CHAPTER 7

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 7 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 7 questions begin on page 178.

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 178. 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.

Introduction and How Do We Learn? (pp. 291–293)

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 slug 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. 294–304)

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

1. 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.
2. In Pavlov's classic experiment, a tone, or ________________, is sounded just before food, the ________________, is placed in the animal's mouth.

3. An animal will salivate when food is placed in its mouth. This salivation is called the ________________

4. Eventually, the dogs in Pavlov's experiment would salivate on hearing the tone. This salivation is called the ________________

Objective 3: Summarize the processes and adaptive value of acquisition, higher-order conditioning, extinction, spontaneous recovery, generalization, and discrimination.

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

6. 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.

   consciously noticed ________________ (can/cannot) influence attitudes.

9. If a CS is repeatedly presented without the US, ________________ soon occurs; that is, the CR diminishes.

10. Following a rest, however, the CR reappears in response to the CS; this phenomenon is called ________________.

11. Subjects often respond to a similar stimulus as they would to the original CS. This phenomenon is called ________________.

12. Humans and other animals can also be trained not to respond to ________________ stimuli. This learned ability is called ________________.

13. Being able to recognize differences among stimuli has ________________ value because it lets us limit our learned responses to appropriate stimuli.

Objective 4: Discuss the importance of cognitive processes and biological predispositions 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 ________________.

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. Conditioning is speedier, stronger, and more durable when the CS is ________ relevant.

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 5:** Summarize Pavlov's contribution to our understanding of learning and to improvements in human health and well-being.

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.

Describe the Watson and Rayner experiment.

**Operant Conditioning** (pp. 304–317)

**Objective 6:** 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 7:** Describe the process of operant conditioning, including the shaping procedure.

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.

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 8: Identify the different types of reinforcers, and describe the major schedules of reinforcement.

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, ____________________________.

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 9: Discuss how 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
22. Because punished behavior is merely ________________, it may reappear. Also, punishment teaches ________________, that behavior that is unacceptable in one context may be acceptable in another.

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 10: Explain the importance of cognitive processes and biological predispositions in operant conditioning.

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 ________________.

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 11: Describe the controversy over Skinner’s views of human behavior, and identify some ways to apply operant conditioning principles at school, in sports, at work, and at home.

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.

35. The use of teaching machines and programmed textbooks was an early application of the operant conditioning procedure of ________________ to education. Online ________________ 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. In using operant conditioning to change your own behavior, you would follow these four steps
   a. ________________________________
   b. ________________________________
   c. ________________________________
   d. ________________________________

Objective 12: Identify the major similarities and differences between classical and operant conditioning.

38. Classical conditioning and operant conditioning are both forms of ________________________________

39. Both types of conditioning involve similar processes of ________________________________
   ________________________________, ________________________________
   ________________________________, ________________________________
   and ________________________________.

40. Classical and operant conditioning are both subject to the influences of ________________________________
    processes and ________________________________ predispositions.

41. Through classical conditioning, an organism associates different ________________________________ that it does not ________________________________ and responds ________________________________.

42. Through operant conditioning, an organism associates its ________________________________ with their ________________________________.

Learning by Observation (pp. 317–323)

Objective 13: Describe the process of observational learning, and Bandura's findings on what determines whether we will imitate a model.

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. Mirror neurons help give rise to children’s ________________________________ and their ________________________________.

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 14: Discuss the impact of prosocial modeling and the relationship between watching violent TV and antisocial behavior.

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 ________________________________.

10. Children in developed countries spend more time ________________________________ than they spend in school.

11. Compared with the real world, 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-viewing effect stems from several factors, including ________________ of observed aggression and the tendency of prolonged exposure to violence to ________________ viewers.

**PROGRESS TEST 1**

Multiples-Choice Questions

Circle your answers to the following questions and check them with the answers beginning on page 180. If your answer is incorrect, read the explanation for why it is incorrect and then consult the appropriate pages of the text (in parentheses following the correct answer).

