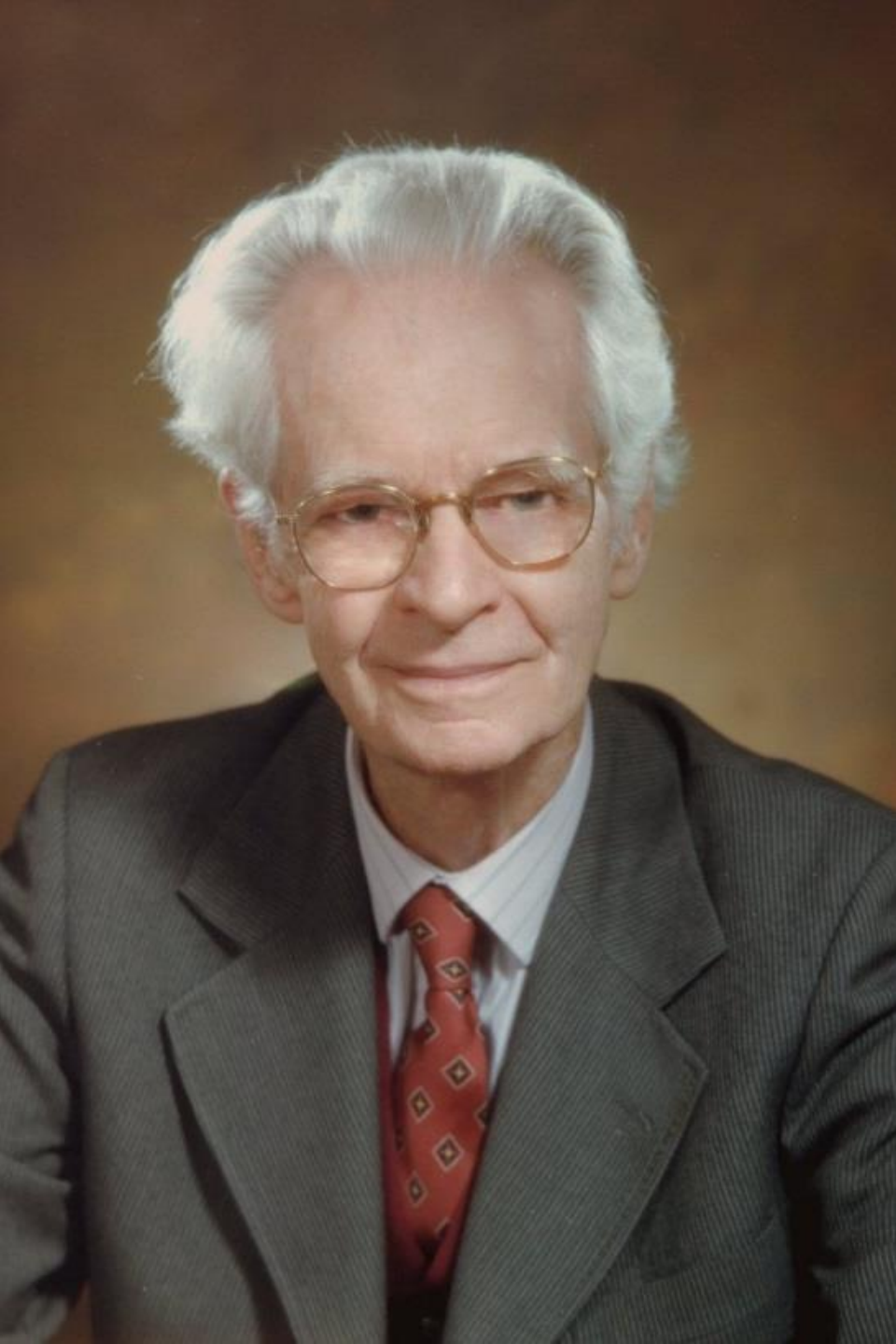


B.F. Skinner & the Behavioral Approach

SIUE PSYC 340



Life of Skinner

- Burrhus Frederic Skinner (1904–1990) was an American psychologist who studied voluntary behavior and its consequences.
- His behavioral approach was the antithesis of the psychoanalytic, trait, life-span, cognitive, and humanistic approaches.

