

# Learning and Behaviour

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## LESSON 1

Read the interim summary on page 138 of your text to re-acquaint yourself with the material in this section.

**5-1** Define learning and describe short-term and long-term habituation.

Read pages 131-132 and answer the following questions.

1. a. Define *learning* in your own words. Your definition should state what changes occur and why.  
  
b. Learning cannot be \_\_\_\_\_ directly; it can only be inferred from changes in \_\_\_\_\_.  
  
c. Define *performance* in your own words.  
  
d. Describe two circumstances that influence the performance of a behaviour.
2. a. Mark was reading when he first heard the deep hum. Immediately he turned his head toward the source of the sound which, he realized, was simply his neighbour working out on her new treadmill. What name do psychologists give to Mark's response?  
  
b. Now, when Mark's neighbor works out on her treadmill, Mark no longer notices the noise. What name do psychologists give to the change in Mark's response?
3. Compare short-term and long-term habituation.
4. Why is habituation beneficial?

**5-2** Discuss the key concepts of classical conditioning, explaining the terms unconditional stimulus, unconditional response, conditional stimulus, and conditional response.

Read pages 132-134 and answer the following questions.

1. a. Study Figures 5.1 and 5.2 in your text and explain why the child in Figure 5.2 is grimacing even before the balloon bursts.

- b. Now explain the child's behaviour using these terms: defensive reaction, neutral stimulus, important stimulus, classically conditioned.
2. a. Briefly retell how Pavlov's original research interests led to his classic work in conditioning. Be sure to note what event suggested that salivation was not an automatic reflexive response.
- b. Study Figure 5.3 in your text and describe Pavlov's apparatus.
- c. Describe the original conditioning procedure. Be sure you mention the time interval between hearing the sound and receiving the food.
- d. How did the dog respond if there was a long delay between hearing the sound and receiving the food? if the sound occurred after the dog received the food?
- e. What is this kind of learning called?
3. Psychologists have given formal names to the stimuli and the responses. Study Figure 5.4 in your text and name the
- a. original eliciting stimulus (such as the taste of food).
- b. salivation caused by the taste of food.
- c. neutral stimulus (such as a bell).
- d. salivation caused by the sound of a bell.
4. a. John, a house painter, is often stung by wasps. Last week, just after setting his ladder against a house, he heard a buzzing noise and ducked his head. His response is a(n) \_\_\_\_\_. The buzzing noise is a(n) \_\_\_\_\_.
- b. John does not remember the first time he was stung by a wasp. Describe what must have happened, using the correct terms for the stimuli and responses that occurred then.

**5-3** Explain the two functions of classical conditioning and basic principles of acquisition, extinction, and stimulus generalization. Read pages 134-137 and answer the following questions.

1. a. List the two important functions of classical conditioning.
1. \_\_\_\_\_ 2. \_\_\_\_\_

- b. Cite research on the aggressive and mating behaviour of tropical fish that underscores the importance of classical conditioning. (Hollis, 1982; Hollis et al., 1989)
  - c. Cite research on nematode worms (Wen et al., 1997) that underscores the importance of classical conditioning in survival.
2. a. Let's examine some of the characteristics of classical conditioning beginning with acquisition of the response. Identify and explain how researchers paired stimuli and responses to teach two human subjects a conditional eyeblink response.
    1. UCS
    2. UCR
    3. CS
    4. CR
  - b. Study the results of this research shown in Figure 5.5 in your text and describe both subjects' progress during the first 100 trials.
  - c. After 100 trials, the intensity of the puff of air, or \_\_\_\_\_, delivered to Subject 1 \_\_\_\_\_, while the \_\_\_\_\_ for Subject 2 remained the same.
  - d. How did the change in procedure for Subject 1 affect performance? Why?
  - e. Discuss another factor that influences the acquisition of the CR. (Study Figure 5.6 in your text.)
3. a. Carefully explain how the pairing of the UCS and the CS is changed to gradually eliminate the CR.
    - b. Name this procedure.
    - c. Compare the extinction rates for both subjects shown in Figure 5.5. Why did extinction occur more rapidly for Subject 1?
4. What did Pavlov observe when he
    - a. placed the dog in the experimental apparatus after successfully extinguishing the CR? Name this phenomenon.
    - b. again paired the UCS and the CS?
5. a. Explain why other stimuli that resemble the CS may also evoke the CR.
    - b. Name this phenomenon.

