

CHAPTER 1 – THE SCIENCE OF PSYCHOLOGY

YOU KNOW YOU ARE READY FOR THE TEST IF YOU ARE ABLE TO...

- Define psychology and describe the goals that psychologists hope to achieve.
- Describe the history of psychology.
- Discuss the current state of psychology, including the most common perspectives and major professions in the field.
- Describe the scientific method and discuss its strengths and weaknesses.
- Explain the basic guidelines and ethical concerns of psychological research.
- Introduce the criteria for critical thinking and its application in psychology.

RAPID REVIEW

Psychology is defined as the scientific study of behavior and mental processes. The goals of psychology are to describe, explain, predict, and control the behaviors and mental process of both humans and animals. The goals of psychology can be thought of in terms of what, why, when, and how behaviors and mental processes occur.

The field of psychology is relatively new (around 125 years old) but has its origins in the much older fields of physiology and philosophy. Wilhelm Wundt formed the first psychology laboratory in Germany in 1879. Wundt used the method of **objective introspection** in an attempt to objectively study human thought processes and mental activities. Because of his innovative efforts, Wundt is often referred to as the father of psychology. The reality, however, is that multiple people in multiple locations began studying psychology and promoting their particular perspective around the same time. Five historical perspectives are discussed in the text.

Edward Titchener, a student of Wundt's, expanded on Wundt's ideas and brought the method of introspection to the U.S. Titchener called his approach **structuralism** because his ultimate goal was to describe the precise structure of our mental processes. At the same time in the U.S., William James was focused on discovering how our mental processes help us to function in our daily lives and began to promote his viewpoint known as **functionalism**. The terms structuralism and functionalism are no longer used to describe specific viewpoints in the field of psychology. Meanwhile, back in Germany, the **Gestalt psychologists** were studying how sensation and perception create a whole pattern that is greater than the sum of the individual components. Max Wertheimer was a major proponent of Gestalt psychology. In neighboring Austria, Sigmund Freud developed his theory of **psychoanalysis** based on the concept of the unconscious. Freud believed the unconscious played an important role in controlling our day-to-day behaviors and thoughts. Freud's theory is also referred to as the psychodynamic perspective. On the opposite end of the spectrum, and back in the United States, was John Watson. Watson expanded the findings of Russian physiologist Ivan Pavlov, to promote the perspective of **behaviorism**. The behaviorists believed that psychology should focus on concepts that could be studied scientifically and they felt that the only area of psychology that could be approached scientifically was observable behavior.

Today there are seven major perspectives within the field of psychology. The **psychodynamic perspective** focuses on the role of the unconscious. **Behaviorism** attempts to study psychology by focusing on observable actions and events. The **humanistic perspective** emphasizes human potential and free will. **Biopsychology** focuses on the biology underlying our behavior and thoughts, while the **cognitive perspective** focuses on the thoughts or "cognitions" themselves. **Cognitive neuroscience** is a specific area of the cognitive perspective that focuses on the physical changes in the brain that occur when we think, remember, or engage in other mental processes. The **sociocultural perspective** explores the role of social and cultural factors on our behaviors and thoughts, while **evolutionary** psychologists attempt to explain behavior and thoughts in terms of their adaptive or "survival" qualities.

There are many professional opportunities within the field of psychology. **Psychiatrists** receive a medical degree (M.D.), treat serious psychological disorders, and can prescribe medication for their patients. A **psychologist** attends graduate school to obtain a doctorate degree (either a Ph.D., Ed.D. or Psy.D.) and can select one of many career options from research to counseling to consulting for a

business. A **psychoanalyst** is a psychiatrist or psychologist who has received special training in Freud's method of psychoanalysis. A **psychiatric social worker** receives a Master of Social Work degree (M.S.W.) and provides counseling to patients or possibly conducts research.

