼
cS			=	cR
School office				Anxiety

- A NS (office) is paired with an UCS (punishment).
- Overtime this association changes the NS to a CS.
- This occurs when the CS (office) elicits the UCR (anxiety). The UCR is now referred to as a CR.

Classical Conditioning

- ❖ Occurs when two stimuli are presented at about the same time.
- ❖ For a NS to become a CS it is most effective if it is presented just before the UCS.
- ❖ Contiguity may, however, be overly simplistic.
- ❖ Contingency is perhaps more important. The potential conditioned stimulus must occur only when the UCS is going to follow.
- ❖ Sometimes one pairing is enough for the learning/conditioning to take place.

Classical Conditioning

- ❖ The more noticeable the NS, the more likely it is to become a CS.
 - ◆ The more likely the organism is to recognize the association between the NS and the CS.
- ❖ Some stimuli are more naturally associated (e.g., food and nausea).
 - ◆ This is referred to as associative bias.
- ❖ Characteristics of the NS affect the degree to which it becomes and CS.
 - ◆ The more noticeable the NS (the principal's office is very unique) the more likely it is to become a CS
- ❖ Classical condition is now thought to involve cognitions.

Extinction

Hospital		Surgery		Pain/Fear
NS	+	UCS	=	UCR
▼				▼
CS			=	CR
Hospital				Fear
▼				
CS		UCS	≠	CR
Hospital		Job		

CS will weaken and eventually disappear if the UCS is no longer associated with it.
 The weaker the CS, the quicker it will be extinguished.
 Extinction is not always predictable.

School and Classical Conditioning

In the school setting it is very easy for a variety of NS to be associated with UCS

<i>Neutral Stimuli</i>	<i>Unconditioned Stimuli</i>	<i>Unconditioned Response</i>
School	Punishment	Pain/Fear
Teacher	Failure	Anxiety
School Work	Frustration	Anxiety

Further, CRs can be very durable and difficult to eliminate.
 This emphasizes the importance of setting children up for early school success.

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Classical vs. Operant Conditioning

Operant conditioning ($R \rightarrow S_{RF}$)

- A voluntary response (R) is followed by a reinforcing stimulus (S_{RF}).
- As a result, the response is more likely to be displayed by the organism.
- A reinforcer is any stimulus that increases the frequency of a behavior.
- To be a reinforcer stimuli **must immediately follow** the response and **must be perceived as contingent** upon the response.

Classical vs. Operant Conditioning

Classical conditioning ($S \rightarrow R$)

- An involuntary response (UCR) is preceded by a stimuli (UCS), or
- A stimulus (UCS) automatically triggers an involuntary response (UCR)
- A neutral stimulus (NS) associated with UCS automatically triggers a conditioned response.
- The NS becomes a conditioned stimulus (CS).

Behavioral Explanations for PTSD

Symptoms			
Type of Reaction	Re-experience	Avoidance and Numbing	Increased Arousal
<i>Somatic</i>	<ul style="list-style-type: none"> • Reactivity to reminders (e.g., sweating, rapid heart beat, nausea, dizziness, dry mouth, difficulty breathing) 	<ul style="list-style-type: none"> • Sensory numbing 	<ul style="list-style-type: none"> • Abdominal distress • Hot flashes or chills • Frequent urination • Trouble swallowing
<i>Behavioral</i>	<ul style="list-style-type: none"> • Insomnia • Increased activity • Aggression • Act as if trauma were recurring 	<ul style="list-style-type: none"> • Avoidance of trauma reminders (e.g., activities, locations, conversations, people, things) • Decrease interest in significant activities • social withdrawal 	<ul style="list-style-type: none"> • Insomnia • Exaggerated startle
<i>Cognitive</i>	<ul style="list-style-type: none"> • Intrusive recall • Flashbacks • Trauma nightmares 	<ul style="list-style-type: none"> • Annesia 	<ul style="list-style-type: none"> • Poor concentration • Hypervigilance
<i>Emotional</i>	<ul style="list-style-type: none"> • Psychological distress with exposure to reminders (e.g., anxiety, anger, guilt, shame, hopelessness) 	<ul style="list-style-type: none"> • Emotional numbing 	<ul style="list-style-type: none"> • Irritability • Outburst of anger

Behavioral Explanations for PTSD

Re-experiencing

NS	+	UCS	=	UCR
e.g., a setting		a trauma		acute distress
NS>CS			=	CR
e.g., a setting				acute distress

Behavioral Explanations for PTSD

Avoidance

Voluntary Response	=	Reinforcing Stimuli
Escape/Avoidance	=	Negative Reinforcement

Arousal

NS	+	UCS	=	UCR
e.g., a setting		a trauma		fight or flight
NS>CS			=	CR
e.g., a setting				acute distress

Classical and Operant Condition Work Together

✱ Behavior can be caused by events that precede it (i.e., S-R) and by events that follow it (i.e., OC). In some instances, behavior is a function of both SR and OC. In such instances, the behavior may be referred to as “two-factor” behavior.

Steege & Watson (2009, p. 121)

Basic Concepts in Operant Conditioning

Concept	Definition
Free Operant Level	Natural level of behavior. Individual “natural levels of behavior” are very different. Important to determine because (a) defines the need for intervention and (b) can be used to assess intervention effectiveness.
Terminal Behavior	Desired frequency of a behavior at the end of a planned reinforcement.

Basic Concepts in Operant Conditioning

Concept	Definition
Extinction	Reinforcing stimulus no longer follows a response. ($R \neq S_{RF}$)
Superstitious Behavior	People try to figure out what they can to obtain desirable outcomes and may become superstitious if contingencies are not clearly specified
Shaping	Procedure used when the free operant level of a behavior is very low (or absent). Involves reinforcing successive approximations of the desired behavior (requires task analysis).

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Next Class Meeting

Date	Topic/Activity	Assignments (To be completed by class date)
August 29	1. Course overview and expectations: <ul style="list-style-type: none"> ◆ Introduction to behavioral psychology 	Obtain required readings Required Reading <ul style="list-style-type: none"> ◆ Loman et al. (2011) Recommended Reading <ul style="list-style-type: none"> ◆ Steege & Watson (2009), chapter 1
September 5	2. Key Terms and Definitions Quiz:	Required Readings <ul style="list-style-type: none"> ◆ Steege & Scherb (2014) ◆ Browning-Wright & Cafferata (2007), Section 1 Recommended Readings <ul style="list-style-type: none"> ◆ Chandler & Dahlquist (2015), Chapters 1 & 2 ◆ Steege & Watson, Chapters 4 & 5
September 12	3. Functional Assessment: <ul style="list-style-type: none"> ◆ Overview ◆ Target Selection ◆ Record Review Quiz:	<i>Fieldwork: Find someone to supervise your FBABIP</i> Required Readings <ul style="list-style-type: none"> ◆ Browning-Wright & Cafferata (2007), Section 4 ◆ O'Neill et al. (2015), Chapter 1

All quizzes will emphasize lecture
