Chapter 02
Developing and Evaluating Theories of Behavior

Multiple Choice Questions

1. A theory is a(n):
A. plausible or scientifically acceptable, well-substantiated explanation of some aspect of the natural world.
B. well-substantiated explanation of some aspect of the natural world.
C. organized system of accepted knowledge that applies in a variety of circumstances to explain a specific set of phenomena and predict the characteristics of as yet unobserved phenomena.
D. All of the answers are correct.

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2. A tentative explanation for an observation, phenomenon, or scientific problem that can be tested by further investigation is called a(n) _____.
A. fact
B. theory
C. hypothesis
D. assertion

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3. Scientific hypotheses must be posed in a form that allows them to be:
A. rejected.
B. proven true.
C. accepted because they seem to make sense.
D. convincing.

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4. Hypotheses and theories differ in that hypotheses are:
A. not well substantiated.
B. relatively simple.
C. more limited in scope.
D. All of the answers are correct.

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5. Which of the following statements is true of hypotheses?
A. They are less limited in scope than are theories.
B. They are better substantiated than theories.
C. They are like educated guesses to be tested.
D. They are well-supported explanations for observations.

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6. Using Darwin's theory to explain the glorious tail plumage of peacocks, which they show off in front of any available peahen during the mating season, is an example of a:
A. sample.
B. law.
C. model.
D. hypothesis.

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7. A theory that has been substantially verified is sometimes called a:
A. law.
B. model.
C. descriptive theory.
D. None of the answers is correct.

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8. Which of the following statements is true of a law?
A. It is an empirically verified, quantitative relationship between two or more variables.
B. It is a tentative explanation for an observation, phenomenon, or scientific problem.
C. It refers to a specific implementation of a more general theoretical view.
D. It is more limited in scope than is a hypothesis.

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9. Mathematically expressed laws are rare in psychology because:
A. they are modeled to change the specific nature of constants.
B. it is difficult to control extraneous variables.
C. they offer only a tentative explanation for an observation.
D. it is difficult to distort relationships between variables.

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10. In most cases, a model is:
A. the same as a theory.
B. a specific implementation of a more general theoretical view.
C. a less specific implementation of a more general theoretical view.
D. a general application of a specific theoretical view.

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11. A model can be a(n):
A. specific implementation of a more general theoretical view.
B. application of a general theory to a specific situation.
C. synonym for a theory.
D. All of the answers are correct.

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12. A _____ is a set of program statements that define the variables to be considered and the ways in which their values will change over the course of time or trials.
A. computer model
B. mechanistic explanation
C. matching law
D. functional explanation

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13. An advantage of building a computer model to test a theory is that:
A. it may help reveal inconsistencies or unspoken assumptions in the theory.
B. it eliminates ambiguity.
C. it can be used to make predictions that would be difficult to derive by verbally tracing out the implications of the theory.
D. All of the answers are correct.

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14. Which of the following statements is true of a computer model?
A. The attempt to build a computer model masks inconsistencies, unspoken assumptions, or other defects in a theory.
B. The behavior of a computer model under simulated conditions can be compared with the behavior of real people.
C. A computer model creates ambiguity, which makes it difficult to determine what the model assumes.
D. A properly implemented computer model will show what is to be ignored under normal conditions.

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15. A _____ explanation describes the physical components and the chain of cause and effect through which conditions act on the physical components to produce behavior.
A. mechanistic
B. functional
C. reductive
D. descriptive

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16. A _____ explanation describes an attribute of something in terms of what it does.
A. mechanistic
B. functional
C. mechanical
D. descriptive

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17. _____ tell you how a system works without necessarily telling you why it does what it does.
A. Descriptive explanations
B. Functional explanations
C. Reductive explanations
D. Mechanistic explanations

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18. _____ refer to the purpose or goal of a given attribute or system without describing how those purposes or goals are achieved.
A. Mechanical explanations
B. Functional explanations
C. Reductive explanations
D. Descriptive explanations

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19. Given the choice between a mechanistic explanation and a functional one, you should:
A. prefer the mechanistic one.
B. prefer the functional one.
C. not care which one you choose.
D. flip a coin.

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20. A(n) _____ defines the relationships between its variables and constants in a set of mathematical formulas.
A. qualitative theory
B. applied general systems theory
C. quantitative theory
D. associative systems theory

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21. A quantitative theory:
A. relates the numerical representations of variables and constants to one another.
B. uses analogies to physical systems for its base.
C. is stated in purely verbal terms.
D. None of the answers is correct.