Psychologists use the **scientific method** to reduce bias and error in their observations. The steps of the scientific method include asking a question, turning your question into a **hypothesis** - a statement about what you believe the actual answer is, testing your hypothesis, drawing a conclusion, and reporting your findings. Your findings can then be further strengthened if other researchers conduct a study and draw the same conclusions as you did, or in other words if other researchers **replicate** your findings. The method you use to test your hypothesis depends on which of the four goals of psychology you are attempting to achieve. If you would like to answer the question of "what" (goal = describe), you would use a descriptive method. **Naturalistic observation** provides a realistic picture of behavior but can become biased through the **observer effect** (subjects act differently when they know they are being watched) and **observer bias** (the researcher only sees what he or she wants to see). Laboratory observation is similar to naturalistic observation but the participants are observed in a laboratory setting instead of "out in nature." Sometimes a researcher will disguise herself as an actual participant in order to reduce the observer effect. This approach is called **participant observation**. A **case study** is a detailed investigation of one individual, or case, and can provide a great deal of information about that one person but is hard to generalize to a larger population. For a **survey**, researchers ask a group of subjects a series of questions. Surveys allow researchers to gather a lot of information quickly. However, with a survey there is no guarantee that the subjects will answer the questions truthfully. Also, researchers must be sure to take a **representative sample** of the **population** they are interested in. A researcher interested in discovering the relationship between two variables would use the **correlational method**. A **correlation coefficient** tells the researcher the direction and strength of the relationship. The coefficient will always be a number between -1.00 and +1.00. A correlation shows that a relationship between two variables exists, but cannot explain the cause of the relationship. In order to answer the question of "why," a researcher must conduct an experiment. Remember the example with the churches and the bars. The new churches did not cause the construction of the new bars. In an **experiment**, the researcher manipulates a variable (the **independent variable**) and measures some response from the participants (the **dependent variable**). In order to measure the dependent variable, the researcher must come up with an **operational definition** for the variable. An operational definition is a set of instructions that explains exactly how to measure the variable. For example, aggressive behavior could be operationally defined as the number of times a subject swings a toy sword in a five-minute observation period. The overall goal of the experiment is to keep everything the same except the independent variable. In order to accomplish this, the researcher usually observes two groups: an **experimental group** and a **control group**. The researcher will most likely use **random assignment** to determine which participants will go in which group. Often, the control group receives a fake treatment in order to control for the **placebo effect** in which the participant's expectations actually influence the results of the experiment. Normally, the subjects are not told which group they are in (**single-blind study**). In order to control for any expectations the experimenter might have (the **experimenter effect**) the study is often designed so that neither the participants nor the experimenter know who is in what group (**double-blind study**). All psychological research must follow the ethical guidelines specified by the American Psychological Association.

Understanding the scientific method can help you in your daily life as you apply the four principles of **critical thinking** to problems you face day to day. The four criteria are that (1) most truths need to be tested, (2) all evidence is not equal, (3) authorities are not always right, and (4) an open mind is still important. Without critical thinking, it can be easy to create beliefs based on **pseudopsychologies**.

STUDY HINTS

1. Be careful not to confuse the independent variable (i.v.) with the dependent variable (d.v.). The independent variable is the variable the researcher manipulates her or himself. If you think about it as if you were the researcher conducting the experiment, the **i**ndependent variable is the one that **I** control. Another way to make sure you have correctly labeled the variables in an experiment is to insert the variable names into the following phrase and make sure it still makes sense. The test phrase is:

How _____ affects _____ .
(i.v.) (d.v.)

Here is an example for you to practice using the test phrase.

A researcher conducts a study looking at the color of different rooms and aggressiveness. She takes a group of 40 college students and randomly assigns 20 to the red room and 20 to the blue room. After the students have been in the rooms for 30 minutes, she measures each person's aggressiveness level on a scale of 1 to 10. In this experiment, which variable is the independent variable and which is the dependent? Try inserting the variable names into the phrase above.

You can see that “How aggressiveness affects room color” does not make sense and is not what the researcher is interested in. However, “How room color affects aggressiveness” does correspond to the researchers’ goals. So in this case, the room color is the independent variable and aggressiveness is the dependent variable.

Try one more example.

A researcher conducts an experiment to study memory skills and caffeine intake. The researcher has a total of 20 volunteer subjects. He gives 10 subjects a can of caffeinated soda and the other 10 subjects receive a can of decaffeinated soda. He then has all the subjects complete a memory task. What are his independent and dependent variables? Try inserting the variable names into the phrase above.

Again, you can see that “How memory skills affect caffeine intake” does not make sense and is not what the researcher is interested in. However, “How caffeine intake affects memory skills” does correspond to the researcher’s goals. So in this case, the caffeine intake is the independent variable and memory skill is the dependent variable.

2. The concept of operational definitions is introduced in this chapter. An operational definition can be thought of as a recipe telling a researcher precisely how to make her observations. In other words, they define the operations or procedures the researcher should go through in order to record her data. Operational definitions are based on behaviors and actions that can be observed and they are much different than the definitions given in a standard dictionary. For example, the dictionary might define fear as feeling anxious or apprehensive about a possible situation. However, that definition does not tell the researcher how to measure one individual’s level of fear. On the other hand, the researcher might operationally define fear as the percent increase in heart rate from a baseline level during a two-minute observation period.

Try this example yourself.

Dictionary Definition of anger: _____

Operational Definition of anger: _____

The dictionary might define anger as a strong feeling of displeasure. However, an operational definition of anger might be something like the number of times an adult slams his or her fists on the table.

Now, try to figure out what variable is being operationally defined below.

The number of times a person laughs within a five-minute period.

Operational Definition of _____:

The score an individual receives on an IQ test.

Operational Definition of _____:

The first example is operationally defining the variable of happiness and the second example gives an operational definition for intelligence.

