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Chapter 7

Mass Media Attitude Change: Implications of the Elaboration Likelihood Model of Persuasion

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It is conceivable that one persuasive person could, through the use of mass media, bend the world's population to his will.

(Cartwright, 1949, p. 253, in summarizing earlier views on the power of the media)

Undoubtedly, few social scientists today think that the mass media have the power to sway huge audiences to the extent once believed likely. Nevertheless, the technological advances of the last century—from the first primitive radio broadcasts to today's high-speed mobile Internet devices—have made it possible for individual communicators to have access to unprecedented numbers of potential message recipients. Millions of dollars are spent worldwide each year in attempts to change people's attitudes about political candidates, consumer products, health and safety practices, and charitable causes. In most of these instances, the ultimate goal is to influence people's behavior so that they will vote for certain politicians or referenda; purchase specific goods; engage in safer driving, eating, and sexual activities; and donate money to various religious,

environmental, and educational organizations and institutions. To what extent are media persuasion attempts effective?

The success of media campaigns depends in part on: (a) whether the transmitted communications are effective in changing the attitudes of the recipients in the desired direction, and (b) whether these modified attitudes in turn influence people's behaviors. Our goal in this chapter is to present a brief overview of current psychological approaches to mass media influence and to outline in more detail a general framework that can be used to understand the processes responsible for mass media attitude change. This framework is called the elaboration likelihood model of persuasion (ELM; see Petty & Cacioppo, 1981, 1986b; Petty & Wegener, 1999). Before addressing the contemporary approaches, we provide a very brief historical overview of perspectives on mass media influence.

EARLY EXPLORATIONS OF MASS MEDIA PERSUASION

Direct Effects Model

The initial assumption about the effects of the mass media by social scientists in the 1920s and 1930s was that mass communication techniques were quite potent. For example, in an analysis of mass communication during World War I, Lasswell (1927) concluded that "propaganda is one of the most powerful instrumentalities in the modern world" (p. 220). During this period, there were several salient examples of seemingly effective mass communication effects. These included the panic following the 1929 stock market crash; the well-publicized mass hysteria following the radio broadcast of Orson Wells' *War of the Worlds* in 1938; and the rise in popularity of individuals such as Adolf Hitler in Germany, and the right wing Catholic priest, Father Coughlin, and Louisiana Senator Huey Long in the United States. The assumption of Lasswell and others was that transmission of information via mass communication produced direct effects on attitudes and behavior (e.g., Doob, 1935; Lippmann, 1922). In detailing the views about mass communication during this period, Sears and colleagues noted that it was assumed that "the audience was captive, attentive, and gullible . . . the citizenry sat glued to the radio, helpless victims" (Sears & Kosterman, 1994, p. 254), and that "propaganda could be made almost irresistible" (Sears & Whitney, 1973, p. 2).

Many analysts of the period based their startling assessments of the power of the media on informal and anecdotal evidence rather than on careful empirical research. For example, few attempts were made to measure the attitudes of message recipients prior to and following propaganda efforts. Thus, although it could be that the great propagandists of

the time were changing the attitudes of their audience, it was also possible that the communicators were mostly attracting an audience that already agreed with them (called "selective exposure"; see Frey, 1986) or some combination of the two. Of course, not all analysts of the period were so optimistic about the prospects for the mass media to produce dramatic changes in opinion, but it was the dominant view (Wartella & Middlestadt, 1991).¹

Although the direct effects model has been replaced by more sophisticated theoretical perspectives, there do remain echoes of this model within both popular and academic writings. The news media, for example, have been represented in the popular literature as directly influencing and shaping political attitudes (e.g., Adams, 1993), the development of racism (e.g., Suber, 1997), and consumer choices (e.g., Lohr, 1991). Traces of the direct effects model can also be discerned in current theoretical perspectives. Zaller (1991), for instance, argues that information presentation is the key to public opinion formation and shift. Specifically, he provides some evidence that one can predict opinion change (e.g., attitudes toward the Vietnam War) from the mere amount of information provided for a particular stance (e.g., pro- or counter-U.S. involvement in the war) in the media. As we will see shortly, most current analyses of attitude change hold that it is not the information per se that produces persuasion, but rather, people's idiosyncratic reactions to this information.

Indirect Effects Model

The direct effects model was tempered considerably in the next two decades, largely as a result of the subsequent empirical research conducted. For example, in analyzing survey information gathered by the National Opinion Research Center, Hyman and Sheatsley (1947) concluded that the effectiveness of mass communication campaigns could not be increased simply by increasing the number of messages. Rather, the specific psychological barriers to effective information dissemination must be considered and overcome (see also Cartwright, 1949). For example, they noted that people often distort incoming information to be consistent with prior attitudes, making change less likely. A similar conclusion was reached by Lazarsfeld, Berelson, and Gaudet (1948) in their

¹In one of the relatively rare empirical efforts of the period, Peterson and Thurstone (1933) examined the power of movies such as D. W. Griffith's *Birth of a Nation*, controversial because of its depiction of Blacks, to modify the racial attitudes of adolescents. The conclusions of this research foreshadowed the modern period in that various moderators of effective influence were uncovered (e.g., greater influence for those with low knowledge rather than high issue-consistent knowledge; Wood, Rhodes, & Biek, 1995; see Wartella & Reeves, 1985).

influential study of the impact of the media in the 1940 presidential campaign. A major result from this study was that the media appeared to reinforce people's already existing attitudes rather than producing new ones (see also Klapper, 1960; Lord, Ross, & Lepper, 1979). Some researchers argued that when public attitude change was produced, it was only indirectly attributable to the media. That is, the media were more effective in influencing various opinion leaders than the average person, and these opinion leaders were responsible for changes in the mass public (i.e., a "two-step" flow of communication; Katz & Lazarsfeld, 1955).

Studies conducted during World War II reinforced the "limited effects" view of the media. Most notably, the wartime studies by Carl Hovland and his colleagues showed that although various military training films had an impact on the knowledge of the soldier recipients, the films were relatively ineffective in producing mass changes in attitudes and behavior. Instead, the persuasive power of the films depended on a large number of moderating variables (Hovland, Lumsdaine, & Sheffield, 1949; see also Shils & Janowitz, 1948). When World War II ended, Hovland returned to Yale University, and the systematic examination of these moderating variables was begun in earnest.

CONTEMPORARY APPROACHES TO MASS MEDIA PERSUASION

The Attitude Construct

Contemporary social psychologists concerned with the study of media influence, like their predecessors (e.g., Peterson & Thurstone, 1933), have focused on the concept of "attitudes," or people's general predispositions to evaluate other people, objects, and issues favorably or unfavorably. People are aware of most of their attitudes (explicit attitudes), but sometimes they come to have favorable or unfavorable predispositions of which they are unaware (implicit attitudes). For example, people may harbor implicit prejudices or stereotypes that they consciously reject (Devine, 1989). In addition, sometimes people are aware of the causes of their attitudes, and sometimes they are not (Greenwald & Banaji, 1995; Wilson, Lindesy, & Schooler, 2000). The attitude construct achieved its preeminent position in research on social influence because of the assumption that a person's attitude—whether implicit or explicit—is an important mediating variable between exposure to new information, on the one hand, and behavioral change, on the other. For example, a television commercial might be based on the idea that giving people information about a candidate's issue positions will lead to favorable attitudes toward the candidate and ultimately to contributing money to and voting

for the candidate. Or, mere repeated exposure to a product name in radio message might lead the listener to like the product name and therefore select it for purchase without much thought on the next shopping trip (Fazio, 1990).

Over the past 50 years, numerous theories of attitude change and models of knowledge-attitude-behavior relationships have been developed (see reviews by Eagly & Chaiken, 1993; Petty, Priester, & Wegener, 1994; Petty & Wegener, 1998a). Contemporary analyses of mass media persuasion have focused on the variables that determine when the media will be effective versus ineffective and what the underlying processes are by which the media induce change. Perhaps the most well-known psychological framework for categorizing and understanding mass media persuasion effects was popularized by Hovland and his colleagues (e.g., Hovland, 1954; Hovland, Janis, & Kelley, 1953) and elaborated considerably by William McGuire (McGuire, 1985, 1989; see McGuire, 1996, for a review of the Hovland approach). After describing this early influential model, we turn to more contemporary approaches.

The Communication/Persuasion Matrix Model of Media Effects

One of the most basic assumptions of initial theories of attitude change (e.g., Strong, 1925) that is also evident in contemporary approaches (e.g., McGuire, 1985) was that effective influence required a sequence of steps (Petty & Cacioppo, 1984b). For example, Fig. 7.1 presents McGuire's (1985, 1989) Communication/Persuasion Matrix model of persuasion. This model outlines the inputs (or independent variables) to the persuasion process that media persuaders can control along with the outputs (or dependent variables) that can be measured to see if any influence attempt is successful.