Life of Skinner

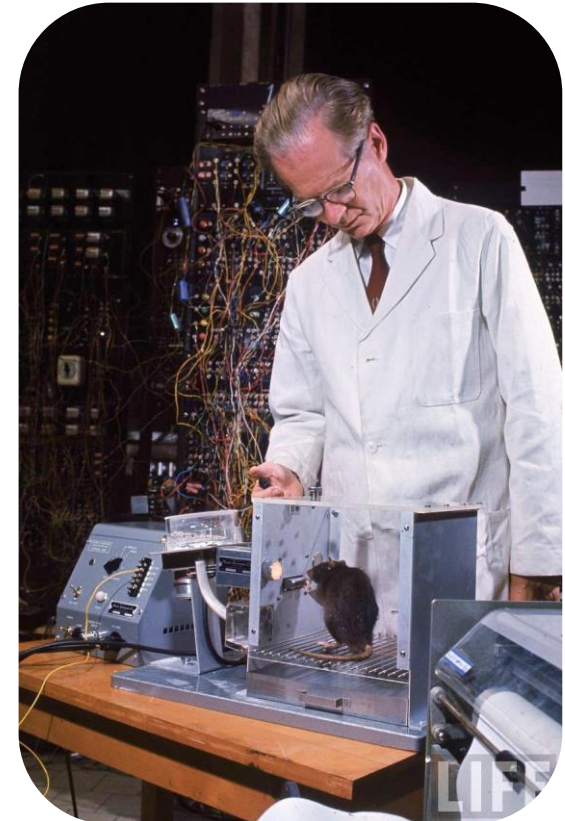
- Born in Pennsylvania in 1904
 - Parents were hardworking and established clear rules of proper behavior
 - Was fascinated with constructing machines and animals
 - Was an independent thinking with an interest in writing
- Experienced an identity crisis in young adulthood
 - Failed to fulfill his dream of becoming a writer

Life of Skinner

- Earned a PhD in psychology from Harvard University in 1931
- Taught at the University of Minnesota (1936-1945), Indiana University (1945-1948), and Harvard (1948-1974)
- Published 21 books and 180 articles
- Named the most influential psychologist of the 20th century by the APA

Skinner's Theory

- Based on his research with rats and pigeons
 - Admitted that human behavior is more complex than animal behavior but said the differences are in degree, not in kind
- Said we are shaped more by nurture than nature
 - What is learned in childhood can be modified.
 - New behavior patterns can be acquired at any age.



Skinner's Theory

- Argued that free will is an illusion and *all* behaviors are conditioned
 - **Operant conditioning:** A procedure that attempts to change a behavior by changing its consequences
 - Reinforcement and punishment determines behavior.
 - We function like machines, in lawful, orderly, predetermined ways.
 - We are not victims as we are responsible for designing our environment.

Skinner's Theory

- Urged psychologists to study only what they can see, manipulate, and measure in the laboratory
 - Said we are “empty organisms” with nothing inside us that can explain our behavior in scientific terms
 - Did not reference internal, subjective states (e.g., overcoming inferiority, reducing anxiety, or striving for self-actualization) to account for behavior
 - Did not deny their existence, only their usefulness for science

Skinner's Theory

- Distinguished between 2 kinds of behavior
 - **Respondent behavior:** Conditioned responses elicited by environmental stimuli
 - Less important and cannot account for all behavior
 - **Operant behavior:** Behavior emitted spontaneously or voluntarily
 - Said to operate on the environment and change it
 - Nature and frequency modified by the reinforcement that follows the behavior

