

# LEARNING

Lecture - 14



# LEARNING OUTCOMES

- Principles of learning
- Classical conditioning
- Operant conditioning
- Social learning theory
- Cognitive learning theory



# LEARNING

- Any relatively permanent change in behaviour that occurs as a result of experience
- It is acquiring new knowledge, behaviors, skills, values, preferences or understanding
- It involves change- either good or bad
- The changes are relatively permanent

# PRINCIPLES OF LEARNING

- Edward Thorndike developed the first three "Laws of learning:" readiness, exercise, and effect
- Three additional principles have been added: primacy and recency, and intensity

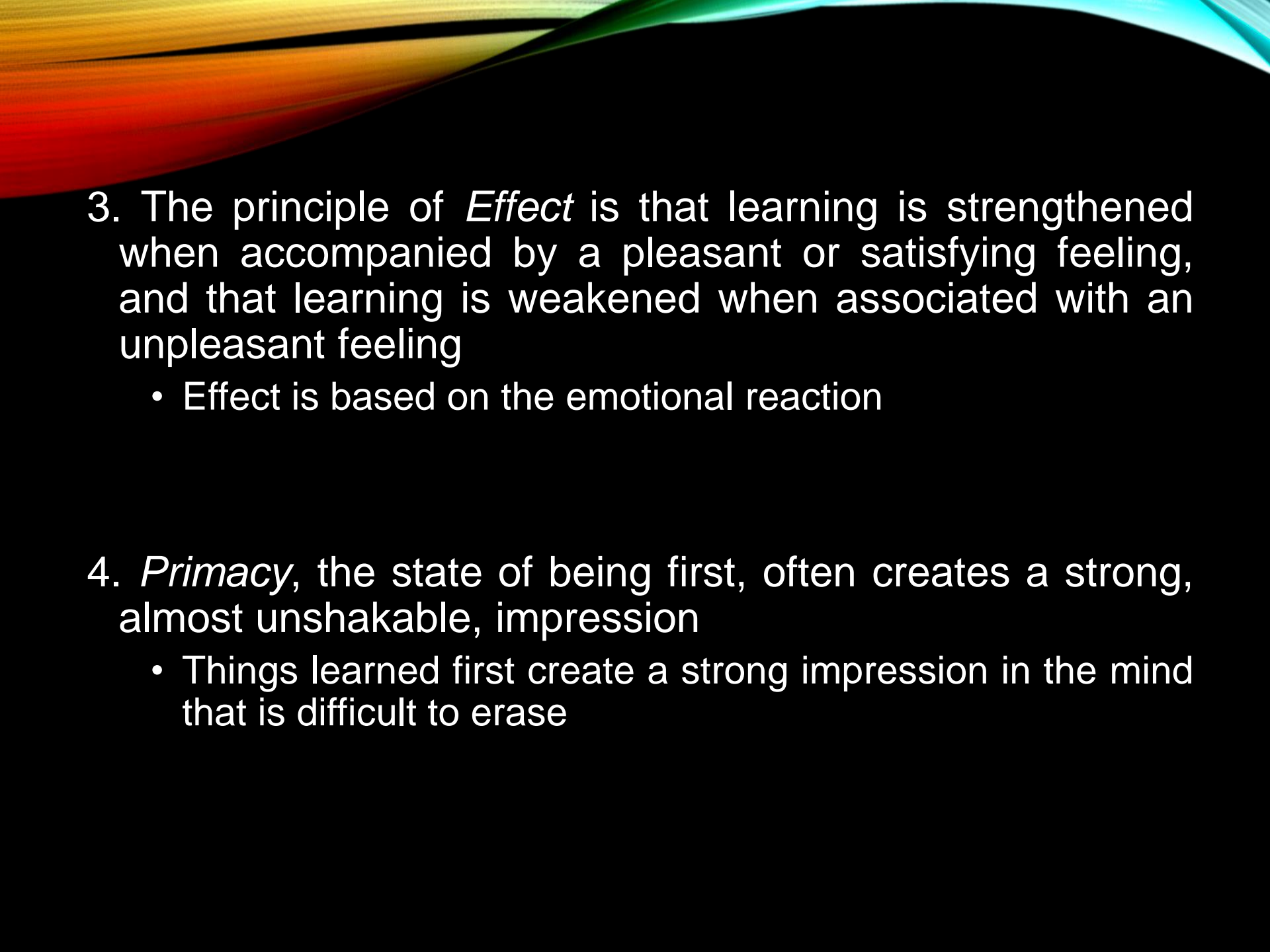


1. *Readiness* implies a degree of single-mindedness and eagerness

- Individuals learn best when they are physically, mentally, and emotionally ready to learn, and they do not learn well if they see no reason for learning