LEARNING OBJECTIVES

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|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1 | <i>What defines psychology as a field of study, and what are psychology's four primary goals?</i> | 1.8 | <i>How are case studies and surveys used to describe behavior, and what are some drawbacks to each of these methods?</i> |
| 1.2 | <i>How did structuralism and functionalism differ, and who were the important people in those early fields?</i> | 1.9 | <i>What is the correlational technique, and what does it tell researchers about relationships?</i> |
| 1.3 | <i>What were the basic ideas and who were the important people behind the early approaches known as Gestalt, psychoanalysis, and behaviorism?</i> | 1.10 | <i>How are operational definitions, independent and dependent variables, experimental and control groups, and random assignment used in designing an experiment?</i> |
| 1.4 | <i>What are the basic ideas behind the seven modern perspectives, as well as the important contributions of Skinner, Maslow, and Rogers?</i> | 1.11 | <i>How do the placebo and experimenter effects cause problems in an experiment, and how can single-blind and double-blind studies control for these effects?</i> |
| 1.5 | <i>How does a psychiatrist differ from a psychologist, and what are the other types of professionals who work in the various areas of psychology?</i> | 1.12 | <i>What are some ethical concerns that can occur when conducting research with people and animals?</i> |
| 1.6 | <i>Why is psychology considered a science, and what are the steps in using the scientific method?</i> | 1.13 | <i>What are the basic principles of critical thinking, and how can critical thinking be useful in everyday life?</i> |
| 1.7 | <i>How are naturalistic and laboratory settings used to describe behavior, and what are some of the advantages and disadvantages associated with these settings?</i> | | |

PRACTICE EXAM

For the following multiple choice questions, select the answer you feel best answers the question.

1. How is psychology different from philosophy?
 - a) Psychology uses the scientific method to answer questions.
 - b) Psychology is interested in questions related to human behavior.
 - c) There is no difference between philosophy and psychology.
 - d) The field of psychology is much older than the field of philosophy.

2. A researcher is attempting to design a program to help people stop smoking. The goal she is attempting to achieve is to
 - a) describe.
 - b) predict.
 - c) explain.
 - d) control.
3. A researcher is interested in finding out the percentage of adolescents in the U.S. who have depression. The goal he is attempting to achieve is to
 - a) describe.
 - b) predict.
 - c) explain.
 - d) control.
4. Which of the following research questions would NOT fall within the field of psychology?
 - a) How can you increase the amount of time a female bird stays with its mate after the birdlings hatch?
 - b) What changes occur in the brain of a rat that has been deprived of sleep?
 - c) Why do students perform better on exams when the exam is given in the same room in which they learned the material?
 - d) All of the questions above could be studied by a psychologist.
5. The first psychology laboratory was opened in _____ in order to study _____.
 - a) 1065, psychological disorders
 - b) 1946, learning
 - c) 1879, introspection
 - d) 1809, biopsychology
6. Which of these is the most accurate definition of the discipline of psychology?
 - a) the science of behavior
 - b) the science of mental processes
 - c) the science of behavior and mental processes
 - d) the science of human behavior and mental processes
7. The psychological perspective of structuralism focused on
 - a) how the whole structure is bigger than the individual parts.
 - b) understanding each individual structure of human thought.
 - c) how mental thought helps us structure our daily activities.
 - d) the structure of society at large.
8. The school of psychology called *structuralism* used a technique called _____, which involved reporting the contents of consciousness to study a person's experiences.
 - a) intervention
 - b) introspection
 - c) insight inventory
 - d) induction
9. William James believed that mental processes could not be studied as an isolated, static event but instead needed to be viewed in terms of how they helped people perform in their daily lives. James was a strong proponent for
 - a) structuralism.
 - b) functionalism.

- c) behaviorism.
 - d) the humanistic perspective.
10. Gestalt psychologists are associated with which of the following sayings?
- a) The pineal gland is the seat of the human soul.
 - b) Psychology should reach into the soul of mankind.
 - c) Behavior should be broken down into its individual components.
 - d) The whole is greater than the sum of its parts.
11. Freud said phobias were _____ whereas Watson said phobias were _____.
- a) learned; inherited
 - b) repressed conflicts; learned
 - c) sexual; unconscious
 - d) conditioned; unconditioned
12. Which of the following statements would Sigmund Freud have most likely been overheard saying?
- a) "Human behavior is largely determined by our own free will."
 - b) "The only way to understand behavior is to study behavior."
 - c) "We will never understand why people do the things they do."
 - d) "The key to understanding behavior is in the unconscious."
13. What was John Watson's biggest complaint about the field of psychology?
- a) Psychologists were attempting to study nonobservable events using the scientific method.
 - b) Psychology was not focused enough on the free will of humans.
 - c) Psychologists were ignoring the role of the unconscious in determining behavior.
 - d) Psychologists were spending too much time doing research.
14. A researcher who studies the chemical changes in the brains of patients with depression would be approaching psychology from which perspective?
- a) behaviorist
 - b) psychodynamic
 - c) cognitive
 - d) biopsychological
15. One of the reasons psychodynamic theories have persisted over the years is that they are _____.
- a) supported by significant scientific research
 - b) based on facts
 - c) difficult to scientifically test and, thus, difficult to disprove
 - d) used by the majority of psychologists
16. A humanistic psychologist would be interested in which of the following research studies?
- a) describing a group of people who claim to have reached their full potential
 - b) understanding the role of the unconscious in a child's decision to disobey her parents
 - c) investigating the role of hormones in the mating behavior of birds
 - d) figuring out visual illusions are possible
17. Cognitive psychologists are interested in
- a) social interactions.
 - b) the adaptive value of particular behaviors.
 - c) mental processes.
 - d) the unconscious.

