

chapter

9

Learning, Memory, and Product Positioning



LEARNING OBJECTIVES

L01 Describe the nature of learning and memory.

L02 Explain the types of memory and memory's role in learning.

L03 Distinguish the different processes underlying high- and low-involvement learning.

L04 Summarize the factors affecting information retrieval from memory.

L05 Understand the application of learning to brand positioning, equity, and leverage.

Learning and memory can be tricky things for consumers and marketers. How we learn or “come to know” something is complex and multifaceted. Once we have learned something, it is hard to “unlearn” it even when we are told or suspect that it is false. Marketers must deal with the challenge of understanding learning and memory and the implications this has for marketing messages and product design.

Some bizarre, funny, and not-so-funny examples of learning and the difficulty of unlearning include:¹

- The flies etched in urinals in men's restrooms apparently act as “targets,” resulting in 80 percent less “spilling.” How men “learn” to aim for the target is not well understood.
- People given large-size buckets of five-day-old stale popcorn mindlessly eat 57 percent more popcorn than people given medium-size buckets of the same popcorn. One source of such “mindless” eating could be the “clean your plate” mantra “learned” at an early age by many children in the United States.

- We “learn” from an early age that buttons get responses via video games, door bells, and so on. Interestingly, research suggests that most “cross walk” buttons are not hooked up to anything and yet people push them endlessly in expectation of an effect.
- We have “learned” that certain noises signal successful action. Thus, while smartphones don't need a “click” for button action success (keyboard or camera), consumers often want the noise because they find it hard to “unlearn” the “noise = successful action” link.
- We have “learned” how cars should sound with combustion engines both as an operator and as pedestrians trying to stay safe. The Nissan Leaf hybrid car runs so quietly that drivers could not tell that their car was running. A synthesizer in the dashboard hooked up to speakers in the hood plays an engine sound to provide drivers with the needed feedback. To warn other people of its approach, an artificial roaring noise was added to the silent ENV hydrogen cell motorcycle.

In this chapter, we discuss the nature of learning and memory, conditioning and cognitive theories of learning, and factors affecting retrieval. Implications for marketing managers are discussed throughout, culminating with an examination of product positioning and brand equity in the final sections.

NATURE OF LEARNING AND MEMORY

L01

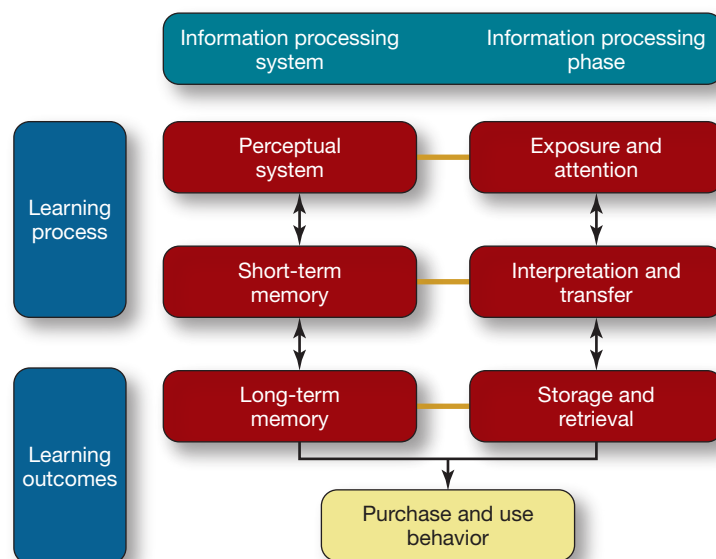
Learning is essential to the consumption process. In fact, consumer behavior is largely *learned* behavior. People acquire most of their attitudes, values, tastes, behaviors, preferences, symbolic meanings, and feelings through learning. Culture, family, friends, mass media, and advertising provide learning experiences that affect the type of lifestyle people seek and the products they consume. Consider, for example, how often your movie choices are influenced by what you read online and discussions you have with friends.

Learning is any change in the content or organization of long-term memory or behavior² and is the result of information processing. In the previous chapter, we described information processing as a series of activities by which stimuli are perceived, transformed into information, and stored. The four activities in the series are exposure, attention, interpretation, and memory.

As Figure 9-1 indicates, different information processing systems handle different aspects of learning. The perceptual system deals with information intake through exposure and attention and, as we discussed in Chapter 8, may be conscious or unconscious. Short-term memory deals with holding information temporarily while it is interpreted and transferred into long-term memory. Long-term memory deals with storing and retrieving information to be used in decisions.

These processes are highly interrelated. For example, a consumer may notice his or her favorite brand of soda on the store shelf because of a purchase goal stored in long-term

FIGURE 9-1 Information Processing, Learning, and Memory



memory. The soda's current price is brought into short-term memory through the perceptual system for processing. But a reference price may also be retrieved from long-term memory as a comparison point. Finally, price perceptions associated with the consumer's favorite brand may be updated and stored in long-term memory as a consequence of the comparison process.

MEMORY'S ROLE IN LEARNING

Memory is the total accumulation of prior learning experiences. As Figure 9–1 suggests, memory is critical to learning. It consists of two interrelated components: short-term and long-term memory.³ These are *not* distinct physiological entities. Instead, **short-term memory (STM)**, or *working memory*, is that portion of total memory that is currently activated or in use. **Long-term memory (LTM)** is that portion of total memory devoted to permanent information storage.

L02

Short-Term Memory

STM has a limited capacity to store information and sensations. In fact, it is not used for storage in the usual sense of that term. It is more like a computer file that is currently in use. Active files hold information while it is being processed. After processing is complete, the reconfigured information is printed or returned to more permanent storage such as the hard drive. A similar process occurs with STM. Individuals use STM to hold information while they analyze and interpret it. They may then transfer it to another system (write or type it), place it in LTM, or both. Thus, STM is closely analogous to what we normally call thinking. *It is an active, dynamic process, not a static structure.*


STM Is Short Lived Information in working memory decays quickly. The memory span for prices, for example, is about 3.7 seconds.⁴ The short-lived nature of STM means that consumers must constantly refresh information through **maintenance rehearsal** or it will be lost. Maintenance rehearsal is *the continual repetition of a piece of information in order to hold it in current memory for use in problem solving or transferal to LTM*. Repeating the same formula or definition several times before taking an exam is an example. Marketers frequently simulate this by repeating the brand name or a key benefit in a prominent manner several times in an ad.

STM Has Limited Capacity The limited capacity of STM means that consumers can hold only so much information in current memory. The capacity of STM is thought to be in the range of five to nine bits of information. A bit can be an individual item or a related set of items. Organizing individual items into groups of related items that can be processed as a single unit is called *chunking*. Chunking can greatly aid in the transfer (and recall) of information from memory. A recent study of toll-free *vanity numbers* shows the power of chunking. Memory for completely numeric numbers was 8 percent, memory for combinations of numbers and words (800-555-HOME) was 44 percent, and memory for all words (800-NEW-HOME) was 58 percent! The number of bits goes down as the words become meaningful chunks replacing meaningless numbers.⁵

Marketers can help consumers chunk product information by organizing detailed attribute information in messages around the more general benefits that they create. Interestingly, consumers who are product experts are better able to chunk due to highly organized memory structures. As a consequence, experts are better able to learn information and avoid information overload.⁶

ILLUSTRATION 9-1


Successful brands must enter into memory in a favorable manner, and they must be recalled when required. The brand name, visual, and ad text will enhance elaborative activities appropriate for the product.



Hopes & dreams. Husbands & wives.
Sons & daughters. In sickness & in health.
Starting a family & getting a starter home.

Life is a matter of ands. They're the moments in-between.
Between planning and execution. Dreaming and doing.
And more lives and more goals come together here.

S&T Bank
One customer at a time.

stbank.com 

CHECKING • LENDING • INSURING • SAVING • INVESTING

Elaborative Activities Occur in STM STM is often termed working memory because that's where information is analyzed, categorized, and interpreted—that is, STM is where **elaborative activities** take place. Elaborative activities are *the use of previously stored experiences, values, attitudes, beliefs, and feelings to interpret and evaluate information in working memory as well as to add relevant previously stored information*. Elaborative activities serve to redefine or add new elements to memory.

Suppose your firm has developed a new product for consumers who want to use their electronic devices safely while driving. The product is a voice-activated program that allows you to give commands to your MP3 player and to your cell phone, hands free. How will this product be categorized? The answer depends in large part on *how* it is presented. How it is presented will influence the nature of the elaborative activities that will occur, which in turn will determine how the product is remembered. Illustration 9–1 shows how the elements of an advertisement can work together to enhance elaborative activities.

Elaborative activities can involve both concepts and imagery. **Concepts** are abstractions of reality that capture the meaning of an item in terms of other concepts. They are similar to a dictionary definition of a word. **Imagery** involves concrete sensory representations of ideas, feelings, and objects. It permits a direct recovery of aspects of past experiences.

Thus, imagery processing involves the recall and mental manipulation of sensory images, including sight, smell, taste, and tactile (touch) sensations.

Pictures can increase imagery, particularly when they are *vivid*, meaning they are relatively concrete representations of reality rather than an abstraction. Pictures are not the only factor to increase imagery, however. Words and phrases in an ad can also encourage consumers to conjure up their own images (e.g., “picture it . . .,” “feel it . . .,” “imagine . . .”).

Marketers need to make sure that the words and pictures work together. For example, if the ad text invites consumers to engage in imagery processing but provides them with a boring picture, then consumers will be turned off to the message and less likely to buy the brand.⁷

Whether consumers are processing concepts or images, a key issue in learning and memory is the *extent of elaboration*. A major determinant of elaboration is consumer motivation or involvement. Elaboration is enhanced when consumers are more involved or interested in the brand, product, or message at hand (as we saw earlier, it also is facilitated by consumer expertise). Elaboration increases the chances that information will be transferred to LTM and be retrieved at a later time by increasing the processing attention directed at that information and by establishing meaningful linkages between the new information and existing information. These linkages or associations are an important part of LTM, as discussed next.

Long-Term Memory

LTM is viewed as *an unlimited, permanent storage*. It can store numerous types of information, such as concepts, decision rules, processes, and affective (emotional) states. Marketers are particularly interested in **semantic memory**, which is *the basic knowledge and feelings an individual has about a concept*. It represents the person’s understanding of an object or event at its simplest level. At this level, a brand such as Acura might be categorized as “a luxury car.”