6. a. Explain how an animal can be trained to distinguish between similar but different stimuli using these terms: CS+ and CS-. (Study Figure 5.7 in your text.)
  - b. Name this phenomenon.
  - c. Why is the ability to discriminate among stimuli beneficial to an animal?

**5-4** Discuss conditional emotional responses and the essential characteristics of the conditional stimulus.

Read pages 137-138 and answer the following questions.

1. a. Suppose that seeing some fossils in a museum reminds you of the times you went fossil hunting with your grandfather, and you have a feeling of nostalgia. How would you explain this event in terms of classical conditioning?
  - b. Describe the conditioning procedure to establish a conditional emotional response used by Todrank et al. (1995).
2. Define *phobia* in your own words and explain how a phobia may result from either direct or indirect experience with the UCS and CS.
3. Review once again the procedure for classically conditioning a blinking response to a puff of air. Explain why only the tone eventually elicited a blinking response and not the other stimuli that were present in the classroom at the same time the tone sounded.
4. List the two conditions that must be met if a neutral stimulus is to become a CS.
  - 1.
  - 2.

Read the interim summary on page 150 of your text to re-acquaint yourself with the material in this section.

**5-5** Describe Thorndike's discovery of the law of effect and Skinner's contributions to the study of operant conditioning.

Read pages 138-140 and answer the following questions.

1. a. What kind of relationships do we learn about through habituation and classical conditioning? through operant conditioning?
- b. Explain the relationship between an animal's behaviour and the types of events that immediately follow that behaviour.
2. a. Briefly retell Thorndike's experience with the cat in the "puzzle box." How did he explain the cat's improved performance on successive trials?
- b. What did Thorndike call this relationship?
- c. Explain why the law of effect, like natural selection, contributes to an organism's survival. (Skinner, 1981, 1990)
- d. How did Thorndike's discovery affect the development of psychology?
- e. Name the new area of research that resulted.
3. Summarize some of the important scientific contributions of B.F. Skinner.
4. See Figure 5.8 in your text and describe an operant chamber used for rats.
5. During operant conditioning, the responses of subjects are recorded as they occur by a \_\_\_\_\_. The number of responses made during a given amount of time is called the \_\_\_\_\_. Events that strengthen responding \_\_\_\_\_ response rates and events that weaken responding \_\_\_\_\_ response rates.
6. In what two ways did the invention of the operant chamber and cumulative recorder advance research?

7. Recall the explanations of teaching a dog to bark on the command “Speak” and answering the telephone found in your text. Fill in the blanks in the table below.

	<i>Dog Learning to “Speak”</i>	<i>Answering the Telephone</i>
preceding event		
response		
following event		

8. a. By which more formal names do we refer to these three events?
- b. What more formal name did Skinner use to describe the relationship between these three events? (See Figure 5.9 in your text.)
9. What do we mean when we say that consequences are contingent upon behaviour?
10. Carefully explain the circumstances in which the operant behaviour will
- produce a consequence.
  - have no effect.
11. How may motivational factors affect a response?

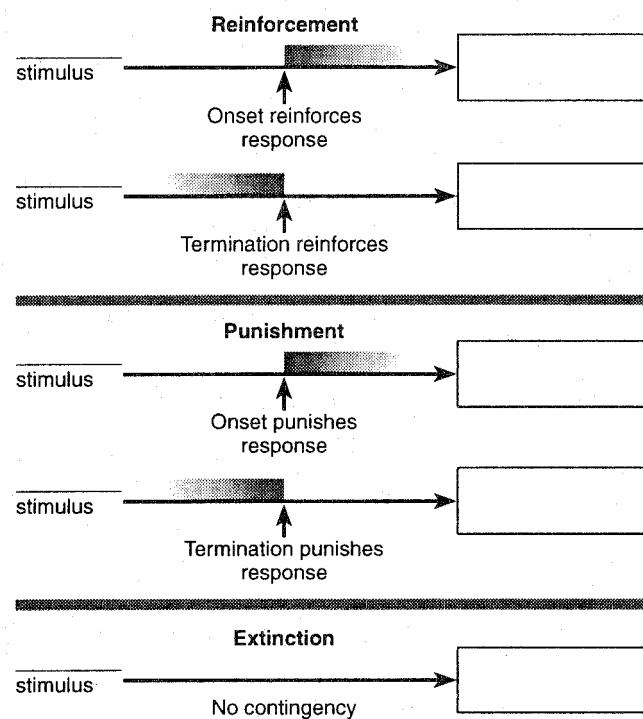
**5-6** Describe the nature of reinforcement and punishment and the phenomenon of extinction.

