

1. Lauren's mother compliments her every time she cleans her bedroom. Soon, Lauren is cleaning her room more and more.

- Positive Reinforcement

3. Ashley's loud alarm goes off at 6am. She hits the snooze button, and the alarm stops. Ashley hits the snooze button again and again and again.

- Negative Reinforcement

4. Ryan dates as much as he can. The women he dates smile and flirt with him, until he mentions that he is married. Then they stop smiling and flirting. Ryan stops mentioning that he is married on his dates.

- Negative Punishment

8. Alison, age 4, needs to learn to speak up louder in class. Her parents and teacher agree that whenever Alison speaks up loudly in class she will get a star on her chart. Whenever she accumulates 25 stars, she will get ice cream. Alison starts speaking up in class more frequently.

- Positive Reinforcement

10. Tom is hammering nails into planks to build a fence. He experiments with holding the nail a different way and immediately hits his thumb with the hammer. OUCH! He continues his work, but he never holds the nail that way again.

- Positive Punishment

11. The smoke detector in Jesse's house is low on batteries. It emits an annoying chirp every few seconds. Jesse installs a new battery so it will stop making that noise.

- Negative Reinforcement

- Have you ever seen a Human Skinner Box?

### Look familiar?

### Look familiar?


### S-R vs S-O-R

- So far we deliberately omitted some terms from our discussions. What are they?
- Mind, thinking, representation

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## John Watson

(1878 -1958)




**BEHAVIORISM:**

- Psychology should be an *objective science*, based solely on directly observable behavior.
- “Behaviorism is a natural science approach to psychology”

➤ **Law of Parsimony:** simpler explanations are generally better than more complex explanations.

## Watson’s Methodological Behaviorism



- Psychologists should only study directly observable behaviors, for methodological reasons.
  - All behavior is essentially reflexive
  - *S-R learning:* Learning involves the establishment of a connection between a specific Stimulus and a specific Response

**Watson’s Famous Quote:**  
 “Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I’ll guarantee to take any one at random and train him to become any type of specialist I might select -- doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors.” (Watson, 1930, p. 104)

### Skinner's Radical Behaviorism



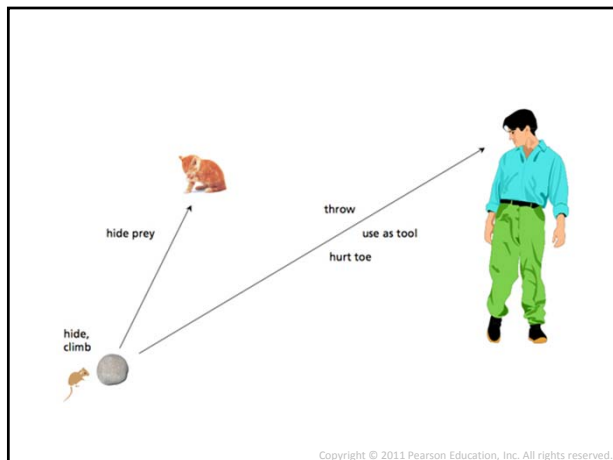
- Emphasizes the influence of environment on **overt** behavior, and rejects the use of internal events (**covert** behavior) to explain behavior.
- Argues that our view of internal events are unreliable



### S-R vs S-O-R

- Stimulus-response has given way to Stimulus-Organism-Response
- Organism's response to a stimulus depends on what this stimulus *means* to it

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### S-R vs S-O-R

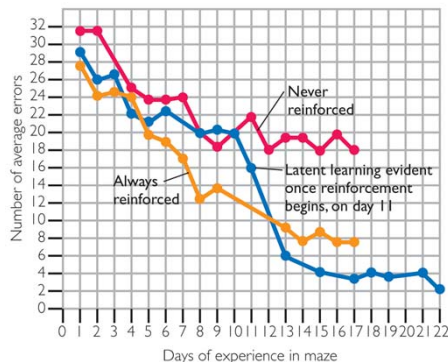
- In this view CC and OC depend on thinking
- E.g. A person is classically conditioned by tones and shock to sweat
  - Sweating is less if she's told that no more shocks
  - Cognitive conditioning (or verbal learning)
  - Conditioning (an automatic process) can be controlled
- According to S-O-R psychologists Pavlov's dog predict the CR from CS

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### Latent Learning

- Refers to learning that is not directly observable
  - Competence vs. performance
- Implies that reinforcement is *not* necessary for learning to occur
  - Tolman & Honzik's maze trials

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## Latent Learning

- The rats had developed **cognitive maps** that were only used once there was a reinforcer
- This research challenged radical behaviorism and implied that thinking plays a role in some forms of learning
  - Can you develop a rival hypothesis?
- McNamara et al. 1956 utilized trolley cars
  - To rule out the rival hypothesis that rats learned motor response in the maze but not a cognitive map

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## Observational Learning

- Simply means learning by watching others
  - Parents, teachers, and others who are influential
- Learners don't have to engage in trial and error to learn how to do something new
  - Skydiving without parachute is bad
- Bandura's research on observing aggression

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## Observational Learning

- Bandura's research on observing aggression
  - Preschool girls and boys watch an adult interact with a large doll
  - Children were randomly assigned into two groups
    - The adult plays quietly and ignores the doll
    - The adult punches to the doll, and shouted to it
  - Children were frustrated
  - Children who observed violent interaction with the doll showed more aggression against the doll compared to control condition

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## Video

- MultiMedia Library
- Watch
  - Neuronal Transmission
- <http://www.mathxl.com/info/mmlib.aspx?bookcode=Lilienfeld2e>

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## Observational Learning

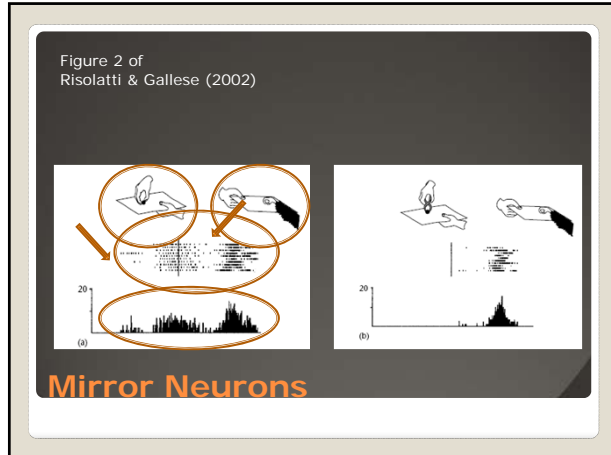
- Bandura's research on observing aggression
  - Child is punished with aggression
  - Child inhibits target behavior
  - Child develops anxiety
  - Child imitates your aggressive behavior. Child takes you as a model.
    - He/she gets double message
- One of the best predictors of aggression in children is a history of physical punishment

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## Mirror Neurons

- Become activated when an animal observes or performs an action
  - So what?
  - Why it is so important?

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## Mirror Neurons

- One of the hot topics in cognitive neuroscience
- Mirror neurons may play a role in observational learning and having empathy for others
  - <http://www.acikbilim.com/2012/12/incelemeler/ayna-noronlarinin-gunluk-hayatimizdaki-yeri.html>
  - <http://www.empathicbrain.com/>

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## Insight Learning

- Insight:
  - Figuring out a solution of a problem instantly
- Köhler's chimpanzees and "Aha!" moments
- Suggests humans and some other animals may gain insight



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## Insight Learning



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