

Rubric for Free Response Question 1

1 point: Working memory is a newer understanding of short-term memory that focuses on conscious, active processing of incoming auditory and visual-spatial information, and of information retrieved from long-term memory. Possible example: Jacque has to focus on what the teacher is saying and recall the correct vocabulary word when she is asked a question. 🔄 Page 319

1 point: Explicit memory is memory of facts and experiences that one can consciously know and “declare.” (Also called *declarative memory*.) Possible example: Defining vocabulary words in any language relies on explicit memory.

🔄 Page 321

1 point: Effortful processing is encoding that requires attention and conscious effort. Possible example: When reading, Jacque has to pay attention to the words and sentence construction to understand what is being conveyed. 🔄 Page 321

1 point: Context-dependent memory refers to the need to put yourself back in the context where you experienced something to prime your memory retrieval. Possible example: Jacque seems to be able to remember her Spanish best when in her Spanish classroom. 🔄 Page 336

1 point: Proactive interference is the disruptive effect of prior learning on the recall of new information. Possible example: Jacque learned Italian before she learned Spanish, and so sometimes her prior knowledge of Italian interferes with her recall of Spanish words. 🔄 Page 345

1 point: The hippocampus is a brain area important to the storage of new learning. Possible example: Since the left hippocampus is important to storage and recall of verbal information—new terms, vocabulary, and so on—Jacque’s hippocampus must be very active during her language classes. 🔄 Page 330

1 point: The amygdala is involved in intense emotional experiences, which affect related memory formation. Possible example: When Jacque is stressed about mixing up her Spanish with Italian words, the stress may cause her to have trouble recalling the information because of hormones that are released. Her positive emotions, experienced in the Italian restaurant, may also be related to the amygdala.

🔄 Pages 331–332

2. Our cognitive processes can enhance or inhibit memory, decision making, problem solving, and communication. Explain how each of the following may both help and hurt cognitive functioning.

- Mental set
- Availability heuristic
- Prototypes
- Critical (or sensitive) period for language development
- Stress effects on memory

(10 points)

3. George, a senior in high school, was reminiscing with his friends about their first homecoming dance.

A. Explain how each of the following psychological terms could *help* George’s recollection or memory of his freshman-year homecoming dance.

- Flashbulb memory
- Mood-congruent effect

B. Explain how each of the following psychological terms could *hinder* George’s recollection or memory of his freshman-year homecoming dance.

- Serial position effect
- Retroactive interference
- Misinformation effect

(5 points)


Multiple-choice self-tests and more may be found at www.worthpublishers.com/MyersAP2e

Unit VII

Motivation, Emotion, and Stress

Modules

- 37** Motivational Concepts
- 38** Hunger Motivation
- 39** Sexual Motivation
- 40** Social Motivation: Affiliation Needs
- 41** Theories and Physiology of Emotion
- 42** Expressed Emotion
- 43** Stress and Health
- 44** Stress and Illness



After an ill-fated Saturday morning in the spring of 2003, experienced mountaineer Aron Ralston understood how motivation can energize and direct behavior. Having bagged nearly all of Colorado's tallest peaks, Ralston ventured some solo canyon hiking that seemed so risk-free he didn't bother to tell anyone where he was going. In Utah's narrow Bluejohn Canyon, just 150 yards above his final rappel, he was climbing over an 800-pound rock when disaster struck: It shifted and pinned his right wrist and arm. He was, as the title of his book says, caught *Between a Rock and a Hard Place*.

Realizing no one would be rescuing him, Ralston tried with all his might to dislodge the rock. Then, with a dull pocketknife, he tried chipping away at it. When that, too, failed, he rigged up ropes to lift the rock. Alas, nothing worked. Hour after hour, then cold night after cold night, he was stuck.

By Tuesday, he had run out of food and water. On Wednesday, as thirst and hunger gnawed, he began saving and sipping his own urine. Using his video recorder, he said good-bye to family and friends, for whom he now felt intense love: "So

again love to everyone. Bring love and peace and happiness and beautiful lives into the world in my honor. Thank you. Love you."