Read pages 140-143 and answer the following questions.

- Which element in the three-term contingency is the most frequently manipulated variable in experiments?
  - List the five different kinds of consequences that can follow operant behaviours.
    - 
    - 
    - 
    - 
    -
- Let's look at each of these more closely. Begin by defining
  - positive reinforcement.
  - appetitive stimulus.
  - positive reinforcer.

- d. negative reinforcement.
- e. aversive stimulus.
- f. negative reinforcer.
3. What is the effect of both positive and negative reinforcement on the likelihood a particular response will occur again?
4. Positive reinforcement is the \_\_\_\_\_ in the frequency of the response that is reliably followed by the \_\_\_\_\_ of a(n) \_\_\_\_\_ stimulus and negative reinforcement is the \_\_\_\_\_ in the frequency of the response that is reliably followed by the \_\_\_\_\_ of a(n) \_\_\_\_\_ stimulus. Punishment is the \_\_\_\_\_ in the frequency of the response that is reliably followed by a(n) \_\_\_\_\_ stimulus.
5. Carefully explain the difference between negative reinforcement and punishment. Be sure to discuss the changes in the frequency of the behaviour in your answer.
6. Summarize some of the negative side effects of the use of punishment.
7. a. Why is immediacy of reinforcement or punishment essential for learning?
- b. What is the exception to this rule?
8. Define *response cost* punishment in your own words.
9. Punishment causes a behaviour to \_\_\_\_\_ and negative reinforcement causes a behaviour to \_\_\_\_\_.
10. a. Define *extinction* in your own words.
- b. Explain the difference between extinction and forgetting.
- c. Explain the utility of extinction for an animal.

11. Complete the figure below after studying Figure 5.10 in your text. Fill in the five blanks at the left of the figure and the five boxes at the right.



12. Complete these sentences to review some definitions and concepts of operant conditioning.

- A stimulus that an organism seeks out is called a(n) \_\_\_\_\_ stimulus and an unpleasant or painful stimulus is called a(n) \_\_\_\_\_ stimulus.
- The occurrence of an appetitive stimulus immediately after a behaviour will \_\_\_\_\_ the probability that the behaviour will be repeated. This phenomenon is called \_\_\_\_\_.
- The occurrence of an aversive stimulus immediately after a behaviour will \_\_\_\_\_ the probability that the behaviour will be repeated. This phenomenon is called \_\_\_\_\_.
- The termination of an appetitive stimulus immediately after a behaviour will \_\_\_\_\_ the probability that the behaviour will be repeated. This phenomenon is called \_\_\_\_\_.
- The termination of an aversive stimulus immediately after a behaviour will \_\_\_\_\_ the probability that the behaviour will be repeated. This phenomenon is called \_\_\_\_\_.
- \_\_\_\_\_, when it occurs, requires the simple passage of time. \_\_\_\_\_ takes places only when an organism makes a response that is \_\_\_\_\_ reinforced.



**5-7** Describe some other operant procedures: shaping, intermittent reinforcement, generalization and discrimination, and conditioned reinforcement and punishment.

Read pages 143-147 and answer the following questions.