Matrix Inputs. The inputs to the persuasion process in Fig. 7.1 are based in part on Lasswell's (1964) classic question: Who says what to whom, when, and how? First, a communication typically has some *source*. The source can be expert or not, attractive or not, male or female, an individual or group, and so on. This source provides some information, the *message*, and this message can be emotional or logical, long or short, organized or not, directed at a specific or a general belief, and so forth. The message is presented to a particular *recipient* who may be high or low in intelligence, knowledge, experience, in a good or bad mood, and so on. The message is presented via some *channel* of communication. Different media allow different types of input such as audio only (e.g., radio), audio plus moving visual (television, Internet), print only, or print plus static visual (e.g., magazines, newspapers). Some media allow presentation of

	SOURCE	MESSAGE	RECIPIENT	CHANNEL	CONTEXT
<i>Outputs:</i>					
EXPOSURE					
ATTENTION					
INTEREST					
COMPREHENSION					
ACQUISITION					
YIELDING					
MEMORY					
RETRIEVAL					
DECISION					
ACTION					
REINFORCEMENT					
CONSOLIDATION					

FIG. 7.1. The Communication/Persuasion Process as an Input/Output Matrix. The figure depicts the primary independent and dependent variables in mass media persuasion research. (Adapted from McGuire, 1989.)

the message at the recipient's own pace (e.g., reading a magazine or browsing the Internet), whereas other media control the pace externally (e.g., radio and television). Finally, the message is presented to the recipient in some *context*. That is, the persuasion context may be one of group or individual exposure, noisy or quiet environment, and so forth.

Matrix Outputs. Each of the inputs to the persuasion process can have an impact on one of the outputs depicted in Fig. 7.1. The Communication/Persuasion Matrix model contends that in order for effective influence to occur, a person first needs to be *exposed* to some new information. Media are often selected by potential persuaders after an estimation of the number and type of people the message is likely to reach. Also, by deciding what to present, those who control the mass media help define the range of issues to which the public is exposed (e.g., Iyengar, Kinder, Peters, & Krosnick, 1984).

Second, the person must *attend* to the information presented. Just because a person is sitting in front of the television doesn't mean that he or she knows what is going on. For example, in order to gain and attract attention, TV commercials often present attractive women and men in proximity to the attitude object. Even if the person does notice the information, this doesn't mean that the person's *interest* will be engaged. The next two stages involve *comprehension* and *acquisition*, or the question of what part of the information presented the person actually understands and learns. It is only at step 6 that attitude change or *yielding* occurs. Once the person accepts the information in the message, the next step in the sequence involves *memory* or storage of the new information and the attitude that it supports. The next three steps detail the processes involved in translating the new attitude into a behavioral response. That is, at some subsequent behavioral opportunity, the person must *retrieve* the new attitude from memory, *decide* to act on it, and perform the appropriate *action*. Finally, the model notes that if the attitude-consistent behavior is not *reinforced*, the new attitude might be undermined. For example, if you act on your attitude and become embarrassed, that attitude will not persist. If the behavior is rewarding, however, the attitude consistent behavior might lead to attitudinal *consolidation*, making the new attitude more likely to endure over time and guide future behavior.

Variants of this general information processing model were sometimes interpreted in theory and in practice as suggesting that a change early in the sequence (e.g., attention) would inevitably lead to a change later in the sequence (e.g., yielding). McGuire (1989) noted, however, that the likelihood that a message will evoke each of the steps in the sequence should be viewed as a conditional probability. Thus, even if the likelihood of achieving each of the first six steps in a mass media campaign was 60%,

the maximum probability of achieving all six steps (exposure, attention, interest, comprehension, learning, and yielding), would be .6⁶, or only 5%.

In addition, it is important to consider the fact that any one input variable can have different effects on the different output steps. For example, Hyman and Sheatsley (1947) noted that in the political domain, the knowledge and interest of a message recipient was positively related to exposure to political messages (i.e., the chronic "know-nothings" are more difficult to reach in a political campaign), but negatively related to attitude change (i.e., high interest and knowledge tends to produce assimilation of messages to one's original point of view). In a cogent analysis of this point, McGuire (1968) noted that several variables might have opposite effects on the steps involving *reception* of information (e.g., exposure, attention, comprehension, acquisition, memory) versus *acceptance* of (yielding to) the information. For example, the intelligence of the message recipient is related positively to reception processes, but negatively related to yielding. The joint action of reception and yielding processes implies that people of moderate intelligence should be easier to persuade than people of low or high intelligence, as this maximizes both reception and yielding (see also Rholes & Wood, 1992).

Additional Issues for the Communication/Persuasion Matrix Model.

Although McGuire's input/output matrix model serves as a very useful way to think about the steps involved in producing attitude and behavior change via the mass media or other means, it is important to appreciate a number of things that the model does not address. First, it is now clear that some of the steps in the postulated information processing sequence may be completely independent of each other, rather than sequential. For example, although a person's ability to learn and recall new information (e.g., facts about a political candidate) was often thought to be an important causal determinant of and prerequisite to attitude and behavior change (e.g., favoring and voting for a candidate), little empirical evidence has accumulated to support the view that message learning is a *necessary* step for persuasion (Greenwald, 1968; McGuire, 1985; Petty & Cacioppo, 1981). Rather, the existing evidence shows that message comprehension and learning can occur in the absence of attitude change and that a person's attitudes can change without learning the specific information in the communication. That is, a person might be able to comprehend all of the intended information perfectly, but not be persuaded either because the information is counterargued or seen as personally irrelevant. On the other hand, a person might get the information all wrong (scoring zero on a knowledge or recall test), but think about it in a manner that produces the intended change. That is, misunderstanding the message can sometimes produce more change than correct understanding.

This analysis helps to explain why previous research on mass media effects has sometimes found that message learning and changes in knowledge occur in the absence of attitude change and vice versa (Petty, Gleicher, & Baker, 1991). For example, after an extensive review of the mass media programs commonly used by government agencies to educate and to reduce social problems involving drugs and alcohol, Kinder, Pape, and Walfish (1980) concluded that although these programs were typically successful in increasing participants' knowledge about drugs, there was very little evidence that they were successful in changing attitudes and behavior (see also Bruvold & Rundall, 1988).

Second, the model tells us little about the factors that produce yielding. Even though the initial steps in the information processing sequence are viewed as prerequisites to acceptance, McGuire did not mean to imply that people would invariably yield to all information they comprehended and learned. That is, the earlier steps were thought to be necessary but not sufficient for yielding. Rather, just as source and other variables determine the extent of attention, they also determine the extent of acceptance. As implied by the Communication/Persuasion matrix, current psychological research on influence focuses on how and why various features of a persuasion situation (i.e., aspects of the source, message, channel, recipient, and context) affect each of the steps in the communication sequence (e.g., How does the credibility of the source affect attention to the message?). The most research by far, however, focuses on the question of how variables affect the processes responsible for yielding to or resisting the communication.

Cognitive Response Approach. Cognitive response theory (Greenwald, 1968; Petty, Ostrom, & Brock, 1981) was developed explicitly to address two key issues unaddressed by the communication/persuasion matrix. That is, cognitive response analysis attempted to account for the low correlation between message learning and persuasion observed in many studies and for the processes responsible for yielding. In contrast to the traditional view that acceptance of a message depended on learning the message content, the cognitive response approach contends that the impact of variables on persuasion depends on the extent to which individuals articulate and rehearse their own idiosyncratic thoughts to the information presented. The cognitive response perspective maintains that individuals are active participants in the persuasion process who attempt to relate message elements to their existing repertoires of information. The influence of cognitive responses—or one's own thoughts—on subsequent attitudes has been demonstrated in a variety of ways.

For example, in early research on "role playing," it was shown that asking people to self-generate arguments on an issue can lead to relatively

enduring attitude change (e.g., Janis & King, 1956). When engaged in role playing (e.g., "generate a message to convince your friend to stop smoking"), people engage in a "biased scanning" of evidence on the issue and end up persuading themselves because the arguments they generate are seen as compelling (Greenwald & Albert, 1968). More recently, Tesser and his colleagues conducted a series of investigations of the effects of merely thinking about an attitude object without any external information presented. These studies have shown clearly that with mere thought, people's reactions and impressions to other people, objects, and issues can become more extreme, in either a positive or negative direction, depending on the valence of the initial thoughts generated (see Tesser, Martin, & Mendolia, 1995, for a review).

The cognitive response approach holds that even when external information is presented, people's thoughts or cognitive responses to this information, rather than learning the information *per se*, determine the extent of influence. Most studies of cognitive responses to messages focus on the valence and the extent of thinking. Valence refers to the favorableness or unfavorableness of the thoughts with respect to the message, and extent of thinking refers to the number of thoughts generated. In general, the more favorable thoughts people have to the message, the more persuasion that results, and the more unfavorable thoughts people have to a message, the less influence (or even change in a direction opposite to the advocacy) that occurs (Greenwald, 1968; Petty et al., 1981; Wright, 1973).

In addition to coding thoughts for valence and number, other categorization schemes have been used (e.g., coding for the origin of the thought, target, self-relevance, and so forth; see Cacioppo & Petty, 1981; Shavitt & Brock, 1986). One feature of thoughts that has proven to be useful is the confidence with which people hold their thoughts. That is, two people can have the same thought about the message (e.g., "the proposed tax increase should help our schools"), but one person might have considerably more confidence in the thought than another. According to *self-validation theory* (Petty & Briñol, 2000; Petty, Briñol, & Tormala, in press), the relationship between thoughts and attitudes should be greater when people have confidence rather than doubt in their thoughts, and many of the traditionally studied source, message, recipient, and channel variables can influence persuasion by influencing the extent to which people have confidence in the thoughts they have in response to a persuasive message. In a series of initial studies conducted to test the basic self-validation hypothesis, Petty, Briñol, and Tormala (in press) found that when the thoughts in response to a message were primarily favorable, increasing confidence in their validity increased persuasion, but increasing doubt about their validity decreased persuasion. When the thoughts

about a message were mostly unfavorable, then increasing confidence reduced persuasion, but undermining confidence increased persuasion. These relationships held whether confidence in thoughts was measured or manipulated. Thus, research on cognitive responses suggest that generating favorable or unfavorable thoughts to a persuasive message is an important factor in producing attitude change, but it is not the only factor. Individuals also need to have confidence in the thoughts that they generate.