On Thursday, surprised to find himself still alive, Ralston had a seemingly divine insight into his reproductive future, a vision of a preschool boy being scooped up by a one-armed man. With this inspiration, he summoned his remaining strength and his enormous will to live and, over the next hour, willfully broke his arm bones and then proceeded to use that dull knife to cut off his arm. He put on a tourniquet, chopped the last piece of skin, and, after 127 hours, broke free. He then rappelled with his bleeding half-arm down a 65-foot cliff and hiked 5 miles before finding someone. He was, in his own words, "just reeling with this euphoria . . . having been dead and standing in my grave, leaving my last will and testament, etching 'Rest in peace' on the wall, all of that, gone and then replaced with having my life again. It was undoubtedly the sweetest moment that I will ever experience" (Ralston, 2004). Ralston's thirst and hunger, his sense of belonging to others, and his brute will to live and become a father highlight *motivation's* energizing and directing power.

His intense emotional experiences of love and joy demonstrate the close ties between our feelings, or *emotions*, and our motivated behaviors. In this unit, we explore our motivations and emotions, and the health effects of intense or prolonged emotions such as anger and stress.

AP® Exam Tip

The introduction to Module 37 is important, because it informs you how the whole module is organized. Read it carefully now and perhaps return to it as a review when you are through with the module.

Module 37

Motivational Concepts

Module Learning Objective

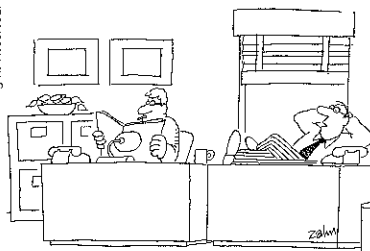
37-1

Define *motivation* as psychologists use the term, and identify the perspectives useful for studying motivated behavior.

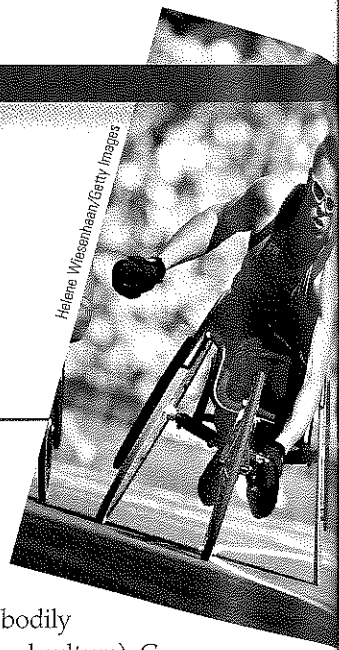
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How do psychologists define *motivation*? From what perspectives do they view motivated behavior?

Our **motivations** arise from the interplay between nature (the bodily "push") and nurture (the "pulls" from our thought processes and culture). Consider four perspectives for viewing motivated behaviors. *Instinct theory* (now replaced by the *evolutionary perspective*) focuses on genetically predisposed behaviors. *Drive-reduction theory* focuses on how our inner pushes and external pulls interact. *Arousal theory* focuses on finding the right level of stimulation. And Abraham Maslow's *hierarchy of needs* describes how some of our needs take priority over others.



"What do you think . . . should we get started on that motivation research or not?"



Instincts and Evolutionary Psychology

Early in the twentieth century, as the influence of Charles Darwin’s evolutionary theory grew, it became fashionable to classify all sorts of behaviors as instincts. If people criticized themselves, it was because of their “self-abasement instinct.” If they boasted, it reflected their “self-assertion instinct.” After scanning 500 books, one sociologist compiled a list of 5759 supposed human instincts! Before long, this fad for naming instincts collapsed under its own weight. Rather than *explaining* human behaviors, the early instinct theorists were simply *naming* them. It was like “explaining” a bright child’s low grades by labeling the child an “underachiever.” To name a behavior is *not* to explain it.