2. *Exercise* states that those things most often repeated are best remembered

- It has been proven that people learn best and retain information longer when they have meaningful practice and repetition
- The key here is that the practice must be meaningful



3. The principle of *Effect* is that learning is strengthened when accompanied by a pleasant or satisfying feeling, and that learning is weakened when associated with an unpleasant feeling

- Effect is based on the emotional reaction

4. *Primacy*, the state of being first, often creates a strong, almost unshakable, impression

- Things learned first create a strong impression in the mind that is difficult to erase



5. The principle of *Recency* states that things most recently learned are best remembered

- Information acquired last generally is remembered best; frequent review and summarization help fix in the mind the material covered

6. *Intensity*- The more intense the material taught, the more likely it will be retained

- A sharp, clear, dramatic, or exciting learning experience teaches more than a routine or boring experience



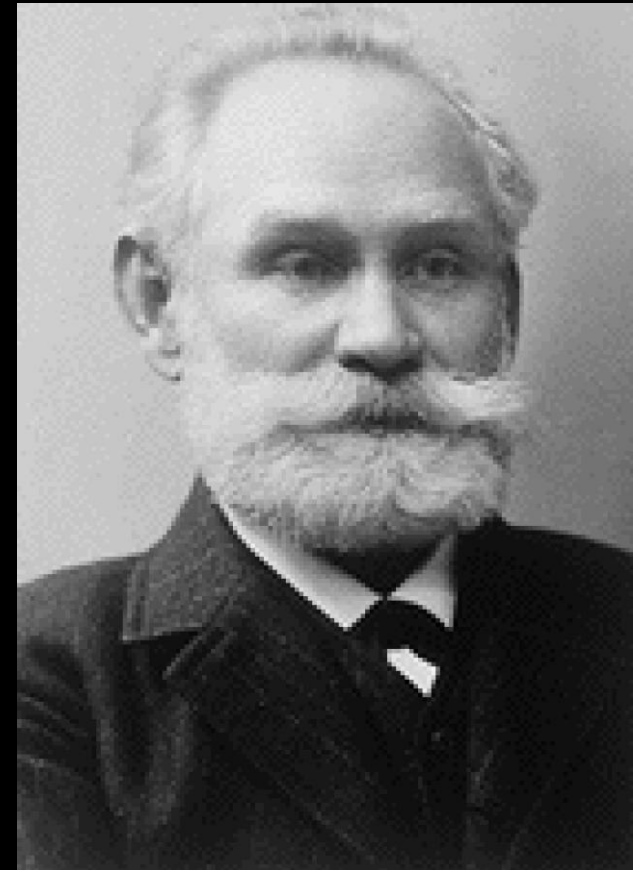
# THEORIES OF LEARNING

- Classical conditioning
- Operant conditioning
- Social learning theory
- Cognitive learning theory



# CLASSICAL CONDITIONING

- Ivan Petrovich Pavlov was a Russian physiologist
- Awarded Nobel Prize in Physiology or Medicine in 1904
- A type of conditioning in which an individual responds to some stimulus that would not ordinarily produce such a response