THE ELABORATION LIKELIHOOD MODEL OF PERSUASION

Although the cognitive response approach provided important insights into the persuasion process, it only focuses on those situations in which people are active processors of the information provided to them. The theory did not account very well for persuasion in situations where people were not actively thinking about the message content. To correct this deficit, the Elaboration Likelihood Model of persuasion (ELM) was proposed. The ELM holds that persuasion can occur when thinking is high or low, but the processes and consequences of persuasion are different in each situation (Petty & Cacioppo, 1981, 1986a; Petty & Wegener, 1999). More specifically, the ELM holds that the processes that occur during the "yielding" stage of influence can be thought of as emphasizing one of two relatively distinct "routes to persuasion" (see Fig. 7.2).²

Central and Peripheral Routes to Persuasion

Central Route. The first or *central route* to persuasion involves effortful cognitive activity whereby the person draws on prior experience and knowledge in order to carefully scrutinize all of the information relevant to determining the central merits of the position advocated (Petty, 1994; Petty & Cacioppo, 1986a). Consistent with the cognitive response approach to persuasion, the message recipient under the central route is actively generating favorable and/or unfavorable thoughts in response to

²Although the ELM has implications for the other stages in McGuire's information processing sequence described earlier (see Fig. 7.1), it does not attempt to provide a *general* theory of information exposure, memory, and so on. For example, even though the ELM would expect people to seek out and attend to messages of high personal relevance more so than messages of low personal relevance, the ELM provides an incomplete account of exposure, as variables unrelated to yielding processes could also determine message exposure. For example, people may seek messages for purposes of excitement or mood management (e.g., see chap. 2).

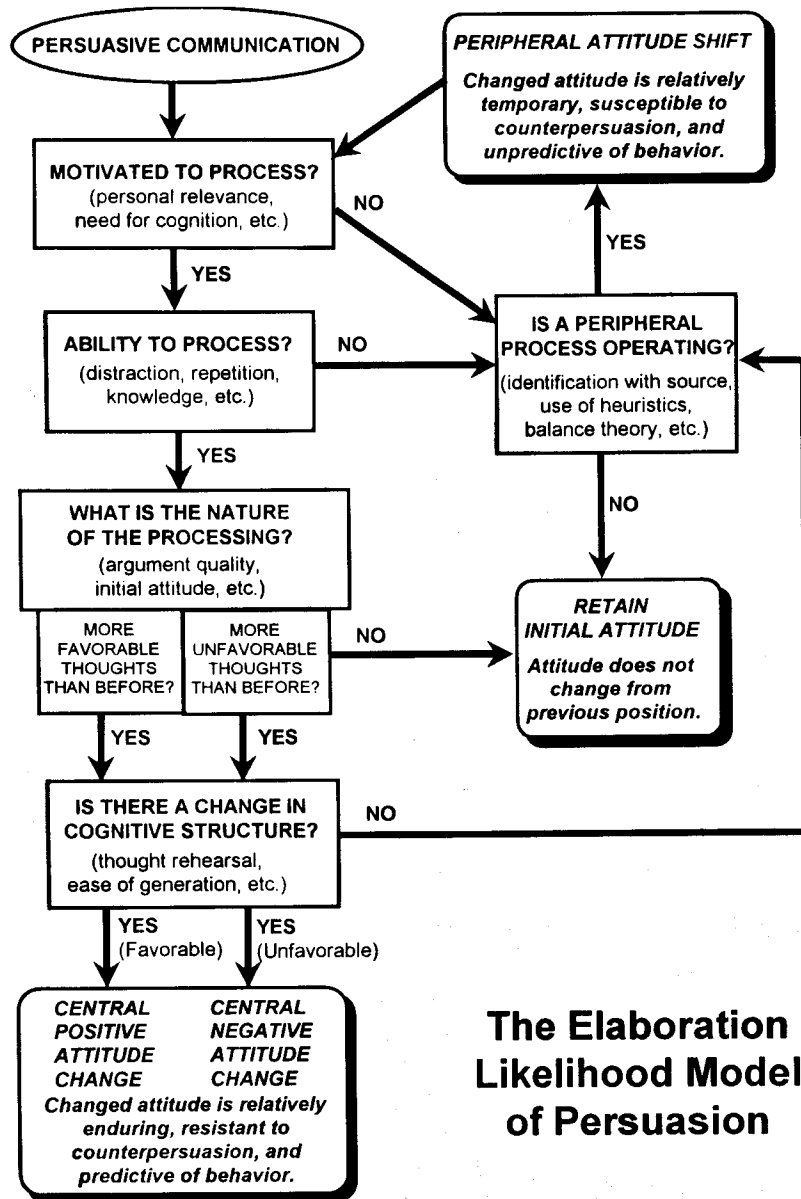


FIG. 7.2. Schematic depiction of the Elaboration Likelihood Model of Persuasion. The figure shows the possible endpoints after exposure to a persuasive communication for people following central and peripheral routes to attitude change. (Adapted from Petty & Cacioppo, 1986a.)

the persuasive communication. The goal of this cognitive effort is to determine if the position advocated has any merit. Not every message received from the media is sufficiently interesting or important to think about, and not every situation provides the time and opportunity for careful reflection. When people are motivated and able to take the central route, they carefully appraise the extent to which the communication provides information that is fundamental or central to the true merits of the position advocated.

Of course, the particular kind of information that is perceived central to the merits of any particular issue can vary from person to person and from situation to situation. For example, when some people think about social issues (e.g., capital punishment), religious considerations and arguments are particularly persuasive, but for others, legalistic arguments carry the most weight (Cacioppo, Petty, & Sidera, 1982). Likewise, research has shown that when some people evaluate ads for consumer products, they are primarily concerned about how usage of the product will affect the image that they project; for other people, this dimension is unimportant (DeBono & Packer, 1991; Snyder & DeBono, 1989). Dimensions that are most important will often receive the most scrutiny (Petty & Wegener, 1998b; Petty, Wheeler, & Bizer, 2000).

Research suggests that an important function of the media in the political domain is to make certain political and social issues more salient than others (see Iyengar & Kinder, 1987; see also chap. 1). For example, a study of magazine stories showed that from the 1960s to the 1990s, stories about drug abuse and nutrition increased dramatically, stories about communism and desegregation declined, and stories on pollution remained about the same (Paisley, 1989). If people come to believe that certain issues are more important due to extensive media coverage, it is reasonable that these dimensions of judgment will become more central in evaluating the merits of political candidates. By giving a problem great coverage (e.g., whether the oil crisis or a presidential sex scandal), newscasters make that problem readily accessible in the minds of recipients, making them more likely to think about that particular problem when they judge the "bottom line" on an attitude object (e.g., a president; see Sherman, Mackie, & Driscoll, 1990). So, by setting the agenda of what is important to evaluate, the media can have important "indirect" effects on attitude change.³

³Of course, much of the correlation between media coverage and ratings of issue-importance is due to the fact that the media cover issues people already think are important. Nevertheless, some research shows that the media coverage can precede public perceptions (e.g., MacKuen, 1981), and the mere accessibility of certain issues can cause people to give greater weight to them (Sherman et al., 1990).

In the central route, once people have had thoughts about the message, the final step involves integrating the new thoughts into one's overall cognitive structure. Such integration may be more likely to occur if one's thoughts are rehearsed and held with high confidence. It is important to note, however, that just because the attitude change process in the central route involves considerable cognitive work does not mean that the attitude formed will be a rational or "accurate" one. The extensive information processing activity might be highly biased by factors such as one's prior attitude and knowledge or one's current mood state. The important point is that sometimes attitudes are changed by a rather thoughtful process in which people attend carefully to the issue-relevant information presented, examine this information in light of their relevant experiences and knowledge, and evaluate the information along the dimensions they perceive central to the merits of the issue. People engaged in this effortful cognitive activity have been characterized as engaging in "systematic" (Chaiken, Liberman, & Eagly, 1989), "mindful" (Palmerino, Langer, & McGillis, 1984), and "piecemeal" (Fiske & Pavelchak, 1986) processing (see Chaiken & Trope, 1999, for a discussion of various "dual-route" models of social judgment). Attitudes changed by the central route have been shown to have a number of distinguishing characteristics. Because these attitudes are well articulated and integrated into a person's cognitive structure, these attitudes have been found to be relatively easy to access from memory, persistent over time, predictive of behavior, and resistant to change until they are challenged by cogent contrary information (Haugtvedt & Petty, 1992; Petty, Haugtvedt, & Smith, 1995; see Petty & Krosnick, 1995, for an extensive discussion of the determinants of attitude strength).

Peripheral Route. In stark contrast to the central route to persuasion, the ELM holds that attitude change does not always require effortful evaluation of the information presented by the mass media or other sources. Instead, when a person's motivation or ability to process the issue-relevant information is low, persuasion can occur by a *peripheral route* in which processes invoked by simple cues in the persuasion context influence attitudes. The peripheral route to persuasion recognizes that it is neither adaptive nor possible for people to exert considerable mental effort in thinking about all of the media communications to which they are exposed. In order to function in contemporary society, people must sometimes act as "lazy organisms" (McGuire, 1969) or "cognitive misers" (Taylor, 1981) and employ simpler means of evaluation (see also Bem, 1972). For example, various features of a communication (e.g., pleasant scenery in a TV commercial) can elicit an affective state (e.g., a good mood) that becomes associated with the advocated position (as in classical condition-

ing, Staats and Staats, 1958). Or, the source of a message can trigger a relatively simple inference or heuristic such as "experts are correct" (Chaiken 1987) that a person can use to judge the message. Similarly, the responses of other people who are exposed to the message can serve as a validity cue (e.g., "if so many agree, it must be true"; Axsom, Yates, & Chaiken, 1987). In the first half of the past century, the Institute for Propaganda Analysis, in a report on propaganda techniques, listed a number of "tricks" that speakers of the time used to persuade their audiences that relied on peripheral cues (e.g., the "bandwagon" effect was giving the sense that most other people already supported the speaker; see Lee & Lee, 1939).