18. Taylor received her degree from a medical school and now meets with patients on a daily basis. Most of her patients have a serious psychological disorder and often Taylor will prescribe medication to treat the disorder. Taylor is a
- psychologist.
 - psychiatrist.
 - psychiatric social worker.
 - school nurse.
19. Vido has an M.S.W. and is interested in working on the causes of poverty. What type of professional is Vido most likely to become?
- educational psychologist
 - psychiatrist
 - school psychologist
 - psychiatric social worker
20. Why do psychologists use the scientific method?
- It is easier to use than other methods.
 - All academic fields must use the scientific method.
 - It is the only method available to answer questions.
 - It reduces bias and error in measurement.
21. The tendency to look for information that supports one's own belief is called ____.
- the principle of falsifiability
 - confirmation bias
 - criterion validity
 - volunteer bias
22. Deb spent the entire day at the park observing children with their parents to see whether fathers or mothers spent more time playing with their kids. Deb used the method of
- naturalistic observation.
 - laboratory observation.
 - survey.
 - case study.
23. Which of the following topics would be best studied using the case study method?
- the reaction times of adults in a stressful situation
 - the sleep pattern of adolescents
 - the impact of club sports involvement on female adolescent self-esteem
 - the personality characteristics of a man accused of killing five people
24. What is an advantage of the survey method?
- nonrepresentative samples
 - courtesy bias
 - large amounts of information
 - observer bias
25. A researcher stops people at the mall and asks them questions about their attitudes toward gun control. Which research technique is being used?
- survey
 - experiment
 - case study
 - naturalistic observation

26. A group of randomly selected subjects that matches the population on important characteristics such as age and sex is called _____.
a) volunteer bias
b) a representative sample
c) the experimental group
d) the control group
27. The word *correlation* is often used as a synonym for _____.
a) validity
b) reliability
c) variable
d) relationship
28. Which of the following correlation coefficients represents the strongest relationship between two variables?
a) +0.62
b) -0.98
c) +0.01
d) +1.24
29. A researcher finds that as the number of classes missed increases, the students' grades decrease. This is an example of a
a) positive correlation.
b) negative correlation.
c) zero correlation.
d) case study.
30. Marcy is trying to define *anxiety* in a way that can be empirically tested. She is attempting to find an appropriate _____.
a) hypothesis
b) operational definition
c) double-blind study
d) theory
31. A researcher is investigating the effects of exercise on weight. What are the independent and dependent variables in this experiment?
a) The dependent variable is weight; the independent variable is exercise.
b) The independent variable is calories consumed; the dependent variable is diet.
c) The independent variable is weight; the dependent variable is calories consumed.
d) The dependent variable is amount of exercise; the independent variable is calories consumed.
32. In a laboratory, smokers are asked to "drive" using a computerized driving simulator equipped with a stick shift and a gas pedal. The object is to maximize the distance covered by driving as fast as possible on a winding road while avoiding rear-end collisions. Some of the participants smoke a real cigarette immediately before climbing into the driver's seat. Others smoke a fake cigarette without nicotine. You are interested in comparing how many collisions the two groups have. In this study, the *cigarette without nicotine* is _____.
a) the control group
b) the driving simulator
c) the experimental group
d) the no-control group