To qualify as an **instinct**, a complex behavior must have a fixed pattern throughout a species and be unlearned (Tinbergen, 1951). Such behaviors are common in other species (Module 26 described salmon returning to their birthplace, and Module 48 will describe imprinting in birds). Human behavior, too, exhibits certain unlearned fixed patterns, including infants’ innate reflexes for rooting and sucking.

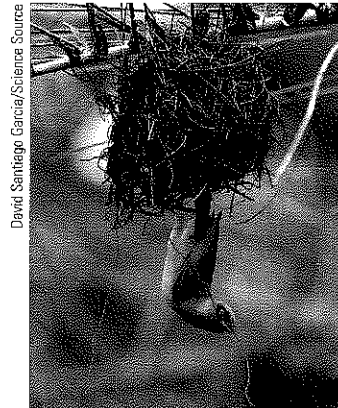
Although *instinct theory* failed to explain most human motives, *evolutionary psychology’s* underlying assumption that genes predispose species-typical behavior remains as strong as ever. We saw this in Module 29’s discussion of animals’ biological predispositions to learn certain behaviors. And we will see this in later discussions of how evolution might influence our phobias, our helping behaviors, and our romantic attractions.

AP® Exam Tip

Note that this section illustrates psychology’s biological perspective.

motivation a need or desire that energizes and directs behavior

instinct a complex, unlearned behavior that is rigidly patterned throughout a species.



Same motive, different wiring

The more complex the nervous system, the more adaptable the organism. Both humans and weaverbirds satisfy their need for shelter in ways that reflect their inherited capacities. Human behavior is flexible; we can learn whatever skills we need to build a house. The bird’s behavior pattern is fixed; it can build only this kind of nest.

Drives and Incentives

When the original instinct theory of motivation collapsed, it was replaced by **drive-reduction theory**—the idea that a physiological need creates an aroused state that drives the organism to reduce the need by, say, eating or drinking. With few exceptions, when a physiological need increases, so does a psychological *drive*—an aroused, motivated state.

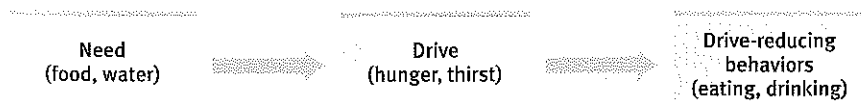
The physiological aim of drive reduction is **homeostasis**—the maintenance of a steady internal state. An example of homeostasis (literally “staying the same”) is the body’s temperature-regulation system, which works like a room thermostat. Both systems operate through feedback loops: Sensors feed room temperature to a control device. If the room temperature cools, the control device switches on the furnace. Likewise, if our body temperature cools, blood vessels constrict to conserve warmth, and we feel driven to put on more clothes or seek a warmer environment (**FIGURE 37.1**).

drive-reduction theory the idea that a physiological need creates an aroused tension state (a drive) that motivates an organism to satisfy the need.

homeostasis a tendency to maintain a balanced or constant internal state; the regulation of any aspect of body chemistry, such as blood glucose, around a particular level.

Figure 37.1

Drive-reduction theory Drive-reduction motivation arises from *homeostasis*—an organism’s natural tendency to maintain a steady internal state. Thus, if we are water deprived, our thirst drives us to drink and to restore the body’s normal state.



AP® Exam Tip

Read carefully! Homeostasis is *not* a motivation theory, but rather a biological principle that applies to some motivational theories (like drive-reduction).

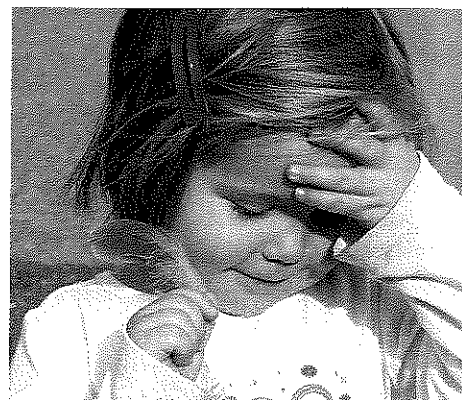
EYI

Recall from Module 29 that we are also motivated by both *intrinsic* and *extrinsic* rewards.