We do not mean to suggest that peripheral approaches are necessarily ineffective. In fact, they can be quite powerful in the short term. The problem is that over time, moods dissipate, peoples' feelings about sources can change, and the cues can become dissociated from the message. These factors would then undermine the basis of the attitude. Laboratory research has shown that attitude changes based on peripheral cues tend to be less accessible, enduring, and resistant to subsequent attacking messages than attitudes based on careful processing of message arguments (see Petty et al., 1995). In sum, attitudes changed via the central route tend to be based on active thought processes resulting in a well-integrated cognitive structure, but attitudes changed via the peripheral route are based on more passive acceptance or rejection of simple cues and have a less well articulated foundation.⁴

The tendency for simple cue processes to dissipate over time along with the tendency for argument-based persuasion to persist can lead to interesting effects. For example, one such phenomena is the often cited but infrequently found (Gillig & Greenwald, 1978) "sleeper effect" (Gruder, Cook, Hennigan, Flay, Alessis, & Halamaj, 1978; Hovland, Lumsdaine, & Sheffield, 1949; Peterson & Thurstone, 1933). The sleeper effect can occur when a persuasive message is followed by a discounting cue (e.g., you learn that some information was reported in the *National Enquirer* after exposure). The effect is that although the discounting cue suppresses attitude change initially, over time the message can increase in effectiveness—opposite to the typical decay pattern found. The ELM predicts that such an effect should be most likely to occur under conditions in which the initial message is very strong, processed carefully, and then discounted. If the message was processed carefully and a simple cue follows message

⁴For expository purposes, we have emphasized the distinction between the central and the peripheral routes to persuasion. That is, we have focused on the prototypical processes at the endpoints of the elaboration likelihood continuum. In most persuasion situations (which fall somewhere along this continuum), some combination of central and peripheral processes are likely to have an impact on attitudes.

processing, what should happen is the following: Over time the impact of the peripheral discounting cue should fade, and people's attitudes should be governed by their initial (and more memorable) favorable thoughts to the strong arguments (see Priester, Wegener, Petty, & Fabrigar, 1999).

Persuasion Processes in the Elaboration Likelihood Model

Variables Affecting the Amount of Thinking. Our discussion of the central and peripheral routes to persuasion has highlighted two basic processes of attitude change, but the depiction of the ELM in Fig. 7.2 outlines more-specific roles that variables can play in persuasion situations. First, some variables affect a person's general *motivation* to think about a message. Mendelsohn (1973) noted that placing potential media recipients "along a continuum ranging from those whose initial interest in a given subject area may be high to those who literally have no interest in what may be communicated becomes an essential step in developing effective public information campaigns" (p. 51). Several variables enhance interest in media messages. Perhaps the most important determinant of interest and motivation to process the message is the perceived personal relevance of the communication. In one study (Petty & Cacioppo, 1979b), for example, undergraduates were told that their own university (high personal relevance) or a distant university (low personal relevance) was considering implementing a policy requiring all seniors to pass an exam in their major as a prerequisite to graduation. The students then listened to a radio editorial that presented either strong or weak arguments in favor of the exam policy. As predicted by the ELM, when the speaker advocated that the exams should be instituted at the students' own campus, the quality of the arguments in the message had a greater impact on attitudes than when the speaker advocated that the exams should be instituted at a distant institution. That is, as the personal relevance of the message increased, strong arguments were more persuasive, but weak arguments were less persuasive than in the low-relevance conditions (see left panel of Fig. 7.3). In addition, an analysis of the thoughts that the students listed after the message suggested that the more extreme attitudes were accompanied by more extreme thoughts. When the arguments were strong, students exposed to the high-relevance message produced more than twice as many favorable thoughts as low-relevance students, and when the arguments were weak, high-relevance students generated almost twice as many unfavorable thoughts as students exposed to the low-relevance version.

In an interesting extension of this work, Burnkrant and Unnava (1989) have found that simply changing the pronouns in a message from the third person (e.g., *one* or *he and she*) to the second person (i.e., *you*) was

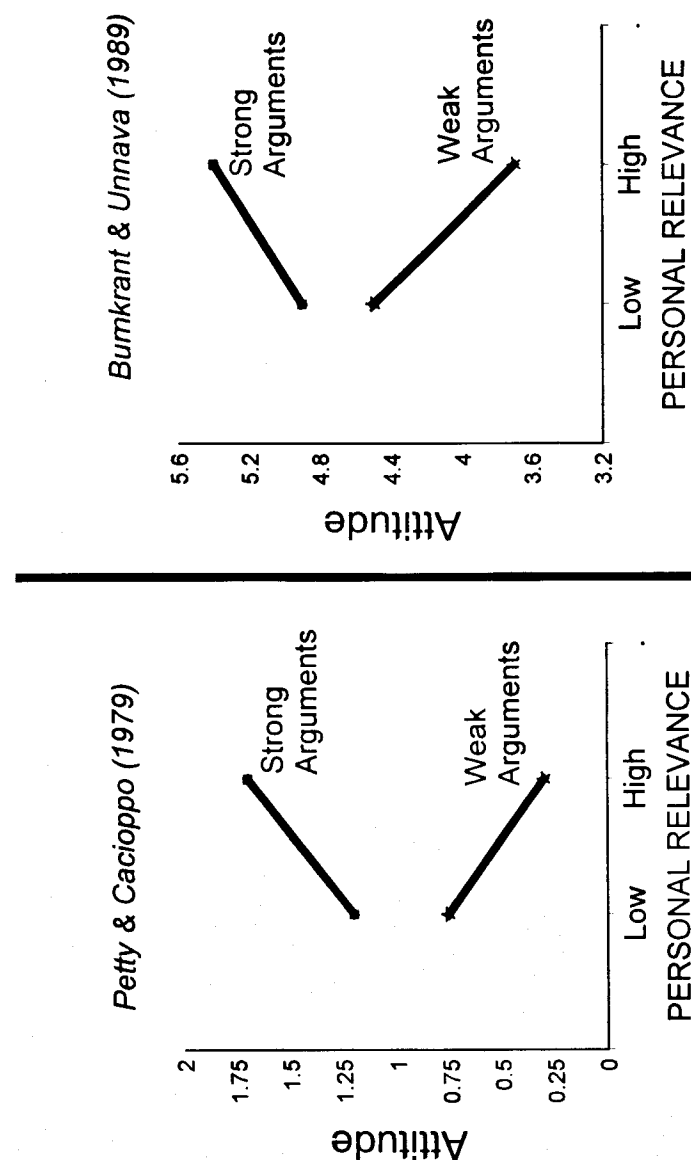


FIG. 7.3. Self-relevance increases message processing. In each panel, as self-relevance (involvement) increases, argument quality becomes a more important determinant of the attitudes expressed after exposure to a persuasive message. Data in the left panel are from an experiment by Petty and Cacioppo (1979b). Data in the right panel are from an experiment by Burnkrant and Unnava (1989). In each panel, higher numbers indicate more-favorable attitudes toward the position taken in the persuasive message.

sufficient to increase personal involvement and processing of the message arguments (see right panel of Fig. 7.3). That is, when the messages contained the self-relevant pronouns, strong arguments were more persuasive and weak arguments were less persuasive than when third-person pronouns were used. Yet another way to increase self-relevance is to frame a message to comport either with people's values or self-conceptions. For example, if a person is attuned to the image value of a product, framing the message as dealing with image can increase message processing (Petty & Wegener, 1998b; see Petty, Wheeler, & Bizer, 2000, for a review).

Although increasing the perceived personal relevance of a message is an important way to increase thinking (see Petty, Cacioppo, & Haugtvedt, 1992, for a review), it is hardly the only one. For example, the degree to which a source is perceived to be of questionable or low trustworthiness has also been found to increase the extent of elaboration (Priester & Petty, 1995). In this research, the extent to which a source could be trusted to convey accurate information was manipulated while keeping source expertise high. In one study, source trustworthiness was manipulated by either providing message recipients with background information that suggested that the speaker was honest and could be trusted or was dishonest and could not always be trusted to provide accurate information. In another study, trustworthiness was manipulated by having the source either advocate a self-serving position (relatively untrustworthy) or a position that violated the source's own self-interests (relatively trustworthy). Regardless of how source trustworthiness was manipulated, sources of questionable trustworthiness engendered greater elaboration than sources perceived to be trustworthy.

This increase in elaboration occurred primarily for individuals who are not intrinsically motivated to elaborate (i.e., low in need for cognition; Cacioppo & Petty, 1982), prompting them to elaborate when they would normally forgo such effortful processing. That is, an untrustworthy source increased elaboration under conditions when individuals would likely not normally have elaborated. In contrast, individuals who intrinsically enjoy elaboration (i.e., high need for cognition individuals) elaborated the messages equally regardless of source trustworthiness. Kaufman, Stasson, and Hart (1999) uncovered a similar pattern of results. Low need for cognition participants were more likely to elaborate the information presented by an untrustworthy (i.e., *National Enquirer*) than trustworthy (i.e., *Washington Post*) source.