33. A psychology professor feels that her students will do better on her exams if there is music playing while they take their exams. To test her hypothesis she divides her class in half. One half takes the exam in a room with music playing and the other half takes the exam in a similar room but without the music playing. In this case, the independent variable is
- a) the room the exam is taken in.
 - b) the absence or presence of music playing.
 - c) the exam.
 - d) the students' scores on the exam.
34. For the experiment described in Question 33, the dependent variable is
- a) the room the exam is taken in.
 - b) the absence or presence of music playing.
 - c) the exam.
 - d) the students' scores on the exam.
35. Twenty volunteers are brought into a sleep laboratory in the evening. Ten are allowed eight hours of sleep while the other ten are only allowed two hours of sleep. In the morning, all 20 subjects are tested for their reaction time in a driving simulation program. For this experiment, the reaction time in the simulation program is the
- a) independent variable.
 - b) dependent variable.
 - c) confounding variable.
 - d) random variable.
36. For the experiment described in Question 35, the amount of sleep allowed is the
- a) independent variable.
 - b) dependent variable.
 - c) confounding variable.
 - d) random variable.
37. Which of the following situations best illustrates the placebo effect?
- a) You sleep because you are tired.
 - b) You throw up after eating bad meat.
 - c) You have surgery to repair a defective heart valve.
 - d) You drink a nonalcoholic drink and become "intoxicated" because you think it contains alcohol.
38. _____ is an experiment in which neither the participants nor the individuals running the experiment know if participants are in the experimental or the control group until after the results are tallied.
- a) The double-blind study
 - b) Field research
 - c) The single-blind study
 - d) Correlational research
39. Dr. Teresa Amabile conducted an actual experiment in which she had two groups of girls aged 7 to 10 years create artwork in the classroom. One group was told that the girl with the best artwork would receive a prize at the end of the session, and the other group was told that prizes would be raffled off when the session was over. Amabile then measured the level of creativity for the artwork in both groups and found that the second group had higher levels of creativity. In this experiment, the dependent variable is the

- a) prize.
 - b) level of creativity.
 - c) way the prize was distributed.
 - d) group of girls.
40. Each of the following is a common ethical guideline suggested by the American Psychological Association EXCEPT _____.
- a) participants must be informed of the nature of the research in clearly understandable language
 - b) participants cannot be deceived or have information concealed from them at any time during an experiment
 - c) risks, possible adverse effects, and limitations on confidentiality must be spelled out in advance
 - d) informed consent must be documented
41. Which of the following is NOT one of the four principles of critical thinking?
- a) All truths need to be tested.
 - b) An open mind is always important.
 - c) Authorities can almost always be trusted.
 - d) All evidence is not equal.
42. Which of the following questions applies the concept of critical thinking to the real world pseudo-psychology of astrology?
- a) What is my astrological sign?
 - b) What does my astrological sign predict will happen to me today?
 - c) How up to date are the charts used by astrologists today?
 - d) Should I marry someone that is the same sign as I?

PRACTICE EXAM ANSWERS

1. a Psychology bases its answers on observations, while philosophy answers its questions using logic and reasoning. Both fields are interested in human behavior. The field of psychology is only 125 years old, while philosophy is much older.
2. d She is trying to change people's behaviors. This corresponds to the question of "how" (in other words, "How" do I help people to stop smoking?).
3. a He would like to describe this particular group with regards to depression rates. He is trying to answer the question of "what." What is the current depression rate among U.S. teenagers?
4. d All of the questions fall under the category of describing, predicting, explaining, or controlling behavior and/or mental processes of humans and animals.
5. c Wilhelm Wundt opened his laboratory in Germany in 1879 and used the method of introspection to study the basic elements of mental processes.
6. c Psychology deals with both behavior and mental processes and includes other animals besides humans.
7. b Structuralists felt that mental processes had to be broken down into their most basic or elemental form in order to be understood.
8. b Introspection was used in an attempt to self-examine the structure of the mind. Although the word "intervention" looks similar, it has a completely different meaning.
9. b James believed we need to understand the function of mental processes.
10. d Gestalt psychologists believed that you had to look at the whole picture in order to understand the larger processes of perception and sensation and that it could not be broken down into its smaller components without losing its essence.

