

8 :

Learning

CHAPTER OVERVIEW

"No topic is closer to the heart of psychology than learning, a relatively permanent change in an organism's behavior due to experience." Chapter 8 covers the basic principles of three forms of learning: classical, or respondent, conditioning, in which we learn associations between events; operant conditioning, in which we learn to engage in behaviors that are rewarded and to avoid behaviors that are punished; and observational learning, in which we learn by observing and imitating others.

The chapter also covers several important issues, including the generality of principles of learning, the role of cognitive processes in learning, and the ways in which learning is constrained by the biological predispositions of different species.

NOTE: Answer guidelines for all Chapter 8 questions begin on page 219.

CHAPTER REVIEW

First, skim each section, noting headings and boldface items. After you have read the section, review each objective by answering the fill-in and essay-type questions that follow it. As you proceed, evaluate your performance by consulting the answers beginning on page 219. Do not continue with the next section until you understand each answer. If you need to, review or reread the section in the textbook before continuing.

How Do We Learn? (pp. 313–315)

David Myers at times uses idioms that are unfamiliar to some readers. If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 227 for an explanation: . . . *breeds hope*; *mugged*; *Japanese rancher reportedly herds cattle*.

Objective 1: Define *learning*, and identify two forms of learning.

1. A relatively permanent change in an organism's behavior due to experience is called _____.
2. More than 200 years ago, philosophers such as John Locke and David Hume argued that an important factor in learning is our tendency to _____ events that occur in sequence. Even simple animals, such as the sea snail *Aplysia*, can learn simple _____ between stimuli. This type of learning is called _____.
3. The type of learning in which the organism learns to associate two stimuli is _____ conditioning.
4. The tendency of organisms to associate a response and its consequence forms the basis of _____ conditioning.
5. Complex animals often learn behaviors merely by _____ others perform them.

Classical Conditioning (pp. 315–326)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 227–229 for an explanation: *For many people, the name Ivan Pavlov . . . rings a bell; drooled; sets your mouth to watering; red-light district; breaking up . . . fire-breathing heartthrob; your heart may race; willy-nilly; the thought that counts; we stand on his shoulders; crack cocaine users often feel a craving; legendary significance.*

Objective 2: Define *classical conditioning* and *behaviorism*, and describe the basic components of classical conditioning.

- Classical conditioning was first explored by the Russian physiologist _____. Early in the twentieth century, psychologist _____ urged psychologists to discard references to mental concepts in favor of studying observable behavior. This view, called _____, influenced American psychology during the first half of that century.
- In Pavlov's classic experiment, a tone, or _____, is sounded just before food, the _____, is placed in the animal's mouth.
- An animal will salivate when food is placed in its mouth. This salivation is called the _____.
- Eventually, the dogs in Pavlov's experiment would salivate on hearing the tone. This salivation is called the _____.

Objective 3: Describe the timing requirements for the initial learning of a stimulus-response relationship.

- The initial learning of a conditioned response is called _____. For many conditioning situations, the optimal interval between a neutral stimulus and the US is _____.

- When the US is presented prior to a neutral stimulus, conditioning _____ (does/does not) occur.

Explain why learning theorists consider classically conditioned behaviors to be biologically adaptive.

- Michael Domjan's sexual conditioning studies with quail demonstrate that classical conditioning is highly adaptive because it helps animals _____ and _____.
- Associations that are not consciously noticed _____ (can/cannot) give rise to attitudes.

Objective 4: Summarize the **processes of extinction, spontaneous recovery, generalization, and discrimination**.

- If a CS is repeatedly presented without the US, _____ soon occurs; that is, the CR diminishes.
- Following a rest, however, the CR reappears in response to the CS; this phenomenon is called _____.
- Subjects often respond to a similar stimulus as they would to the original CS. This phenomenon is called _____.

Objective 5: Discuss the survival value of generalization and discrimination.

- Subjects can also be trained not to respond to _____ stimuli. This learned ability is called _____.
- Being able to recognize differences among stimuli has _____ value because it lets us limit our learned responses to appropriate stimuli.

Objective 6: Discuss the importance of cognitive processes in classical conditioning.

14. The early behaviorists believed that to understand behavior in various organisms, any presumption of _____ was unnecessary.
15. Experiments by Rescorla and Wagner demonstrate that a CS must reliably _____ the US for an association to develop and, more generally, that _____ processes play a role in conditioning. It is as if the animal learns to _____ that the US will occur.
16. The importance of cognitive processes in human conditioning is demonstrated by the failure of classical conditioning as a treatment for _____.

Objective 7: Describe some of the ways that biological predispositions can affect learning by classical conditioning.

17. Some psychologists once believed that any natural _____ could be conditioned to any neutral _____.
18. Garcia discovered that rats would associate _____ with taste but not with other stimuli. Garcia found that taste-aversion conditioning _____ (would / would not) occur when the delay between the CS and the US was more than an hour.
19. Results such as these demonstrate that the principles of learning are constrained by the _____ predispositions of each animal species and that they help each species _____ to its environment. They also demonstrate the importance of different _____ in understanding complex phenomena.

