

**Rationale and Foundation of Current Behavior Analysis and Management Techniques and Methods**

**Basic Processes and Principles**



**Principles of Discrimination**

- The ability to tell the difference between environmental events or stimuli
- Discrimination develops as a result of differential reinforcement

$$S_D \rightarrow B \rightarrow S_{R+}$$

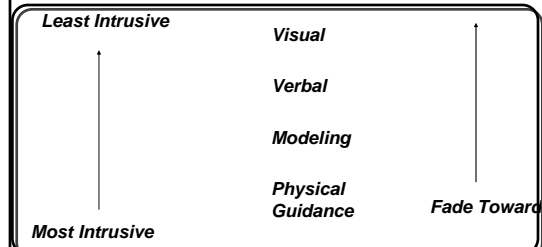
$$S^\Delta \rightarrow B$$

**Effective S<sub>D</sub>**

- Prompts
  - rules
  - instruction
  - hints
  - visual
- Modeling
  - high status
  - demonstrated competence
  - similar to themselves
  - S<sub>R+</sub> for behavior
- Physical Guidance
  - Verbal then Assistance
- Fading
  - decreasing assistance
  - graduated guidance
  - time delay
  - increasing assistance

**Effective Prompting**

- Prompts should focus student attention on the S<sub>D</sub>
- Prompts should be as weak as possible
- Prompts should be faded as soon as possible
- Unplanned prompts should be avoided



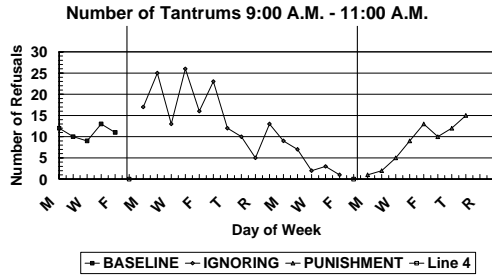
**Types of Behavior**

- Behavior: anything a person "does"
  - not a person's "deportment"
- Two types of behavior (Skinner, 1938)
  - RESPONDENT
    - involuntary behaviors (responses)
    - elicited by known stimuli
    - eye dialation, shivering, sweating, blinking, etc.
  - OPERANT
    - voluntary behaviors (responses)
    - elicited by learned stimuli
    - completing homework, fighting, talking, etc.

**Operant Behaviors**

- Influenced by events that follow the behavior
  - learned as a function of consequences
    - positive - a consequence that increases the likelihood that a behavior will occur in the future
    - negative - a consequence that lowers the likelihood that a behavior will occur in the future
    - contingent - a consequence that follows a behavior conditionally
    - noncontingent - a consequence that follows behavior without conditions

## Moral of the Story



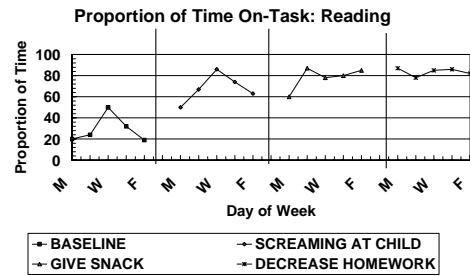
## Reinforcers

- A reinforcer is a consequence that increases the likelihood that a behavior will occur again in the future
  - Positive Reinforcement - the contingent **presentation** of a consequence that increases behavior
    - smile, candy, grade, recess, pay check, etc.
  - Negative Reinforcement - the contingent **removal** of some unwanted stimulus that increases behavior
    - homework, school work, bathing

## Contingency Table - Reinforcers

Stimulus, event, or condition	Present	Remove
Positive condition	Attract	
Aversive condition		Escape

## Moral of the Story



## Categories of Reinforcers

- Primary
  - edible: foods, liquids
  - sensory: visual, auditory, tactile, olfactory, kinesthetic
- Secondary
  - tangible: certificates, badges, stickers
  - privilege: monitorships, group leader
  - activity: special play, access to media, extra work
  - generalized: tokens, points, credits
  - social: expressions, proximity, contact, feedback,

Why does it work?



