**Conditioning and Learning**

Learning is defined as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or attitude that is acquired through experience and cannot be attributed to illness, injury, or maturation.

Learning is a relatively permanent change in behaviour due to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Two basic forms of learning are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

*Classical conditioning* is also called respondent or Pavlovian conditioning. Classical conditioning occurs when \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (which reliably elicits \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). After many pairings of the NS and the US, the NS becomes a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Learning is reinforced during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a response. Withdrawing reinforcement leads to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (although some spontaneous recovery of conditioning may occur). Stimulus generalization has occurred when \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ also elicits a learned response. In stimulus discrimination, organisms learn to respond differently to two similar stimuli. Conditioning often involves simple reflex responses, but emotional conditioning is also possible.

In *operant conditioning* (or instrumental learning), \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ probability that it will be made again. Positive and negative reinforcers increase responding; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; non-reinforcement leads to extinction. Various types of reinforcers and schedules of reinforcement greatly affect operant learning. Informational feedback (or knowledge of results) also facilitates learning and performance. Antecedent stimuli influence operant learning, through stimulus generalization and discrimination, and stimulus control.

Learning, even simple conditioning, is based on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Higher level cognitive learning involves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. At a simpler level, cognitive maps, latent learning, and discovery learning show that learning is based on acquiring information. Learning also occurs through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of models. Observational learning imparts large amounts of information that would be hard to acquire in other ways.

*Behavioural psychology* (behaviourism) has been called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is founded on the basic principles of learning theory. While early proponents highlighted behaviourism’s opposition to the "mind" orientation of the psychoanalytic approach (known as the first force in psychology), theorists such as Kohler and Bandura illustrated the important role of cognitive processes in learning and behaviour. Behaviourism has also claimed a dominant role in bringing psychology into respectability as a legitimate science. The practical applications of learning theory and behavioural psychology are many and varied, and have become increasingly more apparent through a major theoretical approach to applied psychology known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

*Some Applications of Classical Conditioning*

The principles of classical conditioning have proven useful in many areas, including overcoming fears.

Phobias are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Either the objects or situations are not dangerous, or they are less dangerous than the fear response would suggest. Classical conditioning often plays a role in the development of such fears. Dangerous situations can also \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of very long-lasting fears.

Classical conditioning has also been used to treat phobias. Joseph Volpe showed that irra­tional \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through systematic desensitization, a procedure that associ­ates a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (CR), such as relaxation, with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Because, as Wolpe noted, a person cannot be relaxed and afraid at the same time, the new CR (relaxation) replaces the old one (fear).

FROM THE LABORATORY TO REAL LIFE

*Small Car Phobia*

One of the researchers was seriously injured in a car accident when he was 15-years-old. One night, he and a couple of friends decided to attend a concert in a nearby town. Dan was riding in the back seat of his friend's small, two-door car. On the way to the concert the driver lost control of the car and came to rest in a 12-foot culvert. Dan awoke from a coma 14 days later and discovered he had broken his back in three places, had a broken collarbone, and had received 180 stitches in his head. He would spend the best part of the next few months flat on his back and did not regain complete mobility for almost a year. One day, a year later, Dan was walking along the road when some friends drove up in a small, two-door car. "Hey Dan, jump in, we'll give you a ride," one of them shouted. As Dan gazed at the car and noticed that the only available space was in the back seat, he felt a sudden rush of anxiety. He realized he wanted no part of that small car and insisted that he was walking for the exercise. As the car pulled away Dan noticed his anxiety begin to diminish. Dan's small car phobia would last for years. Still today Dan drives a pickup truck and prefers to not ride in small cars when it can be avoided.

It has been suggested that phobias have their origin in Classical Conditioning and are strengthened and/or maintained through Operant Conditioning. From the above example:

1. What is the unconditioned stimulus?

2. What is the unconditioned response?

3. What was the neutral stimulus?

4. What was the conditioned stimulus?

5. What was the conditioned response?

**QUICK QUIZ**

1. A relatively permanent change in behavior or knowledge that occurs as a result of experience is known as:

a conditioned response (CR) c) acquisition

an unconditioned response (UR) d) learning

2. Read the following account of Watson's research and use the information to answer questions 2a-2f.

Watson introduced an 11-month-old boy, referred to as Little Albert, to a harmless white rat. Initially, Albert expressed no fear or other strong emotion while in the presence of the white rat, and even seemed to enjoy its company. At Albert's next meeting with the white rat, and at several subsequent meetings, Watson used a makeshift gong to create a loud, unpleasant sound from behind Albert each time the child reached for the rat or when the rat approached. Later, after several pairings of the noise with the rat, Watson found that Albert was terrified of the rat even when the harsh noise was not present. Watson viewed Albert's fear of the rat as a relatively permanent change.

2a. In the beginning, the white rat was viewed by Albert as a … stimulus.

2b. The banging sound made by Watson was the … stimulus.

2c. After several pairings with the noise, the rat became a … stimulus.

2d. Albert's learned fear of the rat was the:

a) conditioned response b) unconditioned response

с) conditioned stimulus d) unconditioned stimulus

2e. If after being conditioned to respond with fear to the rat Albert were presented with the white rat repeatedly without the presence of the loud noise, this process would probably result in which of the following:

a) acquisition b) extinction

с) stimulus generalization d) stimulus determination

2f. An interesting phenomenon resulted from Watson's work with Little Albert was that Watson learned that Albert was not only frightened of the rat, but of anything white and furry. The process whereby Albert associated all things white and furry with his fear of the rat is called:

a) acquisition b) extinction

с) stimulus generalization d) stimulus determination