1. **Learning** is best defined as
   a. any behavior produced by an organism without being provoked.
   b. a change in the behavior of an organism.
   c. a relatively permanent change in the behavior of an organism due to experience.
   d. behavior based on operant rather than respondent conditioning.

2. The type of learning associated with Skinner is
   a. classical conditioning.
   b. operant conditioning.
   c. respondent conditioning.
   d. observational learning.

3. In Pavlov's original experiment with dogs, the meat served as a
   a. CS.       c. US.
   b. CR.       d. UR.

4. In Pavlov's original experiment with dogs, the tone was initially a(n) ______ stimulus; after it was paired with meat, it became a(n) ______ stimulus.
   a. conditioned; neutral
   b. neutral; conditioned
   c. conditioned; unconditioned
   d. unconditioned; conditioned

5. To obtain a reward, a monkey learns to press a lever when a 1000-Hz tone is on but not when a 1200-Hz tone is on. What kind of training is this?
   a. extinction
   b. generalization
   c. classical conditioning
   d. discrimination

6. Which of the following statements concerning reinforcement is correct?
   a. Learning is most rapid with intermittent reinforcement, but continuous reinforcement produces the greatest resistance to extinction.
   b. Learning is most rapid with continuous reinforcement, but intermittent reinforcement produces the greatest resistance to extinction.
   c. Learning is fastest and resistance to extinction is greatest after continuous reinforcement.
   d. Learning is fastest and resistance to extinction is greatest following intermittent reinforcement.

7. Cognitive processes are
   a. unimportant in classical and operant conditioning.
   b. important in both classical and operant conditioning.
   c. more important in classical than in operant conditioning.
   d. more important in operant than in classical conditioning.

8. The highest and most consistent rate of response is produced by a ______ schedule.
   a. fixed-ratio       c. fixed-interval
   b. variable-ratio   d. variable-interval

9. A response that leads to the removal of an unpleasant stimulus is one being
   a. positively reinforced.
   b. negatively reinforced.
   c. punished.
   d. extinguished.

10. When a conditioned stimulus is presented without an accompanying unconditioned stimulus, ______ will soon take place.
    a. generalization    c. extinction
    b. discrimination    d. aversion
11. One difference between classical and operant conditioning is that
   a. in classical conditioning the responses operate on the environment to produce rewarding or punishing stimuli.
   b. in operant conditioning the responses are triggered by preceding stimuli.
   c. in classical conditioning the responses are automatically triggered by stimuli.
   d. in operant conditioning the responses are reflexive.

12. In Garcia and Koelling’s studies of taste-aversion learning, rats learned to associate
   a. taste with electric shock.
   b. sights and sounds with sickness.
   c. taste with sickness.
   d. taste and sounds with electric shock.

13. In Pavlov’s original experiment with dogs, salivation to meat was the
   a. CS.  
   b. CR.  
   c. US.  
   d. UR.

14. Learning by imitating others’ behaviors is called ______ learning. The researcher best known for studying this type of learning is ______.
   a. secondary; Skinner
   b. observational; Bandura
   c. secondary; Pavlov
   d. observational; Watson

15. Punishment is a controversial way of controlling behavior because
   a. behavior is not forgotten and may return.
   b. punishing stimuli often create fear.
   c. punishment often increases aggressiveness.
   d. of all of these reasons.

16. Classical conditioning experiments by Rescorla and Wagner demonstrate that an important factor in conditioning is
   a. the research participant’s age.
   b. the strength of the stimuli.
   c. the predictability of an association.
   d. the similarity of stimuli.

17. Which of the following is an example of reinforcement?
   a. presenting a positive stimulus after a response
   b. removing an unpleasant stimulus after a response
   c. being told that you have done a good job
   d. All of these are examples.

18. Which of the following is a form of associative learning?
   a. classical conditioning
   b. operant conditioning
   c. observational learning
   d. all of these types of learning

19. For the most rapid conditioning, a CS should be presented
   a. about 1 second after the US.
   b. about one-half second before the US.
   c. about 15 seconds before the US.
   d. at the same time as the US.

