

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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