Operant Conditioning

Positive Reinforcement

- The act of strengthening a response by adding reward
- Reinforcers – Responses from the environment that increase likelihood of repetition

Extinction

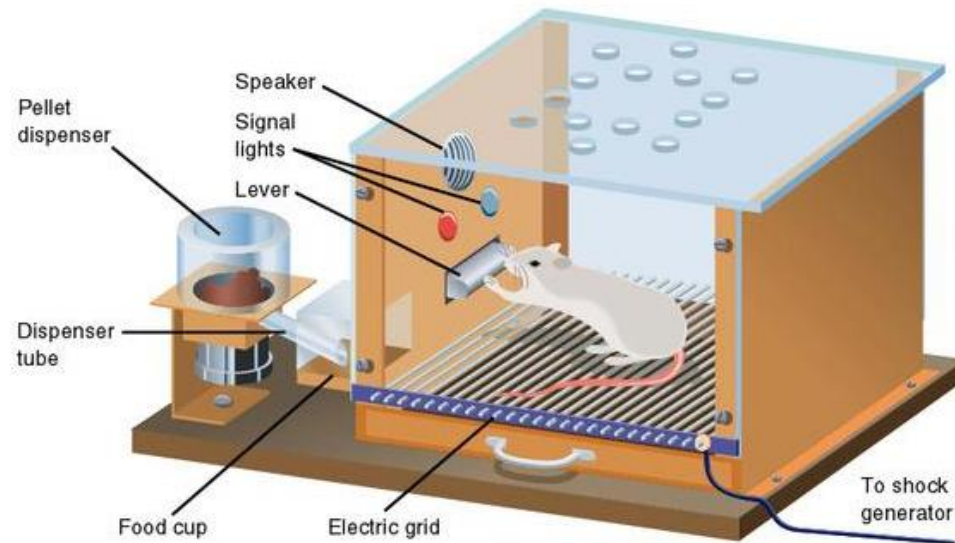
- The process of eliminating a behavior by withholding reinforcement

Punishment

- The act of weakening a response by applying undesirable consequences
- Punishers – Responses from the environment that decrease likelihood of repetition

The Skinner Box

- To standardize the training process, he created the **operant chamber** with a light, a speaker, a food dispenser, a lever, and an electrified floor grid
 - The food-deprived animals were isolated in the box and presented with stimuli.
 - Their rate of response was recorded using a cumulative recorder.



The Skinner Box

- Once inside the box, the rats first explored the environment.
 - Desired behaviors, like going near, looking at, or touching the food dispenser, were reinforced with food.
 - Undesirable behaviors, like facing the wrong direction, were extinguished by withholding food and punished with electric shocks.
- The rats learned to press the bar (behavior) to get food (consequence).
 - They began to press the bar more often to get food.

Schedules of Reinforcement

	Fixed	Variable
Interval	<ul style="list-style-type: none">• Fixed interval: Reinforcer presented after a fixed time interval has elapsed• Shorter intervals resulted in higher response rate	<ul style="list-style-type: none">• Variable interval: Reinforcer presented after an unpredictable amount of time
Ratio	<ul style="list-style-type: none">• Fixed ratio: Reinforcer applied following a fixed number of responses	<ul style="list-style-type: none">• Variable ratio: Reinforcer applied after an unpredictable number of responses• Was effective in bringing about high and stable response rates

Personality Development

- **Personality:** A collection of operant behavior patterns
 - Made no attempt to describe anxieties, repressed traumas, or unconscious forces
- Starting in infancy, we display many behaviors.
 - When parents reinforce a behavior, it strengthens, repeats, and a pattern emerges.
 - When parents ignore, disapprove of, or punish a behavior, it weakens and stops.
 - Said that punishment was ineffective in changing behavior from undesirable to desirable

Shaping of Behavior

- Conditioning a child or animal to make desired complex responses can be achieved with the use of **successive approximations** or **shaping**.
 - Behavior is reinforced as it becomes a closer approximation of the desired behavior.
 - E.g., learning how to speak.
 - At first, parents reinforce their infants' babbling by smiling, laughing, and talking.
 - Over time, they reinforce only the sounds that approximate real words.