20. Mirror neurons are found in the brain’s ______ and are believed to be the neural basis for ______.
   a. frontal lobe; observational learning
   b. frontal lobe; classical conditioning
   c. temporal lobe; operant conditioning
   d. temporal lobe; observational learning
Matching Items

Match each definition or description with the appropriate term.

Definitions or Descriptions

1. presentation of a desired stimulus
2. tendency for similar stimuli to evoke a CR
3. removal of an aversive stimulus
4. an innately reinforcing stimulus
5. an acquired reinforcer
6. responses are reinforced after an unpredictable amount of time
7. the motivation to perform a behavior for its own sake
8. reinforcing closer and closer approximations of a behavior
9. the reappearance of a weakened CR
10. presentation of an aversive stimulus
11. learning that becomes apparent only after reinforcement is provided
12. each and every response is reinforced
13. a desire to perform a behavior due to promised rewards

Terms

a. shaping
b. punishment
c. spontaneous recovery
d. latent learning
e. positive reinforcement
f. negative reinforcement
g. primary reinforcer
h. generalization
i. conditioned reinforcer
j. continuous reinforcement
k. variable-interval schedule
l. extrinsic motivation
m. intrinsic motivation

PROGRESS TEST 2

Progress Test 2 should be completed during a final chapter review. Answer the following questions after you thoroughly understand the correct answers for the section reviews and Progress Test 1.

Multiple-Choice Questions

1. During extinction, the _____ is omitted; as a result, the _____ seems to disappear.
   a. US; UR   b. CS; CR   c. US; CR   d. CS; UR

2. In Watson and Rayner’s experiment, the loud noise was the _____ and the white rat was the _____.
   a. CS; CR   b. US; CS   c. CS; US   d. US; CR

3. In which of the following may classical conditioning play a role?
   a. emotional problems
   b. the body’s immune response
   c. helping drug addicts
   d. in all of these cases

4. Shaping is a(n) _____ technique for _____ a behavior.
   a. operant; establishing
   b. operant; suppressing
   c. respondent; establishing
   d. respondent; suppressing

5. In Pavlov’s studies of classical conditioning of a dog’s salivary responses, spontaneous recovery occurred
   a. during acquisition, when the CS was first paired with the US.
   b. during extinction, when the CS was first presented by itself.
   c. when the CS was reintroduced following extinction of the CR and a rest period.
   d. during discrimination training, when several conditioned stimuli were introduced.

6. For operant conditioning to be most effective, when should the reinforcers be presented in relation to the desired response?
   a. immediately before
   b. immediately after
   c. at the same time as
   d. at least a half hour before
7. In distinguishing between negative reinforcers and punishment, we note that
   a. punishment, but not negative reinforcement, involves use of an aversive stimulus.
   b. in contrast to punishment, negative reinforcement decreases the likelihood of a response by the presentation of an aversive stimulus.
   c. in contrast to punishment, negative reinforcement increases the likelihood of a response by the presentation of an aversive stimulus.
   d. in contrast to punishment, negative reinforcement increases the likelihood of a response by the termination of an aversive stimulus.

8. The “piecework,” or commission, method of payment is an example of which reinforcement schedule?
   a. fixed-interval   c. fixed-ratio
   b. variable-interval d. variable-ratio

9. Putting on your coat when it is cold outside is a behavior that is maintained by
   a. discrimination learning.
   b. punishment.
   c. negative reinforcement.
   d. classical conditioning.

10. On an intermittent reinforcement schedule, reinforcement is given
    a. in very small amounts.
    b. randomly.
    c. for successive approximations of a desired behavior.
    d. only some of the time.

11. You teach your dog to fetch the paper by giving him a cookie each time he does so. This is an example of
    a. operant conditioning.
    b. classical conditioning.
    c. conditioned reinforcement.
    d. partial reinforcement.

12. In promoting observational learning, the most effective models are those that we perceive as
    a. similar to ourselves.
    b. respected and admired.
    c. successful.
    d. having any of these characteristics.

