Thinking and Language

CHAPTER OVERVIEW

The first part of Chapter 9 deals with thinking, with emphasis on how people logically—or at times illogically—use tools such as algorithms and heuristics when making decisions and solving problems. Also discussed are several common obstacles to problem solving, including fixations that prevent us from taking a fresh perspective on a problem and our bias to search for information that confirms rather than challenges existing hypotheses. The section concludes with discussions of the power and perils of intuition and the effects of framing on decision making.

The rest of the chapter is concerned with language, including its structure, development in children, relationship to thinking, and use by animals. Two theories of language acquisition are evaluated: Skinner's theory that language acquisition is based entirely on learning and Chomsky's theory that humans have a biological predisposition to acquire language.

NOTE: Answer guidelines for all Chapter 9 questions begin on page 223.

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 223. 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.

Thinking (pp. 369–382)

Objective 1: Define cognition, and describe the roles of categories, hierarchies, and prototypes in concept formation.

1. Cognition, or __________________, can be defined as ____________________________

2. Scientists who study these mental activities are called __________________________.

3. People tend to organize specific items into mental groupings called _____________, and many such groupings often are further organized into _____________.

4. Concepts are typically formed through the development of a best example, or _____________, of a category. People more easily detect ______________ (male/female) prejudice against ___________ (males/females) than vice versa.

Objective 2: Compare algorithms, heuristics, and insight as problem-solving strategies, and explain how confirmation bias and fixation can interfere with problem solving.

5. Humans are especially capable of using their reasoning powers for coping with new situations, and thus for _______________.

6. When we try each possible solution to a problem, we are using _______________.
7. Logical, methodical, step-by-step procedures for solving problems are called

8. Simple thinking strategies that provide us with problem-solving shortcuts are referred to as

9. When you suddenly realize a problem's solution, _____________ has occurred. Research studies show that such moments are preceded by ________________ activity involved in focusing attention and accompanied by a burst of activity in the ________________

10. The tendency of people to look for information that supports their preconceptions is called ________________

11. It is human nature to seek evidence that ________________ our ideas more eagerly than to seek evidence that might ________________ them.

12. Not being able to take a new perspective when attempting to solve a problem is referred to as ________________. One example of this obstacle to problem solving is the tendency to repeat solutions that have worked previously; this phenomenon is known as the development of a ________________

13. When a person is unable to envision using an object in an atypical way, ________________ is operating.

Objective 3: Explain how the representativeness and availability heuristics can cause us to underestimate or ignore important information, and describe the drawbacks and advantages of overconfidence in decision making.

14. People judge how well something matches a particular prototype; this is the ________________

15. When we judge the likelihood of something occurring in terms of how readily it comes to mind, we are using the ________________

16. (Thinking Critically) Many people fear ________________ more than ________________, and ________________ more than ________________, despite the fact that these fears are not supported by death and injury statistics. This type of faulty thinking occurs because we fear
a. ________________

b. ________________

c. ________________

d. ________________

17. The tendency of people to overestimate the accuracy of their knowledge results in ________________

18. Overconfidence has ________________ value because self-confident people tend to live ________________ (more/less) happily, find it ________________ (easier/harder) to make tough decisions, and seem ________________ (more/less) credible.

19. When research participants are given feedback on the accuracy of their judgments, such feedback generally ________________ (does/does not) help them become more realistic about how much they know.

Objective 4: Describe the effects that belief perseverance, intuition, and framing can have on our judgments and decision making.

20. Research has shown that once we form a belief or a concept, it may take more convincing evidence for us to change the concept than it did to create it; this is because of ________________
21. A cure for this is to _______________ 
_____________________.

22. Intuitive reactions allow us to react 
______________ and in ways that are 
usually _________________.

23. The way an issue is posed is called 
_______________. This effect influences politi-
cal and business decisions, suggesting that our 
judgments ________________ (may/may not) 
always be well reasoned.

Language (pp. 382–391)

Objective 5: Describe the basic structural units of a 
language, including the rules that enable us to com-
unicate meaning.

1. The basic sound units of language are its 
_______________. English has approximately 
______________ of these units. The basic 
units of sign language are defined by 
______________ and 
_______________.

