Chapter 11: Behaviorism: After the Founding

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Neobehaviorism

- **Operationism**
  - Operationism: the doctrine that a physical concept can be defined in precise terms relating to the set of operations or procedures by which it is determined
  - The validity of any scientific findings or theoretical construct depends on the validity of the operations used in arriving at that finding
  - Percy W. Bridgman
    - All physical concepts be defined precisely and that all concepts lacking physical referents be discarded
    - Therefore, a physical concept is the same as the set of operations or procedures which defines it
    - Propositions that cannot be put to the test are meaningless for science

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Neobehaviorism

- This was first proposed in physics
- Neobehaviorists incorporated operationism into their psychology
- **Edward Chance Tolman (1886-1959)**
  - Purposive Behaviorism
    - Combines objective study of behavior with consideration of pusrposiveness, or goal-orientation in behavior
    - Described in *Purposive Behavior in Animals and Men* (1932)
    - Purposiveness can be described in behavioral terms
      - therefore, Tolman was not arguing for a return to consciousness
    - All behaviors are goal-directed

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Neobehaviorism

- Intervening variables
  - Initiating causes and the final resulting behavior must be observable and must have operational definitions
  - Five independent variables can function as causes of behavior
    - Environmental stimuli
    - Physiological drives
    - Heredity
    - Previous training
    - age
  - Between these variables and the ultimate expression of behavior are an unobserved set of factors – the intervening variables
    - Intervening variables: unobserved and inferred factors within the organism that are the actual determinates of behavior

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Neobehaviorism

- Now have S-O-R, where O = how the organism interprets the stimulus
- Intervening variables cannot be objectively observed
- Can specify independent and dependent variables as observable events
  - which could be used as operational definitions of the intervening variables
- Intervening variables useful for developing behavioral theory
  - as long as they were empirically related to experimental and behavioral variables

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Neobehaviorism

- Learning Theory
  - Problem of learning formed a larger part of Tolman's purposive behaviorism
  - Rejected Thorndike's Law or Effect
    - Instead substituted a cognitive explanation for learning
  - Latent learning:
    - learning that cannot be observed at the time it is occurring
  - Recognized as a forerunner to modern cognitive psychology

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Neobehaviorism

- **Edwin Ray Guthrie (1886-1959)**
  - **One-Trial Learning**
    - Most significant contribution to psychology is simplified learning theory
    - Proposed a general law of simultaneous conditioning
      - Law of Contiguity
    - *One Trial Learning*: a single pairing of stimulus and response is sufficient to establish a connection

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Neobehaviorism

- **Clark Leonard Hull (1884-1952)**
  - *Principles of Behavior* (1943)
    - Comprehensive theoretical framework to explain all behavior

  - *A Behavioral System* (1952)
    - Final form of Hull's behaviorism
  - The Spirit of Mechanism
    - Hill committed to an objective behaviorist psychology
    - No place for consciousness
    - Human behavior is automatic
      - capable of being reduced to the language of physics
    - Behaviorists should regard their subjects as machines

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Neobehaviorism

- Objective Methodology and Quantification
  - Methods would be objective and and quantitative
    - Expressed in precise mathematical functions
    - Progress will be seen with the computation of equations which represent laws of behavior
  - Four methods useful for scientific research:
    - Simple observation
    - Systematic observation
    - Experimental testing of hypotheses
    - Hypothetical deductive method

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Neobehaviorism

- **Drive Theory**
  - The basis of motivation is a state of bodily need that arises from a deviation from optimal biological conditions
  - Drive
    - a stimulus arising from a state of tissue need that arouses or activates behavior
  - Reduction or satisfaction of a drive is the sole basis for reinforcement
  - The strength of the drive can be empirically determined
    - length of deprivation
    - intensity, strength, and energy expenditure of the resulting behavior

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Neobehaviorism

- Drives are non-specific
  - Any kind of deprivation contributes in the same way to the drive
  - Do not direct behavior; simply energize behavior
  - Direction of behavior is determined by environment
- Two kinds of drive
  - Primary drive
    - associated with innate need states
  - Secondary drive
    - related to situations or environmental stimuli associated with the reduction of primary drives