11. b Freud studied repressed (unconscious) conflict and Watson studied observable behavior. Watson did not believe that the unconscious could be studied scientifically.
12. d Sigmund Freud was a major proponent of the perspective of psychoanalysis, which emphasizes the role of the unconscious on human behavior.
13. a John Watson started the idea of behaviorism that states the only subject matter that can be scientifically studied is observable behavior.
14. d The biopsychological perspective focuses on studying the biological changes that underlie behavior and mental processes.
15. c Since it is very hard to scientifically test the psychodynamic theories there is little scientific data to support the theories.
16. a The humanistic perspective focuses on the uniqueness and potential of human beings and tries to suggest ways for humans to maximize their potential.
17. d Cognitive psychologists focus on “cognitions” or mental processes, including topics such as memory, decision making, problem solving, perception, language comprehension, creativity, and reasoning.
18. b Psychiatrists have M.D.s, counsel patients with serious disorders, and can prescribe medications.
19. d Psychiatric social workers typically have their Masters of Social Work (M.S.W.) and counsel patients with less severe disorders or focus on social issues such as poverty.
20. d The scientific method is based on observations so that the influence of the researcher’s bias is minimized.
21. b The principle of falsifiability is not an actual principle in psychology.
22. a Naturalistic observation consists of recording behaviors as they occur in their normal settings.
23. d A case study focuses on one individual (or “case”) and provides a detailed description of that individual.
24. c A survey allows the researcher to collect a large amount of information quickly. The other three options are all potential disadvantages of the survey method.
25. a A survey asks the same questions of many people, while naturalistic observation never involves asking questions.
26. b A representative sample is a randomly selected group that matches the population on important characteristics. An experimental group is not necessarily representative of the population.
27. d Correlation means relationship between two variables.
28. b The correlation coefficient must be between +1.00 and -1.00 so option D is automatically excluded. The sign of the coefficient indicates the direction of the relationship and the absolute value of the coefficient indicates the strength; therefore, 0.98 is the largest absolute value listed between 0 and 1.
29. b For a negative correlation, the variables move in the opposite direction. As one variable increases the other one decreases. In this case, as the number of absences increase the grade in class decreases.
30. b An operational definition defines responses in terms that allow them to be measured, while a hypothesis is an educated guess, not a definition.
31. a The exercise is controlled by the experimenter and is, therefore, *independent* of anything the participants do, while the participants’ weight is expected to *depend* on the amount of exercise.
32. a A control group gets either no treatment or treatment that has no effect (in this case, experimenters are controlling for the possibility that the cigarette itself, and not the nicotine, might cause people to get into collisions).
33. b The independent variable is the variable the researcher manipulates. In this case, the instructor manipulated whether there was music playing or not.

34. d Recall the test phrase, “How _____ (*i.v.*) affects _____ (*d.v.*). The professor is testing “How music affects student test scores.” The dependent variable is the subjects’ responses. The room the test is taken in and the test itself should be the same for both groups.
35. b The reaction time is the response observed in the subject. It is not manipulated by the experimenter.
36. a Recall the test phrase, “How hours slept affects driving reaction time.”
37. d The placebo effect is brought on by expectations, and in this case you felt drunk only because you believed you were drinking alcohol.
38. a The double-blind study is an experiment in which neither the participants nor the individuals running the experiment know if the participants are in the experimental or control group. In a single-blind study, only the participants are “blind.”
39. b Dr. Amabile was looking at “how method of reward affects creativity,” and creativity serves as the dependent variable.
40. b Participants may be deceived or have information concealed from them at any time during an experiment.
41. c Simply because someone is an authority, does not mean they should automatically be trusted.
42. c Critical thinking involves making reasoned judgments and questioning the basis that others are using to make judgments, such as in response c.

CHAPTER GLOSSARY

behaviorism	the science of behavior that focuses on observable behavior only.
biopsychological perspective	perspective that attributes human and animal behavior to biological events occurring in the body, such as genetic influences, hormones, and the activity of the nervous system.
case study	study of one individual in great detail; modern perspective that focuses on memory, intelligence, perception, problem solving, and learning.
cognitive neuroscience	study of the physical changes in the brain and nervous system that occur during thinking or other mental processes.
cognitive perspective	modern perspective that focuses on memory, intelligence, perception, problem solving, and learning.
control group	subjects in an experiment that are not subjected to the independent variable and who may receive a placebo treatment.
correlation	a measure of the relationship between two variables.
correlation coefficient	a number for measuring a correlation that indicates the strength and the direction of the relationship between the two variables.
critical thinking	making reasoned judgments about claims.
dependent variable	variable in an experiment that represents the measurable response or behavior of the subjects in the experiment.
double-blind study	study in which neither the experimenter nor the subjects know if the subjects are in the experimental or control group.
evolutionary perspective	perspective that focuses on the biological bases of universal mental characteristics that all humans share.
experiment	a deliberate manipulation of a variable to see if corresponding changes in behavior result, allowing the determination of cause and effect relationships.
experimental group	subjects in an experiment that are subjected to the independent variable.
experimenter effect	tendency of the experimenter’s expectations for a study to unintentionally influence the results of the study.