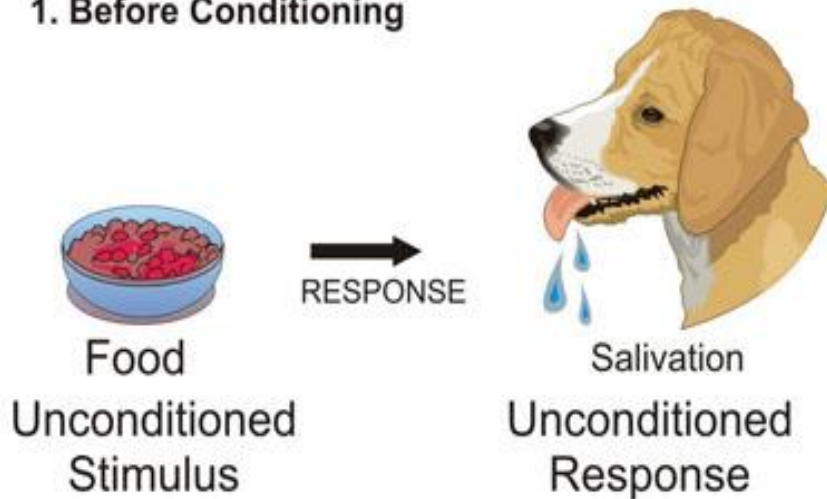


# COMPONENTS OF CLASSICAL CONDITIONING

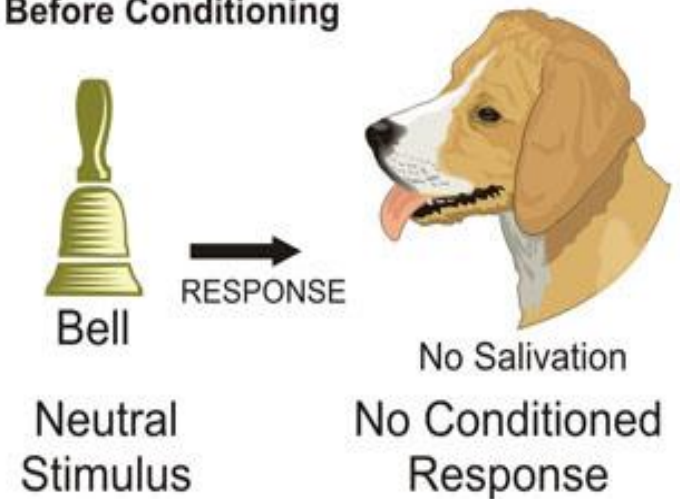
- Unconditioned stimulus: a stimulus that evokes a response without training
- Conditioned stimulus: A stimulus that evokes a response because it has been repeatedly paired with an unconditioned stimulus
- Unconditioned response: An innate response evoked by an unconditioned stimulus; usually either a reflex or an emotional response
- Conditioned response: Term used to refer to a reflex response after learning has occurred to evoke the response by a conditioned stimulus