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Neobehaviorism

- **Learning**
  - *Law of Primary Reinforcement*
    - Basically Thorndike's law of effect
    - When a stimulus-response relationship is followed by a reduction in a bodily need, the probability increases that on subsequent occasions the same stimulus will evoke the same response
  - Secondary reinforcement
    - If the intensity of the stimulus is reduced by a secondary drive, that drive will act as a secondary reinforcement

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Neobehaviorism

- Habit strength
  - S-R connections are strengthened by the number of reinforcements that have occurred
  - The strength of the S-R association is habit strength
- Learning cannot take place in the absence of reinforcement, which is necessary to bring about a reduction of the drive

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Neobehaviorism

- B. F. Skinner (1904-1990)

  - "The major problems of the world today can be solved only if we improve our understanding of human behavior"
  - *The Behavior of Organisms: An Experimental Analysis*
  - Skinner's Behaviorism
    - Represents a renewal of Watson's behaviorism
    - Advocated an empirical system with no theoretical framework within which to conduct research

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Neobehaviorism

- Devoted to the study of responses
  - Concerned with describing rather than explaining behavior
  - Research dealt with observable behavior
  - Purpose of scientific inquiry is to establish functional relationships between experimenter-controlled stimulus conditions and the organism's subsequent responses
- Human organism is like a machine
  - behaves in lawful, predictable ways in response to external forces
- Did not consider it necessary to use large numbers of subjects or to make statistical comparisons between the average responses of treatment groups
  - Favorite method is single-subject research

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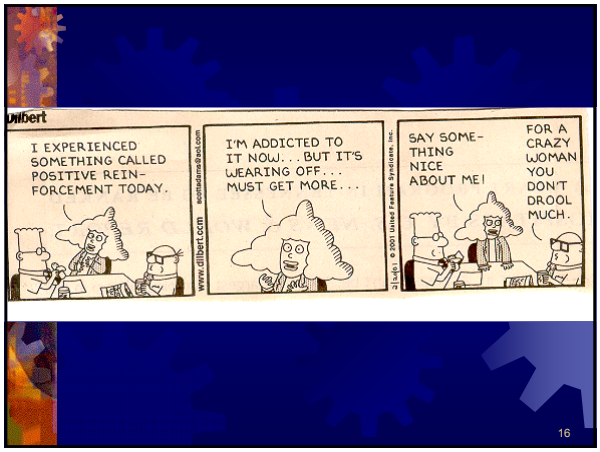

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Neobehaviorism

- **Operant Conditioning**
  - **Positive reinforcement: application of a pleasurable stimulus that increases the likelihood that a behavior will reoccur**
  - **Negative reinforcement: withdrawal of an aversive stimulus that increases that likelihood that a behavior will reoccur**
  - **Positive punishment: application of an aversive stimulus that decreases the likelihood that a behavior will reoccur**
  - **Negative punishment: withdrawal of a pleasurable stimulus that decreases the likelihood that a behavior will reoccur**

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Operant Conditioning

	Give Something	Take Something Away
Increase Behavior	Positive Reinforcement	Negative Reinforcement
Decrease Behavior	Positive Punishment	Negative Punishment

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Neobehaviorism

- It is better to reinforce behavior than it is to punish behavior
  - Law of acquisition:
    - the strength of an operant behavior is increased when it is followed by the presentation of reinforcing stimulus

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Schedules of Reinforcement

- Schedules of reinforcement
  - Timetables that determine when a response will be reinforcement
- Continuous reinforcement
  - Reinforcement of a response every time it occurs
- Partial reinforcement
  - Reinforcement of response only a portion of the time they occur

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Schedules of Reinforcement

- Fixed-ratio schedule
- Variable-ratio schedule
- Fixed-interval schedule
- Variable-interval schedule

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Neobehaviorism

- Punishment works if the 3 Ss are met
- If these three conditions are not met, then the misbehavior actually becomes negatively reinforced on a Variable Ratio schedule of reinforcement
- Verbal Behavior
  - The sounds we make in speaking are a kind of behavior
  - These verbal behavioral responses can be reinforced by other speech sounds or by gestures that same way other behaviors can be reinforced
- Behavior Modification
  - The use of positive reinforcement to control or modify the behavior of individuals or groups