functionalism	early perspective in psychology associated with William James, in which the focus of study is how the mind allows people to adapt, live, work, and play.
Gestalt psychology	early perspective in psychology focusing on perception and sensation, particularly the perception of patterns and whole figures.
humanistic perspective	perspective that emphasizes human potential and the idea that people have the freedom to choose their own destiny.
hypothesis	a statement about some event that can then be tested through observation.
independent variable	variable in an experiment that is manipulated by the experimenter.
naturalistic observation	study in which the researcher observes people or animals in their normal environment.
objective introspection	the process of examining and measuring one's thoughts and mental activities.
observer bias	tendency of observers to see what they expect to see.
observer effect	tendency of people or animals to behave differently from normal when they know they are being observed.
operational definition	definition of a variable of interest that allows it to be directly measured.
participant observation	a naturalistic observation in which the observer becomes a participant in the group being observed.
placebo effect	the phenomenon in which the expectations of the participants in a study can influence their behavior.
population	the entire group of people or animals that the researcher is interested in.
pseudopsychologies	systems of explaining human behavior that are not based on or consistent with scientific evidence.
psychiatric social worker	a social worker with some training in therapy methods who focuses on environmental conditions that can have an impact on mental disorders, such as poverty, overcrowding, stress, and drug abuse.
psychiatrist	a medical doctor who has specialized in the diagnosis and treatment of psychological disorders.
psychoanalysis	the theory and therapy based on the work of Sigmund Freud.
psychoanalyst	either a psychiatrist or a psychologist who has special training in the theories of Sigmund Freud and his method of psychoanalysis.
psychodynamic perspective	modern version of psychoanalysis that is more focused on the development of a sense of self and the discovery of other motivations behind a person's behavior than sexual motivations.
psychologist	a professional with an academic degree and specialized training in one or more areas of psychology.
psychology	the scientific study of behavior and mental processes.
random assignment	process of assigning subjects to the experimental or control groups randomly, so that each subject has an equal chance of being in either group.
replicate	in research, repeating a study or experiment to see if the same results will be obtained in an effort to demonstrate reliability of results.
representative sample	randomly selected sample of subjects from a larger population.
scientific method	system of gathering data so that bias and error in measurement are reduced.
single-blind study	study in which the subjects do not know if they are in the experimental or the control group.
sociocultural perspective	perspective that focuses on the relationship between social behavior and culture.
structuralism	early perspective in psychology associated with Wilhelm Wundt and Edward Titchener, in which the focus of study is the structure or basic elements of the mind.
survey	study conducted by asking a series of questions to a group of people.



1.1

pp. 2–3

Psychology

(is the scientific study of behavior and mental processes)

has methods for studying phenomena

has four primary goals

- describe
- explain
- predict
- control

1.2–3

pp. 3–9

Psychology Then: The History of Psychology

(has roots in several disciplines, including philosophy, medicine, and physiology, and has developed through several perspectives)

- A relatively new science that formally began in 1879 when Wilhelm Wundt ("father of psychology") established the first psychological laboratory in Leipzig, Germany

was a student of Wundt's

Structuralism

founded by Edward Titchener

Functionalism

founded by William James

Gestalt psychology

founded by Max Wertheimer

Psychoanalysis

ideas put forth by Sigmund Freud

Behaviorism

associated with work of John B. Watson, who was greatly influenced by Ivan Pavlov's work in conditioning/learning



1.4

pp. 9–12

Psychodynamic

based on Freud's theory

Behavioral

based on early work of Watson and later B. F. Skinner

Humanistic

two pioneers are Carl Rogers and Abraham Maslow

Cognitive

has roots in Gestalt psychology

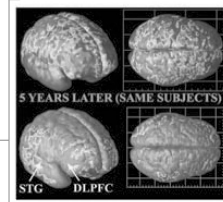
Psychology Now: Modern Perspectives

(No one perspective is used to explain all human behavior and processes)

Sociocultural

Biopsychological

Evolutionary



1.5

pp. 12–14

Types of Psychological Professionals

(people working in the field of psychology have a variety of training experiences and different focuses)

- psychiatrist
- psychoanalyst
- psychologist
- master's-level
 - psychiatric social worker
 - LPC, MFT, etc. (see Appendix B)

1.6–8

pp. 14–19

Psychology: The Science

(psychology uses the scientific method to try to determine facts and reduce uncertainty)

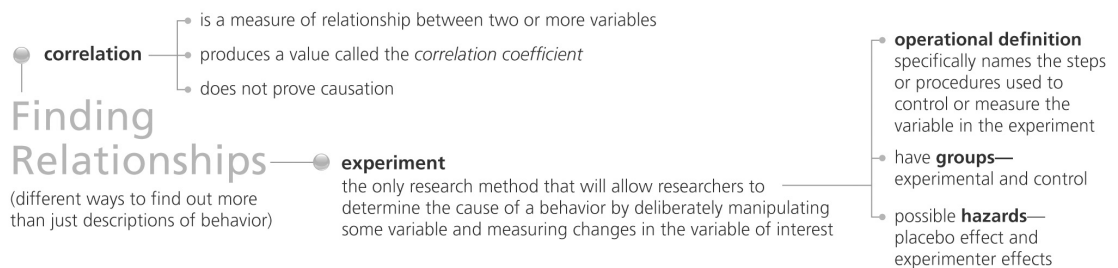


1.9–11

pp. 20–25

Finding Relationships

(different ways to find out more than just descriptions of behavior)



1.12

pp. 26–27

guidelines for research with humans

- rights and well-being of participants must be weighed against the study's value to science
- participants must be allowed to make an informed decision about participating (informed consent)
- deception must be justified
- participants may withdraw from the study at any time
- participants must be protected from risks or told explicitly of risks
- investigator must debrief participants, telling the true nature of the study and expectations of results
- data must remain confidential