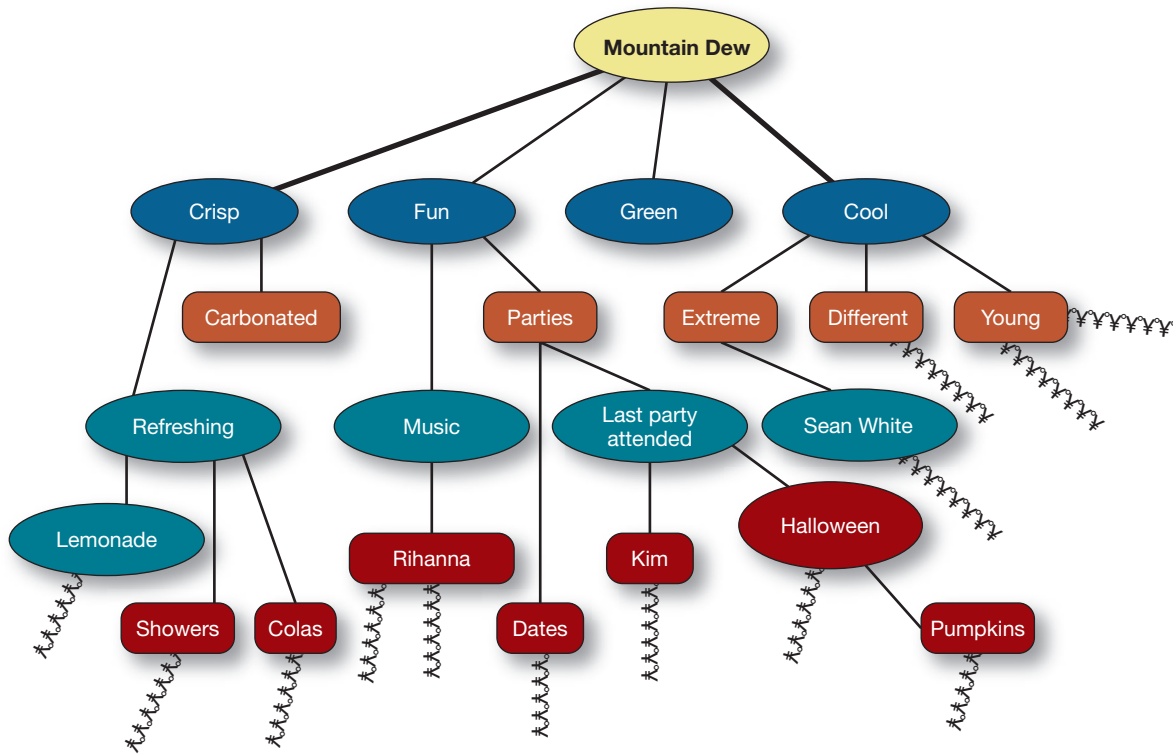
Another type of memory of interest to marketers is **episodic memory**. This is *the memory of a sequence of events in which a person participated*. These personal memories of events such as a first date, graduation, or learning to drive can be quite strong. They often elicit imagery and feelings. Marketers frequently attempt to evoke episodic memories either because their brand was involved in them or to associate the positive feelings they generate with the brand. Flashbulb memories are a special type of episodic memory. **Flashbulb memory** is *acute memory for the circumstances surrounding a surprising and novel event*.⁸

Key aspects of flashbulb memories include the following:

- They are vividly detailed and therefore highly enduring over time.
- They contain specific situational detail about location, people, activities, and felt emotions.
- They are held with a high degree of confidence.
- They are perceived as special and different from memories of ordinary or mundane experiences.

Marketers worry not only about *what* information is stored in LTM but also *how* this information is organized. Two important memory structures are schemas and scripts.

Schemas Both concepts and episodes acquire depth of meaning by becoming associated with other concepts and episodes. A pattern of such associations around a particular concept is termed a **schema** or *schematic memory*, sometimes called a *knowledge structure*. Schematic memory is a complex web of associations. Figure 9–2 provides a simplified example of a schema by showing how one might associate various concepts with Mountain Dew to form a network of meaning for that brand. Notice that our hypothetical

FIGURE 9-2 A Partial Schematic Memory for Mountain Dew


schema contains *product characteristics*, *usage situations*, *episodes*, and *affective reactions*. The source of some of the schema is personal experience, but other aspects may be completely or partially based on marketing activities.⁹ The schematic memory of a brand is the same as the brand image, which we discuss later in the chapter. It is what the consumer thinks of and feels when the brand name is mentioned.

In the partial schema shown in Figure 9–2, concepts, events, and feelings are stored in *nodes* within memory. Thus, the concept “cool” is stored in a node, as are “music,” “fun,” and “Halloween.” Each of these is associated either directly or indirectly with Mountain Dew. *Associative links* connect various concepts to form the complete meaning assigned to an item.

Associative links vary in terms of how strongly and how directly they are associated with a node. In our example, crisp, fun, green, and cool are directly associated with Mountain Dew. However, one or two of these may be strongly associated with the brand, as crisp and cool are shown to be by the bold lines in our example. Other nodes, such as fun and green, may have weaker links. Without reinforcement, the weaker links may disappear or fade over time (e.g., the Halloween party linkage). Over the longer run, so will the stronger ones (e.g., the cool linkage). Marketers spend enormous effort attempting to develop strong, easily activated links between their brands and desirable product benefits.¹⁰ The various ways in which these linkages are established and strengthened (reinforced) are discussed in the next section, on learning.

The memory activation shown in Figure 9–2 originated with the name of a particular brand. If the activation had begun with the concept “cool,” would Mountain Dew arise as a node directly linked to cool? It would depend on the total context in which the memory

was being activated. In general, multiple memory nodes are activated simultaneously. Thus, a question like “What is a cool soft drink?” might quickly activate a memory schema that links Mountain Dew directly to cool. However, a more abstract question like “What is cool?” might not because of its relatively weak and indirect connection to beverages and sodas.¹¹ Marketers expend substantial effort to influence the schema consumers have for their brands. We will discuss this process in detail later in the chapter.

Marketers also strive to influence the schema consumers have for consumption situations. For example, consumers likely have very different beverage schemas for situations such as jogging, where thirst is a key component, than for a party, where socializing and relaxing are key components. The beverage schema for jogging might include products such as water and soda and brands such as Dasani and Pepsi. The beverage schema for a party might include products such as wine and beer and brands such as Yellow Tail and Budweiser. Brands in the schematic memory that come to mind (are recalled) for a specific problem or situation such as thirst are known as the *evoked set*.

The usage situation schema to which a brand attaches itself can have major ramifications. For example, if Canada Dry Ginger Ale associated itself strongly with a “party” situation as a mixer for cocktails, then it is much less likely to be retrieved as part of the evoked set when consumers are thinking of other usage situations, such as those involving thirst.¹² We will discuss how the evoked set influences consumer decision making in Chapter 15.

Scripts *Memory of how an action sequence should occur*, such as purchasing and drinking a soft drink to relieve thirst, is a special type of schema known as a **script**. Scripts are necessary for consumers to shop effectively. One of the difficulties new forms of retailing have is teaching consumers the appropriate script for acquiring items in a new manner. This is the problem facing firms wanting to sell products via the Internet. Before these firms can succeed, their target markets must learn appropriate scripts for Internet shopping. Green marketing efforts relate in part to teaching consumers appropriate scripts for disposal that include recycling.

Retrieval from LTM The likelihood and ease with which information can be recalled from LTM is termed **accessibility**. Every time an informational node or a link between nodes is activated (accessed) in memory, it is strengthened. Thus, accessibility can be enhanced by rehearsal, repetition, and elaboration. For example, Coca-Cola might be one of the brands that always comes to mind (is retrieved) when you think of sodas because you have seen so many ads for that brand. This accessibility effect for brands is called *top-of-mind awareness*. In addition, accessibility is related to the strength and number of incoming linkages. In essence, when a concept is linked to other concepts in memory, its accessibility increases as a result of the multiple retrieval pathways. Thus, elaboration enhances retrieval by creating a rich associative network. Finally, accessibility is related to the strength and directness of links to nodes, with stronger and more direct linkages being more accessible. Thus, *cool* and *crisp* are highly accessible associations related to Mountain Dew, while *parties* and *refreshing* are less accessible. Clearly, marketers want strong and direct linkages between their brand and critical product features.

Retrieving information from LTM is not a completely objective or mechanical task. If asked to recall the sponsor of the last summer Olympics, some consumers will not remember instantly and certainly. These individuals may *construct* a memory based on limited recall and a series of judgments or inferences. For example, many might “recall” Nike because it is a dominant firm in sports equipment and apparel. Thus, it would “make sense” for Nike to be the sponsor, which could lead some consumers to believe that Nike was indeed a sponsor of the event even if it was not.¹³ Therefore, memory is sometimes shaped and changed as it is accessed.

Finally, retrieval may involve *explicit* or *implicit* memories. Traditionally, we have thought of remembering, and thus memory, as the ability to recall specific items or events. If you read this chapter and then try to answer the review questions at the end without referring back to the chapter, you are engaging in traditional memory recall. This is referred to as **explicit memory**, which is characterized by *the conscious recollection of an exposure event*. In contrast, **implicit memory** involves *the nonconscious retrieval of previously encountered stimuli*. It is a sense of familiarity, a feeling, or a set of beliefs about an item without conscious awareness of when and how they were acquired. An example of implicit memory relates to brand placements. One study found that over time, a brand's image becomes increasingly similar to the TV show in which it appears, even when consumers don't remember seeing the brand placements!¹⁴

LEARNING UNDER HIGH AND LOW INVOLVEMENT

L03

We have described learning as any change in the content or organization of long-term memory or behavior. In addition, we have described LTM in terms of schemas or associational networks. So how do people *learn* these associations? For example, how do consumers *learn* that Mountain Dew is cool or that Walmart has low prices?

A moment's reflection will reveal that people learn things in different ways. For example, buying a car or stereo generally involves intense, focused attention and processing. The outcome of these efforts is rewarded by better choices. However, most learning is of a much different nature. Even if they don't care for baseball, most people know who is playing in the World Series each year because they hear about it frequently. And people can identify clothes that are stylish even though they never really think much about clothing styles.

As just described, learning may occur in either a high-involvement or a low-involvement situation. Recall from Chapter 8 that information processing (and therefore learning) may be conscious and deliberate in high-involvement situations. Or it may be nonfocused and even nonconscious in low-involvement situations. A **high-involvement learning** situation is one in which *the consumer is motivated to process or learn the material*. For example, an individual reading *PC Magazine* prior to purchasing a computer is probably highly motivated to learn relevant material dealing with the various computer brands. A **low-involvement learning** situation is one in which *the consumer has little or no motivation to process or learn the material*. A consumer whose television program is interrupted by a commercial for a product he or she doesn't currently use or feel a desire for generally has little motivation to learn the material presented in the commercial. Much, if not most, consumer learning occurs in relatively low-involvement contexts.¹⁵

As we will see in the following sections, the way a communication should be structured differs depending on the level of involvement the audience is expected to have. Illustration 9-2 shows the FEL-PRO ad that assumes high-involvement learning and the Campbell's Select ad based on low-involvement learning. *Why does one ad assume a highly involved audience and the other a low-involvement audience? What differences do you notice between these two ads? Do those differences make sense?*

Figure 9-3 shows the two general situations and the five specific learning theories that we are going to consider. *Level of involvement is the primary determinant of how material is learned*. The solid lines in the figure indicate that operant conditioning and analytical reasoning are common learning processes in high-involvement situations. Classical conditioning and iconic rote learning tend to occur in low-involvement situations. And vicarious learning/modeling is common in both low- and high-involvement situations. We will discuss each of these theories in the following pages.

For the 6.0L Powerstroke® only Fel-Pro® has it all.

Innovative Fel-Pro PermaTorque® MLS multi-layer head gaskets for Powerstroke® 6.0L diesel engines.

- Enhanced bore bead design for robust combustion seal loading.
- Patent-pending pushrod guide hole design reduces potential for premature wear of pushrods that can lead to engine oil contamination.
- Highly advanced embossment technology creates increased spring force to provide a more robust sealing contact—under extreme loads and everyday use.
- Precisely controlled thickness of proprietary FKM rubber coating in all critical sealing areas.
- Engineered to accommodate engine overbore.
- 18mm and 20mm dowel applications.
- Designed to seal an engine that generates higher horsepower, increased combustion pressures and extreme temperatures.

Find these Fel-Pro gaskets for your Powerstroke at leading auto parts stores.

For® Powerstroke® 6.0L (Navistar)
Fel-Pro PermaTorque® MLS Head Gasket
#26374PT - 18mm dowels
#26375PT - 20mm dowels

PREDICTIVE PERFORMANCE

- Exhaustive R&D
- Strength & Innovation
- Superior Sealing

FELPRO-ONLY.com

FELPRO
THE GASKETS PROFESSIONALS TRUST™

©2007 Fel-Pro Gaskets, Inc. All rights reserved.

Delicious and satisfying, with 32 low fat varieties at 130 calories or less.*

absolutely no artificial flavors

Select Satisfies. Restores. Lifts you up.™

*per serving. © 2007 CSC Brands LP.

Conditioning

Conditioning is probably most appropriately described as a set of procedures that marketers can use to increase the chances that an association between two stimuli is formed or learned. The word *conditioning* has a negative connotation to many people and brings forth images of robot-like humans. However, the general procedure simply involves presenting two stimuli in close proximity so that eventually the two are perceived (consciously or unconsciously) to be related or associated. That is, consumers learn that the stimuli go (or do not go) together.