# CLASSICAL CONDITIONING EXPERIMENT

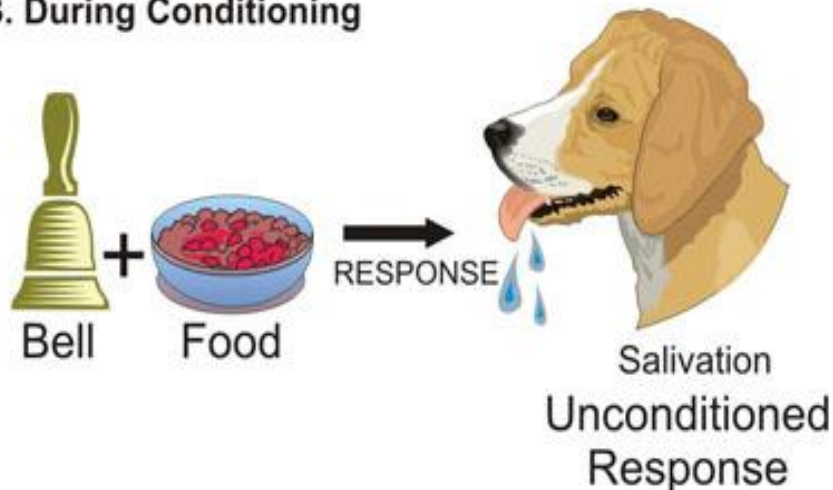
## 1. Before Conditioning



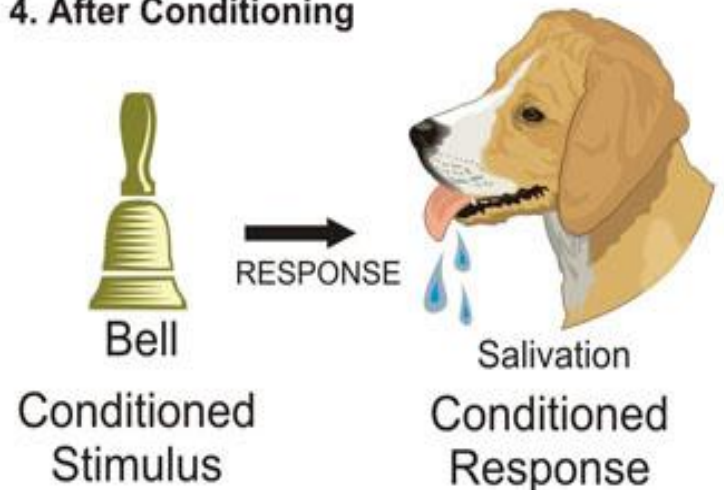
## 2. Before Conditioning



## 3. During Conditioning



## 4. After Conditioning



# CLASSICAL CONDITIONING

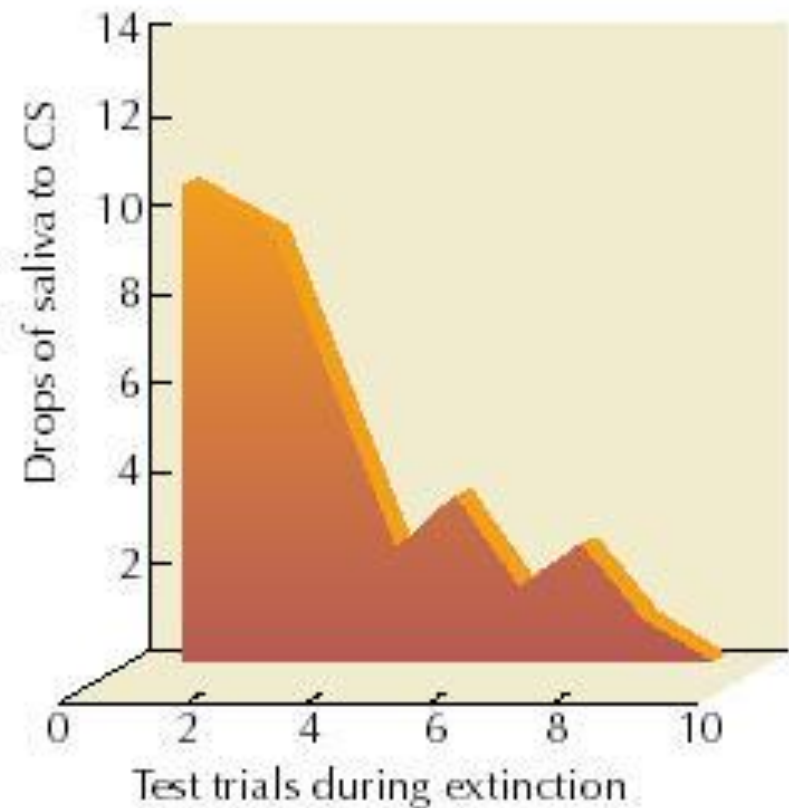
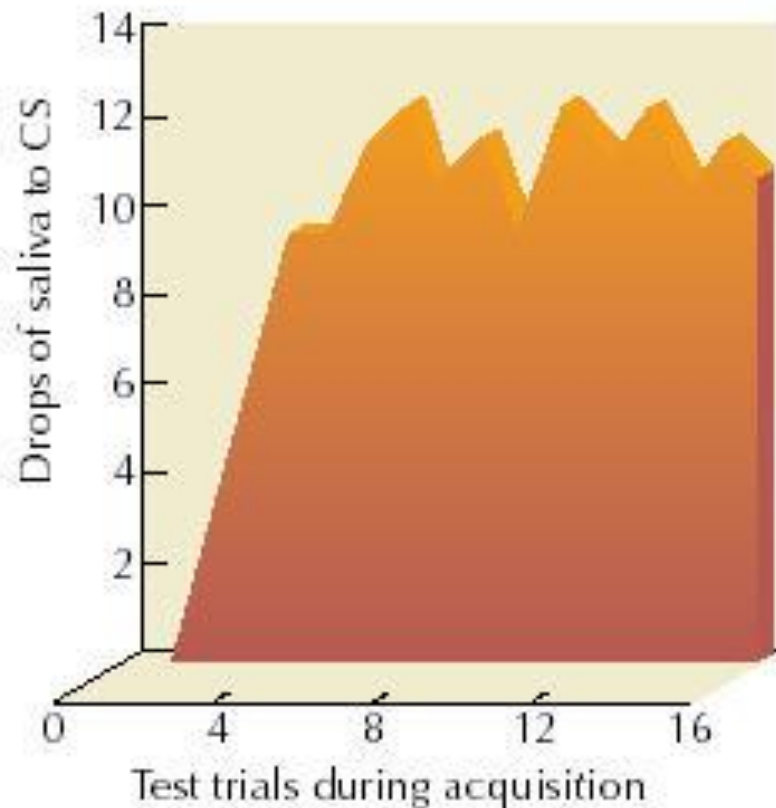
- Classical conditioning deals with reflexes or responses that are evoked from a specific stimulus
- People can be trained to perform certain task or response by providing some sort of trigger, which may be a sound, picture, phrase, etc
- When you see this:
  - What do you think?
- You've been conditioned to think of McDonalds after seeing this picture