Ethics of Psychological Research

(psychological scientists have a primary goal of protecting the health and welfare of their animal or human participants)

- **research with animals** — primary focus is on avoiding any unnecessary pain or suffering

1.13

pp. 27–29

Critical Thinking

four basic criteria for making reasoned judgments

- there are very few “truths” in the world that do not need to be subjected to testing
- all evidence is not equal in quality
- just because someone is considered to be an authority or to have a lot of expertise does not make everything that person claims automatically true
- critical thinking requires an open mind

application: helps protect against pseudopsychologies

pseudopsychologies are ways of explaining human behavior that are not based on scientific evidence and have little value other than entertainment



1.1 **Psychology**

1.2-1.3 **History of Psychology**

Figure 1.1 A Gestalt Perception



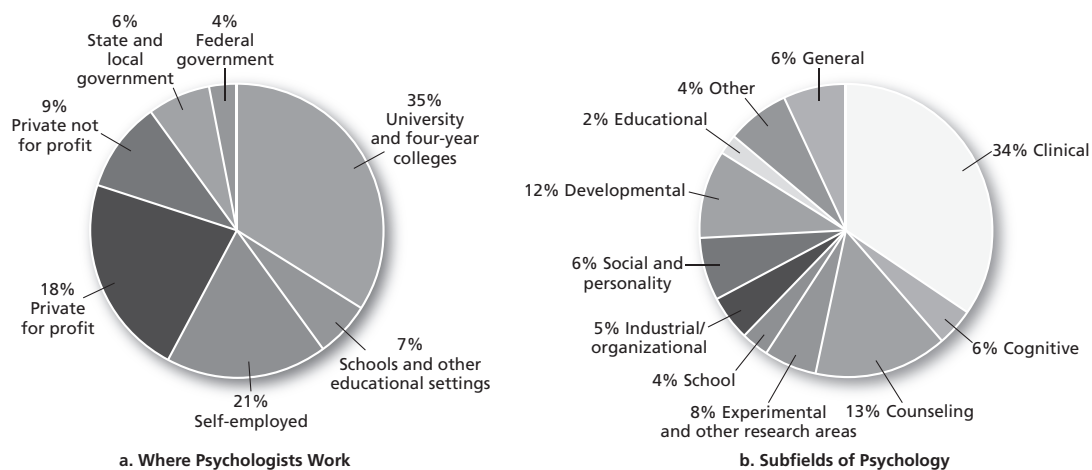
Modern Perspectives

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Types of Psychological Professionals

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

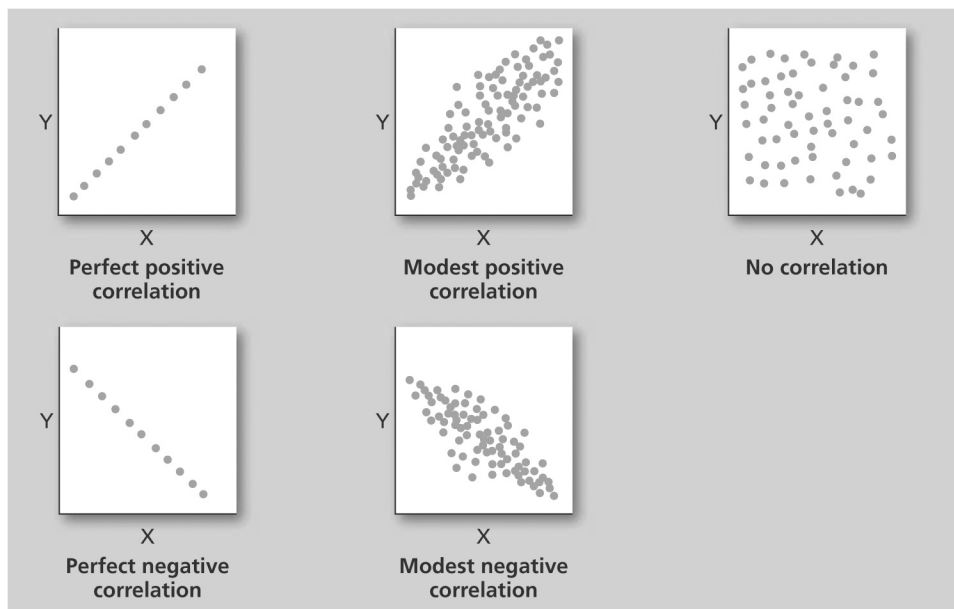
Figure 1.2 Work Settings and Subfields of Psychology



1.6–1.8 Psychology—The Science

1.9-1.11 Finding Relationships

Figure 1.3 Five Scatterplots Showing Direction and Strength of Correlation



1.12 Ethics of Psychological Research

1.13

Critical Thinking

NOTES