2. Phonemes are grouped into units of meaning 
called _________________.

3. The system of rules that enables us to use our lan-
guage to speak to and understand others is called 
_______________.

4. The system by which meaning is derived from 
morphemes, words, and sentences is the 
______________ of a language.

5. The system of rules we use to combine words 
into grammatically sensible sentences is called 
_______________.

Objective 6: Trace the course of language acquisition 
from the babbling stage through the two-word stage.

6. By ________________ months of age, babies can 
read lips and discriminate speech sounds. This 
marks the beginning of their ________________ 
______________, their ability to comprehend 
speech. This ability begins to mature before their 
______________, or 
ability to produce words.

7. The first stage of language development, in 
which children spontaneously utter different 
sounds, is the ________________ stage. This 
stage typically begins at about 
______________ months of age. The sounds children make during 
this stage ________________ (do/do not) 
include only the sounds of the language they 
hear.

8. Deaf infants ________________ (do/do not) 
babble. Many natural babbling sounds are 
______________-______________ pairs 
formed by _________________.

9. By about ________________ months of age, 
infant babbling begins to resemble the household 
language. At about the same time, the ability to 
perceive speech sounds outside their native lan-
guage is ________________ (lost/acquired).

10. During the second stage, called the 
______________ stage, 
children convey complete thoughts using single 
words. This stage begins at about 
______________ year(s) of age.

11. During the ________________ 
stage, children speak in sentences containing 
mostly nouns and verbs. This type of speech is 
called ________________ speech. It 
______________ (does/does not) follow the 
rules of syntax.

Objective 7: Discuss Skinner’s and Chomsky’s contrib-
tions to the nature-nurture debate over how chil-
dren acquire language, and explain why statistical 
leaning and critical periods are important concepts 
in children’s language learning.

12. Skinner believed that language development fol-
lows the general principles of learning, including 
______________, ________________, and 
______________.

13. Other theorists believe that humans are biologi-
cally predisposed to learn language. One such 
thorist is ________________, who believes that 
we all are born with a ________________ 
______________, in 
which ________________ switches are thrown 
as children experience their language. This
theorist contends that all human languages have the same grammatical building blocks, which suggests that there is a ________________
_______________.

14. Research by Jenny Saffran has demonstrated that even before ________________ year(s) of age, infants are able to discern ________________
______________ and ________________ analyze which syllables most often go together.

15. Research studies of infants’ knack for soaking up language suggest that babies come with a built-in readiness to learn ________________
______________.

16. Childhood seems to represent a ________________
______________ for mastering certain aspects of language. Those who learn a second language as adults usually speak it with the ________________ of their first language. Moreover, they typically show ________________ (poorer/better) mastery of the ________________ of the second language.

17. The window for learning language gradually begins to close after age ________________. When a young brain doesn’t learn any language, its language-learning capacity ________________ (never/may still) fully develop(s).

18. Considering the two theories together, we can say that although we are born with a readiness to learn language, ________________ is also important, as shown in linguistically stunted children who have been isolated from language during the ________________ ________________ for its acquisition.

Objective 8: Identify the brain areas involved in language processing and speech.

19. Brain injuries may produce an impairment in language use called ________________. Studies of people with such impairments have shown that ________________ is involved in producing speech, ________________ is involved in understanding speech, and the ________________ ________________ is involved in recoding printed words into auditory form.

20. Norman Geschwind has explained how we use language. When we read aloud, the words register in the brain’s ________________
______________ are relayed to the ________________ ________________, which transforms them into an auditory code that is received and understood in ________________
______________ and sent to ________________ ________________, which controls the ________________ ________________ as it creates the pronounced word.

21. Although the mind’s subsystems are localized in particular brain regions, the brain acts as a ________________.

Thinking and Language (pp. 391–395)

Objective 9: Discuss Whorf’s linguistic determinism hypothesis in relation to current views regarding thinking and language, and describe the value of thinking in images.

1. According to the ________________ ________________ hypothesis, language shapes our thinking. The linguist who proposed this hypothesis is ________________.

2. Many people who are bilingual report feeling a different sense of ________________, depending on which language they are using.