Why does source trustworthiness influence elaboration? The ELM postulates both that (a) individuals are motivated to hold correct attitudes and that (b) although individuals are motivated to hold correct attitudes, the amount and nature of the elaboration on which these attitudes are based varies. In combination, these two postulates offer the explanation that source trustworthiness influences assurance of accuracy, and it is this assur-

ance of accuracy that can influence elaboration. When a source is perceived to be expert and trustworthy (and hence likely to provide accurate information), individuals can be reasonably confident of the accuracy of their attitudes by merely accepting the position advocated. When a source is perceived to be an expert but of low trustworthiness, however, a message recipient cannot be assured of accuracy, and instead must scrutinize the information in order to be assured of an accurate attitude. As such, assuming the source has expertise (and is able to be accurate), perceived trustworthiness can influence the extent to which individuals engage in thinking.

Another source characteristic that has been found to affect message elaboration is the degree to which a source is stigmatized or not. Specifically, research has provided evidence that when the source of a message is a member of a stigmatized group (e.g., gay or African American), message recipients are more likely to elaborate than when the source is a member of a nonstigmatized group (White & Harkins, 1995). Interestingly, this influence of source stigma is apparent only for people who reject prejudicial beliefs (e.g., are low in modern racism or homophobia; Petty, Fleming, & White, 1999). Individuals low in prejudice might be chronically concerned that stigmatized individuals are treated unfairly by themselves or others. As such, they pay particular attention to (i.e., elaborate) information presented by stigmatized sources in order to assure that the sources are treated fairly.

Other variables that have been found to increase elaboration include whether the key arguments are presented as questions or assertions, the number of message sources, and the expectedness of a position. For example, several studies have shown that when a person is not normally motivated to think about the message arguments, more thinking can be provoked by summarizing the major arguments as *questions* rather than as *assertions* (Howard 1990; Petty, Cacioppo, & Heesacker, 1981; Swasy & Munch 1985). Thus, if an argument in a radio commercial was followed by a question (Isn't this candidate the best one?) rather than by an assertion (This candidate is the best one), greater processing of the argument presented would result. Greater thinking about a message can also be induced by having the individual arguments presented by multiple sources rather than just one (Harkins & Petty, 1981; Moore & Reardon, 1987). The multiple source effect is attenuated if people suspect that the multiple sources are not providing independent analyses of the issue (Harkins & Petty, 1987; Wilder, 1990).

When some feature of the message is unexpected, processing can be increased (e.g., Maheswaran & Chaiken, 1991). For example, if a newspaper headline implied that many people favored something that the message recipient disliked or that few people favored something the recipient liked, message scrutiny can be increased over cases in which the headline implied that few favored what the recipient disliked or many favored what the

recipient liked (Baker & Petty, 1994). Of course, the enhanced thinking evoked by rhetorical questions, multiple sources, or surprising headlines will aid persuasion only if the arguments in the communication are subjectively cogent. The enhanced thinking will be detrimental to persuasion if the arguments are found to be specious.

As outlined in Fig. 7.2, having the necessary motivation to process a message is not sufficient for the central route to persuasion to occur. People must also have the ability to process the message. For example, a complex or long message might require more than one exposure for maximal processing, even if the recipient was highly motivated to think about it. The increased processing with multiple exposures should lead to more favorable thoughts and attitudes if the arguments are strong, but to more counterarguments and less-favorable attitudes if the arguments are weak (Cacioppo & Petty, 1989). Of course, repetition is just one variable that has an impact on a person's ability to think about a message. For example, if a message is accompanied by distraction (Petty, Wells, & Brock, 1976) or if the speaker talks too fast (Smith & Shaffer, 1991), thinking about the message will be disrupted. When strong arguments are presented, disrupting thinking should diminish persuasion, but when weak arguments are presented, disrupting thinking should enhance persuasion by reducing counterarguing (see Petty & Brock, 1981). Different media sources have an impact on people's ability to think about the message. Specifically, people are generally better able to process messages in media that allow self-pacing (magazines, Internet) than those that are controlled externally (e.g., radio and television; Chaiken & Eagly, 1976; Wright, 1981).

A consideration of motivational and ability variables together suggests some interesting effects. For example, research shows clearly that moderate repetition of a message can be beneficial if arguments and cues are positive, but repeating the same message over and over eventually leads to boredom and reduced effectiveness. This "wearout" effect occurs regardless of whether the message is on a topic of high or low interest (Sawyer, 1981). Because of this, a number of investigators have suggested that introducing some variation into the repeated ads should forestall the inevitable tedium effect (see Pechman & Stewart, 1989). The ELM suggests that different kinds of message variation should be attempted in a media campaign depending on the recipient's overall motivation to think about the issue of the campaign. In a test of this hypothesis, Schumann, Petty, and Clemons (1990) found that for highly motivated message recipients (those expecting to make an imminent decision about the issue discussed in the communications), repeated presentations on the same topic could be made more effective if the messages varied the substantive arguments that they presented. Variation in peripheral cues made no difference. On the other hand, for recipients low in motivation, variation in

simple cues across repeated exposures enhanced the effectiveness of the campaign, but variation in arguments did not.

Objective Versus Biased Thinking. In addition to influencing a person's general motivation or ability to think about a message, Fig. 7.2 indicates that variables can also have an impact on persuasion by influencing the *nature* of the thoughts that come to mind. That is, some features of the persuasion situation increase the likelihood of favorable thoughts being elicited, but others increase the likelihood of unfavorable thoughts coming to mind. Although the subjective cogency of the arguments used in a message is a prime determinant of whether favorable or unfavorable thoughts are elicited when message thinking is high, other variables can also be influential in determining whether favorable or unfavorable thoughts predominate (Petty & Cacioppo, 1990). For example, instilling "reactance" in message recipients by telling them that they have no choice but to be persuaded on an important issue *motivates* counterarguing, even when the arguments used are strong (Brehm, 1966; Petty & Cacioppo, 1979a). Thus, biased thinking often reduces the impact of message quality on persuasion (Manstead et al., 2001; Petty & Cacioppo, 1986a). Similarly, people who possess accessible attitudes bolstered by considerable attitude-congruent knowledge are better *able* to defend their attitudes than those who have inaccessible attitudes or attitudes with a minimal underlying foundation (Fazio & Williams, 1986; Wood 1982).

Sometimes variables bias people's thinking and influence their responses to a persuasive message without any awareness of the effect. At other times, however, people can become aware of some potentially contaminating influence on their thoughts and judgments. To the extent that people become aware of a possible bias and want to correct for it, they can take steps to debias their judgments. According to the Flexible Correction Model (FCM) of debiasing (Petty & Wegener, 1993; Wegener & Petty, 1997), to the extent that people become aware of a potential contaminating factor and are motivated and able to correct for it, they consult their intuitive theory of the direction and magnitude of the bias and adjust their judgment accordingly (see also Wilson & Brekke, 1994). Because people are not always aware of a biasing factor, as we noted previously, a high elaboration attitude is not necessarily bias free. Even attempts to correct for bias do not necessarily produce bias free judgments because people can be unaware of the actual magnitude or direction of bias and therefore make an inaccurate correction.

Arguments Versus Peripheral Cues. As we noted before, when people have the motivation and ability to think about an issue, they scrutinize the issue-relevant information presented, such as the arguments provided in the

communication. An argument is a piece of information that is relevant to determining the true merits of the position taken. Although we ordinarily think of arguments as features of the message content itself, source, recipient, and other factors can also serve as arguments. For example, if a spokesperson for a beauty product says that "if you use this product, you will look like me," the source's own physical attractiveness serves as relevant information for evaluating the effectiveness of the product (Petty & Cacioppo, 1984c). Or, a person might look to their own emotional state to provide evidence about the merits of something (e.g., "If I don't feel happy in your presence, I must not love you"). Just as source, recipient, and other factors can serve as persuasive arguments in the appropriate context, features of the persuasive message can serve as peripheral cues. A peripheral cue is a feature of the persuasion context that allows favorable or unfavorable attitude formation even in the absence of an effortful consideration of the true merits of the object or issue. Thus, just as source factors such as how expert or attractive the source is (Chaiken, 1980; Petty, Cacioppo, & Goldman, 1981; Petty, Cacioppo, & Schumann, 1983) can serve as peripheral cues when motivation or ability to think are low, so too can the mere number of arguments in the message (Aaker & Maheswaran, 1997; Alba & Marmorstein, 1987; Petty & Cacioppo, 1984a) and the length of the arguments used (Wood, Kallgren, & Priesler, 1985; see also Petty, Wheeler, & Bizer, 1999).

Summary. The ELM holds that as the likelihood of elaboration is increased (as determined by factors such as the personal relevance of the message and the number of times it is repeated), the perceived quality of the issue-relevant information presented becomes a more important determinant of persuasion. Effortful evaluation of this information can proceed in a relatively objective or a relatively biased fashion, however. As the elaboration likelihood is decreased, peripheral cues become more important in determining any attitude change that occurs. That is, when the elaboration likelihood is high, the central route to persuasion dominates, but when the elaboration likelihood is low, the peripheral route takes precedence (see Petty, 1994; Petty & Wegener, 1999, for additional discussion of the operation of central and peripheral processes along the elaboration likelihood continuum).⁵

⁵As we have noted previously, the accumulated research on persuasion has pointed to many variables that can be used to either increase or decrease the amount of thinking about a persuasive message, and render that thinking relatively favorable or unfavorable. Although we have focused on motivational and ability variables that can be modified by external means (e.g., including rhetorical questions in a message to increase thinking about the arguments), other determinants of motivation and ability to process a message are dispositional (e.g., people high in "need for cognition" tend to chronically engage in and enjoy thinking, Cacioppo & Petty, 1982; Cacioppo, Petty, Feinstein, & Jarvis, 1996).