There are two basic forms of conditioned learning: classical and operant. *Classical conditioning* attempts to create an association between a stimulus (e.g., brand name) and some response (e.g., behavior or feeling). *Operant conditioning* attempts to create an association between a response (e.g., buying a brand) and some outcome (e.g., satisfaction) that serves to reinforce the response.

Classical Conditioning Imagine that you are marketing a new brand of pen and want consumers to feel positively about that pen. How might classical conditioning help you to associate positive feelings with your unfamiliar brand? The classical conditioning procedure would have you pair the unknown brand repeatedly together with some other stimulus that you know already *automatically* elicits positive feelings or emotions, such as popular music in an ad. The goal would be that, eventually, after repeatedly pairing the brand name and the music, the brand name alone will elicit the same positive feelings produced by the music.

The process of using an established relationship between one stimulus (music) and response (pleasant feelings) to bring about the learning of the same response (pleasant feelings) to a different stimulus (the brand) is called **classical conditioning**. Figure 9–4 illustrates this type of learning. Hearing popular music (unconditioned stimulus) automatically elicits a positive emotion (unconditioned response) in many individuals. If

ILLUSTRATION 9-2

An important judgment in designing an ad is the level of involvement the audience will have as shown by the FEL-PRO and Campbell's Select ads.

FIGURE 9-3 Learning Theories in High- and Low-Involvement Situations

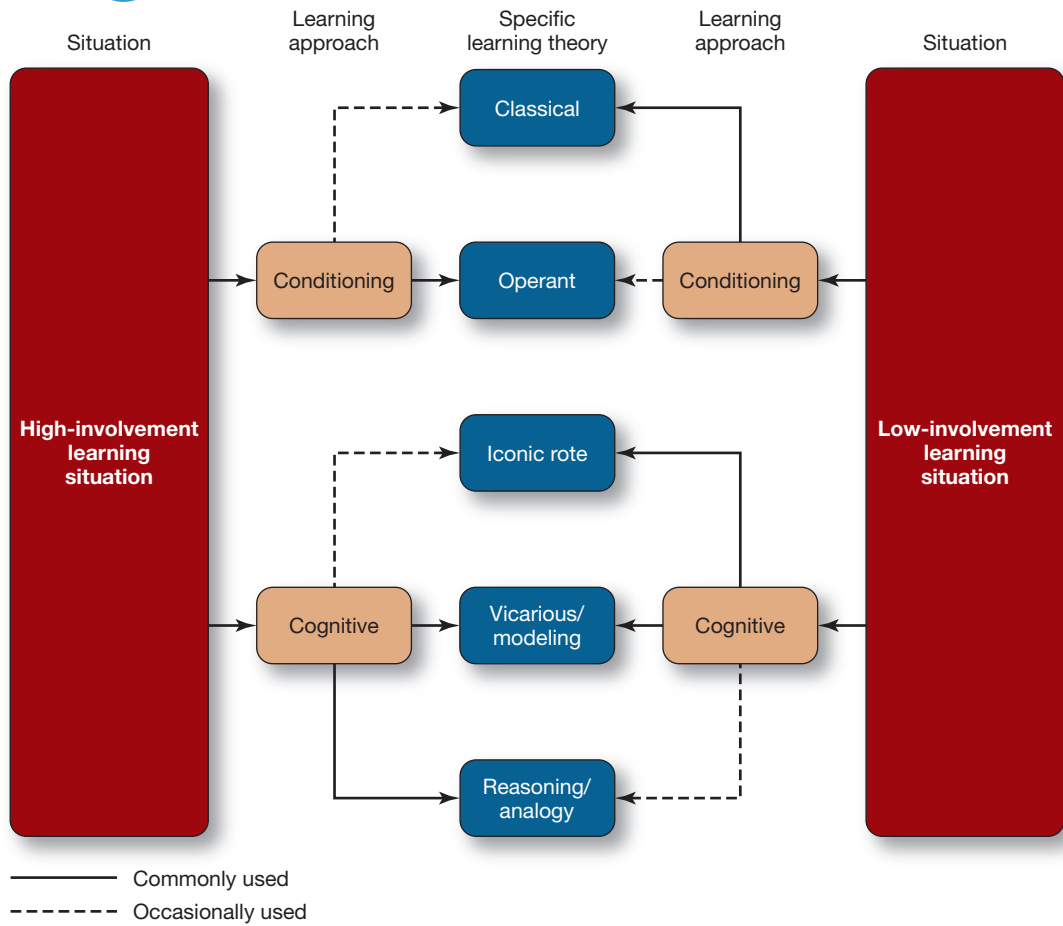
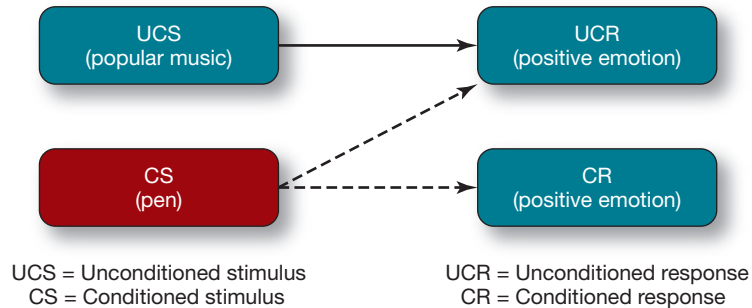


FIGURE 9-4 Consumer Learning through Classical Conditioning



this music is consistently paired with a particular brand of pen or other product (conditioned stimulus), the brand itself may come to elicit the same positive emotion (conditioned response).¹⁶ In addition, some features, such as the masculine/feminine qualities of the unconditioned stimulus, may also become associated with the conditioned stimulus.

That is, using a scene showing males or females in an activity that elicits positive emotions may not only cause a positive emotional response to a brand consistently paired with it, but also cause the brand to have a masculine or a feminine image.¹⁷ Thus, classical conditioning can lead to positive attitudes by influencing brand feelings and beliefs. This is important because, as we will see in later chapters, attitudes influence information search, trial, and brand choice.

Other marketing applications of classical conditioning include:

- Consistently advertising a product on exciting sports programs may result in the product itself generating an excitement response.
- An unknown political candidate may elicit patriotic feelings by consistently playing patriotic background music in his or her commercials and appearances.
- Christmas music played in stores may elicit emotional responses associated with giving and sharing, which in turn may increase the propensity to purchase.

Learning via classical conditioning is most common in low-involvement situations, where relatively low levels of processing effort and awareness are involved.¹⁸ However, after a sufficient number of low-involvement “scannings” or “glances at” the advertisement, the association may be formed or learned.

Operant Conditioning Operant conditioning (or instrumental learning) involves rewarding desirable behaviors such as brand purchases with a positive outcome that serves to reinforce the behavior.¹⁹ The more often a response is reinforced, the more likely it will be repeated in the future as consumers *learn* that the response is associated with a positive outcome.

Imagine that you are marketing a snack called Pacific Snax’s Rice Popcorn. You believe your product has a light, crisp taste that consumers will like. But how can you influence them to learn to consume your brand? One option, based on the operant conditioning procedure, would be to distribute a large number of free samples through the mail, at shopping malls, or in stores. Many consumers would try the free sample (desired response). To the extent that the taste of Rice Popcorn is indeed pleasant (a positive outcome that serves as a reinforcement), the probability of continued consumption is increased. This is shown graphically in Figure 9–5.

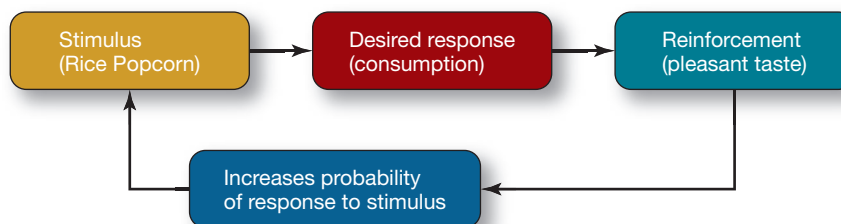
Unlike the relatively automatic associations created by classical conditioning, operant conditioning requires that consumers first engage in a deliberate behavior and come to understand its power in predicting positive outcomes that serve as reinforcement. As suggested in Figure 9–3, such learning is common under conditions of higher involvement.

Operant conditioning often involves influencing consumers to purchase a specific brand or product (desired response). Thus, a great deal of marketing strategy is aimed at securing an initial trial. Free samples (at home or in the store), special price discounts on

Consumer Learning by Operant Conditioning

FIGURE

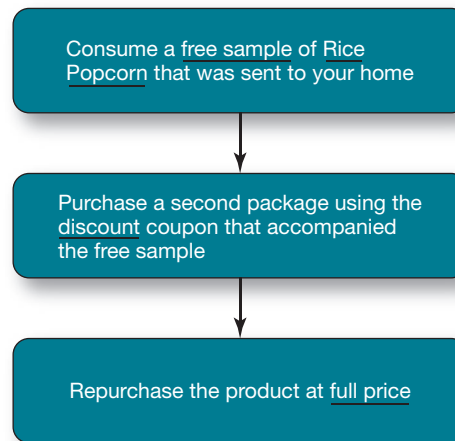
95



FIGURE

96

The Process of Shaping in Purchase Behavior



new products, and contests all represent rewards offered to consumers to try a particular product or brand. If they try the brand under these conditions and like it (reinforcement), they are likely to take the next step and purchase it in the future. This process of encouraging partial responses leading to the final desired response (consume a free sample, buy at a discount, buy at full price) is known as **shaping** and is illustrated in Figure 9–6.

In one study, 84 percent of those given a free sample of a chocolate while in a candy store made a purchase, whereas only 59 percent of those not provided a sample made a purchase. Thus, shaping can be very effective. Illustration 9–3 shows an ad for Ciba Vision Dailies lenses. This ad is designed to induce trial, the first step in shaping.

While reinforcement increases the likelihood of behavior such as a purchase being repeated, a negative consequence (punishment) has exactly the opposite effect. Thus, the purchase of a brand that does not function properly greatly reduces the chances of future purchases of that brand. This underscores the critical importance of consistent product quality.

Operant conditioning is used widely by marketers. The most common application is to offer consistent-quality products so that the use of the product to meet a consumer need is reinforcing. Other applications include:

- Direct mail or personal contact after a sale that congratulates the purchaser for making a wise purchase.
- Giving extra reinforcement for purchasing a particular brand, such as rebates, toys in cereal boxes, or discount coupons.
- Giving free product samples or introductory coupons to encourage product trial (shaping).
- Making store interiors, shopping malls, or downtown areas pleasant places to shop (reinforcing) by providing entertainment, controlled temperature, exciting displays, and so forth.

The power of operant conditioning was demonstrated by an experiment conducted by an insurance company. More than 2,000 consumers who purchased life insurance over a one-month period were randomly divided into three groups. Two of the groups received reinforcement after each monthly payment in the form of a nice “thank-you” letter or telephone call. The third group received no such reinforcement. Six months later, 10 percent

of the members of the two groups that received reinforcement had terminated their policies, while 23 percent of those who had not received reinforcement had done so! Reinforcement (being thanked) led to continued behavior (sending in the monthly premium).²⁰

Cognitive Learning

Cognitive learning encompasses all the mental activities of humans as they work to solve problems or cope with situations. It involves learning ideas, concepts, attitudes, and facts that contribute to our ability to reason, solve problems, and learn relationships without direct experience or reinforcement. Cognitive learning can range from very simple information acquisition (as in iconic rote learning) to complex, creative problem solving (as in analytical reasoning). Three types of cognitive learning are important to marketers.

Iconic Rote Learning Learning a concept or the association between two or more concepts in the absence of conditioning is known as **iconic rote learning**. For example, one may see an ad that states “Ketoprofen is a headache remedy” and associate the new concept “ketoprofen” with the existing concept “headache remedy.” Notice the distinction from conditioning in that there is neither an unconditioned stimulus (classical) nor a direct reward or reinforcement (operant) involved.