13. A cognitive map is a
    a. mental representation of one's environment.
    b. sequence of thought processes leading from one idea to another.
    c. set of instructions detailing the most effective means of teaching a particular concept.
    d. biological predisposition to learn a particular skill.

14. After exploring a complicated maze for several days, a rat subsequently ran the maze with very few errors when food was placed in the goal box for the first time. This performance illustrates
   a. classical conditioning.
   b. discrimination learning.
   c. observational learning.
   d. latent learning.

15. Leon's psychology instructor has scheduled an exam every third week of the term. Leon will probably study the most just before an exam and the least just after an exam. This is because the schedule of exams is reinforcing studying according to which schedule?
   a. fixed-ratio   c. fixed-interval
   b. variable-ratio d. variable-interval

16. Operant conditioning is to _____ as classical conditioning is to ______.
    a. Pavlov; Watson   c. Pavlov; Skinner
    b. Skinner; Bandura d. Skinner; Pavlov

17. Online testing systems and interactive software are applications of the operant conditioning principles of
    a. shaping and immediate reinforcement.
    b. immediate reinforcement and punishment.
    c. shaping and primary reinforcement.
    d. continuous reinforcement and punishment.

18. Which of the following is the best example of a conditioned reinforcer?
    a. putting on a coat on a cold day
    b. relief from pain after the dentist stops drilling your teeth
    c. receiving a cool drink after washing your mother's car on a hot day
    d. receiving an approving nod from the boss for a job well done

19. Experiments on taste-aversion learning demonstrate that
    a. for the conditioning of certain stimuli, the US need not immediately follow the CS.
    b. any perceivable stimulus can become a CS.
    c. all animals are biologically primed to associate illness with the taste of a tainted food.
    d. all of these statements are true.

20. Regarding the impact of watching television violence on children, most researchers believe that
    a. aggressive children simply prefer violent programs.
b. television simply reflects, rather than contributes to, violent social trends.
c. watching violence on television leads to aggressive behavior.
d. there is only a weak correlation between exposure to violence and aggressive behavior.

**True—False Items**

Indicate whether each statement is true or false by placing T or F in the blank next to the item.

______ 1. Operant conditioning involves behavior that is primarily reflexive.

______ 2. The optimal interval between CS and US is about 15 seconds.

______ 3. Negative reinforcement decreases the likelihood that a response will recur.

______ 4. The learning of a new behavior proceeds most rapidly with continuous reinforcement.

______ 5. As a rule, variable schedules of reinforcement produce more consistent rates of responding than fixed schedules.

______ 6. Cognitive processes are of relatively little importance in learning.

______ 7. Although punishment may be effective in suppressing behavior, it can have several undesirable side effects.

______ 8. All animals, including rats and birds, are biologically predisposed to associate taste cues with sickness.

______ 9. Whether the CS or US is presented first seems not to matter in terms of the ease of classical conditioning.

______ 10. Spontaneous recovery refers to the tendency of extinguished behaviors to reappear suddenly.

______ 11. Researchers have discovered brain neurons that fire when a person performs a task or when another person is observed performing the same task.

**PSYCHOLOGY APPLIED**

Answer these questions the day before an exam as a final check on your understanding of the chapter's terms and concepts.

**Multiple-Choice Questions**

1. You always rattle the box of dog biscuits before giving your dog a treat. As you do so, your dog salivates. Rattling the box is a ______; your dog's salivation is a ______

2. You are expecting an important letter in the mail. As the regular delivery time approaches you glance more and more frequently out the window, searching for the letter carrier. Your behavior in this situation typifies that associated with which schedule of reinforcement?

   a. fixed-ratio
   b. variable-ratio
   c. fixed-interval
   d. variable-interval

3. Jack finally takes out the garbage in order to get his father to stop pestering him. Jack's behavior is being influenced by

   a. positive reinforcement.
   b. negative reinforcement.
   c. a primary reinforcer.
   d. punishment.