3. In several studies, researchers have found that using the pronoun “he” (instead of “he or she”) ________________ (does/does not) influence people’s thoughts concerning gender.

4. Bilingual children, who learn to inhibit one language while using their other language, are better able to inhibit their ________________ to irrelevant information. This has been called the ________________
______________.

5. One study of Canadian children found that English-speaking children who were ________________ in French had higher ________________ scores and math scores than control children.

6. It appears that thinking ________________ (can/cannot) occur without the use of language. Thinking in terms of mental pictures is called ________________.
Athletes often supplement physical with
__________ practice.

7. In one study of psychology students preparing
for a midterm exam, the greatest benefits were
achieved by those who visualized themselves
__________ (receiving a high
grade/studying effectively).

Summarize the probable relationship between thinking
and language.

7. Most now agree that humans ________
(alone/along with primates) possess language
that involves complex grammar.

8. The philosopher __________ believed
that animals were living robots that could not
think.

Summarize some of the arguments of skeptics of the
"talking apes" research and some responses of believ-
ers.

Animal Thinking and Language
(pp. 395–401)

Objective 10: Identify some of the cognitive skills
shared by the great apes and humans, and outline the
arguments for and against the idea that animals and
humans share the capacity for language.

1. Animals are capable of forming
__________ . Wolfgang Köhler demon-
strated that chimpanzees also exhibit the "Aha!"
reaction that characterizes reasoning by
__________ .

2. Forest-dwelling chimpanzees learn to use differ-
ent sticks as __________ . These behaviors,
along with behaviors related to grooming and
courtship, __________ (vary/ do not vary)
from one group of chimpanzees to another, suggest-
ing the transmission of __________
customs.

3. Some animals also display an amazing
__________ ability; for example, Alex the
parrot could say how many objects were in a
group.

4. Animals definitely __________ (do/do
not) communicate. For example, honeybees do so
by means of a __________ .

5. The Gardners attempted to communicate with
the chimpanzee Washoe by teaching her
__________ .

6. Skeptics believe that some chimpanzee trainers
may be overgenerous in interpreting ambiguous
animal signing, thanks to their
__________ , the
tendency to see what they want or expect to see.

PROGRESS TEST 1

Multiple-Choice Questions

Circle your answers to the following questions and
check them with the answers beginning on page 225.
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 text defines cognition as
   a. silent speech.
   b. all mental activity.
   c. the mental activities associated with thinking,
      knowing, remembering, and communicating
      information.
   d. logical reasoning.

2. A mental grouping of similar things, events, or
   people is called a(n)
   a. prototype.        c. algorithm.
   b. concept.          d. heuristic.

3. When forming a concept, people often develop a
   best example, or ________, of a category.
   a. denoter         c. prototype
   b. heuristic       d. algorithm
4. Confirmation bias refers to the tendency to
   a. allow preexisting beliefs to distort logical rea-
      soning.
   b. cling to one's initial conceptions after the basis
      on which they were formed has been discr"e-ti-
      ed.
   c. search randomly through alternative solutions
      when problem solving.
   d. look for information that is consistent with
      one's beliefs.

5. The English language has approximately
   ________ phonemes.
   a. 25          c. 40
   b. 30          d. 45

6. Which of the following is NOT true of babbling?
   a. It is imitation of adult speech.
   b. It is the same in all cultures.
   c. It typically occurs from about age 4 months to
      1 year.
   d. Babbling increasingly comes to resemble a
      particular language.

7. Mental set and functional fixedness are two types
   of
   a. algorithms.          c. fixation.
   b. heuristics.          d. insight.

8. Which of the following has been argued by critics
   of ape language research?
   a. Ape language is merely imitation of the train-
      er's behavior.
   b. There is little evidence that apes can equal
      even a 3-year-old's ability to order words with
      proper syntax.
   c. By seeing what they wish to see, trainers
      attribute greater linguistic ability to apes than
      actually exists.
   d. All of these are arguments by critics.

9. Whorf's linguistic determinism hypothesis states
   that
   a. language is primarily a learned ability.
   b. language is partially an innate ability.
   c. the size of a person's vocabulary reflects his or
      her intelligence.
   d. our language shapes our thinking.