Driven by curiosity Baby monkeys and young children are fascinated by things they've never handled before. Their drive to explore the relatively unfamiliar is one of several motives that do not fill any immediate physiological need.



Harlow Primate Laboratory, University of Wisconsin



Glenn Switler

Not only are we *pushed* by our need to reduce drives, we also are *pulled* by **incentives**—positive or negative stimuli that lure or repel us. This is one way our individual learning histories influence our motives. Depending on our learning, the aroma of good food, whether freshly baked pizza or freshly toasted ants, can motivate our behavior. So can the sight of those we find attractive or threatening.

When there is both a need and an incentive, we feel strongly driven. The food-deprived person who smells baking bread feels a strong hunger drive. In the presence of that drive, the baking bread becomes a compelling incentive. For each motive, we can therefore ask, “How is it pushed by our inborn physiological needs and pulled by incentives in the environment?”

Optimum Arousal

We are much more than homeostatic systems, however. *Optimal arousal theory* holds that some motivated behaviors actually *increase* arousal. Well-fed animals will leave their shelter to explore and gain information, seemingly in the absence of any need-based drive. Curiosity drives monkeys to monkey around trying to figure out how to unlock a latch that opens nothing or how to open a window that allows them to see outside their room (Butler, 1954). It drives the 9-month-old infant to investigate every accessible corner of the house. It drives you to read this text, and it drives the scientists whose work this text discusses. And it drives explorers and adventurers such as Aron Ralston and George Mallory. Asked why he wanted to climb Mount Everest, the *New York Times* reported that Mallory answered, “Because it is there.” Those who, like Mallory and Ralston, enjoy high arousal are most likely to seek out intense music, novel foods, and risky behaviors (Zuckerman, 1979). They are “sensation-seekers.”

So, human motivation aims not to eliminate arousal but to seek optimum levels of arousal. Having all our biological needs satisfied, we feel driven to experience stimulation and we hunger for information. We are “infovores,” said neuroscientists Irving Biederman and Edward Vessel (2006), after identifying brain mechanisms that reward us for acquiring information. Lacking stimulation, we feel bored and look for a way to increase arousal to some optimum level. However, with too much stimulation comes stress, and we then look for a way to decrease arousal.

Two early-twentieth-century psychologists studied the relationship of arousal to performance and identified what we now call the **Yerkes-Dodson law**, suggesting that moderate arousal would lead to optimal performance (Yerkes & Dodson, 1908). When taking an exam, for example, it pays to be moderately aroused—alert but not trembling with nervousness. We have since learned that optimal arousal levels depend the task as well, with more difficult tasks requiring lower arousal for best performance (Hembree, 1988) (**FIGURE 37.2**).

incentive a positive or negative environmental stimulus that motivates behavior.

Yerkes-Dodson law the principle that performance increases with arousal only up to a point, beyond which performance decreases.

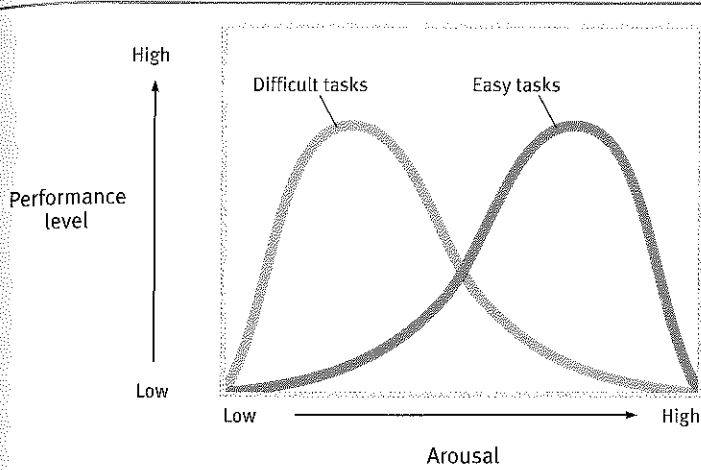


Figure 37.2
Arousal and performance

A Hierarchy of Motives

Some needs take priority over others. At this moment, with your needs for air and water hopefully satisfied, other motives—such as your desire to achieve (discussed in Module 82)—are energizing and directing your behavior. Let your need for water go unsatisfied and your thirst will preoccupy you. Just ask Aron Ralston. Deprived of air, your thirst would disappear.

