Chapter 7: Learning

Objectives

After studying this chapter, students should be able to:

1. List three key ideas in the definition of *learning*, and discuss the relationship between learning and *behaviorism*.

 2. Describe *classical conditioning*. In doing so, identify the *unconditioned stimulus (US)*, *unconditioned response (UR)*, *conditioned stimulus* *(CS)*, and *conditioned response (CR)* in Pavlov’s experiments and other preparations, including drug overdoses.

3. Compare the *acquisition*, *second-order conditioning*, *extinction*, and *spontaneous recovery* of a classically conditioned response.

4. Discuss how stimulus *generalization* and stimulus *discrimination* occur in classical conditioning.

5. Describe how John Watson conditioned a fear response in Little Albert.

6. Identify the cognitive elements of classical conditioning, with focus on the principles identified in the *Rescorla-Wagner model*.

7. Distinguish between *delay* and *trace conditioning*, and discuss how these procedures can shed light on the role of consciousness in classical conditioning.

8. Identify the neural elements of classical conditioning, with a focus on the involvement of the cerebellum, hippocampus, and amygdala.

9. Identify the evolutionary elements of classical conditioning, especially conditioned food aversions and preferences and the concept of *biological preparedness.*

10. Define *operant conditioning*, and distinguish between a classically conditioned response and an operant response.

11. Describe Thorndike’s puzzle box, and state the *Law of effect.*

12. Discuss the methodological and theoretical contributions of B. F. Skinner to the study of *reinforcement* and *punishment;* define and give an example of *positive reinforcement* (primary and secondary), *negative reinforcement*, *positive punishment*, and *negative punishment*.

13. Discuss the role of context in operant conditioning by noting the roles of *discrimination* and *generalization* in the *stimulus control* of behavior.

14. Describe how an operant response is extinguished, and contrast *operant extinction* with extinction of a classically conditioned response.

15. Explain how schedules of reinforcement affect learning by including examples of *fixed interval*, *fixed ratio*, *variable interval*, and *variable ratio schedules.*

16. Explain how the *shaping* of successive approximations to a desired behavior can eventually produce that behavior.

17. Explain how accidental associations between behavior and rewards can result in superstitions.

18. Identify the cognitive elements of operant conditioning, especially the concepts of *latent learning* and *cognitive maps* identified by Edward Chace Tolman.

19. Identify the neural elements of operant conditioning, with a focus on the involvement of structures in the “pleasure center” of the brain.

20. Discuss the evolutionary elements of operant conditioning, especially the “misbehavior” of organisms that was first identified by Marion and Keller Breland.

21. Discuss how *observational learning* can occur in humans, noting especially Bandura’s research on modeling aggressive behavior, and explain how observational learning can spread via a *diffusion chain*.

22. Describe several studies demonstrating observational learning in animals.

23. Identify the neural elements of observational learning, with a focus on *mirror neurons*.

24. Define *implicit learning*,and describe *habituation,* a simple form of implicit learning.

25. Describe how cognitive and neural approaches to the study of implicit learning have yielded characteristics of implicit learning that distinguish it from explicit learning.