

## Introduction

1. Criticize the following statement: The outcome of selection is a change in the strength of a response.
2. Why do operant contingencies have a greater opportunity to contribute to the selection of complex behavior than do classical contingencies?
3. What are the three terms in a three-term contingency? What advantage does the three-term contingency have for the experimental analysis of behavior in comparison to classical, or two-term operant procedures?

## Characteristics of Selected Environment-Behavior Relations

### Purpose and Selection

4. Consider the following: A hungry person drools while looking through a restaurant window at someone eating a meal. Comment on this observation in light of the discussion of *purpose* in the reading. Hint: Is it the hungry person's purpose or intention to eat the meal?
5. Translate the following statement into one that is more consistent with the analysis of purpose given in the readings: Some people are able to resist distraction because they have greater will-power than others.

### Fallibility of Selected Environment-Behavior Relations

6. Suppose that one evening you turned on your stereo and, just as you did, the power went off and the room became dark. Comment on this example with respect to the discussion in the readings of discriminating chance from causal relations between the environment and behavior.

### Specificity of Selected Environment-Behavior Relations

7. The constituents of any environment-behavior relation are the *specific* stimuli and responses that occurred in contiguity with the reinforcer. If this is true, then how might you account for the *general* knowledge that seems to be implied by such notions as concept or idea?
8. Indicate clearly how the example of the behavior of the brain-damaged man bears on the issues raised in the preceding question. Use the term *apraxia* and refer to specific incidents in your comments.
9. Why is it said that reinforcers select *relations* and not responses? Do you understand this important point?

## Stimulus Generalization

### Gradients of Stimulus Generalization

10. Be able to describe the training and testing methods used to demonstrate stimulus generalization after nondifferential training. Your answer should include the phrase *stimulus generalization*. (Refer to **Figure 3.1**.) Compose another example of these procedures using a different stimulus dimension; e.g., auditory stimuli.
11. What does it mean to say that the test stimuli in a generalization test evoke a *behavioral mixture* of previously selected relations? Give examples of the constituents of the mixture that might occur in the generalization testing conditions described in the text.

12. What is the major point made by the findings described in **Figure 3.3**? Must there always be some relation between neural events and behavioral events, as is true with generalized responding? Explain.

13. Describe the basic procedure, results, and major conclusions from the study that estimated the number of brain cells involved in a simple discrimination in a cat. Do you understand the reasoning behind these conclusions?

### **Stimulus Discrimination**

14. In your own words, describe the problem facing a child who is learning to name an object? What factors complicate this apparently simple task? In general, how does selection "solve" this problem?

15. Describe the *differential training procedure* and *generalization testing* methods used to demonstrate stimulus generalization. Your answer should indicate the difference between differential and nondifferential training, and the difference in the shape of the stimulus generalization gradient produced by these two training procedures. (See **Figure 3.6**.)

16. How can some of the differences between the shapes of the stimulus generalization gradients after nondifferential and differential training be explained? Your answer should use technical terms, such as *discriminative stimulus*.

### **Behavioral processes in stimulus discrimination**

17. Describe the behavioral processes that are thought to be responsible for the differences in the functions shown in **Figure 3.5**

18. Describe the rationale, methods, and results of the experiment concerned with the behavioral processes occurring during stimulus generalization. Use the terms IRT and behavioral mixing in your answer. (See **Figure 3.7**.)

### **Neural processes in stimulus discrimination**

19. Comment on the relation between the findings on neural processes and on behavioral processes during stimulus discrimination. Do they both show evidence of mixing?

### **Beyond Simple Stimulus Discrimination**

#### **Multiple stimuli guide behavior**

20. Describe the purpose, methods, findings, and significance of the study on multidimensional stimulus generalization. (See **Figure 3.8**)

#### **Categorical responding to multiple stimuli**

21. In the natural environment, discriminations involve exposure to more than two selecting environments. Describe the methods, findings and significance of the study of *edge effects*, which is concerned with such conditions. Use the phrase *categorical responding* in your answer. (See Figure 3.9.)

22. Be able to give an account of the biobehavioral processes responsible for *edge effects*. Use the phrase *behavioral discrepancy* in your answer.

## **Environmental Guidance of Human Behavior**

23. What are some reasons that the environment can guide human behavior differently from the behavior of other animals? Does this mean that the basic processes that are responsible for the environmental guidance of behavior are different in humans and nonhumans? Explain.

24. What are your thoughts on the differences between the behavior of men and other animals?