

6 :

Perception

CHAPTER OVERVIEW

Chapter 6 explores how we select, organize, and interpret our sensations into meaningful perceptions. The chapter introduces a wide range of terminology, especially in the Perceptual Organization section. Each of the two sections that follow deals with an important issue. The first issue is the role of experience, as opposed to heredity, in perception. Make sure you understand the results of studies of recovery from blindness, sensory deprivation, adaptation to distorted environments, and perceptual set. Note also the role of psychologists in human factors design.

The second issue considered in the chapter is the possible existence of ESP, or perception without sensation. You should be able to discuss both the claims made for ESP and the criticisms of these claims.

NOTE: Answer guidelines for all Chapter 6 questions begin on page 168.

CHAPTER REVIEW

First, skim each section, noting headings and boldface items. After you have read the section, review each objective by answering the fill-in and essay-type questions that follow it. As you proceed, evaluate your performance by consulting the answers beginning on page 168. Do not continue with the next section until you understand each answer. If you need to, review or reread the section in the textbook before continuing.

1. The philosopher _____ first proposed that we perceive objects through the senses, with the mind.

Selective Attention (pp. 237–240)

David Myers at times uses idioms that are unfamiliar to some readers. If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 175 for an explanation: *your attentional spotlight shifts; you may draw a blank; sauntered; pop-out.*

Objective 1: Describe the interplay between attention and perception.

1. Our tendency to focus at any moment on only a limited aspect of all that we are capable of experiencing is called _____. This is illustrated using a figure called a _____ cube.
2. An example of this limited focus is the _____—the ability to attend selectively to only one voice among many.
3. One example of our lack of awareness of happenings around us is _____, in which—after a brief _____ interruption—we fail to notice a change in the environment. Two forms of this phenomenon that involve vision and hearing, respectively, are _____ and _____. Another example is _____.

Perceptual Illusions (pp. 240–242)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 175 for an explanation: *ventriloquist's dummy; more to touch than meets the skin.*

Objective 2: Explain how illusions help us to understand some of the ways we organize stimuli into meaningful perceptions.

1. Illusions reveal the ways we normally _____ and _____ our sensations.
2. The tendency of vision to dominate the other senses is referred to as _____.
3. In a contest between hearing and touch, _____ dominates.

Perceptual Organization (pp. 242–254)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 175–176 for an explanation: *yen; Sometimes, however, they lead us astray; mothers then coaxed them to crawl out onto the glass; The floating finger sausage; As we move, objects that are actually stable may appear to move; by flashing 24 still pictures; through a paper tube; carpentered.*

Objective 3: Describe Gestalt psychology's contribution to our understanding of perception.

1. According to the _____ school of psychology, we tend to organize a cluster of sensations into a _____, or form.
2. Our tendency to perceive complete forms involves sensory analysis, or _____ processing of stimuli, as well as _____ processing that uses our _____ and _____ to interpret our sense-

tions. The distinction between sensation and perception in terms of these two types of information processing is _____ (clear cut/fuzzy).

Objective 4: Explain the figure-ground relationship, and identify principles of perceptual grouping in form perception.

3. When we view a scene, we see the central object, or _____, as distinct from surrounding stimuli, or the _____.

Identify the major contributions of Gestalt psychology to our understanding of perception.

4. Proximity, similarity, closure, continuity, and connectedness are examples of Gestalt rules of _____.
5. The principle that we organize stimuli into smooth, continuous patterns is called _____. The principle that we fill in gaps to create a complete, whole object is _____. The grouping of items that are close to each other is the principle of _____; the grouping of items that look alike is the principle of _____. The tendency to perceive uniform or attached items as a single unit is the principle of _____.

Objective 5: Explain the importance of depth perception, and discuss the contribution of visual cliff research to our understanding of this ability.

6. The ability to see objects in three dimensions despite their two-dimensional representations on our retinas is called _____. It enables us to estimate _____.

7. Gibson and Walk developed the _____ to test depth perception in infants. By _____ (what age?) infants demonstrate they are using Gestalt perception principles.

Summarize the results of Gibson and Walk's studies of depth perception.

Objective 6: Describe two binocular cues for perceiving depth, and explain how they help the brain to compute distance.

For questions 8–19, identify the depth perception cue that is defined.

- 8. Any cue that requires both eyes: _____.
- 9. The greater the difference between the images received by the two eyes, the nearer the object: _____ . 3-D movies simulate this cue by photographing each scene with two cameras. This chapter's fundamental lesson is that our _____ are the constructions of our _____.
- 10. The more our eyes focus inward when we view an object, the nearer the object: _____.