Multiple Roles for Variables in the Elaboration Likelihood Model

Now that we have explained the specific roles that variables can take on in persuasion settings, it is important to note that one of the most powerful features of the ELM is that it holds that any *one* variable can have an impact on persuasion by serving in different roles in different situations. That is, the same feature of a persuasive message can, depending on the context, serve as an issue-relevant argument or a peripheral cue, affect the motivation or ability to think about the message, bias the nature of the thoughts that come to mind, or affect structural properties of the thoughts such as how accessible they are or how much confidence people have in them.

If any one variable can influence persuasion by several means, it becomes critical to identify the general conditions under which the variable acts in each of the different roles or the ELM becomes descriptive rather than predictive (cf., Stiff, 1986). The ELM holds that when the elaboration likelihood is high (such as when perceived personal relevance and knowledge are high, the message is easy to understand, no distractions are present, and so on), people typically know that they want to and are able to evaluate the merits of the arguments presented, and they do so. Variables in the persuasion setting are likely to have little direct impact on evaluations by serving as simple peripheral cues in these situations. Instead, when the elaboration likelihood is high, a variable can serve as an argument if it is relevant to the merits of the issue, the variable can determine the nature of the ongoing information processing activity (e.g., it might bias the ongoing thinking), or the variable can influence structural properties of the cognitive responses that occur (e.g., the confidence with which they are held). On the other hand, when the elaboration likelihood is low (e.g., low personal relevance or knowledge, complex message, many distractions), people know that they do not want to or are not able to evaluate the merits of the arguments presented, or they do not even consider exerting effort to process the message. If any evaluation is formed under these conditions, it is likely to be the result of relatively simple associations or inferences based on salient cues. Finally, when the elaboration likelihood is moderate (e.g., uncertain personal relevance, moderate knowledge, moderate complexity), people may be uncertain as to whether or not the message warrants or needs scrutiny and whether or not they are capable of providing this analysis. In these situations they may examine the persuasion context for indications (e.g., Is the source trustworthy?) of whether or not they are interested in or should process the message. A few examples should help to clarify the multiple roles that a variable can have in different situations.

Multiple Roles for Source Factors. Consider first the multiple processes by which source factors, such as expertise or attractiveness, can have an impact on persuasion (see Petty & Cacioppo, 1984c). In various studies, source factors have been found to influence persuasion by serving as a peripheral cue when the likelihood of thinking was low. For example, when the personal relevance of a message was low, highly expert sources produced more persuasion than sources of low expertise regardless of the quality of the arguments they presented (Petty, Cacioppo, & Goldman, 1981; see also Chaiken, 1980).⁶ On the other hand, in several studies in which the personal relevance of the message was not specified and nothing else was done to make the likelihood of thinking especially high or low (i.e., moderate elaboration likelihood), the source factors of expertise and attractiveness affected how much thinking people did about the message (Heesacker, Petty, & Cacioppo, 1983; Moore, Hausknecht, & Thamodaran, 1986; Puckett, Petty, Cacioppo, & Fisher, 1983). That is, attractive and expert sources led to more persuasion when the arguments were strong, but to less persuasion when the arguments were weak. The self-monitoring scale (see Snyder, 1987) has been used to distinguish people who tend to think more about what experts have to say (i.e., low self-monitors) from those who are more interested in what attractive sources have to say (i.e., high self-monitors; DeBono & Harnish, 1988).

When the likelihood of thinking is very high, source factors take on other roles. For example, if a source factor is relevant to the merits of a message, it can serve as a persuasive argument. Thus, as noted earlier, an attractive endorser might provide persuasive visual evidence for the effectiveness of a beauty product (Petty & Cacioppo, 1984c). In addition, Chaiken and Maheswaran (1994) demonstrated a biasing effect on information processing of source expertise. When recipients under high-elaboration conditions received an ambiguous message (i.e., not clearly strong or weak), expertise significantly affected the valence of the cognitive responses generated (i.e., expertise biased message processing). When the likelihood of thinking was low (i.e., the message was on an unimportant topic), expertise did not affect message-relevant thoughts and simply acted as a persuasion cue (see also Shavitt, Swan, Lowery, & Wanke, 1994).

Under high-elaboration conditions, source factors have also been found to influence persuasion by affecting the confidence people have in the validity of the thoughts they have in response to the message. In one study (Briñol, Tormala, & Petty, 2001), college students read a persuasive

⁶In studies varying expertise or attractiveness, source trustworthiness is assumed to be high.

message containing a set of strong arguments in favor of phosphate detergents. All participants were told to think about the message and to list the thoughts that came to mind. Because the message was composed of convincing arguments, recipients generated mostly favorable thoughts toward the proposal. After receiving the message, but just prior to reporting their attitudes, participants were led to believe that the message was written either by a government environmental agency (high credibility) or by the detergent manufacturer (low credibility source). The credibility of the source could not affect the nature of the thoughts elicited because this manipulation followed message processing. However, the manipulation affected the confidence that participants reported in the validity of their thoughts. That is, more confidence was reported when the message was said to have come from a high rather than a low credibility source. Because the arguments were strong and the thoughts mostly favorable, relying on these thoughts produced more favorable attitudes.

Under high-elaboration conditions, the role that source factors play depends on a number of factors. First, the source factor can serve as a message argument if it contains information central to the merits of the object. Otherwise, the source factor can either bias the direction of the thoughts or affect a person's confidence in the thoughts that are generated. The former role is more likely when the source information precedes the message where it can influence thought generation, but if the source information comes after the message, the latter role is more likely.

Finally, if people were made aware of the potentially biasing impact of source factors (either on information processing or on judgment), they might attempt to correct for this influence. For example, in one study Petty, Wegener, and White (1998) found that highly likable sources produced less persuasion than dislikable sources when participants tried to correct for this potential bias. This reversed effect of liking was a result of "overcorrection" (i.e., people overestimating the effect of source likability on their judgments; see also Wegener & Petty, 1995).

Multiple Roles for Message Factors. As we noted earlier, the mere number of arguments in a message can serve as a peripheral cue when people are either unmotivated or unable to think about the information. When motivation and ability are high, however, the informational items in a message are not simply counted as cues, but instead the information is processed for its cogency. When the number of items in a message serves as a cue (low-elaboration conditions), adding weak reasons in support of a position enhances persuasion, but when the items in a message serve as arguments, adding weak reasons reduces persuasion (Aaker & Maheswaran, 1997; Alba & Marmorstein, 1987; Friedrich, Fetherstonhaugh, Casey, & Gallagher, 1996; Petty & Cacioppo, 1984a).

One study examined multiple roles for message factors at three distinct levels of recipient elaboration. In this research, a regular advertisement for an unknown product was contrasted with an "upward comparison" ad that compared the new product to a well-established one (Pechmann & Estaban, 1993). Unlike a regular message that simply provides support for its position (e.g., You should vote for Candidate X because . . .), an upward comparison message suggests that the critical issue, product, or person is similar to one that is already seen as desirable (e.g., You should vote for Candidate X, who like Person Y, favors tax cuts). In order to examine the multiple roles for this message variable, regular and upward comparison ads containing either strong or weak arguments were presented following instructions and procedures designed to elicit either a relatively low, moderate, or high motivation to think about the critical ad.

Effectiveness of the ads was assessed by asking recipients to rate their intentions to purchase the product advertised. When the low-motivation instructions were used, the upward comparison ad produced more favorable intentions than the regular ad, but strong arguments did not produce more favorable intentions than weak ones. That is, under the low-elaboration likelihood conditions, the comparison with the well-known and liked product served as a simple peripheral cue, and argument processing was minimal. When the high-motivation conditions were examined, the opposite resulted. That is, under the high-elaboration instructions, the strong arguments produced more favorable intentions than the weak ones, but the upward comparison was completely ineffective as a cue for producing more favorable intentions. Finally, when the moderate motivation conditions were analyzed, the use of an upward comparison ad was found to enhance processing of the message arguments. Specifically, when the upward comparison ad used strong arguments, it led to more persuasion than the direct ad, but when the upward comparison ad used weak arguments, it produced less persuasion than the regular ad.

The mere number of arguments and the use of upward comparison are only some of the message factors that can influence persuasion by serving in different roles in different situations. To take one more example, consider the complexity of the message (e.g., difficult vocabulary, sentence structure). Such complexity could serve as a simple cue when the elaboration likelihood is low. For example, a person might use the heuristic, "the person doesn't seem to know what he is talking about, therefore I can't agree." Alternatively, the person might reason that "the person seems to know a lot about this, therefore the position is good." Whether one inference or the other is reached might depend on factors such as the person's self-esteem or perceived knowledge on the issue.

When the elaboration likelihood is not constrained to be high or low, complexity might affect the amount of thinking that occurs. That is, some people (e.g., those high in need for cognition; Cacioppo & Petty, 1982),

might be challenged by a message that seems complex, but other individuals (e.g., those low in need for cognition) might eschew processing a message that is perceived as difficult (Evans & Petty, 1998). Finally, under high-elaboration conditions, other roles for message complexity are possible. In one study, for instance, it was shown that under high-elaboration conditions, complex information undermined people's confidence in their thoughts (Briñol & Petty, 2001).

