

Operant Conditioning

MODULE OVERVIEW

Module 21 covers the basic principles of operant conditioning, in which we learn to engage in behaviors that are rewarded and to avoid behaviors that are punished. The module also includes a discussion of how operant conditioning principles are applied in everyday life. The module begins and concludes by contrasting classical and operant conditioning techniques.

NOTE: Answer guidelines for all Module 21 questions begin on page 192.

MODULE REVIEW

First, skim each section, noting headings and bold-face items. After you have read the section, review each objective by answering the fill-in and essay-type questions that follow it. In some cases, Study Tips explain how best to learn a difficult concept and Applications help you to know how well you understand the material. As you proceed, evaluate your performance by consulting the answers beginning on page 192. 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.

Objective 21-1: Define *operant conditioning*, and describe how operant behavior is reinforced and shaped.

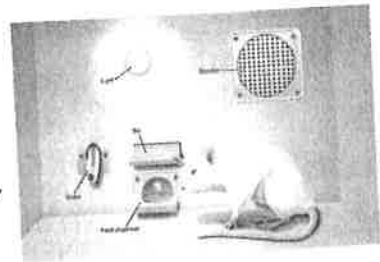
1. Like classical conditioning, operant conditioning is a form of _____ learning in which the organism's response to a _____ is strengthened when it is rewarded.

Skinner's Experiments

2. B. F. Skinner used Thorndike's _____ as a starting point in developing a behavioral technology. This principle states that _____ behavior is likely to _____.

3. In operant conditioning, organisms associate their own actions with _____. Actions followed by _____ increase; actions followed by _____ decrease.

4. Skinner designed an apparatus, called the _____, to investigate _____.



- _____ in animals. This design creates a stage on which organisms act out Skinner's concept of _____, any event that increases the frequency of a preceding response.
5. 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.
 6. 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.

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

APPLICATION:

8. Which of the following is an example of shaping?
- A dog learns to salivate at the sight of a box of dog biscuits.
 - A new driver learns to stop at an intersection when the light changes to red.
 - 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.

Objective 21-2 Discuss the differences between positive and negative reinforcement, and identify the basic types of reinforcers.

9. A stimulus that strengthens a response by presenting a typically pleasurable stimulus after a response is a _____.
10. A stimulus that strengthens a response by reducing or removing an aversive (unpleasant) stimulus is a _____.
11. Reinforcers, such as food and shock, that are related to basic needs and therefore do not rely on learning are called _____.
12. 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, _____.

STUDY TIP: Some students have a problem differentiating positive and negative reinforcers because they naturally think "positive" indicates a "good," or desirable, outcome, while "negative" connotes a "bad," or undesirable, outcome. Remember that from the organism's point of view, reinforcement is always a desirable outcome. You may find it useful to think of a photography analogy. A "negative" is a reverse image in which the "positive" photographic image is not present. So too, negative reinforcement involves taking away an event—in this case, one that is undesirable.

Objective 21-3: Explain how the different reinforcement schedules affect behavior.

15. A _____ is a pattern specifying how often a _____ is reinforced.
16. 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).
17. 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.
18. When behavior is reinforced after a set number of responses, a _____ schedule is in effect.
19. 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.

20. Reinforcement of the first response after a set interval of time defines the _____ schedule. An example of this schedule is _____.

21. 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.

APPLICATIONS:

22. 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

23. 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

24. 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

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

26. Your instructor invites you to her home as part of a select group of students to discuss possible careers in psychology. The invitation is an example of a _____.

Objective 21-4: Discuss how punishment and negative reinforcement differ, and explain how punishment affects behavior.

27. Negative reinforcement _____ (increases/decreases) a response by _____ an aversive stimulus after that response. Punishment _____ (increases/decreases) a response by _____ an aversive stimulus after that response.

28. 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 _____.

29. Because punished behavior is merely _____, it may reappear. Also, punishment teaches _____, that behavior that is unacceptable in one context may be acceptable in another. Punishment can also lead to _____ and a sense of helplessness, as well as to the association of the aversive event with _____.

30. Punishment also often increases _____ and does not guide the individual toward more desirable behavior.

STUDY TIP/APPLICATION: To avoid the natural tendency to confuse punishment and negative reinforcement, remember that positive reinforcement and negative reinforcement both lead to an *increase* in behavior, while punishment *decreases* behavior. In punishment, something bad occurs following an

undesirable behavior; in negative reinforcement, something bad is removed. Complete the chart below of examples of punishment and negative reinforcement. The first example has been filled in for you.

31. Behavior	Consequence	Which Is Taken Away, Something Good or Bad?	Is This Punishment or Negative Reinforcement?
Driving while intoxicated	Lose driver's license	Good	Punishment
a. Forgetting to give your roommate a phone message			
b. Putting on your coat so that you are no longer cold			
c. Getting a drink when you are thirsty			
d. Using your laptop until the battery dies			
e. Your brother nagging you until you help him with his homework			

Skinner's Legacy

Objective 21-5: 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.

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

- 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.
- 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.

In using operant conditioning to change your own behavior, you would follow these four steps

- a. _____
- b. _____
- c. _____
- d. _____

APPLICATIONS:

8. 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.
39. 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

Contrasting Classical and Operant Conditioning

Objective 21-6: Identify the characteristics that distinguish operant conditioning from classical conditioning.

40. Classical conditioning and operant conditioning are both forms of _____

41. Both types of conditioning involve similar processes of _____ and _____
42. 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.
43. The reflexive responses of classical conditioning involve _____ behavior.
44. In contrast, behavior that is more spontaneous and that is influenced by its consequences is called _____ behavior.
45. Classical and operant conditioning are both subject to the influences of _____ processes and _____ predispositions.

STUDY TIP/APPLICATION: If you still find yourself confusing classical conditioning and operant conditioning, try the following. Ask yourself two questions: (1) Is the behavior voluntary (operant conditioning) or involuntary (classical conditioning)? (2) Does the learning involve an association between two stimuli (classical conditioning) or between a response and an outcome (operant conditioning)? Test your understanding with the following examples.

46. Behavior	Is the Behavior Voluntary or Involuntary?	Type of Conditioning
a. After receiving a mild shock from the "invisible fence" surrounding his yard, a dog no longer crosses the boundary.		
b. You flinch when someone yells, "Duck!"		
c. You ask more questions in class after the professor praises you for a good question.		
d. The pupil of your eye dilates (opens wider) after you enter a darkened theater.		