Also, it is important to point out that unlike more complex forms of cognitive learning, iconic rote learning generally involves considerably less cognitive effort and elaboration.²¹ A substantial amount of low-involvement learning involves iconic rote learning. Numerous repetitions of a simple message that occur as the consumer scans the environment may result in the essence of the message being learned. Through iconic rote learning, consumers may form beliefs about the characteristics or attributes of products without being aware of the source of the information. When the need arises, a purchase may be made based on those beliefs.²²

Vicarious Learning or Modeling It is not necessary for consumers to directly experience a reward or punishment to learn. Instead, they can observe the outcomes of others’ behaviors and adjust their own accordingly.²³ Similarly, they can use imagery to anticipate the outcome of various courses of action. This is known as **vicarious learning** or **modeling**.

This type of learning is common in both low- and high-involvement situations. In a high-involvement situation, such as purchasing a new suit shortly after taking a job, a consumer may deliberately observe the styles worn by others at work or by role models from other environments, including advertisements. Many ads encourage consumers to imagine the feelings and experience of using a product.²⁴ Such images not only enhance learning about the product, but may even influence how the product is evaluated after an actual trial.

A substantial amount of modeling also occurs in low-involvement situations. Throughout the course of their lives, people observe others using products and behaving in a great variety of situations. Most of the time they pay little attention to these behaviors. However,



ILLUSTRATION 9-3

Marketers design products that they hope will meet consumer needs. When a need is met by a product, the probability of its being purchased in the future increases. A critical step in the process is the initial purchase or trial of the product. This ad encourages such a trial as shown by the Ciba Vision Dailies ad.

ILLUSTRATION 9-4

Ads not only convey information and elicit feelings; they can challenge existing assumptions, even implicit assumptions, and cause readers to think and reexamine their beliefs.



over time they learn that certain behaviors, and products, are appropriate in some situations and others are not.

Analytical Reasoning The most complex form of cognitive learning is **analytical reasoning**. In reasoning, individuals engage in creative thinking to restructure and recombine existing information as well as new information to form new associations and concepts. Information from a credible source that contradicts or challenges one's existing beliefs will often trigger reasoning.²⁵ The ad in Illustration 9-4 challenges implicit consumer beliefs.

One form of analytical reasoning is the use of analogy. **Analogical reasoning** is *an inference process that allows consumers to use an existing knowledge base to understand a new situation or object*. That is, it allows consumers to use knowledge about

something they are familiar with to help them understand something they are not familiar with. For example, if you have not tried or adopted a digital reader such as the Kindle or nook, you may learn about it by

relating it to your laptop computer and Word documents. Your computer allows for digital storage and downloading of documents which you “open” and “read” on a screen. You might reason that this is much like downloading, opening, and reading any digital content on any digital device. Given the similarities, you might correctly infer that digital readers allow for convenient and mobile access to your online books and magazines. You may also incorrectly infer that flipping through pages and finding your place will be difficult and that reading in such a format will be “hard on your eyes.” Thus, from the analogical comparison you could come away with a relatively complete (though in some areas perhaps inaccurate) set of beliefs about the digital reader based on its similarity to your laptop computer and the Word documents you already use.²⁶

Learning to Generalize and Differentiate

Regardless of which approach to learning is applicable in a given situation, consumers' ability to differentiate and generalize from one stimulus to another (for example, one brand to another) is critical to marketers.

Stimulus discrimination or differentiation refers to the *process of learning to respond differently to similar but distinct stimuli*. This process is critical for marketers who want consumers to perceive their brands as possessing unique and important features compared with other brands. For example, the management of Bayer aspirin feels that consumers should not see its aspirin as being the same as other brands. In order to obtain a premium price or a large market share, Bayer must teach consumers that its aspirin is distinct from other brands. Stimulus discrimination is an important consideration in brand image and product positioning, discussed later in the chapter.²⁷

Stimulus discrimination is critical when brand scandals erupt. Scandals don't always hurt just the scandalized brand but can damage competitors in that industry, an effect termed *spillover*. One of the best ways for competitors to protect against spillover from scandals is to be highly differentiated from the scandalized brand.²⁸

Summary of Learning Theories with Examples of Involvement Level

TABLE 9-1

Theory	Description	High-Involvement Example	Low-Involvement Example
Classical conditioning	A response elicited by one object is elicited by a second object if both objects frequently occur together.	The favorable emotional response elicited by the word <i>America</i> comes to be elicited by a car brand after repeated exposure to its <i>Made in America</i> campaign. This response is in addition to any cognitive learning that may have occurred.	The favorable emotional response elicited by a song in an ad for a new breath mint comes to be elicited by that brand after repeated pairing with the song even though the consumer pays little attention to the ad.
Operant conditioning	A response that is reinforced is more likely to be repeated when the same (or similar) situation arises in the future.	A suit is purchased after extensive thought and the consumer finds that it is comfortable and doesn't wrinkle. A sport coat made by the same firm is later purchased because of the positive experience with their suits.	A familiar brand of peas is purchased without much thought due to the low importance of the decision. The peas taste "fresh," so the consumer continues to purchase this brand.
Iconic rote learning	A concept or the association between two concepts is learned without conditioning.	A consumer with little expertise about Blu-ray players tries hard to learn brand information by examining it carefully several times. Learning is limited, however, because his or her lack of expertise inhibits elaboration.	A consumer learns a company's most recent jingle because it is catchy and can't stop replaying it in his or her head.
Vicarious learning or modeling	Behaviors are learned by watching the outcomes of others' behaviors or by imagining the outcome of a potential behavior.	A consumer carefully watches the reactions that other co-workers have to her friend's new briefcase before deciding to buy one.	A child learns that people dress up for special occasions without really ever thinking about it.
Analytical reasoning	Individuals use thinking to restructure and recombine existing and new information to form new associations and concepts.	A consumer buying a car carefully processes information about a new gas/electric hybrid car by using the analogy of homes powered by solar energy.	When a store is out of black pepper, a consumer buys white pepper instead based on the quick reasoning that "pepper is pepper."

Stimulus generalization, often referred to as the *rub-off effect*, occurs when a response to one stimulus is elicited by a similar but distinct stimulus.²⁹ Thus, a consumer who learns that Nabisco's Oreo cookies taste good and therefore assumes that the company's new Oreo Chocolate Cones will also taste good has engaged in stimulus generalization. Stimulus generalization is common and provides a major source of brand equity and opportunities for brand extensions, which are discussed later in the chapter.

Summary of Learning Theories

Theories of learning help us understand how consumers learn across a variety of situations. We have examined five specific learning theories: classical conditioning, operant conditioning, iconic rote learning, vicarious learning/modeling, and analytical reasoning. Each of these learning theories can operate in a high- or a low-involvement situation, although some are more common in one type of situation than another. Table 9-1 summarizes these theories and provides examples from both high- and low-involvement contexts.

LEARNING, MEMORY, AND RETRIEVAL

Chrysler's growth slowed considerably in the late 2000s,³⁰ as did Gillette's in the early 2000s,³¹ Saturn's in the early 1990s,³² and L&M cigarettes' in the 1980s.³³ In each case, at least some of the decline in growth was attributed to sharply reduced advertising. As one executive stated,

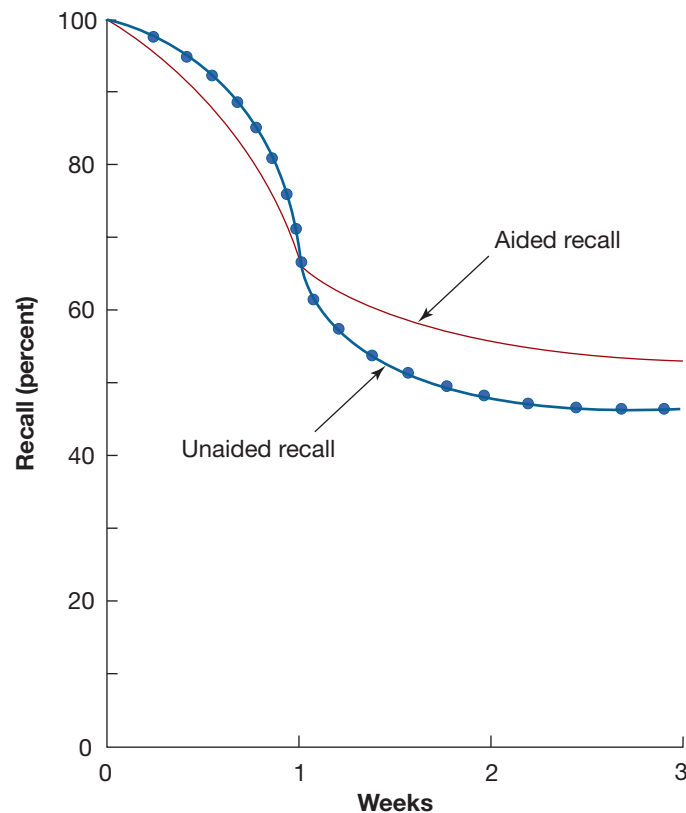
Some time after the company moved away from advertising and marketing, it became clear that people would quickly forget about our products if we didn't support them in the marketplace.³⁴

These examples emphasize that marketers want consumers to learn *and* remember positive features, feelings, and behaviors associated with their brands. However, consumers forget. In conditioned learning, forgetting is often referred to as **extinction** because the desired response (e.g., pleasant feelings or brand purchase) decays or dies out if learning is not repeated and reinforced. In cognitive learning, forgetting is often referred to as a **retrieval failure** because information that is available in LTM cannot be accessed, that is, retrieved from LTM into STM.

Two aspects of forgetting that are of concern to marketers are the *likelihood of forgetting* in any given situation and the *rate of forgetting*. Figure 9-7 illustrates a commonly found rate of forgetting for advertising. In this study, aided and unaided recall of four advertisements from *American Machinist* magazine were measured. As can be seen, the probability of ad recall (likelihood) dropped rapidly over the first five days and then stabilized (rate).

At times, marketers or regulatory groups desire to accelerate forgetting or extinction. For example, the American Cancer Society and other organizations offer programs designed to help individuals “unlearn” smoking behavior. Manufacturers want consumers to forget unfavorable publicity or outdated product images. *Corrective advertising*, a

FIGURE 9-7 Forgetting over Time: Magazine Advertisement



Source: LAP Report #5260.1 (New York: Weeks McGraw-Hill, undated). Reprinted with permission from McGraw-Hill Companies, Inc.

government requirement that firms remove inaccurate learning caused by past advertising, is described in Chapter 20.

Consumers forget brands, brand associations, and other information for a variety of reasons. First, learning may be weak to begin with. Second, information from competing brands and ads may cause memory interference. Third, the response environment (e.g., the retail store) may not be set up to encourage retrieval of previously learned information (e.g., from advertising). We turn to these issues next.

Strength of Learning

How can the HIV Alliance teach you to minimize your AIDS risk so that you will not forget? Or how can Neutrogena teach you about its line of sunless tanning products so you remember key features when shopping at CVS? That is, what is required to bring about a long-lasting learned response?

One factor is strength of learning. The stronger the original learning (e.g., of nodes and links between nodes), the more likely relevant information will be retrieved when required. *Strength of learning* is enhanced by six factors: *importance*, *message involvement*, *mood*, *reinforcement*, *repetition*, and *dual coding*.

Importance Importance refers to the value that consumers place on the information to be learned. Importance might be driven by inherent interest in the product or brand, or by the need to make a decision in the near future. The more important it is for the individual to learn a particular behavior or piece of information, the more effective and efficient he or she becomes in the learning process. This is largely due to the greater elaborative activities involved in fully processing and categorizing the material.