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Neobehaviorism

- Behaviorists after Skinner
  - Keller and Marian "Mouse" Keller
  - Two of Skinner's students
  - 1943—Animal Behavior Enterprises
    - Trained animals to work in commercials
  - 1955—IQ Zoo (Hot Springs, AR)
  - 1972-1981—Animal Wonderland (Hot Springs, AR)

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Social Learning Theories: The Cognitive Challenge

- Albert Bandura (1925-present)

  - "It is amusing to see radical behaviorists, who contend that thoughts have no causal influence, devoting considerable time to speeches, articles, and books in an effort to convert people's beliefs to their way of thinking."
  - Social Cognitive Theory
    - Less extreme form of behaviorism than Skinner's
    - Research focus was to observe the behavior of human subjects in interactions
    - Did not use introspection
    - Emphasized the importance of reinforcements in acquiring or modifying behavior

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Social Learning Theories: The Cognitive Challenge

- Also recognized the importance of expectancies, beliefs, and instructions
  - Thus, when an external reinforcer alters behavior, it does so because the person consciously recognizes the reinforcement and expects it to reoccur in the future
- Individuals can learn all sorts of behavior without experiencing reinforcement directly
  - *Vicarious reinforcement*:
    - learning can occur by observing the behavior of other people, and the consequences of their behavior, rather than by always experiencing reinforcement personally
  - Bobo Doll experiment

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Social Learning Theories: The Cognitive Challenge Cont.

- Modeling
- Self-efficacy
  - One's sense of self-esteem and competence in dealing with life's problems
  - People high in self-efficacy are capable of dealing with the diverse events in their lives
  - People with low self-efficacy feel helpless and hopeless about their ability to cope
- Behavior Modification
  - Focused on externals and the behavior to be changed, not the internal conscious or unconscious conflicts
  - Modeling techniques are usually sued to help shape behavior

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Social Learning Theories: The Cognitive Challenge Cont.

- Julian Rotter (1916-present)
  - Cognitive Processes
    - 1st psychologist to use the term "social learning theory"
    - We learn behavior primarily through social experiences
    - Emphasized cognitive processes much more than Bandura

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Social Learning Theories: The Cognitive Challenge Cont.

- Four principles that govern behavioral outcomes
  - We form subjective expectations of the outcomes of our behaviors in terms of the amount and kind of reinforcement likely to follow it
  - We estimate the likelihood that behaving in a certain way leads to a specific reinforcement and adjust our behavior accordingly
  - We place different values on different reinforces and assess their relative worth for different situations
  - Because each of us functions in a psychological environment that is unique to us as an individual, the same reinforcement can have different values for different people

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Cognitive-Behavioral Therapy

- Started with Joseph Wolpe
  - Treatment of phobias
- My favorite: Albert Ellis (1913-present)
  - Principles of Cognitive-Behavioral Therapy
  - ABCDE model
  - Rational vs. Irrational Beliefs
  - Cognitive distortions

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Cognitive Distortions

- All-or-nothing thinking
- Overgeneralization
- Mental filter
- Discounting the positive
- Jumping to conclusions
- Magnification
- Emotional reasoning
- Shoulding on yourself
- Musterbation
- Labeling
- Personalization
- Blame

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Behavior Therapy Today

- Hayes
  - Behavior therapy is in a transition stage
    - Anomalies
    - Philosophy of science changes
- New Therapies
  - Dialectical Behavioral Therapy
  - Functional Analytic Psychology
  - Integrative Couples Behavior Therapy
  - Mindfulness Based Cognitive Therapy
  - Acceptance and Commitment Therapy

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Acceptance and Commitment Therapy

- ACT
  - Ontology
    - Contextualism
    - Truth Criterion
  - Epistemology
    - General Clinical Goals
    - Therapeutic Assumptions
    - Key Goal
  - Methodology
    - Acceptance
    - Values
    - Commitment

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