Behaviorism

B. F. Skinner

Source: [http://www.webster.edu/~woolflm/personalitieskinner.ppt](http://www.webster.edu/~woolflm/personalitieskinner.ppt)
B.F. Skinner (1904-1990)
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Skinner’s life
Predetermined, lawful, and orderly
A product of past reinforcements

1925: Hamilton College (NY): degree in English, no courses in psychology
Read about Pavlov’s and Watson’s experimental work
1931: Ph.D. from Harvard
B. F. Skinner’s “radical behaviorism” -

- Dealt only with observable behavior
  - The task of scientific inquiry:
    - To establish functional relationships between experimenter-controlled stimulus and organism’s response
  - No presumptions about internal entities - The "empty organism" approach
B. F. Skinner - Operant conditioning

Watson, Pavlov - Respondent behavior: elicited by specific observable stimulus

1. Before conditioning
   - Food (Unconditioned stimulus)
   - Salivation (Unconditioned response)

2. Before conditioning
   - Tuning fork (Neutral stimulus)
   - No salivation (No conditioned response)

3. During conditioning
   - Tuning fork + Food
   - Salivation (Unconditioned response)

4. After conditioning
   - Tuning fork (Conditioned stimulus)
   - Salivation (Conditioned response)
Operant Conditioning

• “the behavior is followed by a consequence, and the nature of the consequence modifies the organisms tendency to repeat the behavior in the future.”
B. F. Skinner

Operant behavior: occurs without an observable external stimulus

Operates on the organism’s environment

The behavior is instrumental in securing a stimulus more representative of everyday learning
B. F. Skinner

Science of behavior: Study of conditioning and extinction of operants

Dependent variable in the "Skinner box": rate of response

Law of acquisition
    key variable: reinforcement
    practice provides opportunities for additional reinforcement

Differs from Thorndike and Hull’s positions
    Thorndike and Hull: explanatory
    Skinner: strictly descriptive
Superstition in the Pigeon

- Skinner placed a series of hungry pigeons in a cage attached to an automatic mechanism that delivered food to the pigeon "at regular intervals with no reference whatsoever to the bird's behavior." He discovered that the pigeons associated the delivery of the food with whatever chance actions they had been performing as it was delivered, and that they subsequently continued to perform these same actions.
• One bird was conditioned to turn counter-clockwise about the cage, making two or three turns between reinforcements. Another repeatedly thrust its head into one of the upper corners of the cage. A third developed a 'tossing' response, as if placing its head beneath an invisible bar and lifting it repeatedly. Two birds developed a pendulum motion of the head and body, in which the head was extended forward and swung from right to left with a sharp movement followed by a somewhat slower return.

Skinner’s Theory

“All we need to know in order to describe and explain behavior is this: actions followed by good outcomes are likely to recur, and actions followed by bad outcomes are less likely to recur.”

(Skinner, 1953)
Central Human Motive in Skinner’s Theory

Environmental consequences shape behavior
LAW OF EFFECT

Behavior Better state of affairs $\xrightarrow{}$ Increased probability of behavior occurring again

Behavior Worse state of affairs $\xrightarrow{}$ Decreased probability of behavior occurring again

Behavior A
Behavior B
Behavior C $\xrightarrow{}$ Better state of affairs $\xrightarrow{}$ Behavior C emerges as the most probable
Behavior D
Behavior E
Laboratory Examples

Operant Conditioning

Pigeon (in a Skinner box)
- Exploring
- Scratching
- Key-pecking
- Grooming
- Defecating
- Urinating

Reinforcement (food pellet)
LIMITED EFFECTS OF PUNISHMENT

• Punishment does not teach appropriate behaviors
• Must be delivered immediately & consistently
• May result in negative side effects
• Undesirable behaviors may be learned through modeling (aggression)
• May create negative emotions (anxiety & fear)
HOW COMPLEX BEHAVIORS ARE LEARNED

- **Successive approximation/shaping** = reinforcing behaviors as they come to approximate the desired behavior

- **Superstitious Behavior** = when persistent behaviors are reinforced coincidentally rather than functionally

- **Self-control of behavior**
  - Stimulus avoidance
  - Self-administered satiation
  - Aversive stimulation
  - Self-reinforcement
It's a rather interesting phenomenon. Every time I press this lever, that post-graduate student breathes a sigh of relief.
B. F. Skinner

Verbal behavior
Speech
Comprised of responses
Can be reinforced by speech sounds or gestures
B. F. Skinner

Aircribs and teaching machines
1945: aircrib
Teaching machine
invented in the 1920s by Pressey
promoted by Skinner
1968: The Technology of Teaching
B. F. Skinner

Walden Two (1948): A behavioristic society

Program of behavioral control

A technology of behavior

Application of laboratory findings to society at large
B. F. Skinner

Behavior modification
Used in a variety of applied settings
Reinforce desired behavior and extinguish undesired behavior
Punishment is not used
B. F. Skinner

**Criticisms of Skinner’s behaviorism**

- His extreme positivism
- His opposition to theory
- His willingness to extrapolate beyond the data
- The narrow range of behavior studied
- Problem of instinctive drift
- His position on verbal behavior
B. F. Skinner

Contributions of Skinner’s behaviorism

Shaped American psychology for 30 years
His goal: the improvement of society
Strength and ramifications of his radical behaviorism
Oh, screw this 'randomly-run-through-the-maze' crap!