## Historical Roots

- Classical Conditioning
- Operant Conditioning
- Social Learning
- Behavior Therapy
- Applied Behavior Analysis

## Classical Conditioning

- The relationship between stimuli and reflex responses
  - stimulus - any condition, event, or change in the physical world (light, touch, noise, temperature) that evoke or elicit responses
    - unconditioned stimulus (UCS) is naturally stimulating and is unlearned (i.e., food, sex)
    - conditioned stimulus (CS) is learned (i.e., anyone dressed in white after painful medical experience, any dog after being bitten by one)
  - responded behavior - usually not controlled by the individual - involuntary, reflex reaction

## Classical Conditioning (cont)

- Ivan P. Pavlov (1849-1936)
  - Russian physiologist and 1904 Nobel Prize winner
    - studied how different foods placed in the digestive system elicited unconditioned reflexes such as gastric secretions and saliva
    - discovered that these responses could be stimulated when certain stimuli associated with the presentation of food were also present in the environment
    - identified "conditioned response"

food	salivation (UCR)
food + bell	salivation (UCR)
bell	salivation (CR)

## Classical Conditioning (cont)

- Modern understanding of Classical Conditioning
  - Pavlovian conditioning is not a stupid process by which the organism willy-nilly forms associations between any two stimuli that happen to co-occur. Rather, the organism is better seen as an information seeker using logical and perceptual relations among events, along with its own preconceptions, to form a sophisticated representation of its world (Rescorla, 1988)
  - Learning must be understood beyond the identification of conditioned and unconditioned stimuli. The properties of the stimuli and the context in which these stimuli are presented not only become part of the stimulus but play a role in the type of response forms that follow (Balsam and Tomie, 1985)

## Classical Conditioning (cont)

- John B. Watson (1878-1958)
  - expanded Pavlov's principle to non primary functions
    - 11 month old child named Albert
  - advocated the study of observable behavior rather than mental phenomena that could not be directly observed
  - coined the terms - labels:
    - behaviorism
    - behaviorist
  - foundation for the field of psychology

## Operant Conditioning

- The relationship between overt events in the environment and changes in specific target behaviors
  - events classified as either
    - antecedents (that which occurs before)
    - consequences (that which occurs after)
  - antecedents and consequences can be manipulated to change behavior rate, duration, or intensity

## Operant Conditioning (cont)

- n Edward L. Thorndike (1874-1949)
  - studied the relationship between animal behavior and environment
  - a law of effect: acts that produce "satisfaction" and the likelihood of those acts to recur
  - a law of exercise: how behavior becomes associated with specific situations
- B.F. Skinner (1904-1990)
  - a expanded Thorndike's research - focused on consequences "which shape and maintain the behavior"
  - a exposed use of behaviorism to education, government, law, and religion

## Psychoanalytic vs. Behavioral Approach

Variable	Psychoanalytic	Behavioral
Behavioral focus	Covert behaviors such as drives, impulses, and motives	Overt behaviors such as work habits, sleeping, talking
View of inappropriate behavior	Maladaptive psychological process or underlying defect in personality	Conditioned or learned
Assessment approach	Conducted by psychiatrist or psychologist outside the environment where behavior occurs	Direct observation of child's behavior within natural environment
Concern for environmental influence	low	high
Concern for psychological influences	high	low
Empirical support	low	high
Direct application for teachers and parents	low	high

## Social Learning Theory

- n Alfred Bandura
  - "*behavior, other personal factors, and environmental factors all operate as interlocking determinants of each other*"
  - stressed the importance of modeling on the acquisition of behavior
    - a performance is then regulated by reinforcement and motivational processes
    - a mass media play an influential role in shaping behavior and social attitudes
  - an attempt to integrate the aspects of different learning paradigms and to take cognitive processes into account