4. Mrs. Ramirez often tells her children that it is important to buckle their seat belts while riding in the car, but she rarely does so herself. Her children will probably learn to

   a. use their seat belts and tell others it is important to do so.
   b. use their seat belts but not tell others it is important to do so.
   c. tell others it is important to use seat belts but rarely use them themselves.
   d. neither tell others that seat belts are important nor use them.

5. A pigeon can easily be taught to flap its wings in order to avoid shock but not for food reinforcement. According to the text, this is most likely so because

   a. pigeons are biologically predisposed to flap their wings in order to escape aversive events and to use their beaks to obtain food.
   b. shock is a more motivating stimulus for birds than food is.
   c. hungry animals have difficulty delaying their eating long enough to learn any new skill.
   d. of all of these reasons.

6. From a casino owner's viewpoint, which of the following jackpot-payout schedules would be the most desirable for reinforcing customer use of a slot machine?

   a. variable-ratio
   b. fixed-ratio
   c. variable-interval
   d. fixed-interval
7. After discovering that her usual route home was closed due to road repairs, Sharett used her knowledge of the city and sense of direction to find an alternate route. This is an example of
a. latent learning.
b. observational learning.
c. shaping.
d. using a cognitive map.

For questions 8–11, use the following information.
As a child, you were playing in the yard one day when a neighbor's cat wandered over. Your mother (who has a terrible fear of animals) screamed and snatched you into her arms. Her behavior caused you to cry. You now have a fear of cats.

8. Identify the CS.
   a. your mother's behavior
   b. your crying
   c. the cat
   d. your fear today

9. Identify the US.
   a. your mother's behavior
   b. your crying
   c. the cat
   d. your fear today

10. Identify the CR.
    a. your mother's behavior
    b. your crying
    c. the cat
    d. your fear today

11. Identify the UR.
    a. your mother's behavior
    b. your crying
    c. the cat
    d. your fear today

12. The manager of a manufacturing plant wishes to use positive reinforcement to increase the productivity of workers. Which of the following procedures would probably be the most effective?
   a. Deserving employees are given a general merit bonus at the end of each fiscal year.
   b. A productivity goal that seems attainable, yet is unrealistic, is set for each employee.
   c. Employees are given immediate bonuses for specific behaviors related to productivity.
   d. Employees who fail to meet standards of productivity receive pay cuts.

13. Bill once had a blue car that was in the shop more than it was out. Since then he will not even consider owning blue- or green-colored cars. Bill's aversion to green cars is an example of
   a. discrimination.
   b. generalization.
   c. latent learning.
   d. extinction.

14. After watching coverage of the Olympics on television recently, Lynn and Susan have been staging their own "summer games." Which of the following best accounts for their behavior?
   a. classical conditioning
   b. observational learning
   c. latent learning
   d. shaping

15. Two groups of rats receive classical conditioning trials in which a tone and electric shock are presented. For Group 1 the electric shock always follows the tone. For Group 2 the tone and shock occur randomly. Which of the following is likely to result?
   a. The tone will become a CS for Group 1 but not for Group 2.
   b. The tone will become a CS for Group 2 but not for Group 1.
   c. The tone will become a CS for both groups.
   d. The tone will not become a CS for either group.

16. Last evening May-ling ate her first cheeseburger and french fries at an American fast-food restaurant. A few hours later she became ill. It can be expected that
   a. May-ling will develop an aversion to the sight of a cheeseburger and french fries.
   b. May-ling will develop an aversion to the taste of a cheeseburger and french fries.
   c. May-ling will not associate her illness with the food she ate.
   d. May-ling will associate her sickness with something she experienced immediately before she became ill.

17. Reggie’s mother tells him that he can watch TV after he cleans his room. Evidently, Reggie’s mother is attempting to use _____ to increase room cleaning.
   a. operant conditioning
   b. secondary reinforcement
   c. positive reinforcement
   d. all of these procedures

18. Which of the following is an example of shaping?
   a. A dog learns to salivate at the sight of a box of dog biscuits.
   b. A new driver learns to stop at an intersection when the light changes to red.
   c. A parrot is rewarded first for making any sound, then for making a sound similar to "Laura," and then for "speaking" its owner's name.
d. A psychology student reinforces a laboratory rat only occasionally, to make its behavior more resistant to extinction.