Objective 7: Explain how monocular cues differ from binocular cues, and describe several monocular cues for perceiving depth.

- 11. Any cue that requires either eye alone: _____.
- 12. If two objects are presumed to be the same size, the one that casts a smaller retinal image is perceived as farther away: _____.
- 13. An object partially covered by another is seen as farther away: _____.
- 14. Objects that appear hazy are seen as farther away: _____.

- 15. As an object becomes increasingly distant, it appears progressively less distinct: _____.
- 16. Objects lower in the visual field are seen as nearer: _____.
- 17. As we move, objects at different distances appear to move at different rates: _____.
- 18. Parallel lines appear to converge in the distance: _____.
- 19. Dimmer, or shaded, objects seem farther away: _____.

Objective 8: State the basic assumption we make in our perceptions of motion, and explain how these perceptions can be deceiving.

- 20. In general, we are _____ (very good/not very good) at quickly detecting the speed of moving objects. Sometimes, we are fooled because larger objects seem to move _____ (faster/more slowly) than smaller objects.
- 21. The brain interprets a rapid series of slightly varying images as _____. This phenomenon is called _____.
- 22. The illusion of movement that results when two adjacent stationary spots of light blink on and off in quick succession is called the _____.

Objective 9: Explain the importance of perceptual constancy.

- 23. Our tendency to see objects as unchanging while the stimuli from them change in size, shape, and lightness is called _____.
- 24. This _____ (bottom-up/top-down) process enables us to identify things regardless of the _____, _____, or _____ by which we view them.

Objective 10: Describe the shape and size constancies, and explain how our expectations about perceived size and distance contribute to some visual illusions.

25. Due to shape and size constancy, familiar objects _____ (do/do not) appear to change shape or size despite changes in our _____ images of them.

26. Several illusions, including the _____, _____, and _____ - _____ illusions, are explained by the interplay between perceived _____ and perceived _____. When distance cues are removed, these illusions are _____ (diminished/strengthened).

Explain how the size-distance relationship accounts for the Moon illusion.

27. People who have lived their lives in uncarpentered rural environments are _____ (more/less) susceptible to the Müller-Lyer illusion.

Objective 11: Discuss lightness constancy and its similarity to color constancy.

28. The brain computes an object's brightness _____ (relative to/independent of) surrounding objects.

29. The amount of light an object reflects relative to its surroundings is called _____.

30. Thanks to _____ we see objects as having a constant hue relative to surrounding objects.

Perceptual Interpretation (pp. 254–264)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 176 for an explanation: *Ping-Pong ball*; *we may feel slightly disoriented, even dizzy*; *to see is to believe . . . to believe is to see*; a "monster" in *Scotland's Loch Ness*; *from what's behind our eyes and between our ears*; *in the eyes of their beholders*.

Objective 12: Describe the contribution of restored-vision and sensory deprivation research in our understanding of the nature-nurture interplay in our perceptions.

1. The idea that knowledge comes from inborn ways of organizing sensory experiences was proposed by the philosopher _____.
2. On the other side were philosophers who maintained that we learn to perceive the world by experiencing it. One philosopher of this school was _____.
3. Studies of cases in which vision has been restored to a person who was blind from birth show that, upon *seeing* tactilely familiar objects for the first time, the person _____ (can/cannot) recognize them.
4. Studies of sensory deprivation demonstrate that visual experiences during _____ are crucial for perceptual development. Such experiences suggest that there is a _____ for normal sensory and perceptual development. For this reason, human infants born with an opaque lens, called a _____, typically have corrective surgery right away.

Objective 13: Explain how the research on distorting goggles increases our understanding of the adaptability of perception.

5. Humans given glasses that shift or invert the visual field _____ (will/will not) adapt to the distorted perception. This is called _____.
6. Animals such as chicks _____ (adapt/do not adapt) to distorting lenses.

7. When distorting goggles are first removed, most people experience a brief perceptual _____, as their perceptual systems continue to compensate for the shifted visual input.

Objective 14: Define perceptual set, and explain how it influences what we do or do not perceive.

8. A mental predisposition that influences perception is called a _____.
9. Through experience, people acquire perceptual _____, as reflected in children's drawings at different ages. This explains why we more accurately recognize _____ of famous faces than these people's actual faces.
10. Our face recognition is especially attuned to the expressive areas of the _____ and _____.

Objective 15: Explain why the same stimulus can evoke different perceptions in different contexts.

11. How a stimulus is perceived depends on our perceptual schemas and the _____ in which it is experienced.
12. The context of a stimulus creates a _____ (top-down/bottom-up) expectation that influences our perception as we match our _____ (top-down/bottom-up) signal against it.
13. Our perception is also influenced by _____ about gender and the _____ context of our experiences.