1. Explain why shaping is a method of successive approximations.
2. Explain the importance of each of these steps in the training procedure to teach a rat how to press a lever when a red light goes on.
  - a. Why is the rat fed only once a day prior to training?
  - b. Why must the pellet dispenser make a sound when food is dispersed?
3. Number these steps so that they can be read in the proper sequence and describe the solution to the problem of training a rat to press a lever to obtain food.
  - \_\_\_\_\_ equipped with a pellet dispenser that makes a noise when food is dispensed
  - \_\_\_\_\_ at feeding time place rat in an operant chamber
  - \_\_\_\_\_ by waiting for the rat to eat the food pellet, then delivering a few more while the rat is near the dispenser so the noise will become an appetitive stimulus
  - \_\_\_\_\_ train the rat to eat from the dispenser
  - \_\_\_\_\_ wait until the rat touches the lever with any part of its body before activating dispenser
  - \_\_\_\_\_ make the rat hungry by feeding once a day
  - \_\_\_\_\_ wait until the rat leaves the dispenser and then turns back in the direction of the lever before activating the dispenser
  - \_\_\_\_\_ wait until the rat presses the lever hard enough to operate the switch by itself before activating dispenser
  - \_\_\_\_\_ activate pellet dispenser for the first time
4. Define *intermittent reinforcement* in your own words.
5. Identify the factor that determines the rate at which a reinforcer is delivered in probability-based patterns of reinforcement? interval-based patterns of reinforcement?
6. Study Figure 5.11 in your text and explain the pattern of intermittent reinforcement and the pattern of response if a researcher uses a
  - a. fixed-ratio schedule.
  - b. variable ratio schedule.
  - c. fixed-interval schedule.

- d. variable-interval schedule.
7. Explain the difference between and importance of fixed and variable schedules by describing the likely work habits of a sales associate whose sales manner is evaluated
- every six months by the department manager.
  - twice a year by a team of anonymous professional shoppers who make surprise visits to each department.
8. The two pigeons described in your text were trained to peck at a disk in order to receive food. The responding of one is reinforced on a one-to-one ratio, while the other receives, on the average, one reinforcer after every fifty responses.
- When pecking is no longer reinforced, how will each bird respond?
  - State the rule that describes the pigeons' behaviour.
9. What personality variable may be related to experience with different schedules of reinforcement?
10. a. Carefully explain what generalization means in classical conditioning and in operant conditioning.
- Now explain what discrimination means in classical conditioning and in operant conditioning.
  - What kind of discriminative stimuli do not elicit a response in operant conditioning?
11. a. What did Herrnstein and Loveland (1964) want to teach pigeons through discrimination training involving learning to peck at a translucent disk (a procedure you are already familiar with)?
- How did they then present the concept of a human to the pigeons?
  - Which trials were reinforced and which were not?
  - What was the discriminative stimulus?
  - What were the results?

12. List some practical uses of the ability to generalize and discriminate between stimuli.
13. What did Jitsumori and Yoshihara (1997) train pigeons to categorize? What were the pigeons using to form their categories?
14. Njedoran and Weisman (1997) trained two groups of chickadees to discriminate pairs of songs.
- How did the pairs of songs differ? Which group of chickadees learned faster?
  - What did they find when comparing birds raised in the wild with birds raised in the laboratory?
15. a. State the essential difference between primary reinforcers and punishers and conditioned reinforcers and punishers. Define and give an example of each of these stimuli.
- b. Give an example of each of these stimuli that is meaningful to you.
16. a. A neutral stimulus that regularly occurs just before an appetitive stimulus will become a conditioned \_\_\_\_\_.
- b. A neutral stimulus that regularly occurs before an aversive stimulus will become a conditioned \_\_\_\_\_.
- c. List two reasons why it is important that neutral stimuli can become classically conditioned reinforcers or punishers.

## LESSON I SELF TEST

- Angela noticed that her infant, who used to cry every time the phone rang, no longer does. The absence of a response is an example of
  - species-typical behaviour.
  - habituation.
  - extinction.
  - classical conditioning.
- A child who has a balloon burst in his or her face squints whenever he or she blows up a balloon. The first time the child saw an expanding balloon it served as a(n) and the second time it was a(n)
  - CS; UCS
  - UCR; neutral stimulus
  - neutral stimulus; CS
  - UCR; CR
- Extinction will eventually occur if
  - neither the CS or the UCS are presented.
  - the animal forgets the association between the neutral stimulus and the CS.
  - the CS continues to be presented, but is no longer followed by the UCS.
  - the CS and the UCS are not presented simultaneously.
- Through classical conditioning
  - learning becomes permanent.
  - neutral stimuli take on some of the properties of important stimuli and can shape and modify behaviour.
  - the relation between the UCS and UCR is strengthened.
  - responses of the autonomic nervous system are protected from becoming CRs.