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23. A theory that provides only a description of a phenomenon and makes no attempt to explain it is a(n) _____ theory.
A. analogical
B. informational
C. fundamental
D. descriptive

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24. Most descriptive theories:
A. use analogy to explain relationships.
B. are simply proposed generalizations from observations.
C. adequately explain phenomena within their scopes.
D. None of the answers is correct.

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25. Proposing a theory of motivation that likens motivational control systems to home heating systems is an example of a(n) _____ theory.
A. analogical
B. descriptive
C. fundamental
D. modeling

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26. _____ borrow from well-understood models by suggesting that the system to be explained behaves in a fashion similar to that described by a well-understood model.
A. Analogical theories
B. Fundamental theories
C. Descriptive theories
D. Functional theories

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27. A problem with analogical theories is that:
A. analogies are sometimes hard to come by.
B. they merely describe phenomena.
C. they cannot be adequately tested.
D. analogies can be taken only so far before they begin to break down.

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28. Fundamental theories:
A. require and rely heavily on analogy.
B. are the lowest form of theory because they do not explain phenomena.
C. seek to model an underlying reality that produces the observed relationships among the variables.
D. cannot be developed to explain psychological phenomena.

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29. Fundamental theories:
A. do not rely on analogy to explain phenomena.
B. propose a new structure that directly relates variables and constants within a system.
C. are the highest form of theory.
D. All of the answers are correct.

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30. Fundamental theories are rare in psychology because:
A. they are the lowest level of description.
B. it is extremely difficult to control the relevant variables.
C. they are too general to account for psychological phenomena.
D. it is easy to identify variables using mathematical laws.

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31. The _____ of a theory concerns the range of situations to which it applies.
A. applicability
B. generality
C. domain
D. broadness

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32. Freud's theory of personality gave us deep insight into the operation of the unconscious mind. This is an example of a theory:
A. adding confusion to an already confused issue.
B. predicting events accurately.
C. having limited application.
D. helping us understand a complex phenomenon.

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33. Which of the following was listed in your text as a role of theory in science?
A. Increasing publication rates
B. Providing a way to predict the behavior of systems
C. Validating new dependent variables
D. All of the answers are correct.

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34. Dr. Jones proposed a theory of helping behavior that turned out to be wrong. However, it did serve as a catalyst for a fruitful research area. This illustrates the _____ value of a theory.
A. heuristic
B. catalytic
C. predictive
D. organizational

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35. Which of the following statements is true of the heuristic value of a theory?
A. It acts as a countermeasure in a new research.
B. It affects only the independent variables in a research.
C. It is often independent of its validity.
D. It nullifies correlation between variables.

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36. Because of the failure of theories of learning, Skinner (1949) suggested that:
A. researchers be more careful when developing theories.
B. researchers rely more heavily on analogical theories than on fundamental theories.
C. research be guided more by the search for functional relationships than by theory.
D. theories are useless.

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37. For a theory to be of value, it must:
A. be able to account for data within its scope.
B. give good reason to believe that a phenomenon would occur under the specified conditions.
C. be testable.
D. All of the answers are correct.

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38. If a theory gives good reason to believe that a phenomenon would occur under the conditions specified by the theory, the theory is said to have:
A. strong inference capacity.
B. explanatory relevance.
C. testability.
D. predictability.

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39. According to the text, Freud's theory of personality lacks:
A. explanatory relevance.
B. predictability.
C. heuristic value.
D. testability.

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40. A theory is _____ if it is capable of failing an empirical test.
A. sound
B. relevant
C. testable
D. controvertible

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41. If a theory can account for a phenomenon, no matter what the phenomenon is, then the theory:
A. is probably untestable.
B. lacks explanatory relevance.
C. has too wide a scope.
D. lacks heuristic value.

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42. With respect to predicting events, a theory:
A. need only predict phenomena within its scope.
B. need not predict events within its scope.
C. should predict phenomena beyond its original scope as well as those within its scope.
D. None of the answers is correct.

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43. Theory A explains a behavior with 10 propositions. Theory B explains the same behavior with 5 propositions. With respect to Theory A, Theory B:
A. has greater explanatory relevance.
B. has a narrower scope.
C. has greater heuristic value.
D. is more parsimonious.

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44. A(n) _____ explains a phenomenon with as few statements as possible.
A. explanatory relevant theory
B. theory with high heuristic value
C. parsimonious theory
D. strong theory

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45. According to the text, the collapse of the Hull-Spence theory of learning occurred because the theory:
A. lacked heuristic value.
B. was no longer parsimonious.
C. lacked explanatory relevance.
D. was too limited in scope.