Multiple Roles for Recipient Factors. According to the ELM, recipient factors can serve in the same multiple roles as source and message factors. Consider the impact that a person's mood state has on persuasion. The mass medium of television has special power to present messages (commercials) in contexts in which people's moods vary (e.g., due to the television program they are watching). According to the ELM, when the likelihood of elaboration is relatively low, a person's mood should impact attitudes by a peripheral process. Consistent with this view, a number of studies have shown that the nonthoughtful "classical conditioning" of affect to an attitude object occurs more easily when the likelihood of thinking is low (e.g., Cacioppo, Marshall-Goodell, Tassinari, & Petty, 1992; Gorn, 1982; Priester, Cacioppo, & Petty, 1996). Also under low-elaboration conditions, affective states have been postulated to influence attitudes by a simple inference process in which misattribution of the cause of the mood state to the persuasive message or to the attitude object occurs (e.g., I must feel good because I like or agree with the message advocacy; see Petty & Cacioppo, 1983; Schwarz, 1990).

As the likelihood of elaboration increases, mood takes on different roles (see also Forgas, 1995). Specifically, when the elaboration likelihood is more moderate, mood has been shown to have an impact on the extent of argument elaboration. According to the hedonic contingency theory (Wegener & Petty, 1994, 1996), happy people tend to pay attention to the hedonic rewards of situations, and thus they are more likely than are sad people to process a message that is thought to be hedonically rewarding if processed (see Wegener, Petty, & Smith, 1995). On the other hand, if the message will not be rewarding to think about (e.g., because it is on a counterattitudinal or a depressing topic), then sad individuals will engage in greater message processing than will happy people because sadness tends to put people in a problem-solving mind-set (Schwarz, Bless, & Bohner, 1991).

When the elaboration likelihood is high, the ELM holds that affective states can influence attitudes by influencing the nature of the thoughts that come to mind. Memory research has demonstrated that material of a positive valence is more accessible in memory when people are in positive rather than in negative moods, whereas negatively valenced material is more accessible when they are in negative rather than positive moods (e.g.,

see Blaney, 1986; Bower, 1981; Isen, 1987). The increased accessibility of mood-congruent material in memory may lead to mood-congruent associations that may further influence the evaluation of the target. In other words, when the elaboration likelihood is high, mood can introduce a positive or negative bias to the thoughts generated in response to the persuasive message. Thus, positive mood can have a similar effect on attitudes under high- and low-elaboration conditions, but the process is different. In one examination of this, students watched a television commercial in the context of a program that induced either a happy or a neutral mood (Petty, Schumann, Richman, & Strathman, 1993). The likelihood of thinking about the critical ad was varied by telling some of the students that they would be allowed to select a free gift at the end of the experiment from a variety of brands of the target product (high involvement) or that they would be allowed to select a free gift from another product category (low involvement). Following exposure to the television program containing the ads, the students reported on their moods, rated their attitudes toward the target product, and listed the thoughts they had during the message. The results of this study revealed that the pleasant program led to a more positive mood and more positive evaluations of the product under both high- and low-elaboration conditions. Importantly, and consistent with the notion that a pleasant mood produces positive attitudes by different processes under high- and low-elaboration conditions, it was found that a pleasant mood was associated with more positive thoughts about the product when the elaboration likelihood was high, but not when it was low. Figure 7.4 presents the results from causal path analyses that simultaneously estimated the three paths between (a) manipulated mood and attitude toward the product, (b) manipulated mood and proportion of positive thoughts generated, and (c) proportion of positive thoughts and attitude toward the product. Under low-involvement (low-elaboration) conditions, mood had a direct effect on attitudes, but did not influence thoughts (see left panel). In contrast, under high-involvement (high-elaboration) conditions, mood had no direct effect on attitudes. Instead, mood influenced the production of positive thoughts, which in turn had an impact on attitudes (see right panel).

One way in which mood biases thoughts is by affecting how likely people think the consequences mentioned in the message are. Specifically, when in a good mood and thinking carefully, people believe that positive consequences mentioned in the communication are more likely, but negative consequences are less likely. The opposite occurs for a negative mood (e.g., Johnson & Tversky, 1983). Thus, positively framed arguments (e.g., if you stop smoking, you will live longer) are more effective when thoughtful people are in a positive rather than a negative mood because people overestimate the likelihood of the positive consequence, but negatively framed arguments (if you don't stop smoking, you'll die sooner) are

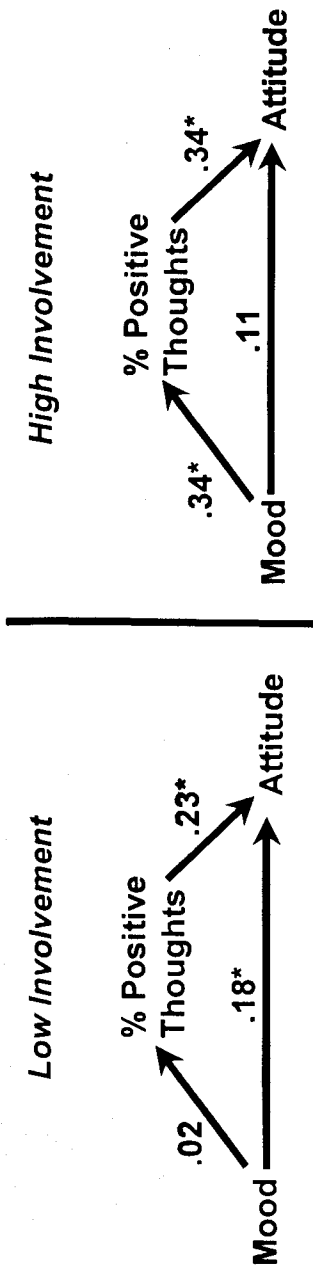


FIG. 7.4. Direct and indirect effects of positive mood on attitudes under high- and low-involvement conditions. Data in the left panel show that when involvement is low and people are not motivated to process the message, mood has a direct effect on attitudes. Data in the right panel show that when involvement is high and people are motivated to process the message, the effect of positive mood on attitudes is mediated by the generation of positive thoughts. (Figure adapted from Petty, Schumann, Richman, & Strathman, 1993.)

more effective in a negative than in a positive mood because thoughtful people overestimate the likelihood of the negative consequence (Wegener, Petty, & Klein, 1994). Research suggests that the effects of moods on perceived likelihoods are quite specific such that sad moods are especially effective in increasing the perceived likelihood of sad consequences and angering states are especially effective in increasing the perceived likelihood of angering consequences (DeSteno, Petty, Rucker, & Wegener, 2000). Because of this, more specific types of matching of messages to emotional states could prove effective in situations in which people are being thoughtful (e.g., presenting sad arguments to sad people but angering arguments to angry people).

In addition to biasing thoughts, recent research has shown that mood states can also affect the confidence people have in their thoughts when the elaboration likelihood is high. Research in nonpersuasion contexts has shown that a positive mood can enhance confidence in general knowledge structures (such as schemata, scripts, and stereotypes), and that happy individuals rely on these knowledge structures more than neutral or negative mood people (Bless, Clore, Schwarz, Golisano, Rabe, & Wolk, 1996; Krauth-Gruber & Ric, 2000). Similarly, in a series of studies, Briñol, Petty, and Barden (2001) found that high need for cognition individuals made to feel sad after message exposure came to have less confidence in the thoughts they generated during message exposure than people who were made to feel happy after message exposure. When the message was strong and elicited mostly favorable thoughts, causing doubt in these thoughts (via sad mood) led to reduced persuasion relative to causing confidence (via happy mood). But, when the message was weak and elicited mostly unfavorable thoughts, causing doubt in these thoughts led to more persuasion relative to causing confidence. In contrast, individuals low in motivation to elaborate (i.e., low need for cognition) simply showed more persuasion with happy than sad moods, regardless of argument quality. These low thoughtful individuals used their current mood state as a peripheral cue and generalized from their current mood state to the message.

Finally, it is important to note that the effects we have outlined for mood under different elaboration conditions assume that moods are not so salient that they are perceived as biasing. When moods are made salient and people perceive a possible biasing impact, they will often attempt to correct their judgments for the perceived contaminating impact of the emotional state (Schwarz & Clore, 1973). This can cause judgments to move in a direction opposite to people's intuitive theories of bias (Wegener & Petty, 1997, 2001). Thus, if people think a positive mood has a favorable impact on their judgments and they overestimate this bias, the corrected judgment in a positive mood can be more negative than the corrected judgment in a negative mood (e.g., Berkowitz, Jaffee, Jo, & Troccoli, 2000; Ottati & Isbell, 1996).

Consequences of Multiple Roles. Although we have only provided illustrative examples of particular source, message, and recipient variables, the accumulated studies support the ELM notion that variables can serve in different roles in different situations (see Petty & Wegener, 1998a). That is, various source, message, and recipient variables have been shown to influence attitudes as: (a) a peripheral cue under low-elaboration likelihood conditions, (b) a determinant of the extent of thinking about the message under moderate elaboration conditions, (c) a message argument when the variable was relevant to the attitude object and elaboration was high, and finally, depending on whether the variable was introduced before or after the message to (d) bias message processing, or to (e) influence confidence in one's message-relevant cognitive responses.