5. The law of effect describes the relationship between behaviour and
- its consequences.
  - its persistence.
  - neutral stimuli.
  - resistance to extinction.
6. The \_\_\_\_\_ of an aversive stimulus is \_\_\_\_\_ and the \_\_\_\_\_ of an appetitive stimulus is \_\_\_\_\_.
- termination; reinforcing; termination; punishing
  - termination; punishing; termination; reinforcing
  - onset; reinforcing; continuation; punishing
  - onset; punishing; termination; reinforcing
7. \_\_\_\_\_ causes a behaviour to \_\_\_\_\_ and \_\_\_\_\_ causes a behaviour to \_\_\_\_\_.
- Primary reinforcement; increase; conditioned reinforcement; decrease
  - Punishment; decrease; negative reinforcement; increase
  - Negative reinforcement; decrease; punishment; decrease
  - Response cost; increase; negative reinforcement; decrease
8. Which one of these statements about shaping is correct?
- Experience indicates that food is the best reinforcer to use when shaping a behaviour.
  - Shaping is the reinforcement of successive approximations at regular time intervals.
  - Shaping is a formal training procedure, but something like it occurs in the outside world.
  - The criteria for a successful response remain constant throughout the shaping procedure.
9. An animal that has been reinforced on a variable-interval schedule of reinforcement will respond
- rapidly, receive the reinforcer, pause a little, and respond again.
  - more rapidly with each succeeding reinforcement.
  - at a slow, steady rate.
  - faster than it would on a variable-ratio schedule.
10. Njegovan and Weisman (1997) trained chickadees to discriminate pairs of songs and found that chickadees
- raised in the lab learned to discriminate faster
  - learned to discriminate unrelated songs faster
  - could not learn to discriminate pairs of songs
  - discriminated faster when one note was always higher than the other

## LESSON 11

Read the interim summary on page 150 of your text to re-acquaint yourself with the material in this section.

- 5-8** Discuss how the capacity to learn is affected by an organism's genetic program and the development of superstitious and ritualistic behaviour.

Read pages 147-150 and answer the following questions.

- According to Mayr (1974), what is a genetic program and how does it affect an organism's behaviour?
- Complete the chart below.

	<i>Closed Genetic Programs</i>	<i>Open Genetic Programs</i>
Species		
Life Span		
Maturation Rate		
Parental Care		
Learning Capacity		

3. Review the courtship ritual of the three-spined stickleback (see Figure 5.12 in your text) and the Sandula bachelor ritual of the Laiapu Enga (Schwab, 1995) and compare the likely origins of this behaviour.
4. Explain why the customs and rituals of any culture endure. (Guerin, 1992, 1995)
5.
  - a. What does a psychologist mean by the term *superstitious behaviour*?
  - b. Briefly describe the demonstration based on Skinner's research. (Skinner, 1948)
  - c. How does Skinner explain the acquisition of this behaviour?
  - d. And how may humans also acquire superstitious behaviours?
6. What is the value of ritualistic behaviours such as the Sandula bachelor ritual to a culture?
7. What human characteristic permits us to adapt our behaviour to changing environmental conditions?

Read the interim summary on pages 159-160 of your text to re-acquaint yourself with the material in this section.

**5-9** Discuss the learning of complex behaviours and conditioned flavour aversions, the aversive control of behaviour, and the learning that occurs through observation and imitation.

Read pages 151-155 and answer the following questions.

1. Explain why we are willing to work hard to master a difficult task.
2. For each of the following situations, suggest the conditioned reinforcer(s) which shape and maintain this behaviour.
  - a. practicing a musical instrument
  - b. learning to knit
  - c. writing a computer program

3. Discuss two reasons why control of behaviour through aversive means is widespread.
4. Punishment can be explained as a form of classical conditioning. Briefly review the first encounter of the dog with the porcupine and study Figure 5.13 in your text and identify the
  - a. species-specific defense reaction of the dog and the porcupine
  - b. the UCS and UCR
5. At the next encounter with the porcupine the dog quickly ran off. Identify the
  - a. CS
  - b. CR
6. What is a feedback stimulus? Discuss this concept in terms of the dog and porcupine example.
7. Explain the difference between an escape response and an avoidance response.
8. a. What information must the organism have to successfully make an avoidance response?
  - b. Review the encounter with a boring party guest at the buffet table and identify the external discriminative stimulus that causes you to turn away from the buffet table at a subsequent party.
9. Explain why phobias
  - a. often involve avoidance responses.
  - b. are especially resistant to extinction. (Study Figure 5.14 in your text.)
10. Explain how conditioned flavour aversions are acquired through classical conditioning.
11. List two reasons why psychologists study conditioned flavour aversions.
  - 1.
  - 2.