One emerging area of interest to marketers is how bilingual consumers process and recall second-language ads. For example, if Hispanic consumers process an ad in English, will it still be as effective as when they process the same ad in Spanish? Generally speaking, processing an ad in a second language is more difficult. This tends to reduce learning and recall for ads in a consumer's second language. Does this mean that second-language ads can never be effective? The answer appears to depend on importance. When importance is high, bilingual consumers expend more processing effort to understand the second-language ad, leading to greater learning and recall.³⁵

Importance is one dimension that separates high-involvement learning situations from low-involvement situations. Therefore, high-involvement learning tends to be more complete than low-involvement learning.³⁶ Unfortunately, marketers are most often confronted with consumers in low-involvement learning situations.

Message Involvement When a consumer is not motivated to learn the material, processing can be increased by causing the person to become involved *with the message itself*. For example, playing an instrumental version of a popular song with lyrics related to product attributes ("Like a rock" in Chevrolet pickup ads) may cause people to "sing along," either out loud or mentally. This deepened involvement with the message, relative to merely listening to the lyrics being sung, increases the extent of processing of the message and memory of the associated features or theme.³⁷

In Chapter 8 we discussed various strategies for increasing consumer attention including incongruity, rhetoric, incomplete messages, and interesting ads with plots and surprise endings. These strategies also tend to enhance message involvement and thus lead to stronger learning and memory.³⁸

Several issues regarding message involvement are important to consider. First, there is evidence that scent may be important to memory. One study found that positive scents

present during exposure to an ad increased attention to the ad and resulted in higher brand recall. Not surprisingly, marketers are currently developing technologies that will allow for “scent-emitting” technologies for Internet applications and in-store kiosks!³⁹

A second issue is the role of suspense. Sometimes marketers wait until the very end of a message to reveal the brand name in an attempt to attract interest and attention. However, this strategy must be used with caution because waiting until the end of an ad to reveal the brand gives consumers little opportunity to integrate new information into their existing brand schemas. As a result, the associative linkages are weaker and memory is reduced. These results suggest that marketers should strongly consider mentioning the brand relatively early in any marketing message.⁴⁰

A final issue regards message strategies that highlight a brand’s personal relevance to the consumer. One such strategy is self-referencing. **Self-referencing** indicates that consumers are relating brand information to themselves. The “self” is a powerful memory schema, and integrating brand information into this schema enhances learning and memory. Self-referencing can be encouraged in ads by using nostalgia appeals, which encourage consumers to remember past personal experiences.⁴¹ It can also be encouraged by using language such as “you” and “your” (second-person pronoun).

Mood Get happy, learn more? Research indicates that this is indeed true. A positive mood during the presentation of information such as brand names enhances learning. A positive mood during the reception of information appears to enhance its relational elaboration—it is compared with and evaluated against more categories. This produces a more complete and stronger set of linkages among a variety of other brands and concepts, which in turn enhances retrieval (access to the information).⁴²

Learning enhancement caused by a positive mood suggests the types of programs that marketers attempting to encourage consumer learning should advertise on. Likewise, it suggests that those commercials that enhance one’s mood would also increase learning.⁴³

Reinforcement Anything that increases the likelihood that a given response will be repeated in the future is considered **reinforcement**. While learning frequently occurs in the absence of reinforcement, reinforcement has a significant impact on the speed at which learning occurs and the duration of its effect.

A *positive reinforcement* is a pleasant or desired consequence. A couple who likes Mexican food sees an ad for a new Chipotle Mexican Grill in their area and decides to try it. They enjoy the food, service, and atmosphere. They are now more likely to select the Chipotle Mexican Grill the next time they dine out.

A *negative reinforcement* involves the removal or the avoidance of an unpleasant consequence. Vicks ads promise to relieve sinus pain and pressure. If they convince a consumer to try the sinus formula and it performs well, this consumer is likely to purchase and use it again in the future and, based on stimulus generalization, perhaps try other Vicks products as well.

Illustration 9–5 is an ad for KitchenAid which provides an additional example of reinforcement in that it suggests the positive outcomes of using their brand.

ILLUSTRATION 9-5

Reinforcement is anything that increases the probability that a response will be repeated in the future. This KitchenAid ad utilizes positive reinforcement.



Earworms—Music That Gets Stuck in Our Heads

Through repetitive exposure, consumers unintentionally, inattentively, unknowingly learn the jingles, and songs, which lie dormant for days, months, years, even decades in the consumers' memory that on occasion can be triggered and brought to awareness by a fragrance, a few musical notes, a flash of a picture. Such recall may be accompanied by the feeling of surprise—the unearthing of buried information—and nostalgia—memories tied to the music. Soon, however, the tune returns to its state of dormancy.⁴⁴

However, some jingles and songs in memory refuse to be “turned off” and play in an endless, repetitive loop in our heads for hours, days, and, for a small minority, even weeks or months. They pop up and demand to be sung or hummed repeatedly. They are called *earworms*. Some 98 percent of people have experienced this annoying condition. In a recent study, the top four earworms were

- Chili’s “Baby Back Ribs” jingle.
- “Who Let the Dogs Out” by Baha Men.
- “We Will Rock You” by Queen.
- Kit-Kat candy-bar jingle (“Gimme a Break . . .”).

Music most likely to cause an earworm is simple, upbeat, and repetitive and has an element of the

unexpected—like a rhythmic variation, a shifting time signature, or an extra beat.

Music is a ubiquitous component of commercials. Sometimes the music is created specifically for the product—Chili’s “Baby Back Ribs,” Dr. Pepper’s “I’m a Pepper.” Sometimes the music is a piece of popular music specially culled to appeal to the target market (e.g., Apple’s use of U-2’s “Vertigo”) and sometimes music is selected for its ability to enhance the features of the product—Rolling Stone’s “Start Me Up” for a new Windows release.

As annoying as earworms can be, they do prove that music serves as a hook of sorts for brands. A better understanding of earworms may be key to a better understanding of the automaticity of music and memory.

Critical Thinking Questions

1. Have you experienced earworms? What song got stuck in your head? How long did it last?
2. What is your opinion of musicians licensing their music to advertisements? Is this “selling out” or is it a smart way for a win-win for marketers and musicians?
3. What are the (dis)advantages of using popular music in advertisements? Original music?

Punishment is the opposite of reinforcement. It is any consequence that decreases the likelihood that a given response will be repeated in the future. If the couple who tried the Chipotle Mexican Grill described earlier thought that the service was bad or that the food was poorly prepared, they would be unlikely to patronize it in the future.

Obviously, it is critical for marketers to determine precisely what reinforces consumer purchases so they can design promotional messages and products that encourage initial and repeat purchases.

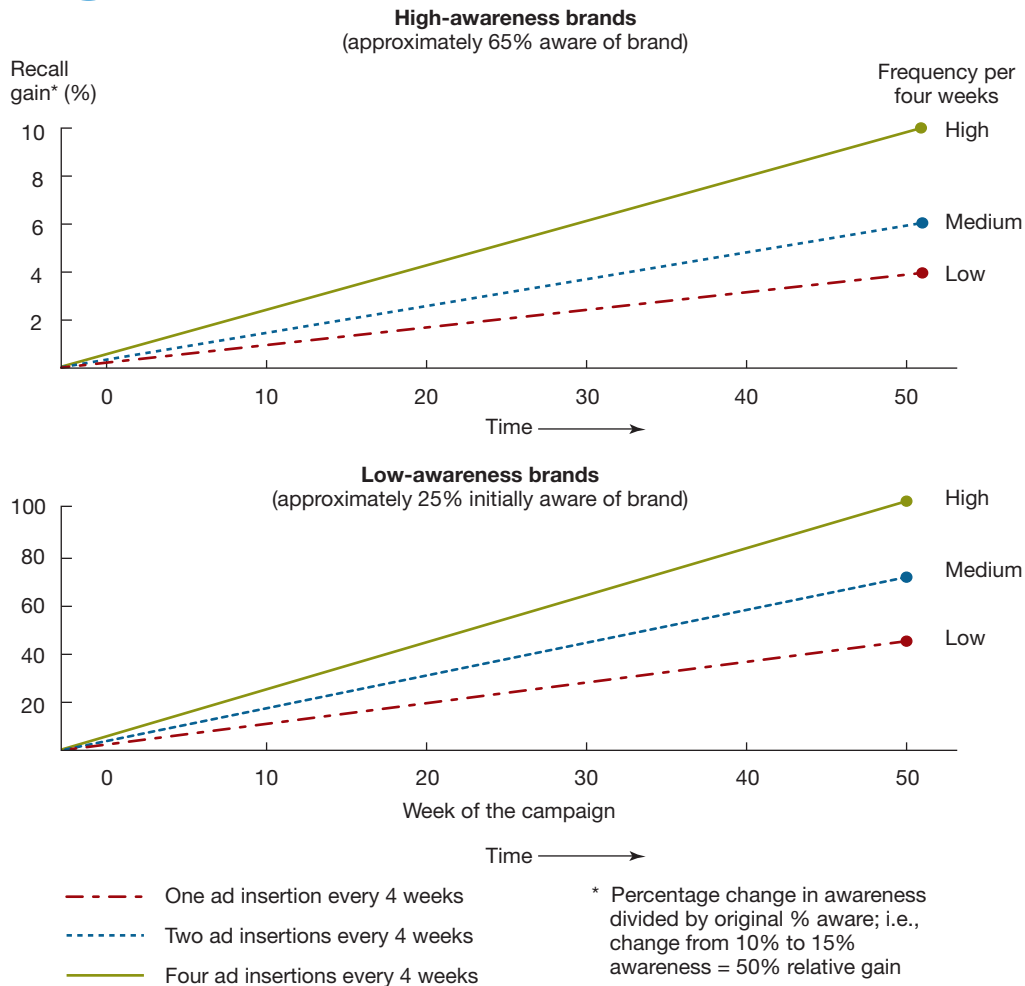
Repetition Repetition enhances learning and memory by increasing the accessibility of information in memory or by strengthening the associative linkages between concepts.⁴⁵ Quite simply, the more times people are exposed to information or engage in a behavior, the more likely they are to learn and remember it. For example, compared with one showing of a Miller Lite beer commercial, three showings during a championship baseball game produced two-and-one-third times the recall.⁴⁶ For reasons that are not completely clear, certain music “motivates” automatic self-repetition on the part of the consumer, which creates stronger learning and brand associations, as discussed in Consumer Insight 9–1.

The effects of repetition depend, of course, on importance and reinforcement. Less repetition of an advertising message is necessary for someone to learn the message if the subject matter is important or if there is a great deal of relevant reinforcement. Since many advertisements do not contain information of current importance to consumers or direct rewards for learning, repetition plays a critical role in the promotion process for many products.⁴⁷ As we saw earlier, classical conditioning and iconic rote learning (low-involvement learning) rely heavily on repetition.

Figure 9–8, shows how ad repetition affects recall for low and high awareness brands. High repetition works better than low and the gains in recall are more pronounced the longer the campaign runs and for low awareness brands.⁴⁸

Both the number of times a message is repeated and the timing of those repetitions affect the extent and duration of learning and memory.⁴⁹ Figure 9–9 illustrates the relationship between repetition timing and product recall for a food product. One group of homemakers, represented by the curved line in the figure, was exposed to a food product advertisement

FIGURE 9-8 Impact of Repetition on Brand Awareness for High- and Low-Awareness Brands



Source: A Study of the Effectiveness of Advertising Frequency in Magazines. © 1993 Time Inc. Reprinted by permission.