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46. When data support your theory, it means that:
A. you can have more confidence in the theory's ability to explain and predict phenomena within its scope.
B. the theory has been proven correct.
C. the theory has been disconfirmed.
D. the theory will not be proven incorrect later on.

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47. It is difficult to prove a theory correct because:
A. at the present time our experimental techniques are too crude to provide the ultimate test of a theory.
B. a theory is a general statement and it is a logical fallacy to try to prove a general statement correct.
C. theories usually have mechanisms built into them to prevent them from being proven correct.
D. None of the answers is correct.

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48. If a theory is disconfirmed by data, it is:
A. usually discarded immediately.
B. sometimes modified so that the theory can account for the new data.
C. retained because data from empirical research are usually unreliable.
D. retained without modification until more data come in.

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49. The process of developing alternative explanations for a phenomenon, developing predictions based on the alternatives, and testing those predictions is known as:
A. strong inference.
B. a confirmational strategy.
C. a disconfirmational strategy.
D. weak inference.

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50. Strong inference will work only if:
A. a theory is parsimonious.
B. alternative explanations give rise to well-defined predictions.
C. a theory is capable of being confirmed.
D. All of the answers are correct.

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51. According to the text, following a confirmational strategy to test a theory is important but has limitations. Which of the following is one of those limitations?
A. Alternative explanations generated often do not give rise to predictions that are specific enough to be confirmed.
B. Current research methods are not developed enough to firmly confirm a theory.
C. You can gather all the confirmational data in the world, but the theory could still be wrong.
D. All of the answers are correct.

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52. If a positive result of an experiment does not support a prediction made by a theory, you are using:
A. strong inference.
B. analogical inference.
C. a confirmational strategy.
D. a disconfirmational strategy.

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53. According to the text, adequate testing of a theory involves using:
A. only a disconfirmational strategy.
B. only a confirmational strategy.
C. both disconfirmational and confirmational strategies.
D. strong inference alone.

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54. According to the text, a theory should be developed:
A. before any empirical data are collected.
B. after there is an adequate base of empirical data on the phenomenon of interest.
C. only if the attempts to find functional relationships via research fail.
D. whenever there is a phenomenon that cannot be adequately explained.

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True / False Questions

55. A theory provides the final explanation for a phenomenon.
FALSE

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56. A theory is more complex than a hypothesis.
TRUE

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57. Quantitative theories express relationships in mathematical terms.
TRUE

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58. Any theory that is not quantitative is qualitative.
TRUE

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59. Descriptive theories are the highest level of theories.
FALSE

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60. Fundamental theories are theories that depend on analogy to explain phenomena.
FALSE

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61. Cognitive dissonance theory is an example of a theory with a limited domain.
FALSE

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62. A good theory helps a researcher organize and understand the findings in a research area.
TRUE

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63. If a theory is proven incorrect, it is totally useless.
FALSE

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64. If you find yourself saying, "Ah, but of course!" with respect to a theory, that theory has explanatory relevance.
TRUE

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65. A testable theory is one that can potentially fail an empirical test.
TRUE

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66. A theory that generates research, even if it is later proven wrong, is a parsimonious theory.
FALSE

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67. One of the dangers in using a confirmational strategy is the possibility of affirming the consequence.
TRUE

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68. Weak inference will work only if alternative explanations generate well-defined predictions.
FALSE

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69. When research generates data that support the predictions of a theory, we can safely say that the theory was proven correct.
FALSE

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70. The best way to test theories is to use both confirmational and disconfirmational strategies together.
TRUE

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71. Interest in the Hull-Spence theory of learning died because the theory had become too complex.
TRUE

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72. Theories should be developed even before a good base of empirical data exists.
FALSE

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73. Experimentation without theory prevents the generation of irrelevant data.
FALSE

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Essay Questions

74. Compare and contrast theory, hypothesis, and law. Define each, and mention how they relate to one another.

Answer may vary.

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75. What is the difference between a mechanistic explanation and a functional explanation? Which is better, and why?

Answer may vary.

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76. Define what is meant by descriptive, analogical, and fundamental theories. What are the defining characteristics, strengths, and weaknesses of each?

Answer may vary.

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77. Discuss the various roles that theory plays in science. Where applicable, give examples.

Answer may vary.

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78. Outline the characteristics of a good theory.

Answer may vary.

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79. If you wanted to test a particular theory, what strategy would you use and why?

Answer may vary.

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