## Behavior Therapy

- n May be considered an extension or practical application of classical conditioning
- n "*refers primarily to clinical treatment of so-called behavior disorders*" (Tawney & Gast, 1984)
- n used primarily with covert behaviors and mental illness such as anxiety and neuroses

## Behavior Therapy (cont)

- n Systematic Desensitization
  - Joseph Wolpe - "individuals learn to experience anxiety in the presence of certain stimuli through a process of classical, or Pavlovian conditioning"
  - paired relaxation with gradually increasing amounts of anxiety-producing stimuli
- n Flooding
  - involves the repeated presentation of the anxiety-producing stimulus at full strength until the stimulus no longer produces anxiety (test taking, animal phobia)

## Behavior Therapy (cont)

- n Aversion Therapy
  - involves pairing an aversive stimulus (feeling pain, being sick, smell, losing a job) with another stimulus (alcohol, cigarettes, drugs, arousal) in order to discourage the behavior associated with the second stimulus
  - seriously questioned on both ethical and efficacy grounds

## Behavior Therapy (cont)

### n Covert Conditioning

- overt behavior can be changed when an individual imagines target behaviors paired with reinforcing or punishing consequences - depending on the desired outcomes
- used primarily with older adolescents and adults
- efficacy has not been clearly demonstrated

## Behavior Therapy (cont)

### n Modeling

- the learning of new (modified) behaviors from observing others
  - often used with "paired" models
- used with phobic or anxiety producing stimuli paired with appropriate behavior
- often used as an introductory prompt for teaching new skills and behaviors such as social skills

## Behavior Therapy (cont)

### n Biofeedback

- involves providing an individual with immediate information (visual, and/or auditory) about a physiological process (heart rate, pulse rate, blood pressure, skin temperature) and the use of operant conditioning (reinforcement or punishment) to modify the physiological process
- the objective is to teach individuals how to control or manipulate otherwise involuntary or unfelt physiological processes
- used extensively to teach control of incontinence, impulsiveness, hyperactivity, and inattention

## Applied Behavior Analysis

- n the direct application of behavior change principles in nonlaboratory, everyday situations and settings
  - behaviors should be observed and studied in their natural environment
  - applied research is "eminently pragmatic"
  - reliable quantification can be achieved
  - strive for "relevance to principle" rather than a "collection of tricks"
  - generality or durability of behavioral change over time is an important concern that should "be programmed, rather than expected or lamented"

## Summary

- n Classical conditioning
  - relationship between stimuli and reflex responses (conditioned and unconditioned)
- n Operant conditioning
  - relationship between overt events in the environment (antecedents & consequences) and changes in behavior
- n Behavior therapy
  - practical applications of classical conditioning used primarily with covert behaviors and mental illness
- n Social learning
  - relationship among behavior and child's social and cognitive development; integrates classical and operant learning principles
- n Applied behavior analysis
  - practical applications of operant conditioning in nonlaboratory, everyday situations and settings

**If you don't know where you are going,  
you'll probably never get there.**

## Behavioral Objectives

## Important Terms

- ⁿ Behavior
  - refers to any visible activity displayed by the learner (student)
- ⁿ Terminal Behavior
  - refers to the behavior you would like your learner to be able to demonstrate at the time your influence over him ends
- ⁿ Criterion
  - is a standard to test by which terminal behavior is evaluated

## Why We Care About Objectives

An Objective is an intent communicated by a statement describing a proposed change in a learner.

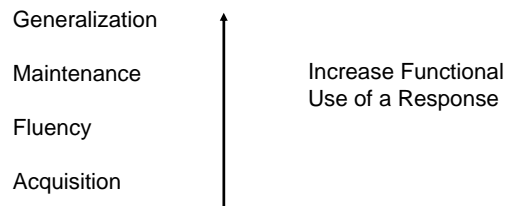
It is a description of a pattern of behavior (performance) we want the learner to be able to demonstrate.

When clearly defined goals are lacking, it is impossible to evaluate a course or program efficiently.

