Chapter 1: Thinking Critically With Psychological Science (Approaches)

Key Terms

Writing Definitions

1. **Hindsight bias** refers to the tendency to believe, after learning an outcome, that one would have foreseen it; also called the I-knew-it-all-along phenomenon. (p. 16)

2. **Critical thinking** is careful reasoning that examines assumptions, discerns hidden values, evaluates evidence, and assesses conclusions. (p. 20)

3. A **theory** is an explanation using an integrated set of principles that organizes observations and predicts behaviors or events. (p. 21)

4. A **hypothesis** is a testable prediction, often implied by a theory; testing the hypothesis helps scientists to test the theory. (p. 21)
   
   Example: In order to test his theory of why people conform, Solomon Asch formulated the testable hypothesis that an individual would be more likely to go along with the majority opinion of a large group than with that of a smaller group.

5. An **operational definition** is a precise statement of the procedures (operations) used to define research variables. (p. 21)

6. **Replication** is the process of repeating an experiment, often with different participants and in different situations, to see whether the basic finding generalizes to other people and circumstances. (p. 21)

7. The **case study** is an observation technique in which one person is studied in great depth, often with the intention of revealing universal principles. (p. 22)

8. The **survey** is a technique for ascertaining the self-reported attitudes or behaviors of a representative, random sample of people. (p. 23)

9. A **population** consists of all the members of a group being studied. (p. 24)

10. A **random sample** is one that is representative because every member of the population has an equal chance of being included. (p. 24)

11. **Naturalistic observation** involves observing and recording behavior in naturally occurring situations without trying to manipulate and control the situation. (p. 24)

12. **Correlation** is a measure of the extent to which two factors vary together, and thus of how well either factor predicts the other. (p. 25)

   Example: If there is a positive correlation between air temperature and ice cream sales, the warmer (higher) it is, the more ice cream is sold. If there is a negative correlation between air temperature and sales of cocoa, the cooler (lower) it is, the more cocoa is sold.

14. A **scatterplot** is a depiction of the relationship between two variables by means of a graphed cluster of dots. (p. 25)

15. **Illusory correlation** is the perception of a relationship where none exists. (p. 28)

16. An **experiment** is a research method in which a researcher directly manipulates one or more factors (independent variables) to observe the effect on some behavior or mental process (the dependent variable); experiments therefore make it possible to establish cause-effect relationships. (p. 31)

17. **Random assignment** is the procedure of assigning participants to the experimental and control conditions by chance, thus minimizing preexisting differences between those assigned to the different groups. (p. 31)

18. A **double-blind procedure** is an experimental procedure in which neither the experimenter nor the research participants are aware of which group is receiving the treatment. It is used to prevent experimenters’ and participants’ expectations from influencing the results of an experiment. (p. 31)

19. The **placebo effect** occurs when the results of an experiment are caused by expectations alone. (p. 31)

20. The **experimental group** in an experiment is one in which participants are exposed to the independent variable being studied. (p. 31)

   Example: In the study of the effects of a new drug on reaction time, participants in the experimental group would actually receive the drug being tested.

21. The **control group** in an experiment is one in which the treatment of interest, or independent variable, is withheld so that comparison to the experimental condition can be made. (p. 31)
Example: The control group in an experiment testing the effects of a new drug on reaction time would be a group of participants given a placebo (inactive drug or sugar pill) instead of the drug being tested.

22. The independent variable of an experiment is the factor being manipulated and tested by the investigator. (p. 32)
Example: In the study of the effects of a new drug on reaction time, the drug is the independent variable.

23. The dependent variable of an experiment is the factor being measured by the investigator, that is, the factor that may change in response to manipulations of the independent variable. (p. 32)
Example: In the study of the effects of a new drug on reaction time, the participants’ reaction time is the dependent variable.

24. The mode is the most frequently occurring score in a distribution; it is the simplest measure of central tendency to determine. (p. 34)

25. The mean is the arithmetic average, the measure of central tendency computed by adding the scores in a distribution and dividing by the number of scores. (p. 34)

26. The median, another measure of central tendency, is the score that falls at the 50th percentile, cutting a distribution in half. (p. 34)
Example: When the mean of a distribution is affected by a few extreme scores, the median is the more appropriate measure of central tendency.

27. The range is a measure of variation computed as the difference between the highest and lowest scores in a distribution. (p. 35)

28. The standard deviation is a computed measure of how much scores in a distribution deviate around the mean. Because it is based on every score in the distribution, it is a more precise measure of variation than the range. (p. 35)

29. The normal curve is the symmetrical, bell-shaped distribution describing many types of psychological data, in which most scores fall near the mean, with fewer and fewer at the extremes. (p. 36)

30. Statistical significance means that an obtained result, such as the difference between the averages for two samples, very likely reflects a real difference rather than sampling variation or chance factors. Tests of statistical significance help researchers decide when they can justifiably generalize from an observed instance. (p. 37)

31. Culture is the enduring behaviors, ideas, attitudes, and traditions shared by a large group of people and transmitted from one generation to the next. (p. 39)