Objective 8: Summarize Pavlov's contribution to our understanding of learning.

20. Classical conditioning is one way that virtually all organisms learn to _____ to their environment.
21. Another aspect of Pavlov's legacy is that he showed how a process such as learning could be studied _____.

Explain why the study of classical conditioning is important.

Objective 9: Describe some uses of classical conditioning to improve human health and well-being.

22. Through classical conditioning, drug users often develop a _____ when they encounter _____ associated with previous highs.
23. Research studies demonstrate that the body's immune system _____ (can/cannot) be classically conditioned.

Describe the Watson and Rayner experiment.

Operant Conditioning (pp. 326–340)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 229–231 for an explanation: *to pull habits out of a rat*; . . . *between Bach's music and Stravinsky's*; *pastes gold stars*; *snooze button*; *goofing off*; *the kick that often comes within seconds*; *a sale with every pitch*; *paid on a piecework basis*; *fly fishing*; *a choppy stop-start pattern*; *"You've got mail"*; *loses a treat*; *drawbacks*; *spanking is a hit*; *backfire*; *piggy bank*; *stirred a hornet's nest*; *rule of thumb*.

Objective 10: Identify the two major characteristics that distinguish classical conditioning from operant conditioning.

1. Classical conditioning associates _____ stimuli with stimuli that trigger responses that are _____. Thus, in this form of conditioning, the organism _____ (does/does not) control the responses.
2. The reflexive responses of classical conditioning involve _____ behavior.
3. In contrast, behavior that is more spontaneous and that is influenced by its consequences is called _____ behavior.

Objective 11: State Thorndike's law of effect, and explain its connection to Skinner's research on operant conditioning.

4. B. F. Skinner used Thorndike's _____ as a starting point in developing a "behavioral technology." This principle states that _____ behavior is likely to _____.
5. Skinner designed an apparatus, called the _____, to investigate learning in animals.

Objective 12: Describe the shaping procedure, and explain how it can increase our understanding of what animals and babies can discriminate.

6. The procedure in which a person teaches an animal to perform an intricate behavior by building up to it in small steps is called _____. This method involves reinforcing successive _____ of the desired behavior.
7. In experiments to determine what an animal can perceive, researchers have found that animals are capable of forming _____ and _____ between stimuli. Similar experiments have been conducted with babies, who also can't verbalize their responses.

8. A situation, event, or signal that a certain response will be reinforced is a _____.

Objective 13: Compare positive and negative reinforcement, and give one example each of a primary reinforcer, a conditioned reinforcer, an immediate reinforcer, and a delayed reinforcer.

9. An event that increases the frequency of a preceding response is a _____.
10. A stimulus that strengthens a response by presenting a typically pleasurable stimulus after a response is a _____.
11. A stimulus that strengthens a response by reducing or removing an aversive (unpleasant) stimulus is a _____.
12. Reinforcers, such as food and shock, that are related to basic needs and therefore do not rely on learning are called _____. Reinforcers that must be conditioned and therefore derive their power through association are called _____.
13. Children who are able to delay gratification tend to become _____ (more/less) socially competent and high achieving as they mature.
14. Immediate reinforcement _____ (is/is not) more effective than its alternative, _____ reinforcement. This explains in part the difficulty that _____ users have in quitting their habits, as well as the tendency of some teens to engage in risky, _____.

Objective 14: Discuss the strengths and weaknesses of continuous and partial (intermittent) reinforcement schedules, and identify four schedules of partial reinforcement.

15. The procedure involving reinforcement of each and every response is called _____. Under these conditions, learning is _____ (rapid/slow). When this

type of reinforcement is discontinued, extinction is _____ (rapid/slow).

16. The procedure in which responses are reinforced only part of the time is called _____ reinforcement. Under these conditions, learning is generally _____ (faster/slower) than it is with continuous reinforcement. Behavior reinforced in this manner is _____ (very/not very) resistant to extinction.
17. When behavior is reinforced after a set number of responses, a _____ schedule is in effect.
18. Three-year-old Yusef knows that if he cries when he wants a treat, his mother will sometimes give in. When, as in this case, reinforcement occurs after an unpredictable number of responses, a _____ schedule is being used.
19. Reinforcement of the first response after a set interval of time defines the _____ schedule. An example of this schedule is _____.
20. When the first response after varying amounts of time is reinforced, a _____ schedule is in effect.

Describe the typical patterns of response under fixed-interval, fixed-ratio, variable-interval, and variable-ratio schedules of reinforcement.

Objective 15: Discuss the ways negative punishment, positive punishment, and negative reinforcement differ, and list some drawbacks of punishment as a behavior-control technique.

21. An aversive consequence that decreases the likelihood of the behavior that preceded it is called _____. If an aversive stimulus is administered, it is called _____. If a desirable stimulus is withdrawn, it is called _____.
22. Because punished behavior is merely _____, it may reappear.
23. Punishment can also lead to _____ and a sense of helplessness, as well as to the association of the aversive event with _____.
24. Punishment also often increases _____ and does not guide the individual toward more desirable behavior.