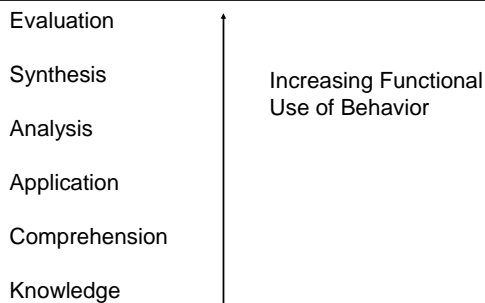
## Components of a Behavioral Objective

- ⁿ **Identify the learner**
  - *John*
- ⁿ **Identify the target behavior**
  - *will look at Ms. Jones*
- ⁿ **Identify the conditions under which the behavior is to be displayed**
  - *when independent work instructions are given*
- ⁿ **Identify criteria for acceptable performance**
  - *within 30 seconds of the teacher ringing the "attention" bell.*

## Hierarchy of Response Competence

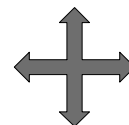


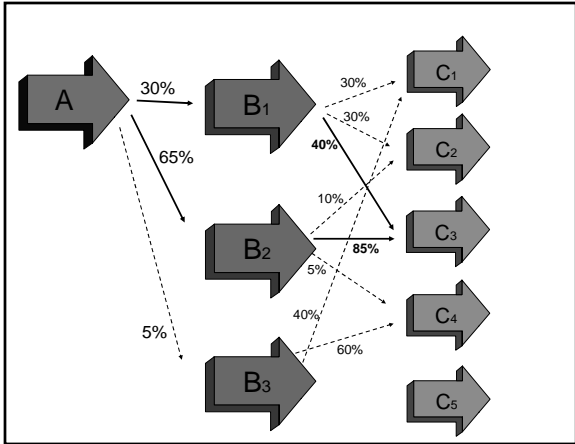
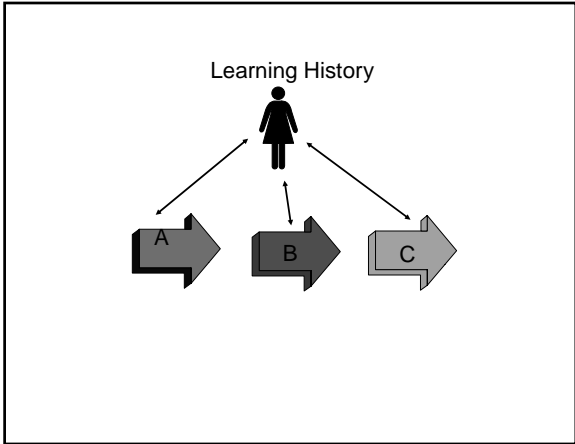
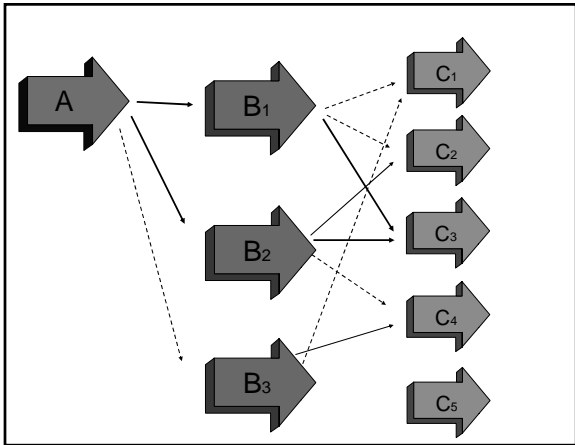
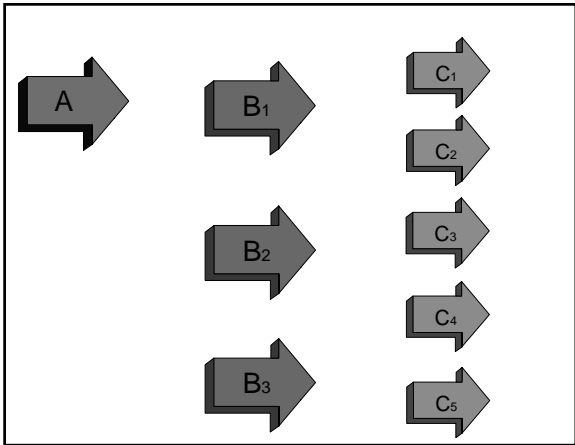
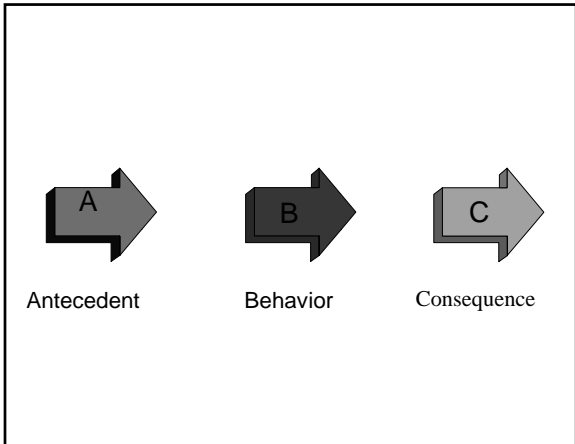
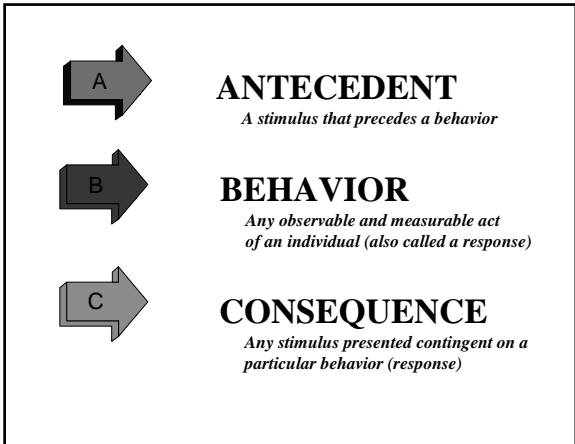
## Hierarchy of Levels of Learning