Abraham Maslow (1970) described these priorities as a **hierarchy of needs** (FIGURE 37.3). At the base of this pyramid are our physiological needs, such as those for food and water. Only if these needs are met are we prompted to meet our need for safety, and then to satisfy our needs to give and receive love and to enjoy self-esteem. Beyond this, said Maslow (1971), lies the need to actualize one's full potential. (More on self-esteem and self-actualization in Modules 57 and 59.)

Near the end of his life, Maslow proposed that some people also reach a level of self-transcendence. At the self-actualization level, people seek to realize their own potential.

hierarchy of needs Maslow's pyramid of human needs, beginning at the base with physiological needs that must first be satisfied before higher-level safety needs and then psychological needs become active.

"Hunger is the most urgent form of poverty." -ALLIANCE TO END HUNGER, 2002

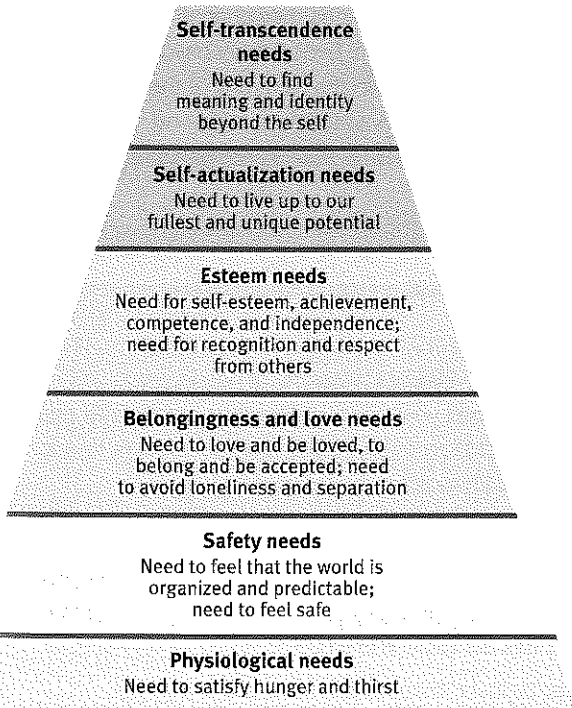


Figure 37.3
Maslow's hierarchy of needs Once our lower-level needs are met, we are prompted to satisfy our higher-level needs. (From Maslow, 1970.) For survivors of the disastrous tornadoes that swept across the Midwest and Southeastern United States in 2011, satisfying very basic needs for water, food, and safety became top priority. Higher-level needs on Maslow's hierarchy, such as respect, self-actualization, and meaning, become far less important during such times.

At the self-transcendence level, people strive for meaning, purpose, and communion that is beyond the self, that is *transpersonal* (Koltko-Rivera, 2006).

Maslow's hierarchy is somewhat arbitrary; the order of such needs is not universally fixed. People have starved themselves to make a political statement. Today's evolutionary psychologists concur with the first four levels of Maslow's needs pyramid. But they note that gaining and retaining mates, and parenting offspring, are also universal human motives (Kenrick et al., 2010).

Nevertheless, the simple idea that some motives are more compelling than others provides a framework for thinking about motivation. Worldwide life-satisfaction surveys support this basic idea (Oishi et al., 1999; Tay & Diener, 2011). In poorer nations that lack easy access to money and the food and shelter it buys, financial satisfaction more strongly predicts feelings of well-being. In wealthy nations, where most are able to meet basic needs, home-life satisfaction is a better predictor. Self-esteem matters most in individualist nations, whose citizens tend to focus more on personal achievements than on family and community identity. (TABLE 37.1 summarizes the strengths and weaknesses of the different perspectives on motivation.)