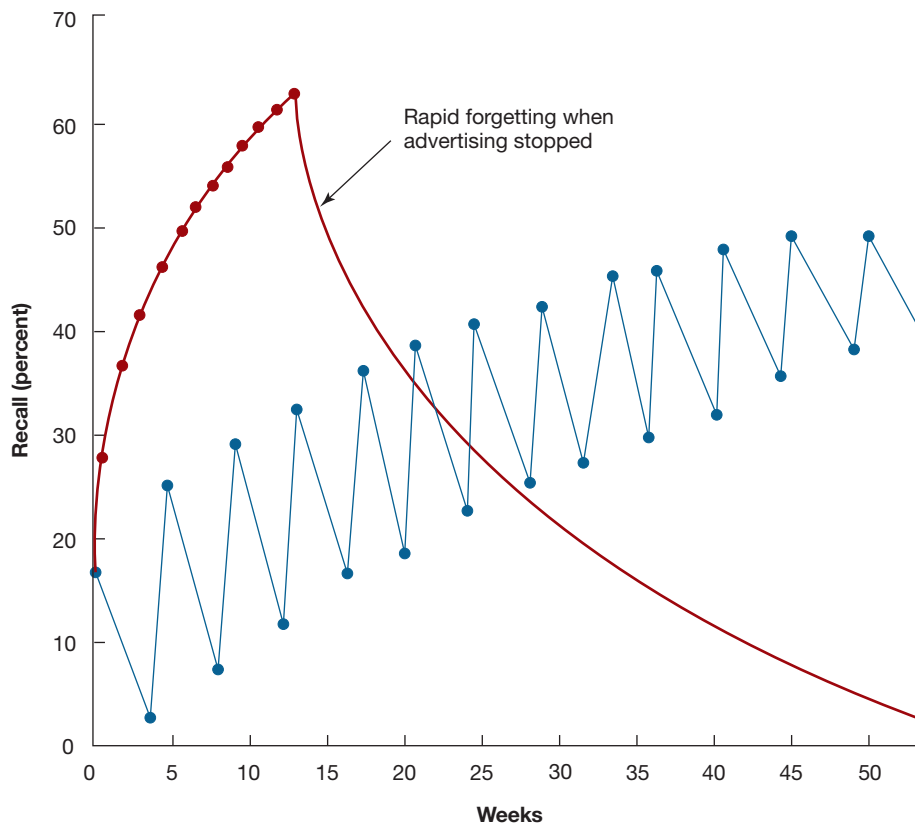
once a week for 13 consecutive weeks. For this group, product recall increased rapidly and reached its highest level during the 13th week. Forgetting occurred rapidly when advertising stopped, and recall was virtually zero by the end of the year.

A second group of homemakers was exposed to the same 13 direct-mail advertisements. However, they received one ad every four weeks. The zigzag line in the figure shows the recall pattern for this group. In this case, learning increased throughout the year, but substantial forgetting occurred between message exposures.

Given a finite budget, how should a firm allocate its advertising across a budget cycle—should it concentrate it all at once or spread it out over time? The answer depends on the task. Any time it is important to produce widespread knowledge of the product rapidly, such as during a new-product introduction, frequent (close together) repetitions should be used. This is referred to as **pulsing**. Thus, political candidates frequently hold back a significant proportion of their media budgets until shortly before the election and then use a media blitz to ensure widespread knowledge of their desirable attributes. More long-range programs, such as store or brand image development, should use more widely spaced repetitions.⁵⁰

Repetition Timing and Advertising Recall

FIGURE



Source: Reprinted from H. J. Zielski, "The Remembering and Forgetting of Advertising," *Journal of Marketing*, January 1959, p. 240, with permission from The American Marketing Association. The actual data and a refined analysis were presented in J. L. Simon, "What Do Zielski's Data Really Show about Pulsing?," *Journal of Marketing Research*, August 1979, pp. 415–20.

Marketers must walk a fine line in terms of repetition. Too much repetition can cause consumers to actively shut out the message, evaluate it negatively, or disregard it, an effect called **advertising wearout**.⁵¹ One strategy for avoiding wearout is to utilize variations on a common theme.⁵² For example, ads for Target continually emphasize core brand themes and the “red dot” symbol. However, they have done so over time in different and interesting ways, including roaming animated spokes characters, a white dog with a red dot around one eye, and so on. Cross-cultural research suggests that a consistent theme with a varied execution is an effective strategy for avoiding advertising wearout in Southeast Asia as well.⁵³

Dual Coding Consumers can store (code) information in different ways. Storing the same information in different ways (dual coding) results in more internal pathways (associative links) for retrieving information. This in turn can increase learning and memory.

One example of dual coding is when consumers learn information in two different contexts—for example, a consumer sees two ads for the same brand of dandruff shampoo, one with an office theme and one with a social theme. The varied theme (context) provides multiple paths to the brand and therefore enhances recall later on. Illustration 9–6 shows one theme that Clorox uses for its disinfectant products. It has other themes as well. By using multiple themes for its disinfectant products, Clorox can enhance consumer memory beyond its traditional bleach products.

Another example of dual coding relates to information being stored in different memory modes, such as verbal versus visual.⁵⁴ Dual coding helps explain why *imagery*

ILLUSTRATION 9-6

Using varied themes across ads can aid dual coding and enhance memory. Note the differences between this Clorox ad and others you may have seen.



enhances memory. High-imagery stimuli leave a dual code because they are stored in memory on both verbal and pictorial dimensions, whereas low-imagery stimuli are coded only verbally. As a consequence, high-imagery brand names such as Jolt and Mustang are substantially easier to learn and remember than low-imagery names.

Echoic memory—memory of sounds, including words—is another memory mode that appears to have characteristics distinct from visual and verbal memory.⁵⁵ This provides the opportunity for dual coding when the sound component of a message (e.g., background music) conveys similar meanings to that being conveyed by the verbal message.⁵⁶

Learning and memory appear to be enhanced when the key ideas communicated through one mode are consistent with those communicated through other modes.⁵⁷ For example, one study finds that having the picture (visual) and text (verbal) convey consistent ideas makes it easier for bilingual consumers to process an ad in their second language. The result is greater learning and memory of the second-language ad.⁵⁸

Memory Interference

Sometimes consumers have difficulty retrieving a specific piece of information because other related information in memory gets in the way. This effect is referred to as **memory interference**. A common form of interference in marketing is due to competitive advertising. For example, seeing an ad for Canada Dry Ginger Ale might interfere with your memory of Mountain Dew. Competitive advertising makes it harder for consumers to recall any given advertisement and its contents. And even if they can recall the contents of a specific ad, they will often have a hard time associating that ad with a specific brand. As a consequence, competitive advertising can either reduce memory for the brand claims made in a specific advertisement or lead to brand-claim confusion across advertisements for competing brands.⁵⁹

Competitive advertising interference increases as the number of competing ads within the same product category increases and as the similarity of those ads to each other increases. Given the high levels of advertising clutter, it should not be surprising that this is an area of concern for marketers and advertisers. The major question is, *What can marketers do to decrease competitive interference?* A number of strategies exist, many related to the learning and memory concepts we discussed earlier.

Avoid Competing Advertising One strategy is to avoid having your ad appear in the same set of ads (same pod in a TV format) as your competitors'. Some companies actually pay a premium to ensure this exclusivity. Another strategy, called *recency planning*, involves trying to plan advertising exposures so that they occur as close in time to a consumer purchase occasion as possible. The idea behind this concept is that reducing the time to purchase reduces the chances that an ad for a competing brand will be seen prior to purchase.⁶⁰

Strengthen Initial Learning Another strategy is to increase the strength of the initial learning because stronger learning is less subject to memory interference. Evidence for the value of this strategy comes from the fact that memory interference is less pronounced in high-involvement contexts and for highly familiar brands. This is not surprising when you consider that high-involvement learning should result in stronger brand schemas and that brand schemas for familiar brands are stronger than those for unfamiliar brands.⁶¹

Additional evidence for the role of learning comes from advertising strategies that encourage dual coding. Specifically, brands can reduce competitive interference by showing different ad versions for the same brand (shampoo ad in office context and social context) or by varying the modality across exposures (radio ad followed by a print ad).⁶²

Interestingly, while strong initial learning of a brand's key attributes can yield positive memory effects, it can also make it harder for the brand to add or change attributes. That is, the strong initial learning interferes with consumer learning and memory for new brand information.⁶³ This can make brand *repositioning* a challenging task. Repositioning is discussed later in the chapter.

Reduce Similarity to Competing Ads Ads within the same product class (e.g., ads for different brands of cell phone) have been shown to increase interference, as have ads that are similar to competing ads. Similarity can be in terms of ad claims, emotional valence, and ad execution elements such as background music or pictures. Interestingly, similarity between ad execution elements can lead to memory interference even when the ads are for brands in different product categories (print ads for bleach and soda each picturing mountain scenes). Just as unique ads can break through advertising clutter to garner greater attention, unique ads are also more resistant to competitive memory interference.⁶⁴

Provide External Retrieval Cues Retrieval cues provide an external pathway to information that is stored in memory. The reason that brand names are so important is because they can serve as a retrieval cue. Seeing a brand name can trigger recall of brand information stored in memory, as well as retrieval of images and emotions associated with prior advertisements for the brand.

However, brand name is not always enough to trigger recall of prior advertising for the brand. For example, seeing the brand on a store shelf may not be sufficient to cue consumers' memory for prior advertising. This is of major consequence for marketers because failure to recall prior advertising information and emotion during purchase reduces advertising effectiveness. In this case, marketers can use point-of-purchase displays or package cues that link directly back to the advertisements for that brand.⁶⁵ For example, during the "Got Milk?" campaign, in-store signage with the "Got Milk?" slogan was used to remind consumers about the TV ads that emphasized how awful it feels to run out of milk. Quaker Oats applied this concept as well by placing a photo of a scene from its Life cereal commercial on the cereal box. This enhanced the ability of consumers to recall both affect and information from the commercial and was very successful.

Response Environment

Retrieval is also affected by the similarity of the retrieval (response) environment to the original learning environment and type of learning.⁶⁶ Thus, the more the retrieval situation offers cues similar to the cues present during learning, the more likely effective retrieval is to occur. One strategy is to configure the retrieval environment to resemble the original learning environment. The "Got Milk?" and Life cereal examples discussed earlier represent attempts by marketers to match the in-store retrieval environment to the learning environment by providing retrieval cues.

Another strategy is to configure the learning environment to resemble the most likely retrieval environment. Suppose a chewing gum brand knows that its retrieval environment will be in retail stores. In this case, conditioning a positive feeling to the *brand and package* by consistently pairing a visual image of the package with pleasant music would likely be most appropriate. This is because the response environment (the store shelf) visually presents consumers with brand packages. And, because learning was conditioned to a visual of the brand's package (learning environment configured to match the retrieval environment), seeing the package on the shelf will likely elicit the learned response.

BRAND IMAGE AND PRODUCT POSITIONING

Brand Image

Brand image refers to *the schematic memory of a brand*. It contains the target market's interpretation of the product's attributes, benefits, usage situations, users, and manufacturer/marketer characteristics. It is what people think of and feel when they hear or see a brand name. It is, in essence, the set of associations consumers have *learned* about the brand.⁶⁷ *Company image* and *store image* are similar except that they apply to companies and stores rather than brands.

The importance of branding and brand image can be seen in the fact that products that have traditionally been unbranded such as water, apples, and meat are increasingly being branded. Consider the meat industry. It must deal with a number of issues, not the least of which is that many consumers see meat as difficult and time-consuming to prepare. As one industry expert said:

A lot of consumers don't have the time and expertise to take a raw roast and cook it for six to eight hours, so what we have to do in this industry is understand that and do something about it.⁶⁸

Tyson has responded by offering a line of fully cooked chicken, pork, and beef meals that are fast, easy, and safe to prepare. This move builds nicely on Tyson's strong reputation for quality fresh meat products and its prepackaged lunch meats. Given today's consumers' dual concerns over convenience and food safety, Tyson is well positioned with a strong and consistent image that consumers trust and can relate to. The ability to benefit from a brand image is called *brand equity*, which we discuss in the next section.