10. Which of the following best describes Chomsky's
    view of language development?
    a. Language is an entirely learned ability.
    b. Language is an innate ability.
    c. Humans have a biological predisposition to
        acquire language.
    d. There are no cultural influences on the devel-
       opment of language.

11. Failing to solve a problem that requires using an
    object in an unusual way illustrates the pheno-
    monon of
    a. mental set.          c. framing.
    b. functional fixedness. d. belief perseverance.

12. Which of the following is an example of the use
    of heuristics?
    a. trying every possible letter ordering when
       unscrambling a word
    b. considering each possible move when playing
       chess
    c. using the formula "area = length \times width" to
       find the area of a rectangle
    d. playing chess using a defensive strategy that
       has often been successful for you

13. The chimpanzee Sultan used a short stick to pull
    a longer stick that was out of reach into his cage.
    He then used the longer stick to reach a piece of
    fruit. Researchers hypothesized that Sultan's dis-
    covery of the solution to his problem was the result
    of:
    a. trial and error.
    b. heuristics.
    c. functional fixedness.
    d. insight.

14. You hear that one of the Smith children is an out-
    standing Little League player and immediately
    conclude it's their one son rather than any of their
    four daughters. You reached your quite possibly
    erroneous conclusion as the result of
    a. the confirmation bias.
    b. the availability heuristic.
    c. the representativeness heuristic.
    d. belief perseverance.

15. Researchers who are convinced that animals can
    think point to evidence that
    a. chimpanzees demonstrate the ability to
       "count" by learning to touch pictures of
       objects in ascending numerical order.
    b. chimpanzees regularly use sticks as tools in
       their natural habitats.
    c. chimps invent grooming and courtship cus-
       toms and pass them on to their peers.
    d. they exhibit all of these skills.
16. Deaf children who are not exposed to sign language until they are teenagers
   a. are unable to master the basic words of sign language.
   b. learn the basic words but not how to order them.
   c. are unable to master either the basic words or syntax of sign language.
   d. never become as fluent as those who learned to sign at a younger age.

17. According to the text, language acquisition is best described as
   a. the result of conditioning and reinforcement.
   b. a biological process of maturation.
   c. an interaction between biology and experience.
   d. a mystery of which researchers have no real understanding.

18. Infants as young as 6 months old display a remarkable ability to learn statistical aspects of speech. Specifically, research studies have shown that they
   a. are quickly able to recognize syllable sequences that appear repeatedly.
   b. respond to changes in the pitch of a speaker’s voice.
   c. pay less attention to a same-gender voice.
   d. do all of these things.

19. The linguistic determinism hypothesis is challenged by the finding that
   a. chimps can learn to communicate spontaneously by using sign language.
   b. people with no word for a certain color can still perceive that color accurately.
   c. the Eskimo language contains a number of words for snow, whereas English has only one.
   d. infants’ babbling contains many phonemes that do not occur in their own language and that they therefore cannot have heard.

20. Several studies have indicated that the generic pronoun “he”
   a. tends for children and adults alike to trigger images of both males and females.
   b. tends for adults to trigger images of both males and females, but for children to trigger images of males.
   c. tends for both children and adults to trigger images of males but not females.
   d. for both children and adults triggers images of females about one-fourth of the time it is used.

21. Damage to ______ will usually cause a person to lose the ability to comprehend language.
   a. the angular gyrus
   b. Broca’s area
   c. Wernicke’s area
   d. frontal lobe association areas
Matching Items

Match each definition or description with the appropriate term.