In the ensuing modules, we will consider four representative motives, beginning at the physiological level with hunger and working up through sexual motivation and the need to belong. At each level, we shall see how experience interacts with biology.

Table 37.1

Motivational Theory	Strength	Weakness
<i>Instinct Theory and Evolutionary Psychology</i>	Evolutionary psychology helps explain behavioral similarities due to adaptations from our ancestral past.	Instinct theory explains animal behavior better than human behavior; humans have few true instincts.
<i>Drive-Reduction Theory</i>	Explains our motivation to reduce arousal by meeting basic needs, such as hunger or thirst.	Does not explain why some motivated behaviors increase arousal.
<i>Optimal Arousal Theory</i>	Explains that motivated behaviors may decrease or increase arousal.	Does not explain our motivation to address our more complex social needs.
<i>Maslow's Hierarchy of Needs</i>	Incorporates the idea that we have various <i>levels</i> of needs, including lower-level physiological and safety needs, and higher-level social, self-esteem, actualization, and meaning needs.	The order of needs may change in some circumstances. Evolutionary psychologists note the absence in the hierarchy of the universal human motives to find a mate and reproduce.

Before You Move On

► ASK YOURSELF

Consider your own experiences in relation to Maslow's hierarchy of needs. Have you ever experienced true hunger or thirst that displaced your concern for other, higher-level needs? Do you usually feel safe? Loved? Confident? How often do you feel you are able to address what Maslow called your "self-actualization" needs?

► TEST YOURSELF

While on a long road trip, you suddenly feel very hungry. You see a diner that looks pretty deserted and creepy, but you are *really* hungry, so you stop anyway. What motivational perspective would most easily explain this behavior, and why?

Answers to the Test Yourself questions can be found in Appendix E at the end of the book.

Module 37 Review

37-1

How do psychologists define *motivation*? From what perspectives do they view motivated behavior?

- *Motivation* is a need or desire that energizes and directs behavior.
- The *instinct/evolutionary* perspective explores genetic influences on complex behaviors.
- *Drive-reduction theory* explores how physiological needs create aroused tension states (drives) that direct us to satisfy those needs. Environmental *incentives* can intensify

drives. Drive-reduction's goal is *homeostasis*, maintaining a steady internal state.

- Optimal arousal theory proposes that some behaviors (such as those driven by curiosity) do not reduce physiological needs but rather are prompted by a search for an optimum level of arousal.
- Abraham Maslow's *hierarchy of needs* proposes a pyramid of human needs, from basic needs such as hunger and thirst up to higher-level needs such as self-actualization and self-transcendence.

Multiple-Choice Questions

1. Which of the following is an unlearned, complex behavior exhibited by all members of a species?
 - a. Reflex
 - b. Drive
 - c. Incentive
 - d. Instinct
 - e. Motive
2. Which of the following is an aroused motivational state created by a physiological need?
 - a. Drive
 - b. Instinct
 - c. Incentive
 - d. Reflex
 - e. Motive
3. Which of the following is a conclusion that can be drawn from the Yerkes-Dodson law?
 - a. Performance on easy tasks is best when arousal is low.
 - b. Performance is best when arousal is extremely high.
 - c. Performance is best when arousal is extremely low.
 - d. Performance on difficult tasks is best when arousal is high.
 - e. Performance is best when arousal is moderate.
4. Which of the following is the lowest priority motive in Abraham Maslow's hierarchy of needs?
 - a. Belongingness and love needs
 - b. Physiological needs
 - c. Esteem needs
 - d. Self-actualization needs
 - e. Self-transcendence needs

Practice FRQs

1. How can you use Maslow's hierarchy of needs to explain why a
 - hungry young person would steal?
 - lonely new student in a school would join a club?
 - successful artist would continue to invest tremendous effort in her career?
2. Describe how three different motivational theories could explain a young man's desire to become an excellent soccer player.

(3 points)

Answer

1 point: A hungry young person would steal because of a physiological need.

1 point: A lonely new student would join a club to meet belongingness and love needs.

1 point: A successful artist would still work hard to satisfy the need for self-actualization.