Brand image is a major concern of both industrial and consumer goods marketers. Consider the following headlines from recent marketing publications:

Buick Leads GM's Efforts at Reinvention

How Microsoft got Hip

Moto's Regaining Its Mojo by Putting Consumer First

Pepsi Max Drops the Diet, Aims to Rekindle Cola War

How powerful are brand images? Think of Nike, McDonald's, Kate Spade, Hershey's, Coke, Discovery Channel, Amazon.com, and Midas. For many consumers, each of these names conjures up a rich pattern of meanings and feelings. These meanings and imagery are powerful drivers of consumer decision making, which explains why strong brands also tend to be market leaders in terms of sales and profits. Examine Illustration 9-7. *What meanings and imagery are elicited by the Lee Jeans brand? Does this brand have a strong image?*

Brand images can hinder as well as help products.⁶⁹ Hershey's recently tried to enter

L05



ILLUSTRATION 9-7

Brand names such as Lee Jeans provide an anchor to which consumers can attach meaning. This allows marketers to invest in product improvements and communications with a reasonable possibility of benefiting from those investments.

the upscale chocolate market with the name *Cacao Reserve by Hershey's*. The product has not performed well, most likely because consumers don't equate Hershey's with premium. Hershey's has a strong image. However, its image as an everyday chocolate hinders its move into the premium market. In this case, Hershey's may have been better off using a *new brand strategy* with no ties to the Hershey's name. We discuss this strategy later in the chapter.

Product Positioning

Product positioning is a *decision by a marketer to try to achieve a defined brand image relative to competition within a market segment*. That is, marketers decide that they want the members of a market segment to think and feel in a certain way about a brand relative to competing brands. The term *product positioning* is most commonly applied to decisions concerning brands, but it is also used to describe the same decisions for stores, companies, and product categories.

Product positioning has a major impact on the long-term success of the brand, presuming the firm can create the desired position in the minds of consumers. A key issue in positioning relates to the need for brands to create product positions that differentiate them from competitors in ways that are meaningful to consumers.⁷⁰ A brand that fails to differentiate itself from competitors (stimulus discrimination) will generally find it difficult to generate consumer interest and sales.

Consider Saturn. Its original positioning emphasized customer service and the retail experience. This differentiated Saturn from the competition and resulted in strong sales. However, its ads stopped focusing on customer service in 2002 and after that sales slumped. As a result, it switched advertising agencies with the hopes of *repositioning* its brand in the minds of customers by focusing back on customer service.⁷¹ These efforts ultimately failed and the Saturn line was discontinued.

An important component of brand image is the appropriate usage situations for the product or brand. Often marketers have the opportunity to influence the usage situations for which a product or brand is seen as appropriate. What do you think of when you think of cranberry sauce? Odds are that Thanksgiving and perhaps Christmas are part of your image of cranberry sauce. In fact, these are probably the only usage situations that came to mind. However, in one study, sales for cranberry sauce increased almost 150 percent over a three-month period after consumers saw advertisements promoting nontraditional uses. Thus, expanding the usage situation component of cranberry sauce's product position could dramatically increase its sales.⁷²

The terms *product position* and *brand image* are often used interchangeably. In general, however, product position involves an explicit reference to a brand's image relative to another brand or the overall industry. It is characterized by statements such as "HP printers are the most reliable printers available." Brand image generally considers the firm's image without a direct comparison to a competitor. It is characterized by statements such as "HP printers are extremely reliable."

Once a marketer decides on an appropriate product position, the marketing mix is manipulated in a manner designed to achieve that position in the target market.⁷³ For example, Sunkist Growers offers a fruit jelly candy called Sunkist Fruit Gems that comes in various fruit flavors. It is positioned as a "healthful, natural" snack for adults and children. From a product standpoint, the candy is made from pectin (a natural ingredient from citrus peels) and contains no preservatives and less sugar than most fruit jelly candies. Thus, the product itself communicates the desired position.

However, other aspects of the marketing mix can also contribute. For example, Sunkist could distribute the candy through the produce departments of supermarkets. Notice how distribution then supports the desired product position or image. A consumer receiving a

message that this is a healthful, natural product should be more receptive when the product is found near other healthful, natural products such as apples and oranges.

Marketing managers frequently fail to achieve the type of product image or position they desire because they fail to anticipate or test for consumer reactions. Toro's initial light-weight snowthrower was not successful. Why? It was named the Snowpup, and consumers interpreted this to mean that it was a toy or lacked sufficient power. Sales success came only after a more macho, power-based name was utilized—first Snowmaster and later Toro.

Perceptual mapping offers marketing managers a useful technique for measuring and developing a product's position. Perceptual mapping takes consumers' perceptions of how similar various brands or products are to each other and relates these perceptions to product attributes. Figure 9–10 is a perceptual map for various chocolate candy brands. This perceptual map also provides the ideal points for five market segments—I₁, I₂, I₃, I₄, I₅. The size of the circle around the ideal point represents the relative size of the segment, with segment 4 (I₄) being the largest and segment 5 (I₅) being the smallest. These ideal points represent the image or characteristics each segment desires in a chocolate candy. If the chocolate candies in this map were all that existed, it would indicate that segment 2 consumers are not being offered many of the products they want. Target has recently positioned a brand to target this segment with Choxie (the tagline is “Choxie is chocolate with moxie.”). Still, opportunities remain to target segment 2. Is Dove well positioned? It appears not; that is, Dove would benefit from *repositioning* toward segment 2. We discuss repositioning in the next section. Notice that even though segment 3 is relatively large, there is also a considerable amount of competition, something of importance when deciding which segments to target with new brands. *What segment and competitor factors would make it more difficult to enter segment 5 than segment 2?*

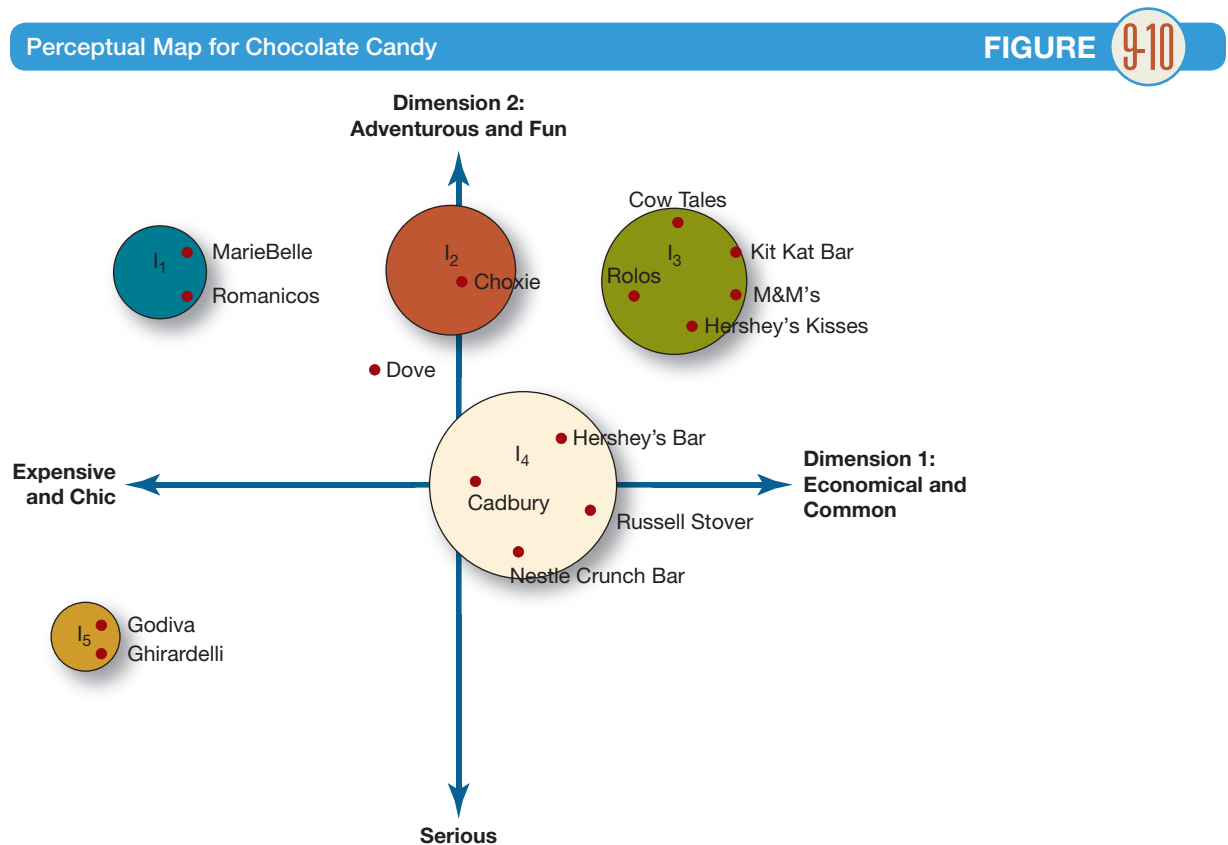


ILLUSTRATION 9-8

Repositioning a product involves making all aspects of the product consistent with the new position. This includes product features, price, communications, and distribution channels.



Product Repositioning

The images consumers have of brands change over time as a function of their own changing needs, as a function of changes in competitors, and as a function of changes initiated by the brand itself. Consider GM's recent efforts and challenges with Buick:

General Motor's launch this summer of the 2010 Buick LaCrosse is one of the automaker's most critical post-bankruptcy initiatives, as the company seeks to attract younger consumers with a more sophisticated car design and image overhaul to match. The 2010 model is drawing good reviews, *but target consumers* [between 46 and 55 years old, which is about 10 years younger than current Buick buyers] are disinclined to even visit Buick showrooms given that the brand is associated with plush, easy-driving sedans favored by retirees. As one executive stated, "We have a huge challenge with Buick because many people don't know what the brand stands for."⁷⁴

The lack of clarity of the Buick image and the lack of fit between target market *perceptions* of the brand and what they want in an automobile mean that successful *repositioning* of Buick is critical for its long-term success. **Product repositioning** refers to *a deliberate decision to significantly alter the way the market views a product*. This could involve its level of performance, the feelings it evokes, the situations in which it should be used, or even who uses it.⁷⁵

Illustration 9–8 shows a firm's efforts to reposition its brand in the minds of its target customers. Other recent repositioning efforts include the following:

- H&R Block is moving from being a tax preparation specialist to "the accessible provider of financial services to Middle America."⁷⁶
- Infiniti is attempting to move from a diffuse luxury car image to a "new brand image that is about performance."⁷⁷
- Hyundai is attempting to move from a low-price image to one that is "refined and elegant."⁷⁸

Repositioning can be very difficult and costly, requiring consumers to *unlearn* old associations and replace them with new ones.⁷⁹ This can take years to accomplish. In the auto

industry, it is estimated that repositioning can take up to 10 years. According to one industry expert, “People’s perceptions change very slowly.”⁸⁰

Repositioning may also require drastic action. For example, Hardee’s was able to reverse plummeting sales only after completely walking away from the thin patties common in fast-food hamburgers and focusing exclusively on its now signature Thickburger made from Black Angus beef.⁸¹ Sometimes companies will even change their brand name to allow a fresh start. For example, when Bell Atlantic and GTE Wireless merged, they changed their name to Verizon.

BRAND EQUITY AND BRAND LEVERAGE

Brand equity is the value consumers assign to a brand above and beyond the functional characteristics of the product.⁸² For example, many people pay a significant premium for Bayer aspirin relative to store brands of aspirin although they are chemically identical.

Brand equity is nearly synonymous with the reputation of the brand. However, the term *equity* implies economic value.⁸³ Thus, brands with “good” reputations have the potential for high levels of brand equity, whereas unknown brands or brands with weak or negative reputations do not. The outcomes of brand equity include increased market share, decreased consumer price sensitivity, and enhanced marketing efficiency.⁸⁴

Brand equity is based on the product position of the brand. A consumer who believes that a brand delivers superior performance, is exciting to use, and is produced by a company with appropriate social values is likely to be willing to pay a premium for the brand, to go to extra trouble to locate and buy it, to recommend it to others, to forgive a mistake or product flaw, or to otherwise engage in behaviors that benefit the firm that markets the brand. Thus, one source of economic value from a positive brand image results from consumers’ behaviors toward existing items with that brand name.⁸⁵

Another source of value for a brand image is that consumers may assume that the favorable aspects of the image associated with an existing product will apply to a new product with the same brand name. This is based on the principle of stimulus generalization described earlier in this chapter. **Brand leverage**, often termed *family branding*, *brand extensions*, or *umbrella branding*, refers to *marketers capitalizing on brand equity by using an existing brand name for new products*.⁸⁶ If done correctly, consumers will assign some of the characteristics of the existing brand to the new product carrying that name. Relatively recent brand extensions include Starbucks ice cream, Listerine breath strips, and Campbell’s tomato juice.