19. Lars, a shoe salesman, is paid every two weeks, whereas Tom receives a commission for each pair of shoes he sells. Evidently, Lars is paid on a ____ schedule of reinforcement, and Tom on a ____ schedule of reinforcement.
   a. fixed-ratio; fixed-interval
   b. continuous; intermittent
   c. fixed-interval; fixed-ratio
   d. variable-interval; variable-ratio

20. Nancy decided to take introductory psychology because she has always been interested in human behavior. Jack enrolled in the same course because he thought it would be easy. Nancy’s behavior was motivated by ____ , Jack’s by ____ .
   a. extrinsic motivation; intrinsic motivation
   b. intrinsic motivation; extrinsic motivation
   c. drives; incentives
   d. incentives; drives

Essay Question
Describe the best way for a pet owner to condition her dog to roll over. (Use the space below to list the points you want to make, and organize them. Then write the essay on a separate piece of paper.)

KEY TERMS
Writing Definitions
Using your own words, on a piece of paper write a brief definition or explanation of each of the following terms.
1. learning
2. associative learning
3. classical conditioning
4. behaviorism
5. unconditioned response (UR)
6. unconditioned stimulus (US)
7. conditioned response (CR)
8. conditioned stimulus (CS)
9. acquisition
10. higher-order conditioning
11. extinction
12. spontaneous recovery
13. generalization
14. discrimination
15. respondent behavior
16. operant conditioning
17. operant behavior
18. law of effect
19. operant chamber (Skinner box)
20. shaping
21. reinforcer
22. positive reinforcement
23. negative reinforcement
24. primary reinforcers
25. conditioned reinforcers
26. continuous reinforcement
27. partial (intermittent) reinforcement
28. fixed-ratio schedule
29. variable-ratio schedule
30. fixed-interval schedule
31. variable-interval schedule
32. punishment
33. cognitive map
34. latent learning
35. intrinsic motivation
36. extrinsic motivation
37. observational learning
38. modeling
39. mirror neurons
40. prosocial behavior
Cross-Check

As you learned in the Prologue, reviewing and overlearning of material are important to the learning process. After you have written the definitions of the key terms in this chapter, you should complete the crossword puzzle to ensure that you can reverse the process—recognize the term, given the definition.

ACROSS
1. Behavior that occurs as an automatic response to a stimulus.
4. Relatively permanent change in behavior due to experience.
6. Reinforcer that, when removed after a response, strengthens the response.
9. Type of stimulus that naturally triggers an unconditioned response.
12. Unlearned, involuntary response.
14. Type of behavior that is positive and helpful.
17. Behavior that produces reinforcing or punishing stimuli.
20. Procedure that involves reinforcing successive approximations of a behavior.
21. Learned response to a previously neutral stimulus.
22. Learning that occurs in the absence of reinforcement but only becomes apparent when an incentive is introduced.
23. Initial stage of conditioning, in which a new response is established.

DOWN
2. Type of reinforcement in which responding is intermittently reinforced.
3. Schedule in which the first response following a set period of time is reinforced.
5. Tendency for stimuli similar to the original CS to evoke a CR.
7. This occurs when a response is no longer reinforced.
8. Mental picture of the environment
10. Responding differently to stimuli that signal whether a behavior will be reinforced.
11. Learning that involves watching and imitating others.
13. Stimulus that automatically triggers an unconditioned response.
14. The presentation of an aversive stimulus, which decreases the behavior it follows.
15. Type of learning also called Pavlovian conditioning.
16. The process of watching and then imitating a behavior.
18. Motivation to perform a behavior in order to obtain a reward or avoid a punishment.
19. Originally neutral stimulus that comes to trigger a conditioned response.

ANSWERS

Chapter Review

How Do We Learn?

1. learning
2. associate; associations; associative learning
3. classical
4. operant
5. observing