Definitions or Descriptions

______ 1. the basic units of sound in a language
______ 2. the way an issue or question is posed
______ 3. rules for combining words into sentences
______ 4. the rules by which meaning is derived from sentences
______ 5. presuming that something is likely if it comes readily to mind
______ 6. the tendency to overestimate the accuracy of one's judgments
______ 7. being unable to see a problem from a different angle
______ 8. haphazard problem solving by trying one solution after another
______ 9. the sudden realization of the solution to a problem
______ 10. the tendency to repeat problem-solving techniques that worked in the past even though a fresh approach may be more appropriate
______ 11. the basic units of meaning in a language
______ 12. controls speech production
______ 13. responsible for language comprehension
______ 14. language disorder

Terms

a. syntax
b. morphemes
c. mental set
d. trial and error
e. availability heuristic
f. phonemes
g. semantics
h. insight
i. framing
j. overconfidence
k. fixation
l. aphasia
m. Broca's area
n. Wernicke's area

PROGRESS TEST 2

Progress Test 2 should be completed during a final chapter review. Answer the following questions after you thoroughly understand the correct answers for the section reviews and Progress Test 1.

Multiple-Choice Questions

1. A common problem in everyday reasoning is our tendency to
   a. accept as logical those conclusions that agree with our own opinions.
   b. accept as logical those conclusions that disagree with our own opinions.
   c. underestimate the accuracy of our knowledge.
   d. accept as logical conclusions that involve unfamiliar concepts.

2. Phonemes are the basic units of ___ in language.
   a. sound            c. grammar
   b. meaning          d. semantics

3. Syntax refers to the
   a. sounds in a word.
   b. rules for grouping words into sentences.
   c. rules by which meaning is derived from sentences.
   d. overall rules of a language.

4. Skinner and other behaviorists have argued that language development is the result of
   a. imitation.       c. association.
   b. reinforcement.  d. all of these.

5. Many psychologists are skeptical of claims that chimpanzees can acquire language because the chimps have not shown the ability to
   a. use symbols meaningfully.
   b. acquire speech.
   c. acquire even a limited vocabulary.
   d. use syntax in communicating.
6. Representativeness and availability are examples of
   a. mental sets.       c. algorithms.
   b. belief bias.      d. heuristics.

7. The basic units of cognition are
   a. phonemes.         c. prototypes.
   b. concepts.        d. morphemes.

8. Researchers who believe that some primates can read intent point to evidence that
   a. chimpanzees have recognized themselves in a mirror.
   b. marmosets can learn from and imitate others.
   c. chimpanzees in the wild use sticks as tools.
   d. honeybees communicate the direction and distance of a food source by performing a dance.

9. Assume that Congress is considering revising its approach to welfare and to this end is hearing a range of testimony. A member of Congress who uses the availability heuristic would be most likely to
   a. want to experiment with numerous possible approaches to see which of these seems to work best.
   b. want to cling to approaches to welfare that seem to have had some success in the past.
   c. refuse to be swayed by his or her beliefs despite persuasive testimony to the contrary.
   d. base his or her ideas on the most vivid, memorable testimony given, even though many of the statistics presented run counter to this testimony.

10. If you want to be absolutely certain that you will find the solution to a problem you know is solvable, you should use
    a. a heuristic.      c. insight.
    b. an algorithm.    d. trial and error.

11. Complete the following: *-ed is to *st as
    ______ is to ______.
    a. phoneme; morpheme  c. grammar; syntax
    b. morpheme; phoneme  d. syntax; grammar

12. Which of the following is NOT cited by Chomsky as evidence that language acquisition cannot be explained by learning alone?
    a. Children master the complicated rules of grammar with ease.
    b. Children create sentences they have never heard.
    c. Children make the kinds of mistakes that suggest they are attempting to apply rules of grammar.
    d. Children raised in isolation from language spontaneously begin speaking words.

13. Telegraphic speech is typical of the ______ stage.
    a. babbling       c. two-word
    b. one-word       d. three-word

14. Children first demonstrate a rudimentary understanding of syntax during the ______ stage.
    a. babbling       c. two-word
    b. one-word       d. three-word

15. The study in which people who immigrated to the United States at various ages were compared in terms of their ability to understand English grammar found that
    a. age of arrival had no effect on mastery of grammar.
    b. those who immigrated as children understood grammar as well as native speakers.
    c. those who immigrated as adults understood grammar as well as native speakers.
    d. whether or not English was spoken in the home was the most important factor in mastering the rules of grammar.

16. Researchers taught the chimpanzee Washoe and the gorilla Koko to communicate by using
    a. various sounds.
    b. plastic symbols of various shapes and colors.
    c. sign language.
    d. all of these methods.