Stage	Question	Expected Behavior	Reinforcer
Current Behavior	1. What behavior would you like to modify? What is the behavior you would expect from the child/animal/yourself?	Runs around me like a wild dog	Give treats, use puppy's name, pet, throw toy
Approximation 1	2. What is the first step? What is the easiest, simplest behavior to start with?	Naturally stands next to me	
Approximation 2	3. What is the second step? What behavior is slightly more difficult and complex than the previous behavior?	Naturally stands next to me and stays on command	
Approximation 3	4. What is the third step? What behavior is even more difficult and complex but does not quite meet the mark?	Naturally sits down next to me	
Goal Behavior	5. What is the goal? What behavior would you like to see from the child/animal/yourself?	Sit and stay on command	

Shaping of Behavior

- **Superstitious behavior:** Persistent behavior that has a coincidental and not functional relationship to the reinforcement it received
 - Results from accidental reinforcement
 - E.g., wearing your lucky socks during games
 - A single incidence of wearing the socks and winning a game can be powerful enough to reinforce the wearing of these socks.

Shaping of Behavior

- **Self-control:** Behaving in ways that increase one's control of external events
 - Monitor behavior (e.g., record frequency)
 - Change the environment (e.g., stimulus avoidance)
 - Redirect your attention
 - Reinforce and punish yourself
 - Inform others about your goal for behavior change

Shaping of Behavior

- **Negative reinforcement:** An aversive or noxious stimulus, the removal of which is rewarding
 - E.g., a loud noise or an electric shock that continues until you push a button; course evaluation email reminders until you complete the survey
 - Consequences are not as predictable as positive reinforcement

Skinner's Methods

- Preferred intensive study of single subjects
- Relied on **functional analysis**, which involves an assessment of the frequency of behavior, the situation in which the behavior occurs, and the reinforcement associated with the behavior
 - E.g., direct observation, self-report questionnaires, and physiological measurements

Applications of Operant Conditioning

- He designed a “teaching machine” for children.
- He built an enclosed climate-controlled “air crib” for infants.



Applications of Operant Conditioning

- **Behavior modification:** A type of therapy that applies principles of reinforcement for changing behavior
 - Started by assessing behaviors with the goal of modifying undesirable behavior
 - Define the nature of and the optimum rate of presentation of reinforcers
 - Applicable in classrooms, clinics, businesses, and industries
 - E.g., reinforcers for business - pay, job security, recognition, status, development opportunities

Applications of Operant Conditioning

- **Token economy:** Tokens are awarded for desired behaviors and can be exchanged for valued objectives or privileges
 - Application of behavior modification
 - Have been used to reduce problem behaviors in institutional settings
 - Reinforced behaviors revert to original state when the tokens are not provided



Research on Skinner's Theory

- Researchers have found evidence that:
 - ✓ The greater the reinforcement given during training, the more resistant is the conditioned response to extinction.
 - ✓ Operant conditioning can shape most forms of behaviors in humans and animals.
 - ✓ College students who measure high in self-control get better grades, are better adjusted psychologically, and have higher self-esteem.
 - ✓ Token economy programs have reduced aggressive acts by cognitively impaired patients by as much as 79 percent.

Strengths of Skinner's Theory

- Shaped the field more than any other individual
- Focused on overt, observable, measurable behaviors
- Supported by modern research
- Continues to be applied in laboratory, clinical, and organizational settings

Criticisms of Skinner's Theory

- Ignored uniquely human qualities
- Based broad predictions on simple experiments
- Ignored animals' tendency to be guided by instincts
 - **Instinctive drift:** The substitution of instinctive behaviors for behaviors that had been reinforced