Because any one variable can produce persuasion in multiple ways, it is important to understand the process by which the variable has influenced a person's attitude. For example, our discussion of the two routes to persuasion suggests that if a good mood has produced persuasion by serving as a simple cue under low-elaboration conditions, the attitude induced will be less accessible, less persistent, less resistant, and less predictive of behavior than if a good mood produced the same amount of persuasion, but worked by increasing positive thoughts to the message arguments under high-elaboration conditions. In empirical research on media campaigns in a variety of domains (see Rice & Atkin, 1989), many source, message, recipient, and contextual variables have been examined. Relatively little attention has been paid, however, to the processes by which these variables work. The ELM holds that the variables that determine persuasion can work by different processes in different situations, and that the process, central or peripheral, by which the variable induces change is critical for understanding the consequences of any attitude change that occurs (see Fig. 7.2).

Directions for Future Research

Thus far we have reviewed evidence that has supported the primary ELM postulates about the processes responsible for attitude change. Before addressing the links between attitude change and behavior change, it is useful to consider where some future basic research on persuasion processes might be directed. We explained that an important factor in the ELM is how much thinking a person is motivated or able to engage in regarding an attitude issue. Because of this, most of the research on the ELM to date has focused on variables that initiate message processing. Little attention has been paid to variables that determine when that processing will stop. Because most of the messages used in laboratory research are relatively short (e.g., 1–3 minutes; 1–2 pages of text), it is likely that once individuals embark on the central route, they will continue to think about the message until the message ends. On the other

hand, the longer the message becomes, the less likely it seems that people will continue to diligently process every argument that is presented. At some point, the individual becomes tired, loses interest, or has considered enough information to come to a reasonable conclusion. Once this point is reached, the person becomes less attentive to the remaining message. As attention begins to wander, the person may become more aware of peripheral features of the persuasion context or may turn attention completely to noncommunication factors. In sum, future research might be directed profitably not only at additional variables and psychological conditions that initiate message processing ("start rules"), but also on those that determine when message processing will cease ("stop rules," Petty, Tormala, Hawkins, & Wegener, 2001) or shift processing from one mode to another ("shift rules," Mazursky & Schul, 2000).

ATTITUDE-BEHAVIOR LINKS

As we noted previously, the ELM provides a framework for understanding persuasion (yielding) processes. Once a person's attitude has changed, however, behavior change requires that the person's new attitude, rather than the old attitude or previous habits, guide action. Considerable research has addressed the links between attitudes and behavior, and a number of situational and dispositional factors have been shown to enhance attitude-behavior consistency (see Ajzen, 1988, for a comprehensive review).

Two general models of the process by which attitudes guide behavior have achieved widespread acceptance. One type is exemplified by Fishbein and Ajzen's (1975) "theory of reasoned action," which assumes that "people consider the implications of their actions before they decide to engage or not engage in a given behavior" (Fishbein & Ajzen, 1975, p. 5). In this model, people are hypothesized to form intentions to perform or not perform behaviors, and these intentions are based on the person's attitude toward the behavior as well as perceptions of the opinions of significant others (norms). The model focuses on the relatively thoughtful processing involved in considering the personal costs and benefits of engaging in a behavior. In particular, the model focuses on the perceived likelihood that certain benefits will be obtained or costs avoided and on the desirability or aversiveness of those benefits or costs. The model has accumulated considerable empirical support (Sheppard, Hartwick, & Warshaw, 1988). Ajzen (1991) has expanded the model into a "theory of planned behavior" and has shown that in addition to attitudes and norms, it is important to consider a person's perceptions of control over the behavior.

In contrast to the thoughtful processing highlighted by the theories of reasoned action and planned behavior, Fazio (1990, 1995) has proposed

that much behavior is rather spontaneous and that attitudes guide behavior by a relatively automatic process. That is, if the relevant attitude comes to mind, consistent behavior is likely to follow. Fazio argued that attitudes can guide behavior without any deliberate reflection or reasoning if (a) the attitude is accessed spontaneously by the mere presence of the attitude object, and (b) the attitude colors perception of the object so that if the attitude is favorable (or unfavorable), the qualities of the object appear favorable (or unfavorable). Fazio (1990) further notes that motivational and ability factors are important in determining whether the reasoned action or the automatic activation process occurs. That is, for behavioral decisions that are high in perceived personal consequences, attitudes are likely to guide behavior by a deliberate reflection process, but when perceived consequences are low, spontaneous attitude activation should be more important as a determinant of behavior. Similarly, as the time allowed for a decision is reduced, the importance of spontaneous attitude activation processes should increase over more deliberative processes. When there is sufficient motivation and ability to think about one's behavior, a person may reflect on the costs and benefits of the anticipated action. Interestingly, depending on what costs and benefits are salient at the moment, this process could lead to a behavior that is consistent or inconsistent with the underlying attitude. For example, the underlying attitude might be based on a combination of both emotional and cognitive (e.g., belief-based) factors, but if reflection time is high, people might overweight cognitive over emotional considerations leading to later dissatisfaction with the decision (see Wilson, Dunn, Kraft, & Lisle, 1989). When motivation and ability to reflect are low, however, people's actions are determined by whichever attitudes are the most accessible.⁷

In some domains an accessible attitude is easily translated into behavior (e.g., I like candidate X, I will vote for this candidate). In other domains, however, translating new attitudes into new behaviors is rather complex, even if the person has the desire to act on the attitude (e.g., I want to consume a low-fat diet, but how do I do this?). Thus, for some media campaigns, attitude change, though an important first step, may still be insufficient to produce the desired behavioral responses, even if appropriate attitudes were formed by the central route. People may also need to rehearse the attitude sufficiently so that it overcomes and replaces past attitudes (Petty, Gleicher, & Jarvis, 1993; Wilson et al., 2000), or they may need to acquire new skills and self-perceptions of confidence that

⁷Because attitudes formed by the central route tend to be more accessible than attitudes formed by the peripheral route, peripheral cues in the behavioral environment are likely to have an impact on immediate actions only when the likelihood of reflection in the current situation is low and there are no accessible attitudes to guide behavior.

allow newly acquired attitudes and intentions to be translated into action. Bandura's (1977, 1986) social-cognitive theory provides a framework to understand these processes (see chap. 6).

SUMMARY AND CONCLUSIONS

Although considerable research on mass media effects has shown that it is possible for media messages to change the knowledge or facts that people have about some object, issue, or person, we have argued that knowledge reception does not invariably result in attitude and behavior change. Our brief review of the ELM and the research supporting it has emphasized that information will only be successful in producing enduring changes in attitudes and behavior if people are motivated and able to process the information and if this processing results in favorable thoughts and ideas that are integrated into the person's relatively enduring cognitive structure. Furthermore, once attitudes have changed, implementing changes in some behaviors may require overcoming past attitudes and learning new skills and perceptions of self-efficacy. Thus, current work on attitude and behavior change may help to account for some unsuccessful media campaigns in which knowledge acquisition failed to have attitudinal and/or behavioral consequences. First, the knowledge acquired may have been seen as irrelevant by the recipients or may have led to unfavorable rather than favorable reactions. Second, even if favorable reactions were produced, people may have lacked confidence in those favorable thoughts, attenuating their reliance on them and reducing the likelihood of change. Third, even if appropriate attitude changes were induced, the changes may have been based on simple peripheral cues rather than on elaborative processing of the message. Thus, whatever changes were produced would be unlikely to persist over time and guide behavior. Fourth, even if attitude changes were produced by the central route, the people influenced may have lacked the necessary skills or self-confidence to translate their new attitudes into action, or the impact of attitudes on behavior may have been undermined by competing norms.

Perhaps the three most important issues raised in our review are (1) although some attitudes are based on an effortful reasoning process in which externally provided information is related to oneself and integrated into a coherent belief structure (central route), other attitudes are formed as a result of relatively simple cues in the persuasion environment (peripheral route); (2) any one variable (e.g., source expertise, mood) can be capable of inducing persuasion by either the central or the peripheral route in different situations by serving in one or more roles (i.e., affecting motivation or ability to think, biasing thinking, affecting thought confidence, serving as an argument, or a peripheral cue); and (3) although both

central and peripheral route processes can lead to attitudes similar in their valence (how favorable or unfavorable they are), there are important consequences of the manner of attitude change such that more thoughtful attitude changes tend to be more consequential than less thoughtful ones.

If the goal of a mass media influence attempt is to produce long-lasting changes in attitudes with behavioral consequences, the central route to persuasion appears to be the preferred persuasion strategy. If the goal is immediate formation of a new attitude, even if it is relatively ephemeral (e.g., attitudes toward the charity sponsoring a telethon), the peripheral route may prove acceptable. Influence via the central route requires that the recipient of the new information have the motivation and ability to process it. As noted previously, one of the most important determinants of motivation to think about a message is the perceived personal relevance of that message. Most of the media messages people receive are probably not perceived as directly relevant, and they have few immediate personal consequences. Thus, many of these messages will be ignored or processed primarily for peripheral cues. An important goal of any persuasion strategy aimed at enduring change will be to increase people's motivation to think about the messages by increasing the perceived personal relevance of the communications or employing other techniques to enhance processing (e.g., ending arguments with questions rather than statements; using multiple sources).

In conclusion, we note that research on mass media persuasion has come a long way from the early optimistic (and scary) notion that the mere presentation of information was sufficient to produce persuasion and the subsequent pessimistic view that media influence attempts were typically ineffective. We now know that media influence, like other forms of influence, is a complex, though explicable, process. We know that the extent and nature of a person's cognitive responses to external information may be more important than the information itself. We know that attitudes can be changed in different ways, such as central versus peripheral routes, and that some attitude changes are more accessible, stable, resistant, and predictive of behavior than others. We also know that even apparently simple variables such as how likable a source is or what mood a person is in can produce persuasion by very different processes in different situations.

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