However, stimulus generalization does not occur just because two products have the same brand name. There must be a connection between the products. Pace is finally leveraging its brand equity beyond salsas by extending its name into related products such as refried beans, taco sauces, and bean dip. According to Pace’s brand manager:

We feel we have the ability to expand into Mexican meals, it’s just now about choosing the right products and aligning with what consumers are making.⁸⁷

In contrast, Campbell’s was not able to introduce a spaghetti sauce under the Campbell’s name (it used Prego instead). Consumer research found that

Campbell’s, to consumers, says it isn’t authentic Italian. Consumers figured it would be orangy and runny like our tomato soup.⁸⁸

Successful brand leverage generally requires that the original brand have a strong positive image and that the new product fit with the original product on at least one of four dimensions:⁸⁹

1. *Complement*. The two products are used together.
2. *Substitute*. The new product can be used instead of the original.



Art Infusion: A Path to Greater Brand Extendibility

Marketers would like their brands to be more extendable in many cases because it increases their options to leverage existing brand equity. Research has found that one path to increased brand extendibility is by using visual art in a brand's advertising. For example, Vincent Van Gogh's painting "Starry Night" was used as the "art" visual in an ad for a brand of MP3 player called Consul (this was the core product and brand). The "non-art" visual was a picture of a night sky. These two ads were used to advertise the Consul MP3 player and then consumers were asked about both the Consul MP3 player and about their perceptions of two possible extensions, namely, Consul clothing (a lower-fitting extension with MP3 players) and Consul digital radios (a higher-fitting extension with MP3 players). The following effects were found when comparing the effects of the art visual advertisement to the non-art visual advertisement:⁹⁰

- The art visual in the ad increased brand image for the Consul MP3 player.
- The art visual in the ad increased the perceived fit of the extensions and therefore . . .
- The art visual increased the perceived extendibility of the Consul brand from MP3 players to both clothing and digital radios.

These effects are worth a bit more explanation. First, visual art has been shown to elicit perceptions of luxury and exclusiveness that spill over (that is, generalize) to the brand in a relatively automatic way. This explains why the art visual enhanced the image of the Consul MP3 brand. Second, visual art in an ad increases consumers' cognitive flexibility, allowing them to see connections between objects that are more different than they would otherwise be able to do. This increases perceived fit even for extensions that are lower in fit, such as when Consul moved from an MP3 player to clothing. Both of these effects operate in such a way that having an art visual in an advertisement increases the extendibility of the brand in the minds of consumers from MP3 players to digital radios and clothing.

The positive effects of visual art occur even when consumers are not familiar with the visual art in question (in this case Van Gogh's "Starry Night"), which means that the use of visual art in advertising does not require that the target audience be art connoisseurs.

Critical Thinking Questions

1. Why does visual art increase brand image?
2. Why does visual art enhance cognitive flexibility?
3. Are there some product categories for which art infusion would not work? Explain.

3. *Transfer*. Consumers see the new product as requiring the same manufacturing skills as the original.
4. *Image*. The new product shares a key image component with the original.

It is important for marketers to understand what the key "fit" criteria are for consumers. For example, one study found that consumers would prefer Fruit Loops lollipops over Fruit Loops hot cereal. Apparently, the key fit criterion of concern was not the *transfer* of manufacturing capability, but rather the *image* component of taste.⁹¹

It is also important for marketers to realize that the more the new product category is a "stretch" for the brand, the more their advertising messages must help to explain how the products fit together.⁹² For example, Revlon tried to launch its own vitamins with the expression "Now, Revlon beauty begins from the inside-out." Notice how the slogan associates cosmetics and vitamins in terms of beauty.

Finally, it is important for marketers to realize that the way in which they advertise a brand can enhance perceptions of fit and make a brand more extendable into a broader set of product categories. One such approach, the use of visual art, is discussed in Consumer Insight 9-2.



Examples of successful and unsuccessful brand extensions include the following:

- Harley-Davidson has applied its name successfully to a wide variety of products, but its Harley-Davidson wine coolers were not successful.
- Levi Strauss failed in its attempt to market Levi's tailored suits for men.
- Country Time could not expand from lemonade to apple cider.
- LifeSavers gum did not succeed.
- Coleman successfully expanded from camping stoves and lanterns into a complete line of camping equipment.
- Oil of Olay bar soap is successful in large part because of the equity of the Oil of Olay lotion.

Illustration 9–9 shows ads for two different product offerings that demonstrate the concept of brand extension. Which of the two, Fabreze or Special K, is closest to its existing products?

Sometimes brand extensions are not feasible. When marketers want to target distinct market segments with an image distinct from the original brand, they generally need to create a new brand rather than extend the existing one. Toyota did this when moving into the luxury automobile market with the new brand Lexus, as did Honda with the new brand Acura. These new brands have images that are distinct from the original brand. Using unique brand names for this purpose avoids diluting or confusing the original brand image.

Brand extensions can also involve risks, one being that a failure of any product with a brand name can hurt all the products with the same brand name (consumers generalize both good and bad outcomes).⁹³ Another risk is diluting the original brand image.⁹⁴

ILLUSTRATION 9-9

Brand extensions are most likely to succeed when the new product is closer to existing products as with Fabreze. However, the greatest rewards are sometimes associated with extensions into more distinct product categories as with Special K.

A strong image is generally focused on a fairly narrow set of characteristics. Each additional product added to that product name alters the image somewhat. If too many or too dissimilar products are added to the brand name, the brand image may become diffuse or confused.⁹⁵ For instance, were Porsche to offer a ski boat that competed on price rather than performance, it could damage its core image, particularly among existing owners.⁹⁶ Some observers feel that Nike is in danger of such a brand dilution as it attaches its name to an ever-wider array of products.

SUMMARY

LO1: Describe the nature of learning and memory

Learning is any change in the content or organization of long-term memory or behavior and is the result of information processing. Information processing is a series of activities by which stimuli are perceived, transformed into information, and stored. The four activities in the series are exposure, attention, interpretation, and memory. Thus memory is both an outcome of learning and a part of the process of learning. For example, when interpreting the price of a brand, consumers may retrieve information about competitor prices (prior learning) and once the comparison is made, store their price perception about the new brand in memory (new learning).

LO2: Explain the types of memory and memory's role in learning

Memory is the result of learning, which involves information processing. Most commonly, information goes directly into *short-term memory* (STM) for processing, where two basic activities occur: maintenance rehearsal and elaborative activities. *Maintenance rehearsal* is the continual repetition of a piece of information in order to hold it in current memory. *Elaborative activities* are the use of stored experiences, values, attitudes, and feelings to interpret and evaluate information in current memory.

Long-term memory (LTM) is information from previous information processing that has been stored for future use. LTM undergoes continual restructuring as new information is acquired. Information is stored in LTM in associative networks, or schemas. Consumers often organize information in LTM around brands in the form of *brand schemas*. These schemas represent the brand's image in terms of key attributes, feelings, experiences, and so on.

LO3: Distinguish the different processes underlying high- and low-involvement learning

Consumers learn in various ways, which can be broadly classified into high- versus low-involvement learning. *High-involvement learning* occurs when an individual is motivated to acquire the information. *Low-involvement learning* occurs when an individual is paying only limited or indirect attention to an advertisement or other message. Low-involvement learning tends to be limited as a result of a lack of elaborative activities.

Learning can also be classified as either conditioned or cognitive. There are two forms of conditioned learning: classical and operant. *Classical conditioning* attempts to create an association between a stimulus (e.g., brand name) and some response (e.g., behavior or feeling) and is generally low involvement in nature. *Operant conditioning* attempts to create an association between a response (e.g., buying a brand) and some outcome (e.g., satisfaction) that serves to reinforce the response and is generally high involvement in nature.

The *cognitive* approach to learning encompasses the mental activities of humans as they work to solve problems, cope with complex situations, or function effectively in their environment. Cognitive learning includes *iconic rote learning* (generally low involvement), *vicarious learning/modeling* (low or high involvement), and *analytical reasoning* (generally high involvement).

Stimulus generalization is one way of transferring learning by generalizing from one stimulus situation to other, similar ones. *Stimulus discrimination* refers to the opposite process of learning—responding differently to somewhat similar stimuli. The ability of consumers to differentiate and generalize is critical for successful brand positioning and leverage.

LO4: Summarize the factors affecting information retrieval from memory

Once learned, information is *retrieved* from LTM for use in evaluations and decisions. *Retrieval failures* or *extinction* of a learned response represents a reduction in marketing effectiveness. Retrieval depends on strength of initial learning, memory interference, and the response environment. *Strength of learning* depends on six basic factors: importance, message involvement, reinforcement, mood, repetition, and dual coding. *Importance* refers to the value that the consumer places on the information to be learned—greater importance increases learning and retrieval. *Message involvement* is the degree to which the consumer is interested in the message itself—the greater the message involvement, the greater the learning and retrieval. *Reinforcement* is anything that increases the likelihood that a response will be repeated in the future—the greater the reinforcement, the greater the learning and retrieval. *Mood* is the temporary mental state or feeling of the consumer. Learning and memory appear to be greater in positive mood conditions. *Repetition* refers to the number of times that we are exposed to the information or that we engage in a behavior. Repetition increases learning and memory but can also lead to *wearout*. *Dual coding* involves creating multiple complementary pathways to a concept in LTM. Dual coding increases learning and retrieval.

Memory interference occurs when consumers have difficulty retrieving a specific piece of information

because other related information in memory gets in the way. A common form of memory interference is due to competitive advertising. Competitive interference increases with increased advertising clutter. But it can be reduced by avoiding competitive clutter, strengthening learning, reducing similarity to competitor ads, and providing retrieval cues.

The *response environment* can also be critical to retrieval. Matching the response environment to the learning environment, or matching the learning environment to the response environment, can enhance the ease and likelihood of retrieval.

LO5: Understand the application of learning to brand positioning, equity, and leverage

Brand image, a market segment or individual consumer's schematic memory of a brand, is a major focus of marketing activity. *Product positioning* is a decision by a marketer to attempt to attain a defined and differentiated brand image, generally in relation to specific competitors. A brand image that matches a target market's needs and desires will be valued by that market segment. Such a brand is said to have *brand equity* because consumers respond favorably toward it in the market. In addition, these consumers may be willing to assume that other products with the same brand name will have some of the same features, which relates to how consumers learn to generalize from one stimulus to another. Introducing new products under the same name as an existing product is referred to as *brand leverage* or *brand extension*.

KEY TERMS

Accessibility 319	Flashbulb memory 317	Product repositioning 340
Advertising wearout 334	High-involvement learning 320	Pulsing 333
Analogical reasoning 326	Iconic rote learning 325	Punishment 331
Analytical reasoning 326	Imagery 316	Reinforcement 330
Brand equity 341	Implicit memory 320	Retrieval failure 328
Brand image 337	Learning 314	Schema 317
Brand leverage 341	Long-term memory (LTM) 315	Script 319
Classical conditioning 321	Low-involvement learning 320	Self-referencing 330
Cognitive learning 325	Maintenance rehearsal 315	Semantic memory 317
Concepts 316	Memory interference 335	Shaping 324
Conditioning 321	Modeling 325	Short-term memory (STM) 315
Elaborative activities 316	Operant conditioning 323	Stimulus discrimination 326
Episodic memory 317	Perceptual mapping 339	Stimulus generalization 327
Explicit memory 320	Product positioning 338	Vicarious learning 325
Extinction 328		