17. Regarding the relationship between thinking and language, which of the following most accurately reflects the position taken in the text?
    a. Language determines everything about our thinking.
    b. Language determines the way we think.
    c. Thinking without language is not possible.
    d. Thinking affects our language, which then affects our thought.

18. The rules most directly involved in permitting a person to derive meaning from words and sentences are rules of
    a. syntax.       c. phonemic structure.
    b. grammar.     d. semantics.
19. Which of the following is true regarding the relationship between thinking and language?
   a. “Real” thinking requires the use of language.
   b. People sometimes think in images rather than in words.
   c. A thought that cannot be expressed in a particular language cannot occur to speakers of that language.
   d. All of these statements are true.

20. One reason an English-speaking adult may have difficulty pronouncing Russian words is that
   a. the vocal tracts of English- and Russian-speaking people develop differently in response to the demands of the two languages.
   b. although English and Russian have very similar morphemes, their phonemic inventories are very different.
   c. although English and Russian have very similar phonemes, their morphemic inventories are very different.
   d. after the babbling stage, a child who hears only English stops uttering other phonemes.

True-False Items

Indicate whether each statement is true or false by placing T or F in the blank next to the item.

1. The order in which children acquire an understanding of various morphemes is unpredictable.
2. According to the confirmation bias, people often interpret ambiguous evidence as support for their beliefs.
3. Most human problem solving involves the use of heuristics rather than reasoning that systematically considers every possible solution.
4. When asked, most people underestimate the accuracy of their judgments.
5. Studies have shown that even animals may sometimes have insight reactions.
6. Mental set is the tendency to repeat problem-solving solutions that have worked in the past.
7. Although the morphemes differ from language to language, the phonemes for all languages are the same.
8. Children of all cultures babble using the same phonemes.
9. Thinking without using language is not possible.

10. Most researchers believe that we can perform statistical analyses of language throughout our lives.

PSYCHOLOGY APPLIED

Answer these questions the day before an exam as a final check on your understanding of the chapter’s terms and concepts.

Multiple-Choice Questions

1. The word “predates” contains ____ phonemes and ____ morphemes.
   a. 7; 3  
   b. 3; 7  
   c. 7; 2  
   d. 3; 2

2. In a soccer game, Laura suffered damage to her left temporal lobe. As a result, she is unable to speak in meaningful sentences. The damage affected
   a. Wernicke’s area.
   b. Boca’s area.
   c. the angular gyrus.
   d. the hippocampus.

   a. not be able to tell them apart.
   b. be able to tell them apart if they were older than 6 months.
   c. be able to tell them apart if they were older than 8 to 10 months.
   d. be able to tell them apart at any age.

4. Which of the following illustrates belief perseverance?
   a. Your belief remains intact even in the face of evidence to the contrary.
   b. You refuse to listen to arguments counter to your beliefs.
   c. You tend to become flustered and angered when your beliefs are refuted.
   d. You tend to search for information that supports your beliefs.

5. Complete the following analogy: Rose is to flower as
   a. concept is to prototype.
   b. prototype is to concept.
   c. concept is to hierarchy.
   d. hierarchy is to concept.
6. Your stand on an issue such as the use of nuclear power for electricity involves personal judgment. In such a case, one memorable occurrence can weigh more heavily than a bookful of data, thus illustrating
   a. belief perseverance.
   b. confirmation bias.
   c. the representativeness heuristic.
   d. the availability heuristic.

7. A dessert recipe that gives you the ingredients, their amounts, and the steps to follow is an example of a(n)
   a. prototype.
   b. algorithm.
   c. heuristic.
   d. mental set.

8. Marilyn was asked to solve a series of five math problems. The first four problems could only be solved by a particular sequence of operations. The fifth problem could also be solved following this sequence; however, a much simpler solution was possible. Marilyn did not realize this simpler solution and solved the problem in the way she had solved the first four. Her problem-solving strategy was hampered by
   a. functional fixedness.
   b. the overconfidence phenomenon.
   c. mental set.
   d. her lack of a prototype for the solution.