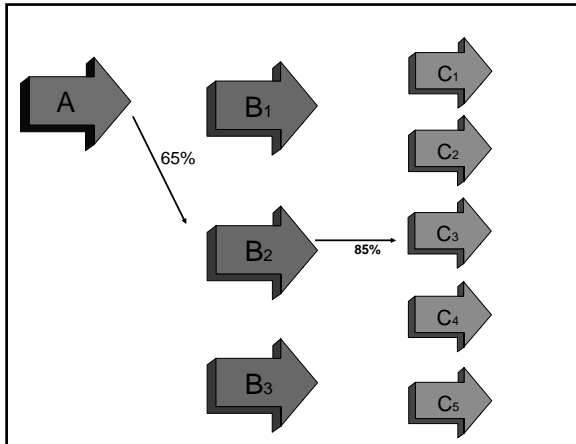


## Concept Analysis of Behavior Change

*Theory and Techniques*



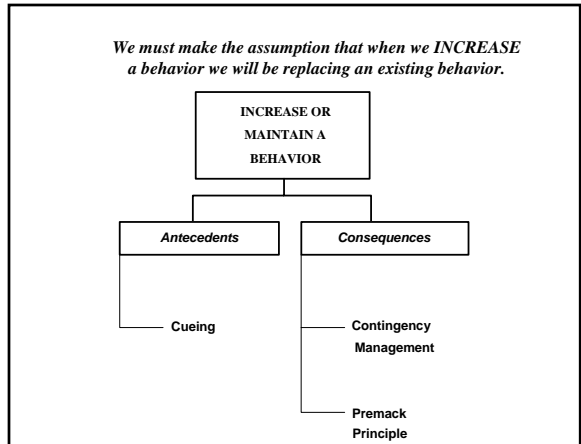
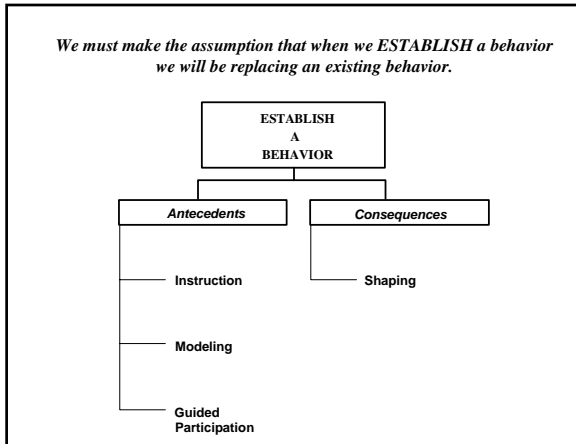
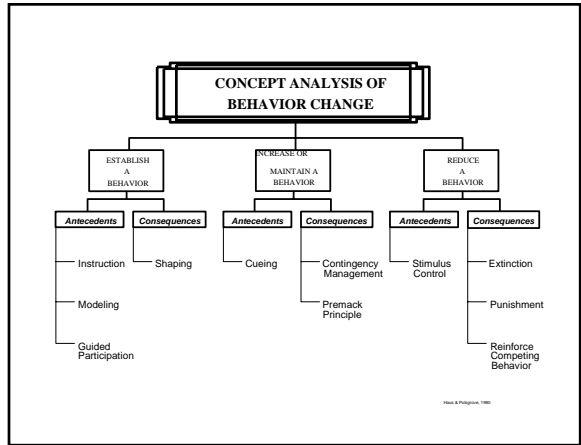
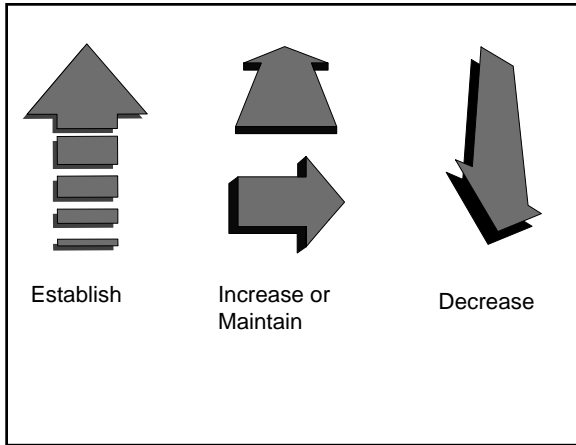




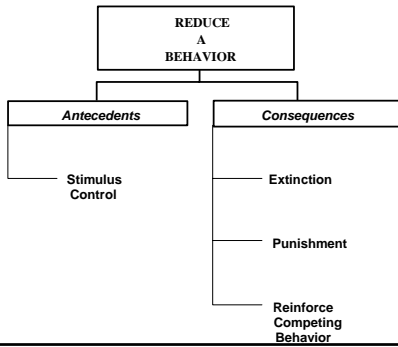
## Principles of Discrimination

- The ability to tell the difference between environmental events or stimuli
- Discrimination develops as a result of differential reinforcement

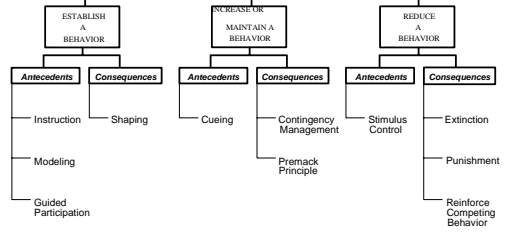
$$S_D \rightarrow B \rightarrow S_{R+}$$

$$S^\Delta \rightarrow B$$


*We must make the assumption that when we DECREASE a behavior we will cause another behavior to increase.*



### CONCEPT ANALYSIS OF BEHAVIORAL CHANGE



Wills & Proctor, 1985