12. In research by Garcia and Koelling (1966), illustrated in Figures 5.15 and 5.16 in your text, how successful were the following attempts to form conditioned aversions?
  - a. taste stimulus followed by illness
  - b. taste stimulus followed by shock
  - c. auditory stimulus followed by illness
  - d. auditory stimulus followed by shock
13. What do the results of this experiment suggest about
  - a. the kind of information rats are capable of learning?
  - b. the neural circuits involved in this kind of learning?
14. a. What is the evolutionary significance of the ability to learn conditioned flavour aversions?
  - b. What do the different ways rats and some birds (Wilcoxon et al., 1971) form conditioned flavour aversions suggest about the adaptability of this response?
15. Describe how a young woman developed a conditioned flavour aversion to spearmint gum.
16. Indicate how the role of the same stimulus—food that causes illness—can be interpreted in two different ways.
  - a. If food aversion results through operant conditioning, what is the role of flavour?
  - b. If food aversion results from classical conditioning, then what is the role of flavour?
17. a. Why do some cancer patients undergoing chemotherapy develop conditioned flavour aversions? Why can these aversions have serious consequences (Bernstein, 1978, 1991)?
  - b. Describe the procedure that can reduce the likelihood of such aversions. (Broberg and Bernstein, 1987)
18. Discuss a useful application of conditional flavour aversions with wildlife.
19. Describe some examples of learning through observation and imitation without external reinforcement.
  - a. birds learning a song (Marler, 1961)

- b. developing a fear of dogs (Bandura and Menlove, 1968)

**5-10** Discuss how human behaviour is influenced by instructions, the use of symbols, and drug use and abuse.

Read pages 155-156 and answer the following questions.

1. Briefly explain why researchers study the interaction between reinforcement and rules.
  
2. a. Summarize how students in a study by Buskist and Miller (1986) responded when the information they were given about the reinforcement schedule in effect for the experiment was
  1. true.
  2. false.
  3. ambiguous.
  
- b. What do the results suggest about the kinds of rules that influence behaviour?
  
2. a. What do behavioural pharmacologists study?
  
- b. What are the origins of this discipline?
  
- c. What is the corresponding terminology for
  1. *discriminative stimuli*
  2. *responding*
  3. *consequences*
  
3. Most psychoactive drugs function as \_\_\_\_\_ in both \_\_\_\_\_ and \_\_\_\_\_. When administered, these drugs induce \_\_\_\_\_ of \_\_\_\_\_.
  
4. Now state the conclusions of supporting research on the effect of
  - a. drugs on response rates (Griffiths et al., 1980).
  - b. cocaine on the behaviour of rhesus monkeys (Johnson et al., 1976).
  - c. reinforcement for nondrug-taking behaviour (Higgins et al., 1994).



5. People become more sociable under the effects of alcohol. These effects do not necessarily arise from the drug itself. Discuss.
6. Explain how the reaction to the effects of a drug may be conditioned. Also explain how a change of environment from where one typically takes the drug can lead to an overdose.

**5-11** Discuss the nature of insightful behaviour and compare the approaches of behaviour analysts and cognitive psychologists to the study of learning.

Read pages 156-159 and answer the following questions.

1. Summarize some common beliefs about insight.
2. Describe and discuss studies that examined problem-solving behaviour.
  - a. Briefly retell how
    1. Sultan succeeded in reaching some bananas that hung in his cage. (Köhler 1927/1973; see Figure 5.17 in your text.)
    2. some cats learned to escape from a latch box. (You may wish to review this research discussed earlier in this chapter.)
  - b. When Köhler compared the problem-solving behaviour of the chimpanzee and the cats, what did he conclude?
3.
  - a. Describe the two tasks experimenters taught to a pigeon. (Epstein et al., 1984)
  - b. Once the pigeon learned the tasks, how did they test the pigeon's insightful behaviour and how did the pigeon respond?
  - c. What four separate tasks did they later teach another pigeon? How did the pigeon use this experience to reach a banana hanging overhead? (Epstein, 1985; See Figure 5.18 in your text.)
4. What, then, must precede an instance of insightful behaviour?