Objective 16: Describe the role human factors psychologists play in creating user-friendly machines and work settings.

14. Psychologists who study the importance of considering perceptual principles in the design of machines, appliances, and work settings are called _____ psychologists.
15. Victims of the "curse of knowledge," technology developers who assume that others share their _____, may create designs that are unclear to others.

16. Another example of failure to consider the human factor in design is the "_____ " technology that provides embarrassing headsets that amplify sound for people with hearing loss.

Is There Extrasensory Perception? (pp. 264–268)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 176 for an explanation: *uncanny*; *mind-blowing performance*; *unsatisfied hunger* . . . *an itch*.

Objective 17: Identify the three most testable forms of ESP, and explain why most research psychologists remain skeptical of ESP claims.

1. Perception outside the range of normal sensation is called _____.
2. Psychologists who study ESP are called _____.
3. The form of ESP in which people claim to be capable of reading others' minds is called _____. A person who "senses" that a friend is in danger might claim to have the ESP ability of _____. An ability to "see" into the future is called _____. A person who claims to be able to levitate and move objects is claiming the power of _____.
4. Analyses of psychic visions and premonitions reveal _____ (high/chance-level) accuracy. Nevertheless, some people continue to believe in their accuracy because vague predictions often are later _____ to match events that have already occurred. In addition, people are more likely to recall or _____ dreams that seem to have come true.
5. Critics point out that a major difficulty for parapsychology is that ESP phenomena are not consistently _____.

6. Researchers who tried to reduce external distractions between a "sender" and a "receiver" in an ESP experiment, reported performance levels that _____ (beat/did not beat) chance levels. More recent studies _____ (failed to replicate the results/found equally high levels of performance).

PROGRESS TEST 1

Multiple-Choice Questions

Circle your answers to the following questions and check them with the answers beginning on page 169. If your answer is incorrect, read the explanation for why it is incorrect and then consult the appropriate pages of the text (in parentheses following the correct answer).

1. The historical movement associated with the statement "The whole may exceed the sum of its parts" is:
 - a. parapsychology.
 - b. behavioral psychology.
 - c. functional psychology.
 - d. Gestalt psychology.
2. Figures tend to be perceived as whole, complete objects, even if spaces or gaps exist in the representation, thus demonstrating the principle of:
 - a. connectedness.
 - b. similarity.
 - c. continuity.
 - d. closure.
3. The figure-ground relationship has demonstrated that:
 - a. perception is largely innate.
 - b. perception is simply a point-for-point representation of sensation.
 - c. the same stimulus can trigger more than one perception.
 - d. different people see different things when viewing a scene.
4. When we stare at an object, each eye receives a slightly different image, providing a depth cue known as:
 - a. convergence.
 - b. linear perspective.
 - c. relative motion.
 - d. retinal disparity.
5. As we move, viewed objects cast changing shapes on our retinas, although we do not perceive the objects as changing. This is part of the phenomenon of:
 - a. perceptual constancy.
 - b. relative motion.
 - c. linear perspective.
 - d. continuity.
6. Which of the following illustrates the principle of visual capture?
 - a. We tend to form first impressions of other people on the basis of appearance.
 - b. Because visual processing is automatic, we can pay attention to a visual image and any other sensation at the same time.
 - c. We cannot simultaneously attend to a visual image and another sensation.
 - d. When there is a conflict between visual information and that from another sense, vision tends to dominate.
7. A person claiming to be able to read another's mind is claiming to have the ESP ability of:
 - a. psychokinesis.
 - b. precognition.
 - c. clairvoyance.
 - d. telepathy.
8. Which philosopher maintained that knowledge comes from inborn ways of organizing our sensory experiences?
 - a. Locke
 - b. Kant
 - c. Gibson
 - d. Walk
9. Dr. Martin is using natural mapping to redesign the instrument gauges of automobiles to be more "user friendly." Dr. Martin is evidently a(n):
 - a. psychophysicist.
 - b. cognitive psychologist.
 - c. human factors psychologist.
 - d. experimental psychologist.
10. The visual cliff tests an infant's perceptual sensitivity to which depth cue?
 - a. interposition
 - b. relative height
 - c. linear perspective
 - d. texture gradient
11. Kittens and monkeys reared seeing only diffuse, unpatterned light:
 - a. later had difficulty distinguishing color and brightness.
 - b. later had difficulty perceiving color and brightness, but eventually regained normal sensitivity.
 - c. later had difficulty perceiving the shape of objects.
 - d. showed no impairment in perception, indicating that neural feature detectors develop even in the absence of normal sensory experiences.