Objective 16: Explain how latent learning and the effect of external rewards demonstrate that cognitive processing is an important part of learning.

25. Skinner and other behaviorists resisted the growing belief that expectations, perceptions, and other _____ processes have a valid place in the science of psychology.
26. When a well-learned route in a maze is blocked, rats sometimes choose an alternative route, acting as if they were consulting a _____.
27. Animals may learn from experience even when reinforcement is not available. When learning is not apparent until reinforcement has been provided, _____ is said to have occurred.
28. Excessive rewards may undermine _____, which is the desire to perform a behavior for its own sake. The motivation to seek external rewards and avoid punishment is called _____.

Objective 17: Explain how biological predispositions place limits on what can be achieved through operant conditioning.

- 29. Operant conditioning _____ (is/is not) constrained by an animal's biological predispositions.
- 30. For instance, with animals it is difficult to use food as a _____ to _____ behaviors that are not naturally associated with _____.
- 31. Biological constraints predispose organisms to learn associations that are naturally _____. When animals revert to their biologically predisposed patterns, they are exhibiting what is called "_____."

Objective 18: Describe the controversy over Skinner's views of human behavior.

- 32. Skinner's views were controversial because he insisted that _____ influences, rather than _____ and _____, shape behavior.
- 33. Skinner also advocated the use of _____ principles to influence people in ways that promote more desirable _____.
- 34. Skinner's critics argued that he _____ people by neglecting their personal _____ and by seeking to _____ their actions.

Objective 19: Describe some ways to apply operant conditioning principles at school, in sports, at work, and at home.

- 35. The use of teaching machines and programmed textbooks was an early application of the operant conditioning procedure of _____ to education. On-line _____ systems, software that is _____, and _____-based learning are newer examples of this application of operant principles. Reinforcement principles can also be

used to enhance _____ abilities by shaping successive approximations of new skills.

- 36. In boosting productivity in the workplace, positive reinforcement is _____ (more/less) effective when applied to specific behaviors than when given to reward general merit and when the desired performance is well defined and _____. For such behaviors, immediate reinforcement is _____ (more/no more) effective than delayed reinforcement.
- 37. Many economists and psychologists believe that people's spending behavior is controlled by its consequences (its _____ and _____).
- 38. In using operant conditioning to change your own behavior, you would follow these four steps:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

Objective 20: Identify the major similarities and differences between classical and operant conditioning.

- 39. Classical conditioning and operant conditioning are both forms of _____.
- 40. Both types of conditioning involve similar processes of _____, _____, _____, and _____.
- 41. Classical and operant conditioning are both subject to the influences of _____ processes and _____ predispositions.
- 42. Through classical conditioning, an organism associates different _____ that it does not _____ and responds _____.
- 43. Through operant conditioning, an organism associates its _____ with their _____.

Learning by Observation (pp. 341–346)

If you do not know the meaning of the following phrases in the context in which they appear in the text, refer to page 231 for an explanation: *those who observed the model's aggressive outburst were much more likely to lash out at the doll; Does the reel world reflect the real world?*

Objective 21: Describe the process of observational learning, and explain the importance of the discovery of mirror neurons.

1. Learning by observing and imitating others is called _____, or _____. This form of learning _____ (occurs/does not occur) in species other than our own.
2. Neuroscientists have found _____ neurons in the brain's _____ lobe that provide a neural basis for _____ learning. These neurons have been observed to fire when monkeys perform a simple task and when they _____. This type of neuron _____ (has/has not) been found in human brains.
3. By age _____, infants will imitate novel play behaviors. By age _____, they will imitate acts modeled on television.

Objective 22: Describe Bandura's findings on what determines whether we will imitate a model.

4. The psychologist best known for research on observational learning is _____.
5. In one experiment, the child who viewed an adult punch an inflatable doll played _____ (more/less) aggressively than the child who had not observed the adult.
6. Bandura believes people imitate a model because of _____ and _____, those received by the model as well as by imitators.
7. These results may help explain why _____ parents might have

_____ children. However, _____ factors may also be involved.

Objective 23: Discuss the impact of prosocial modeling.

8. Children will also model positive, or _____, behaviors.
9. Models are most effective when they are perceived as _____, _____, or _____. Models are also most effective when their words and actions are _____.

Objective 24: Explain why correlations cannot prove that watching violent TV causes violent behavior, and cite some experimental evidence that helps demonstrate a cause-effect link.

10. Children in developed countries spend more time _____ than they spend in school.
11. Compared to real-world crimes, television depicts a much higher percentage of crimes as being _____ in nature.
12. Correlational studies _____ (link/do not link) watching television violence with violent behavior.
13. The more hours children spend watching violent programs, the more at risk they are for _____ and _____ as teens and adults.
14. Correlation does not prove _____. Most researchers believe that watching violence on television _____ (does/does not) lead to aggressive behavior.
15. The violence effect stems from several factors, including _____ of observed aggression and the tendency of prolonged exposure to violence to _____ viewers.