5. In their attempt to better understand learning and behaviour, what kind of events do behaviour analysts study? cognitive psychologists?
6. According to cognitive psychologists, what three factors influence learning?
7. Why do behaviour analysts question the existence of internal events and their influence on behaviour? (Skinner, 1978; 1990)
8. How do scientific debates such as this one advance human understanding?

## LESSON II SELF TEST

1. The zig-zag dance of the three-spined stickleback
  - a. is seen in a species with a closed genetic program.
  - b. depends on previous experience.
  - c. has no effect on fertility.
  - d. indicates that this species is incapable of learning.
2. Superstitious behaviour develops when a response
  - a. is inadvertently reinforced.
  - b. causes the appetitive stimulus.
  - c. is also a species-typical behaviour.
  - d. terminates an aversive stimulus.
3. Society frequently employs aversive control of behaviour because
  - a. the loss of money is a powerful reinforcer for all income levels.
  - b. it produces almost immediate behavioural change.
  - c. negative reinforcement is equivalent to punishment.
  - d. punishment is more effective than positive reinforcement in changing behaviour.
4. Aversive stimuli
  - a. have the same effects on behaviour as appetitive stimuli.
  - b. elicit species-typical defensive responses.
  - c. reinforce a wide-variety of responses.
  - d. lead to extinction.
5. "The organism endures the effects of an aversive stimulus until its behaviour terminates the stimulus" best defines
  - a. escape response
  - b. punishment
  - c. shaping
  - d. positive reinforcement
6. Rats learn to avoid a particular taste that is followed by \_\_\_\_\_.
  - a. illness
  - b. shock
  - c. noise
  - d. cold

7. Baby birds reared apart from other birds can learn the song characteristic of their species if they hear the song over a loudspeaker. Their behaviour demonstrates learning through
  - a. reinforcement.
  - b. generalization.
  - c. trial-and-error.
  - d. imitation.
8. Human subjects in an operant conditioning study
  - a. never learned that the schedule was really an FI 30-sec. schedule after being told it was FI 60-sec.
  - b. responded to the contingencies of the schedule and ignored what they were told.
  - c. never learned that the schedule was really an FI 30-sec. schedule after being told it was FI 15-sec.
  - d. ignored only ambiguous information.
10. Learning through insight
  - a. appears to be an innate tendency.
  - b. requires external reinforcement.
  - c. is usually reinforcing by itself.
  - d. requires some experience with components of the new behaviour.
11. Cognitive psychologists disagree with the strict emphasis of behavioural analysts on
  - a. the environmental determinants of learning.
  - b. the mental processes that affect learning.
  - c. the role of insight and imitation.
  - d. genetic determinants of learning capacity.

### Answers to Self Tests

#### Lesson I

- |      |          |      |          |      |          |      |          |       |          |
|------|----------|------|----------|------|----------|------|----------|-------|----------|
| 1. b | Obj. 5-1 | 2. c | Obj. 5-2 | 3. c | Obj. 5-3 | 4. b | Obj. 5-3 | 5. a  | Obj. 5-5 |
| 6. a | Obj. 5-6 | 7. b | Obj. 5-6 | 8. c | Obj. 5-7 | 9. c | Obj. 5-7 | 10. a | Obj. 5-7 |

#### Lesson II

- |      |          |      |          |      |           |      |           |       |           |
|------|----------|------|----------|------|-----------|------|-----------|-------|-----------|
| 1. a | Obj. 5-8 | 2. a | Obj. 5-8 | 3. b | Obj. 5-9  | 4. b | Obj. 5-9  | 5. a  | Obj. 5-9  |
| 6. a | Obj. 5-9 | 7. d | Obj. 5-9 | 8. a | Obj. 5-10 | 9. d | Obj. 5-11 | 10. a | Obj. 5-11 |