# PRINCIPLES OF CLASSICAL CONDITIONING

- Acquisition: acquiring a new response to the conditioned stimulus
- Extinction: the diminishing of the conditioned response when the unconditioned stimulus no longer follows the conditioned stimulus
- Spontaneous Recovery: a partial recovery in strength of the conditioned response following a break during extinction training

# GRAPHIC: ACQUISITION & EXTINCTION



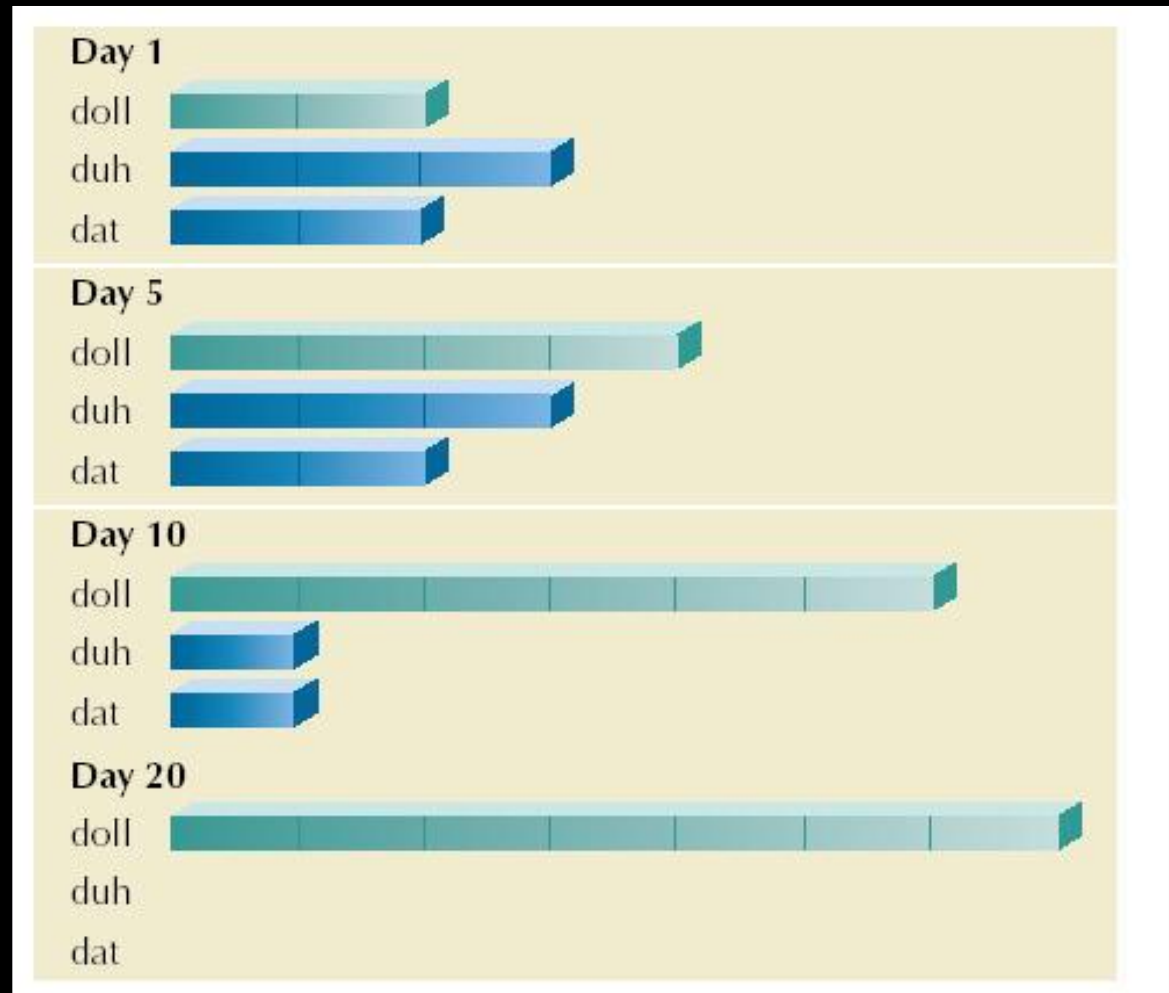


# OPERANT CONDITIONING

- A type of conditioning in which desired voluntary behaviour leads to a reward or prevents a punishment
- Learning based on the consequences of responding
- Responses are associated with their consequences
- Operant conditioning leads to voluntary behaviour

# EXAMPLE OF OPERANT CONDITIONING

- Child says “doll,” “duh,” “dat” to get doll
- On Day 1, parents give doll only when child says “doll”
- By Day 20, child only says “doll” to get doll





# TYPES OF REINFORCEMENT

- Reinforcer: a stimulus that increases the probability of a prior response
- Reinforcement: process by which the probability of a response is increased by the occurrence of a reinforcer
- Punisher: a stimulus that decreases the probability of a prior response
- Punishment: the process by which the probability of a response is decreased by the occurrence of a punisher

# TYPES OF STIMULI

- Appetitive stimulus: a stimulus that is pleasant
- Aversive stimulus: a stimulus that is unpleasant
- Positive reinforcement: reinforcement in which an appetitive stimulus is presented
- Positive punishment: punishment in which an aversive stimulus is presented
- Negative reinforcement: reinforcement in which an aversive stimulus is removed
- Negative punishment: reinforcement in which an appetitive stimulus is removed

# TYPES OF CONDITIONING

	<b>Punishment</b> (decreasing behavior)	<b>Reinforcement</b> (increasing behavior)
<b>Positive</b> (adding)	adding something to decrease behavior	adding something to increase behavior
<b>Negative</b> (subtracting)	subtracting something to decrease behavior	subtracting something to increase behavior

# TYPES OF REINFORCERS

- Primary Reinforcer: Unlearned and natural; satisfies biological needs (e.g., food, water)
- Secondary Reinforcer: Learned reinforcer (e.g., money, grades, approval, praise)
  - Token Reinforcer: Tangible secondary reinforcer (e.g., money, gold stars, poker chips)
  - Social Reinforcer: Provided by other people (e.g., learned desires for attention and approval)

# SOCIAL LEARNING THEORY

- Learning which occurs by observing what happens to other people, or direct experiences
- Four influential processes:
  - Attention process – mental focus or attention
  - Retention – how long you can remember
  - Production – to actually perform the behaviour observed
  - Reinforcement – force that drives to act

# METHODS OF SHAPING BEHAVIOR

- Positive reinforcement
- Negative reinforcement
- Punishment
- Extinction

# COGNITIVE LEARNING THEORY

- Cognition is a process by which mind gets knowledge
- Theory based on Edward Talman's experiment on rats
- Rats develop a cognitive maps, a mental representation of environment (the maze)
- They develop this map naturally, without reinforcement