9. Dr. Mendoza is studying the mental strategies people use when solving problems. Dr. Mendoza is clearly a(n)
   a. cognitive psychologist.
   b. experimental psychologist.
   c. organizational psychologist.
   d. developmental psychologist.

10. Boris the chess master selects his next move by considering moves that would threaten his opponent’s queen. His opponent, a chess-playing computer, selects its next move by considering all possible moves. Boris is using a(n) _____ and the computer is using a(n) _____ .
   a. algorithm; heuristic
   b. prototype; mental set
   c. mental set; prototype
   d. heuristic; algorithm

11. During a televised political debate, the Republican and Democratic candidates each argued that the results of a recent public opinion poll supported their party’s platform regarding sexual harassment. Because both candidates saw the information as supporting their belief, it is clear that both were victims of
   a. functional fixedness.
   b. mental set.
   c. belief perseverance.
   d. confirmation bias.

12. The child who says “Milk gone” is engaging in _______. This type of utterance demonstrates that children are actively experimenting with the rules of _______.
   a. babbling; syntax
   b. telegraphic speech; syntax
   c. babbling; semantics
   d. telegraphic speech; semantics

13. Experts in a field prefer heuristics to algorithms because heuristics
   a. guarantee solutions to problems.
   b. prevent mental sets.
   c. often save time.
   d. prevent fixation.

14. Rudy is 6 feet 6 inches tall, weighs 210 pounds, and is very muscular. If you think that Rudy is more likely to be a basketball player than a computer programmer, you are a victim of
   a. belief perseverance.
   b. mental set.
   c. functional fixedness.
   d. the representativeness heuristic.

15. Failing to see that an article of clothing can be inflated as a life preserver is an example of
   a. belief perseverance.
   b. the availability heuristic.
   c. the representativeness heuristic.
   d. functional fixedness.

16. Airline reservations typically decline after a highly publicized airplane crash because people overestimate the incidence of such disasters. In such instances, their decisions are being influenced by
   a. belief perseverance.
   b. the availability heuristic.
   c. the representativeness heuristic.
   d. functional fixedness.

17. Most people tend to
   a. accurately estimate the accuracy of their knowledge and judgments.
   b. underestimate the accuracy of their knowledge and judgments.
   c. overestimate the accuracy of their knowledge and judgments.
   d. lack confidence in their decision-making strategies.
18. In relation to ground beef, consumers respond more positively to an ad describing it as “75 percent lean” than to one referring to its “25 percent fat” content. This is an example of
   a. the framing effect.  c. mental set.
   b. confirmation bias.  d. overconfidence.

19. The sentence “Blue jeans wear false smiles” has correct _______ but incorrect _______.
   a. morphemes; phonemes
   b. phonemes; morphemes
   c. semantics; syntax
   d. syntax; semantics

20. In preparing her class presentation, “Updating Chomsky’s Understanding of Language Development,” Britney’s outline includes all of the following evidence EXCEPT that
   a. computers programmed to learn to form the past tense of irregular verbs can learn to do so, even without “inborn” linguistic rules.
   b. infants rapidly learn to detect subtle differences between simple sequences of syllables.
   c. infants can recognize color differences even before they can name different colors.
   d. children isolated from language during the first seven years of life never fully develop language.

Essay Question
The lectures of your linguistics professor, who happens to be a staunch behaviorist, clearly imply that she believes language development can be explained according to principles of conditioning. What evidence should you present to convince her that she is wrong? (Use the space below to list the points you want to make, and organize them. Then write the essay on a separate piece of paper.)

KEY TERMS

Writing Definitions
Using your own words, on a piece of paper write a brief definition or explanation of each of the following terms.
1. cognition
2. concept
3. prototype
4. algorithm
5. heuristic
6. insight
7. confirmation bias
8. fixation
9. mental set
10. functional fixedness
11. representativeness heuristic
12. availability heuristic
13. overconfidence
14. belief perseverance
15. intuition
16. framing
17. language
18. phoneme
19. morpheme
20. grammar
21. semantics
22. syntax
23. babbling stage
24. one-word stage
25. two-word stage
26. telegraphic speech
27. aphasia
28. Broca’s area
29. Wernicke’s area
30. linguistic determinism